HOGAR AGRUPADO
TOCANCIPÁ

REVISION 2 DEL DISEÑO

JOSE VICENTE VINUEZA VELASCO
MATRICULA No. 16.238

BOGOTA D.C. OCTUBRE DE 2.018

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JOSÉ VICENTE VINUEZA VELASCO
INGENIERO CONSULTOR

INGENIERO
DANIEL RICARDO LOZANO MONSALVE
CIUDAD

REF.: 2º Revisión Diseño Estructural CDI-HOGAR - TOCANCIPA

Estimados Señores:

En relación con el proyecto de la referencia, y para dar respuesta a las observaciones pertinentes tenemos lo siguiente:

2 - OBSERVACIONES A LOS PLANOS ESTRUCTTURALES

- Se anexan los detalles de las conexiones de la correa a la estructura de concreto. La cercha C1 es una viga metálica especificada en la planta (300x150x8.0).
- Se anexan los detalles de las conexiones de la columna metálica en la base y a nivel superior.
- Se anexa el detalle de la placa de concreto de la zona B.

3- OBSERVACIONES A LAS MEMORIAS DE CÁLCULO

- Se anexa el diseño total incluyendo la carga de viento.
- Se anexan los detalles de las conexiones de la estructura metálica.
- Las derivas en el umbral de daño se presentó en la primera revisión.

Sin otro particular me suscribo de Ustedes.

Atentamente,

JOSE VICENTE VINUEZA VELASCO
C.C. 2'877.632 de Bogotá
Mat. No. 16.238 C/ marca.

Bogotá D. C., Octubre 29 de 2018

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LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL2 + 1.4DL
2	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + 1.6SL
3	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + 1.6SL
4	1.2D0 + 1.2DL2 + 1.2DL + .5LL + 1.6SL
5	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + 1.6LL + .5SL
6	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + .5SL
7	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL + .5SL
8	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLX
9	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLX
10	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLY
11	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLY
12	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL+.75WLX+.75WLY
13	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL-.75WLX-.75WLY
14	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLX
15	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLX
16	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLY
17	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLY
18	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .375WLX + .375WLY
19	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .375WLX - .375WLY
20	.9D0 + .9DL2 + .9DL + WLX
21	.9D0 + .9DL2 + .9DL - WLX
22	.9D0 + .9DL2 + .9DL + WLY
23	.9D0 + .9DL2 + .9DL - WLY
24	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX + .3EQY
25	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX - .3EQY
26	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX - .3EQY
27	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX + .3EQY
28	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX + EQY
29	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX - EQY
30	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX + EQY
31	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX - EQY
32	.9D0 + .9DL2 + .9DL + EQX + .3EQY
33	.9D0 + .9DL2 + .9DL - EQX - .3EQY
34	.9D0 + .9DL2 + .9DL + EQX - .3EQY
35	.9D0 + .9DL2 + .9DL - EQX + .3EQY
36	.9D0 + .9DL2 + .9DL + .3EQX + EQY
37	.9D0 + .9DL2 + .9DL - .3EQX - EQY
38	.9D0 + .9DL2 + .9DL - .3EQX + EQY
39	.9D0 + .9DL2 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 3

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0
2	mamposteria	100	4200	4200	4200	70000	30000	2400.0

COLUMN SECTIONS

Number of prismatic sections = 4

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x45	Rectang	30.00	45.00	-	-	-	-	1350.0	227812	101250	234900
2	30x60	Rectang	30.00	60.00	-	-	-	-	1800.0	540000	135000	369900
3	FI200x5.0	Pipe	20.00	20.00	0.50	0.50	-	-	30.6	1457	1457	2914
4	15x20	Rectang	15.00	20.00	-	-	-	-	300.0	10000	5625	11869

Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm2
A1-AA'	1	3.00	2.68	4	15x20	10 #3 @ 5 cm (end)	1 (b)	Top	34	-10.05	0.39	0.16	0.0147	4.4
				1		17 #3 @ 10 cm (ctr)	0 (h)	Bot	34	-10.05	0.24	0.15	0.0128	3.8
A1'-AA'	1	3.00	2.68	4	15x20	10 #3 @ 5 cm (end)	1 (b)	Top	32	-9.61	0.42	0.12	0.0144	4.3
				1		17 #3 @ 10 cm (ctr)	0 (h)	Bot	32	-9.61	0.26	0.13	0.0124	3.7
A1-AA	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	25	31.40	4.33	8.12	0.0142	19.2
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	38.29	9.45	2.42	0.0100	13.5
A2-AA	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	29	34.99	8.75	11.64	0.0306	41.3
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	34.99	9.54	5.82	0.0171	23.1
A3-AA	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	30	19.12	11.63	5.49	0.0195	26.3
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	30	19.12	8.83	2.75	0.0100	13.5
A1-AB	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	31	55.20	14.18	3.13	0.0195	26.3
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	55.53	11.71	1.35	0.0107	14.4
A2-AB	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	31	69.32	6.33	4.14	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	37	48.46	7.85	1.17	0.0100	13.5
A3-AB	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	35.61	17.37	4.98	0.0300	40.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	28	36.15	12.34	2.09	0.0136	18.4
A1-AC	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	31	38.72	9.32	2.18	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	31	38.72	8.90	1.50	0.0100	13.5
A2-AC	2	0.40	0.32	1	30x45	3 #3 @ 10 cm	2 (b)	Top	1	1.48	0.36	0.04	0.0100	13.5
				1		---	1 (h)	Bot	1	1.48	0.75	0.04	0.0100	13.5
A2-AC	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	28	33.25	5.46	6.28	0.0113	15.2
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	31	33.32	7.06	3.23	0.0100	13.5
A3-AC	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	29	1.09	2.49	1.53	0.0100	13.5
				1		---	1 (h)	Bot	29	1.22	5.57	2.27	0.0100	13.5
A3-AC	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	29	1.09	2.49	1.53	0.0100	13.5
				1		---	1 (h)	Bot	29	1.22	5.57	2.27	0.0100	13.5
A3-AC	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	28	20.24	10.39	2.15	0.0113	15.2
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	28	20.24	8.13	1.64	0.0100	13.5
A1-AD	1	3.00	2.71	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	2	39.86	12.03	1.28	0.0100	18.0
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	29	32.50	15.20	1.36	0.0100	18.0
A3-AD	2-3	0.80	0.40	2	30x60	4 #3 @ 10 cm	3 (b)	Top	2	10.18	15.32	0.25	0.0100	18.0
				1		---	1 (h)	Bot	2	10.35	12.01	0.25	0.0100	18.0
A3-AD	2-3	0.80	0.40	2	30x60	4 #3 @ 10 cm	3 (b)	Top	2	10.18	15.32	0.25	0.0100	18.0
				1		---	1 (h)	Bot	2	10.35	12.01	0.25	0.0100	18.0
A3-AD	1	3.00	2.68	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	2	17.23	13.34	0.42	0.0100	18.0
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	28	12.61	11.34	1.55	0.0100	18.0
A1-AE	1	3.00	2.71	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	26	27.07	6.20	7.99	0.0100	18.0
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	31	26.57	14.09	3.36	0.0100	18.0
A3-AE	2-3	0.80	0.40	2	30x60	4 #3 @ 10 cm	3 (b)	Top	2	9.37	14.17	0.28	0.0100	18.0
				1		---	1 (h)	Bot	2	9.54	11.06	2.14	0.0100	18.0
A3-AE	2-3	0.80	0.40	2	30x60	4 #3 @ 10 cm	3 (b)	Top	2	9.37	14.17	0.28	0.0100	18.0
				1		---	1 (h)	Bot	2	9.54	11.06	2.14	0.0100	18.0
A3-AE	1	3.00	2.68	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	24	9.82	8.61	4.47	0.0100	18.0
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	28	10.41	10.57	1.89	0.0100	18.0
A1-AF	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	29	49.50	8.14	10.30	0.0259	35.0
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	49.50	7.61	4.97	0.0107	14.4
A2-AF	2	0.40	0.32	2	30x60	3 #3 @ 10 cm	3 (b)	Top	1	1.37	0.32	0.05	0.0100	18.0
				1		---	1 (h)	Bot	1	1.37	0.75	0.07	0.0100	18.0
A2-AF	1	3.00	2.68	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	27	47.24	2.34	27.74	Insuff.	Sectic
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	29	46.94	11.63	12.99	0.0213	38.2
A3-AF	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	24	1.68	0.82	4.33	0.0100	13.5
				1		---	1 (h)	Bot	26	1.65	3.52	7.31	0.0130	17.6
A3-AF	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	24	1.68	0.82	4.33	0.0100	13.5
				1		---	1 (h)	Bot	26	1.65	3.52	7.31	0.0130	17.6
A3-AF	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	27	26.86	6.77	6.80	0.0148	19.9
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	27	26.86	3.58	4.46	0.0100	13.5
A1-AG	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	31	57.71	8.17	6.46	0.0154	20.7
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	31	57.71	7.42	3.47	0.0100	13.5

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA A - TOCANCIPA

Engineer: Jose Vicente Vinueza
08:54:20 p.m. 07/11/2018

Column	Story	L	Lu	Sec	bxh	TIES	XTIES	Sec	LdCmb	Pu	Mu2	Mu3	RHO	As
A2-AG	1	3.00	2.68	2	30x60	7 #3 @ 10 cm (end)	3 (b)	Top	28	47.97	5.55	26.33	Insuff.	Sectic
				1		7 #3 @ 20 cm (ctr)	1 (h)	Bot	31	47.96	10.91	12.69	0.0201	36.1
A3-AG	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	25	2.28	0.83	4.80	0.0100	13.5
				1		---	1 (h)	Bot	25	2.41	2.89	6.85	0.0119	16.C
A3-AG	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	25	2.28	0.83	4.80	0.0100	13.5
				1		---	1 (h)	Bot	25	2.41	2.89	6.85	0.0119	16.C
A3-AG	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	28.35	6.30	7.34	0.0154	20.7
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	28	29.08	6.33	3.25	0.0100	13.5
A1-AH	1	3.00	2.71	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	27.31	1.39	7.28	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	26	27.20	2.26	4.70	0.0100	13.5
A2-AH	2	0.40	0.24	1	30x45	2 #3 @ 10 cm	2 (b)	Top	1	2.21	0.12	0.25	0.0100	13.5
				1		---	1 (h)	Bot	1	2.21	0.15	0.11	0.0100	13.5
A2-AH	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	39	3.89	3.96	0.09	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	6.64	4.67	1.29	0.0100	13.5
A3-AH	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	3.96	0.46	0.21	0.0100	13.5
				1		---	1 (h)	Bot	1	4.10	0.12	0.65	0.0100	13.5
A3-AH	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	3.96	0.46	0.21	0.0100	13.5
				1		---	1 (h)	Bot	1	4.10	0.12	0.65	0.0100	13.5
A3-AH	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	32	4.38	0.72	3.69	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	26	6.95	1.87	2.95	0.0100	13.5
A1-AI	1	3.00	2.72	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	27	3.23	1.84	3.39	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	27	3.23	1.69	2.72	0.0100	13.5
A2-AI	2	0.40	0.25	1	30x45	2 #3 @ 10 cm	2 (b)	Top	1	0.62	0.12	0.15	0.0100	13.5
				1		---	1 (h)	Bot	1	0.62	0.05	0.02	0.0100	13.5
A2-AI	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	31	4.26	4.04	0.11	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	29	4.13	4.44	1.22	0.0100	13.5
A3-AI	2-3	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	-0.18	0.07	0.23	0.0100	13.5
				1		---	1 (h)	Bot	1	-0.18	0.42	0.84	0.0100	13.5
A3-AI	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	33	-1.35	0.16	2.42	0.0100	13.5
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	33	-1.35	0.42	2.82	0.0100	13.5

BEAM SECTIONS

Number of prismatic sections = 5

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
2	25x40	Rectang	25.00	40.00	-	-	-	-	1000.0	133333	52083	126302
3	50x40	Rectang	50.00	40.00	-	-	-	-	2000.0	266667	416667	529067
4	2x160x60x2.5	Box/Tub	12.00	16.00	0.25	0.25	-	-	15.0	576	330	658
5	rc203x67x3.0	Box/Tub	13.40	20.30	0.30	0.30	-	-	21.1	1275	613	1317

Design Results - Beams (DMO)

BEAM: A3(AI-AH) FLOOR: 2

Length: L = 2.65 m a = 0.15 m Section: b = 50.0 cm Sec: 50x40
Lu = 2.35 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.39	0.62	0.86	1.09	1.33	1.56	1.80	2.03	2.27	2.50
Mu(-), ton-m:	-2.03	-1.59	-1.18	-0.79	-0.74	-0.74	-0.74	-1.30	-2.07	-2.87	-3.70
Mu(+), ton-m:	3.17	2.62	2.05	1.44	0.81	0.74	0.74	0.74	0.80	1.05	1.27
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	3.74	3.74	3.79	3.91	4.03	4.15	4.27	4.39	4.51	4.55	4.55
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3+1r	#3+1r	#3+1r	#3+1r	#3	#3	#3	#3+1r	#3+1r	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

A3-AI 12 #3+1r @ 7.5 3 #3 @ 17.5 12 #3+1r @ 7.5 A3-AH

BEAM: A3(AH-AG) FLOOR: 2

Length: L = 7.90 m, Lu = 7.60 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.91	1.67	2.43	3.19	3.95	4.71	5.47	6.23	6.99	7.75
Mu(-), ton-m:	-1.96	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-2.79	-4.62	-6.75
Mu(+), ton-m:	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	2.25
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	2.32	2.11	1.69	1.27	1.28	1.72	2.16	2.58	3.00	3.43	3.64
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AH — 12 #3+1r @ 7.5, 33 #3 @ 17.5, 12 #3+1r @ 7.5 — A3-AG

BEAM: A3(AG-AF) FLOOR: 2

Length: L = 7.35 m, Lu = 7.05 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.85	1.56	2.27	2.97	3.68	4.38	5.09	5.79	6.49	7.20
Mu(-), ton-m:	-15.57	-6.57	-3.19	-3.19	-3.19	-3.19	-3.19	-3.19	-3.19	-6.78	-15.95
Mu(+), ton-m:	5.19	3.19	3.19	6.12	9.27	10.35	9.19	5.97	3.19	3.19	5.32
As(-), cm2:	11.69	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	12.00
As(+), cm2:	6.27	6.27	6.27	6.27	6.73	7.56	6.67	6.27	6.27	6.27	6.27
Vu, ton:	13.40	12.05	9.11	6.17	3.24	0.71	3.35	6.29	9.22	12.16	13.52
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AG — 11 #3+1r @ 7.5, 31 #3 @ 17.5, 11 #3+1r @ 7.5 — A3-AF

BEAM: A3(AF-AE) FLOOR: 2

Length: L = 4.70 m, Lu = 4.40 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.59	1.03	1.47	1.91	2.35	2.79	3.23	3.67	4.11	4.55
Mu(-), ton-m:	-7.02	-5.54	-4.16	-2.89	-1.75	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40
Mu(+), ton-m:	2.34	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.73	2.32	2.81
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	4.99	4.95	4.72	4.48	4.24	4.00	3.77	3.53	3.29	3.06	3.02
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AF — 12 #3+1r @ 7.5, 15 #3 @ 17.5, 12 #3+1r @ 7.5 — A3-AE

BEAM: A3(AE-AD) FLOOR: 2

Length: L = 6.23 m, Lu = 5.93 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.74	1.34	1.93	2.52	3.12	3.71	4.30	4.89	5.49	6.08
Mu(-), ton-m:	-3.17	-1.95	-0.94	-0.63	-0.63	-0.63	-0.63	-0.63	-0.88	-1.86	-3.04
Mu(+), ton-m:	1.06	0.63	0.86	1.07	1.10	1.09	1.16	1.16	0.96	0.71	1.01
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	2.23	2.11	1.79	1.46	1.14	0.81	1.08	1.40	1.73	2.06	2.17
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AE — 12 #3+1r @ 7.5, 23 #3 @ 17.5, 12 #3+1r @ 7.5 — A3-AD

BEAM: A3(AD-AC) FLOOR: 2

Length: L = 5.67 m, Lu = 5.37 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.69	1.22	1.76	2.30	2.84	3.37	3.91	4.45	4.98	5.52
Mu(-), ton-m:	-3.01	-2.01	-1.16	-0.66	-0.66	-0.66	-0.66	-0.66	-1.28	-2.21	-3.30
Mu(+), ton-m:	1.00	0.72	0.83	0.86	0.77	0.66	0.66	0.66	0.66	0.66	1.10
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	2.06	1.98	1.68	1.39	1.10	0.98	1.27	1.56	1.85	2.15	2.23
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AD — 12 #3+1r @ 7.5 | 20 #3 @ 17.5 | 12 #3+1r @ 7.5 — A3-AC

BEAM: A3(AC-AB) FLOOR: 2

Length: L = 5.21 m, Lu = 4.91 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.64	1.13	1.62	2.11	2.61	3.10	3.59	4.08	4.57	5.06
Mu(-), ton-m:	-5.37	-2.62	-1.74	-1.74	-1.74	-1.74	-1.74	-1.74	-2.41	-5.26	-8.71
Mu(+), ton-m:	1.79	1.74	1.74	2.32	2.71	2.72	2.00	1.74	1.74	1.74	2.90
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.31
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	6.64	6.32	5.03	3.74	2.45	2.53	3.82	5.11	6.43	7.89	8.22
Tu, ton-m:	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AC — 12 #3+1r @ 7.5 | 18 #3 @ 17.5 | 12 #3+1r @ 7.5 — A3-AB

BEAM: A3(AB-AA) FLOOR: 2

Length: L = 5.89 m, Lu = 5.59 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.83	2.39	2.95	3.50	4.06	4.62	5.18	5.74
Mu(-), ton-m:	-10.42	-5.40	-2.08	-2.08	-2.08	-2.08	-2.08	-2.08	-2.08	-2.23	-6.15
Mu(+), ton-m:	3.47	2.08	2.08	3.13	5.08	6.20	6.15	5.47	3.95	2.08	2.08
As(-), cm2:	7.62	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	10.66	10.10	8.21	6.43	4.76	3.09	3.06	4.73	6.41	8.18	8.79
Tu, ton-m:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AB — 12 #3+1r @ 7.5 | 21 #3 @ 17.5 | 12 #3+1r @ 7.5 — A3-AA

BEAM: A2(AG-AF) FLOOR: 2

Length: L = 7.35 m, Lu = 7.05 m, a = 0.15 m, c = 0.15 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.15	0.85	1.56	2.27	2.97	3.68	4.38	5.09	5.79	6.49	7.20
Mu(-), ton-m:	-26.87	-10.47	-5.37	-5.37	-5.37	-5.37	-5.37	-5.37	-5.37	-10.13	-26.40
Mu(+), ton-m:	8.96	5.37	5.37	12.57	18.35	20.42	18.45	12.76	5.37	5.37	8.80
As(-), cm2:	21.49	7.94	3.90	3.90	3.90	3.90	3.90	3.90	3.90	7.66	21.14
As(+), cm2:	6.70	3.90	3.90	9.72	15.15	16.75	15.24	9.89	3.90	3.90	6.57
Vu, ton:	24.24	21.80	16.50	11.20	5.91	1.09	5.77	11.07	16.36	21.66	24.10
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AG — 18 #3 @ 7.5 | 25 #3 @ 17.5 | 18 #3 @ 7.5 — A2-AF

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA A - TOCANCIPA

Engineer: Jose Vicente Vinueza
08:54:20 p.m. 07/11/2018

BEAM: A2(AC-AB) FLOOR: 2

Length: L = 5.21 m, Lu = 4.91 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.64	1.13	1.62	2.11	2.61	3.10	3.59	4.08	4.57	5.06
Mu(-), ton-m:	-6.14	-2.88	-2.88	-2.88	-2.88	-2.88	-2.88	-2.88	-3.35	-8.20	-14.40
Mu(+), ton-m:	2.88	2.88	3.32	4.89	5.65	5.39	3.80	2.88	2.88	2.88	4.80
As(-), cm2:	4.49	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	6.10	11.36
As(+), cm2:	3.76	3.76	3.76	3.76	4.11	3.91	3.76	3.76	3.76	3.76	3.76
Vu, ton:	10.69	10.14	7.69	5.48	3.36	4.51	6.62	9.03	11.47	13.91	14.46
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AC — 11 #3 @ 7.5, 18 #3 @ 17.5, 11 #3 @ 7.5 — A2-AB

BEAM: A2(AB-AA) FLOOR: 2

Length: L = 5.89 m, Lu = 5.59 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.83	2.39	2.95	3.50	4.06	4.62	5.18	5.74
Mu(-), ton-m:	-17.77	-8.49	-3.55	-3.55	-3.55	-3.55	-3.55	-3.55	-3.55	-3.77	-10.68
Mu(+), ton-m:	5.92	3.55	3.55	4.85	8.58	10.38	10.04	7.77	4.12	3.55	3.56
As(-), cm2:	14.56	6.33	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	8.11
As(+), cm2:	4.32	3.76	3.76	3.76	6.40	7.87	7.58	5.75	3.76	3.76	3.76
Vu, ton:	17.93	16.82	13.35	9.87	6.40	3.25	3.99	7.26	10.74	14.21	15.32
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AB — 11 #3 @ 7.5, 22 #3 @ 17.5, 11 #3 @ 7.5 — A2-AA

BEAM: A1'(AA-D) FLOOR: 2

Length: L = 1.50 m, Lu = 1.35 m, a = 0.15 m, c = 0.00 m; Section: b = 25.0 cm, h = 40.0 cm; Sec: 25x40; Mat: RConcrete1

X, m:	0.15	0.29	0.42	0.56	0.69	0.83	0.96	1.10	1.23	1.37	1.50
Mu(-), ton-m:	-1.78	-1.78	-2.08	-2.84	-3.62	-4.43	-5.27	-6.14	-7.03	-7.96	-8.92
Mu(+), ton-m:	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	2.97
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.21	3.85	4.52	5.24	5.99	6.78
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	11.61	11.61	11.61	11.65	11.87	12.10	12.32	12.54	12.59	12.59	12.59
Tu, ton-m:	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50

DESIGN

A1'-AA — 18 #3 @ 7.5 — A1'-D

BEAM: A1'(D-AA') FLOOR: 2

Length: L = 2.22 m, Lu = 2.15 m, a = 0.00 m, c = 0.08 m; Section: b = 25.0 cm, h = 40.0 cm; Sec: 25x40; Mat: RConcrete1

X, m:	0.00	0.21	0.43	0.64	0.86	1.07	1.29	1.50	1.72	1.93	2.15
Mu(-), ton-m:	-0.89	-0.68	-0.48	-0.29	-0.18	-0.18	-0.18	-0.34	-0.51	-0.69	-0.89
Mu(+), ton-m:	0.54	0.44	0.34	0.22	0.18	0.18	0.19	0.32	0.45	0.56	0.67
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	1.05	1.05	1.04	0.98	0.92	0.86	0.82	0.88	0.94	0.95	0.95
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

A1'-D — 12 #3 @ 7.5, 2 #3 @ 17.5, 12 #3 @ 7.5 — A1'-AA'

BEAM: A1(AI-AH) FLOOR: 2

Length: L = 2.65 m a = 0.15 m Section: b = 50.0 cm Sec: 50x40
Lu = 2.35 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.39	0.62	0.86	1.09	1.33	1.56	1.80	2.03	2.27	2.50
Mu(-), ton-m:	-1.94	-1.94	-1.94	-2.11	-2.41	-2.93	-3.94	-5.10	-6.52	-8.08	-9.71
Mu(+), ton-m:	2.88	2.02	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	3.24
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	7.07
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	8.61	8.61	8.74	9.07	9.40	9.73	10.06	10.39	10.72	10.85	10.85
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3+1r	#3+1r	#3+1r	#3+1r	#3	#3	#3	#3+1r	#3+1r	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

A1-AI 12 #3+1r @ 7.5 3 #3 @ 17.5 12 #3+1r @ 7.5 A1-AH

BEAM: A1(AH-AG) FLOOR: 2

Length: L = 7.90 m a = 0.15 m Section: b = 50.0 cm Sec: 50x40
Lu = 7.60 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.91	1.67	2.43	3.19	3.95	4.71	5.47	6.23	6.99	7.75
Mu(-), ton-m:	-12.92	-4.89	-4.89	-4.89	-4.89	-4.89	-4.89	-4.89	-4.89	-13.55	-24.44
Mu(+), ton-m:	4.89	4.89	4.89	6.60	8.80	8.82	6.50	4.89	4.89	4.89	8.15
As(-), cm2:	9.56	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	10.06	19.33
As(+), cm2:	6.27	6.27	6.27	6.27	6.38	6.40	6.27	6.27	6.27	6.27	6.27
Vu, ton:	12.95	11.52	8.65	5.77	2.98	3.08	5.93	8.80	11.68	14.55	15.99
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A1-AH 11 #3+1r @ 7.5 34 #3 @ 17.5 11 #3+1r @ 7.5 A1-AG

BEAM: A1(AG-AF) FLOOR: 2

Length: L = 7.35 m a = 0.15 m Section: b = 50.0 cm Sec: 50x40
Lu = 7.05 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.85	1.56	2.27	2.97	3.68	4.38	5.09	5.79	6.49	7.20
Mu(-), ton-m:	-29.44	-13.16	-5.89	-5.89	-5.89	-5.89	-5.89	-5.89	-5.89	-8.96	-23.87
Mu(+), ton-m:	9.81	5.89	5.89	9.59	15.60	18.08	16.72	11.82	5.89	5.89	7.96
As(-), cm2:	24.09	9.75	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.50	18.81
As(+), cm2:	7.15	6.27	6.27	6.97	11.71	13.76	12.62	8.69	6.27	6.27	6.27
Vu, ton:	24.26	21.94	16.90	11.87	6.83	2.01	5.25	10.29	15.32	20.35	22.68
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A1-AG 11 #3+1r @ 7.5 31 #3 @ 17.5 11 #3+1r @ 7.5 A1-AF

BEAM: A1(AF-AE) FLOOR: 2

Length: L = 4.70 m a = 0.15 m Section: b = 50.0 cm Sec: 50x40
Lu = 4.40 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.59	1.03	1.47	1.91	2.35	2.79	3.23	3.67	4.11	4.55
Mu(-), ton-m:	-15.19	-11.68	-8.63	-6.07	-4.01	-3.04	-3.04	-3.04	-3.04	-3.04	-3.80
Mu(+), ton-m:	5.06	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04
As(-), cm2:	11.37	8.59	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	10.86	10.70	9.57	8.50	7.50	6.49	5.49	4.48	4.43	5.43	5.56
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

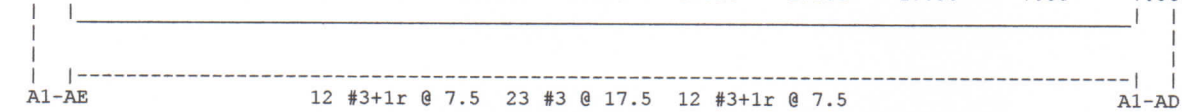
A1-AF 12 #3+1r @ 7.5 15 #3 @ 17.5 12 #3+1r @ 7.5 A1-AE

BEAM: A1(AE-AD) FLOOR: 2

Length: L = 6.23 m, Lu = 5.93 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.74	1.34	1.93	2.52	3.12	3.71	4.30	4.89	5.49	6.08
Mu(-), ton-m:	-7.42	-3.06	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-5.17	-10.12
Mu(+), ton-m:	2.47	2.02	2.22	4.20	5.53	5.84	4.92	3.19	2.02	2.02	3.37
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	7.38
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	8.64	7.96	6.08	4.31	2.65	1.88	3.54	5.23	7.10	8.99	9.66
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

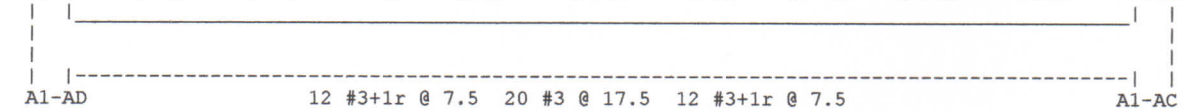


BEAM: A1(AD-AC) FLOOR: 2

Length: L = 5.67 m, Lu = 5.37 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.69	1.22	1.76	2.30	2.84	3.37	3.91	4.45	4.98	5.52
Mu(-), ton-m:	-8.84	-5.13	-2.14	-1.77	-1.77	-1.77	-1.77	-1.77	-1.77	-4.26	-7.81
Mu(+), ton-m:	2.95	1.77	1.77	1.77	2.47	2.89	2.50	1.77	1.77	1.77	2.60
As(-), cm2:	6.41	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	7.64	7.17	5.58	4.13	2.72	1.32	2.42	3.83	5.27	6.86	7.32
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

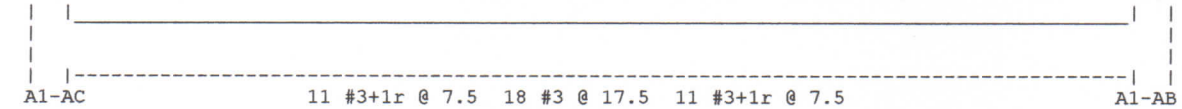


BEAM: A1(AC-AB) FLOOR: 2

Length: L = 5.21 m, Lu = 4.91 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.64	1.13	1.62	2.11	2.61	3.10	3.59	4.08	4.57	5.06
Mu(-), ton-m:	-8.62	-3.90	-2.78	-2.78	-2.78	-2.78	-2.78	-2.78	-3.33	-7.97	-13.91
Mu(+), ton-m:	2.87	2.78	2.78	3.45	4.79	4.94	3.68	2.78	2.78	2.78	4.64
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	10.35
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	11.35	10.77	8.19	5.71	3.46	3.17	5.41	7.87	10.45	13.03	13.62
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

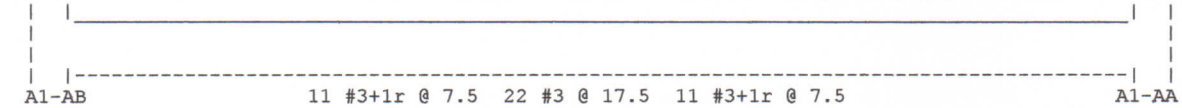


BEAM: A1(AB-AA) FLOOR: 2

Length: L = 5.89 m, Lu = 5.59 m, a = 0.15 m, c = 0.15 m, Section: b = 50.0 cm, h = 40.0 cm, Sec: 50x40, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.83	2.39	2.95	3.50	4.06	4.62	5.18	5.74
Mu(-), ton-m:	-15.98	-7.21	-3.20	-3.20	-3.20	-3.20	-3.20	-3.20	-3.20	-5.34	-13.56
Mu(+), ton-m:	5.33	3.20	3.20	5.11	8.34	9.65	8.82	6.08	3.20	3.20	4.52
As(-), cm2:	12.02	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	10.07
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	7.02	6.40	6.27	6.27	6.27	6.27
Vu, ton:	15.81	14.70	11.24	7.78	4.32	0.87	3.46	6.92	10.38	13.84	14.94
Tu, ton-m:	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN



BEAM: A1(AA-10a) FLOOR: 2

	Length:	L = 1.50 m Lu = 1.35 m	a = 0.15 m c = 0.00 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1			
X, m:	0.15	0.29	0.42	0.56	0.69	0.83	0.96	1.10	1.23	1.37	1.50
Mu(-), ton-m:	-12.91	-10.54	-8.26	-6.55	-5.67	-5.52	-5.72	-6.00	-6.37	-6.80	-7.42
Mu(+), ton-m:	4.30	2.58	2.58	2.58	2.58	2.58	2.58	3.16	4.90	6.62	8.44
As(-), cm2:	9.55	7.71	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	25.98	25.98	25.98	25.93	25.62	25.32	25.01	24.15	24.08	24.08	24.08
Tu, ton-m:	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.22	0.22	0.22	0.22
Stirrup:	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
DESIGN	A1-AA				18 #3+1r @ 7.5						A1:10a

BEAM: A1(10a-AA') FLOOR: 2

	Length:	L = 2.22 m Lu = 2.15 m	a = 0.00 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1			
X, m:	0.00	0.21	0.43	0.64	0.86	1.07	1.29	1.50	1.72	1.93	2.15
Mu(-), ton-m:	-1.63	-1.23	-0.86	-0.53	-0.33	-0.33	-0.33	-0.49	-0.82	-1.19	-1.59
Mu(+), ton-m:	1.28	1.09	0.88	0.66	0.42	0.33	0.38	0.62	0.83	1.04	1.24
As(-), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
As(+), cm2:	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27
Vu, ton:	1.89	1.89	1.87	1.75	1.63	1.51	1.58	1.70	1.82	1.85	1.85
Tu, ton-m:	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Stirrup:	#3+1r	#3+1r	#3+1r	#3+1r	#3	#3	#3	#3+1r	#3+1r	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50
DESIGN	A1:10a				12 #3+1r @ 7.5	2 #3 @ 17.5		12 #3+1r @ 7.5			A1-AA'

BEAM: F(AI-AH) FLOOR: 2

	Length:	L = 2.65 m Lu = 2.45 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.35	0.59	0.84	1.08	1.33	1.57	1.82	2.06	2.31	2.55
Mu(-), ton-m:	-0.39	-0.35	-0.33	-0.33	-0.34	-0.38	-0.53	-0.69	-0.89	-1.12	-1.38
Mu(+), ton-m:	0.32	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.46
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	0.95	0.95	0.98	1.06	1.14	1.22	1.29	1.37	1.45	1.49	1.49
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50
DESIGN	F-AI				12 #3 @ 7.5	3 #3 @ 17.5		12 #3 @ 7.5			F-AH

BEAM: F(AH-AG) FLOOR: 2

	Length:	L = 7.90 m Lu = 7.70 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.87	1.64	2.41	3.18	3.95	4.72	5.49	6.26	7.03	7.80
Mu(-), ton-m:	-1.46	-0.50	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-1.06	-2.19
Mu(+), ton-m:	0.49	0.44	0.44	0.83	1.13	1.18	0.98	0.55	0.44	0.44	0.73
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.42	1.27	0.96	0.65	0.34	0.24	0.52	0.83	1.15	1.46	1.61
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	F-AH				12 #3 @ 7.5	33 #3 @ 17.5		12 #3 @ 7.5			F-AG

BEAM: F(AG-AF) FLOOR: 2

	Length:	L = 7.35 m Lu = 7.15 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.81	1.53	2.25	2.96	3.68	4.39	5.11	5.82	6.54	7.25
Mu(-), ton-m:	-2.11	-1.10	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42	-0.42	-1.17
Mu(+), ton-m:	0.70	0.42	0.42	0.42	0.75	0.95	0.94	0.72	0.42	0.42	0.42
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.58	1.45	1.16	0.87	0.58	0.33	0.35	0.61	0.90	1.18	1.32
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	F-AG			12 #3 @ 7.5		30 #3 @ 17.5		12 #3 @ 7.5			F-AF

BEAM: F(AF-AE) FLOOR: 2

	Length:	L = 4.70 m Lu = 4.50 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.55	1.00	1.45	1.90	2.35	2.80	3.25	3.70	4.15	4.60
Mu(-), ton-m:	-1.25	-0.87	-0.55	-0.30	-0.25	-0.25	-0.25	-0.25	-0.36	-0.62	-0.94
Mu(+), ton-m:	0.42	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	0.99	0.97	0.79	0.63	0.48	0.32	0.34	0.49	0.65	0.81	0.84
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	F-AF			12 #3 @ 7.5		15 #3 @ 17.5		12 #3 @ 7.5			F-AE

BEAM: F(AE-AD) FLOOR: 2

	Length:	L = 6.23 m Lu = 6.03 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.70	1.31	1.91	2.51	3.12	3.72	4.32	4.92	5.53	6.13
Mu(-), ton-m:	-0.94	-0.38	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.62	-1.26
Mu(+), ton-m:	0.31	0.25	0.26	0.53	0.72	0.76	0.65	0.42	0.25	0.25	0.42
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.11	1.02	0.78	0.54	0.32	0.21	0.42	0.65	0.89	1.13	1.22
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	F-AE			12 #3 @ 7.5		24 #3 @ 17.5		12 #3 @ 7.5			F-AD

BEAM: F(AD-AC) FLOOR: 2

	Length:	L = 5.67 m Lu = 5.47 m	a = 0.10 m c = 0.10 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.10	0.65	1.19	1.74	2.29	2.84	3.38	3.93	4.48	5.02	5.57
Mu(-), ton-m:	-1.28	-0.74	-0.30	-0.26	-0.26	-0.26	-0.26	-0.26	-0.26	-0.42	-0.88
Mu(+), ton-m:	0.43	0.26	0.26	0.26	0.37	0.48	0.46	0.35	0.26	0.26	0.29
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.17	1.10	0.88	0.66	0.47	0.28	0.33	0.52	0.72	0.94	1.01
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	F-AD			12 #3 @ 7.5		21 #3 @ 17.5		12 #3 @ 7.5			F-AC

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA A - TOCANCIPA

Engineer: Jose Vicente Vinueza
08:54:20 p.m. 07/11/2018

BEAM: F(AC-AB) FLOOR: 2

Length: L = 5.21 m a = 0.10 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.01 m c = 0.10 m h = 40.0 cm Mat: RConcrete1

X, m:	0.10	0.60	1.10	1.60	2.10	2.61	3.11	3.61	4.11	4.61	5.11
Mu(-), ton-m:	-0.88	-0.48	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.31	-0.67	-1.12
Mu(+), ton-m:	0.29	0.22	0.22	0.22	0.29	0.32	0.24	0.22	0.22	0.22	0.37
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	0.92	0.87	0.67	0.49	0.32	0.24	0.42	0.59	0.79	0.99	1.04
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

F-AC 12 #3 @ 7.5 18 #3 @ 17.5 12 #3 @ 7.5 F-AB

BEAM: F(AB-AA) FLOOR: 2

Length: L = 5.89 m a = 0.10 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.69 m c = 0.10 m h = 40.0 cm Mat: RConcrete1

X, m:	0.10	0.67	1.24	1.81	2.38	2.95	3.51	4.08	4.65	5.22	5.79
Mu(-), ton-m:	-1.19	-0.59	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.34	-0.83
Mu(+), ton-m:	0.40	0.24	0.24	0.40	0.64	0.76	0.74	0.66	0.47	0.24	0.28
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.19	1.13	0.94	0.73	0.53	0.34	0.38	0.57	0.77	0.97	1.03
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

F-AB 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 F-AA

BEAM: F(AA-10) FLOOR: 2

Length: L = 1.00 m a = 0.10 m Section: b = 30.0 cm Sec: 30x40
Lu = 0.90 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.10	0.19	0.28	0.37	0.46	0.55	0.64	0.73	0.82	0.91	1.00
Mu(-), ton-m:	-0.63	-0.56	-0.48	-0.41	-0.35	-0.28	-0.22	-0.17	-0.11	-0.06	-0.02
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	0.72	0.72	0.72	0.72	0.72	0.69	0.66	0.63	0.60	0.57	0.54
Tu, ton-m:	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

F-AA 6 #3 @ 17.5 F-10

BEAM: A3(AI-AH) FLOOR: 4

Length: L = 2.65 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 2.35 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.39	0.62	0.86	1.09	1.33	1.56	1.80	2.03	2.27	2.50
Mu(-), ton-m:	-0.43	-0.43	-0.43	-0.43	-0.43	-0.43	-0.43	-0.81	-1.23	-1.67	-2.13
Mu(+), ton-m:	1.61	1.32	1.01	0.69	0.43	0.43	0.43	0.43	0.43	0.43	0.71
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.57	2.57	2.60	2.67	2.75	2.82	2.89	2.96	3.03	3.06	3.06
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

A3-AI 12 #3 @ 7.5 3 #3 @ 17.5 12 #3 @ 7.5 A3-AH

BEAM: A3(AH-AG) FLOOR: 4

Length: L = 7.90 m, Lu = 7.60 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.91	1.67	2.43	3.19	3.95	4.71	5.47	6.23	6.99	7.75
Mu(-), ton-m:	-1.52	-0.67	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.54	-1.38	-2.42
Mu(+), ton-m:	0.51	0.48	0.48	0.72	0.96	0.99	0.77	0.48	0.48	0.48	0.81
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.44	1.30	0.99	0.69	0.42	0.39	0.65	0.93	1.23	1.54	1.69
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AH — 12 #3 @ 7.5 | 33 #3 @ 17.5 | 12 #3 @ 7.5 — A3-AG

BEAM: A3(AF-AE) FLOOR: 4

Length: L = 4.70 m, Lu = 4.40 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.59	1.03	1.47	1.91	2.35	2.79	3.23	3.67	4.11	4.55
Mu(-), ton-m:	-1.41	-0.93	-0.52	-0.28	-0.28	-0.28	-0.28	-0.28	-0.28	-0.51	-0.86
Mu(+), ton-m:	0.47	0.28	0.28	0.33	0.37	0.38	0.47	0.54	0.55	0.49	0.41
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.19	1.17	1.02	0.88	0.74	0.60	0.48	0.61	0.75	0.89	0.91
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AF — 12 #3 @ 7.5 | 15 #3 @ 17.5 | 12 #3 @ 7.5 — A3-AE

BEAM: A3(AE-AD) FLOOR: 4

Length: L = 6.23 m, Lu = 5.93 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.74	1.34	1.93	2.52	3.12	3.71	4.30	4.89	5.49	6.08
Mu(-), ton-m:	-1.86	-1.16	-0.57	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.67	-1.24
Mu(+), ton-m:	0.62	0.37	0.37	0.37	0.42	0.54	0.55	0.52	0.37	0.37	0.41
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.39	1.32	1.12	0.93	0.73	0.53	0.51	0.70	0.90	1.09	1.16
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AE — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — A3-AD

BEAM: A3(AD-AC) FLOOR: 4

Length: L = 5.67 m, Lu = 5.37 m, a = 0.15 m, c = 0.15 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.15	0.69	1.22	1.76	2.30	2.84	3.37	3.91	4.45	4.98	5.52
Mu(-), ton-m:	-1.71	-1.08	-0.55	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34	-0.52	-0.99
Mu(+), ton-m:	0.57	0.34	0.34	0.34	0.44	0.53	0.59	0.62	0.55	0.40	0.34
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.32	1.27	1.09	0.91	0.74	0.56	0.46	0.63	0.81	0.98	1.04
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AD — 12 #3 @ 7.5 | 20 #3 @ 17.5 | 12 #3 @ 7.5 — A3-AC

BEAM: AI(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-2.11	-1.36	-0.77	-0.60	-0.60	-0.60	-0.60	-0.60	-1.18	-2.02	-2.98
Mu(+), ton-m:	1.16	1.22	1.24	1.16	0.95	0.67	0.70	0.71	0.70	0.61	0.99
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.45	1.37	1.18	0.99	0.80	0.93	1.12	1.32	1.51	1.70	1.77
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AI — 12 #3 @ 7.5 | 24 #3 @ 17.5 | 12 #3 @ 7.5 — A2-AI

BEAM: AI(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-2.13	-1.38	-0.77	-0.59	-0.59	-0.59	-0.59	-0.59	-1.23	-2.04	-2.96
Mu(+), ton-m:	0.92	0.99	1.01	0.95	0.78	0.59	0.62	0.63	0.62	0.59	0.99
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.41	1.34	1.15	0.95	0.76	0.87	1.06	1.26	1.45	1.64	1.71
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AI — 12 #3 @ 7.5 | 24 #3 @ 17.5 | 12 #3 @ 7.5 — A1-AI

BEAM: AI(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-3.18	-2.14	-1.29	-0.66	-0.64	-0.64	-0.64	-0.64	-0.64	-0.64	-0.64
Mu(+), ton-m:	1.06	1.05	1.37	1.64	1.82	1.84	1.71	1.43	1.08	0.75	0.64
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	3.78	3.78	3.44	2.92	2.39	1.87	1.53	2.06	2.58	2.92	2.92
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AI — 12 #3 @ 7.5 | 5 #3 @ 17.5 | 12 #3 @ 7.5 — F-AI

BEAM: AH(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-2.08	-1.37	-0.79	-0.63	-0.63	-0.63	-0.63	-0.63	-1.27	-2.16	-3.15
Mu(+), ton-m:	1.34	1.40	1.40	1.27	1.02	0.69	0.71	0.72	0.72	0.65	1.05
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.47	1.40	1.21	1.02	0.85	1.03	1.23	1.42	1.61	1.80	1.87
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AH — 12 #3 @ 7.5 | 24 #3 @ 17.5 | 12 #3 @ 7.5 — A2-AH

BEAM: AH(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-2.16	-1.42	-0.81	-0.64	-0.64	-0.64	-0.64	-0.68	-1.39	-2.23	-3.20
Mu(+), ton-m:	1.04	1.08	1.06	0.96	0.76	0.64	0.64	0.64	0.64	0.64	1.07
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.43	1.36	1.17	0.97	0.81	0.99	1.18	1.37	1.56	1.75	1.82
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN: A2-AH — 12 #3 @ 7.5 | 24 #3 @ 17.5 | 12 #3 @ 7.5 — A1-AH

BEAM: AH(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-4.85	-2.93	-1.38	-0.97	-0.97	-0.97	-0.97	-0.97	-0.97	-0.97	-0.97
Mu(+), ton-m:	1.62	0.97	1.49	2.23	2.81	3.08	3.04	2.77	2.19	1.35	0.97
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	6.99	6.99	6.29	5.21	4.12	3.03	2.30	3.38	4.47	5.16	5.16
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN: A1-AH — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AH

BEAM: AG(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.92 m, a = 0.23 m, c = 0.30 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.41	2.00	2.59	3.18	3.77	4.37	4.96	5.55	6.14
Mu(-), ton-m:	-8.60	-4.09	-2.43	-2.43	-2.43	-2.43	-2.43	-2.43	-2.74	-6.94	-12.16
Mu(+), ton-m:	2.87	2.43	2.43	3.93	4.96	5.09	4.08	2.54	2.43	2.43	4.05
As(-), cm2:	6.41	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	5.10	9.37
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.18	8.49	6.66	4.97	3.28	2.76	4.44	6.13	7.93	9.86	10.53
Tu, ton-m:	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN: A3-AG — 11 #3 @ 7.5 | 24 #3 @ 17.5 | 11 #3 @ 7.5 — A2-AG

BEAM: AG(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.92 m, a = 0.30 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.30	0.89	1.48	2.07	2.67	3.26	3.85	4.44	5.03	5.62	6.22
Mu(-), ton-m:	-11.24	-5.91	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-5.18	-9.85
Mu(+), ton-m:	3.75	2.25	2.25	3.35	4.70	5.25	4.57	2.99	2.25	2.25	3.28
As(-), cm2:	8.59	4.31	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	7.43
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.80	3.76	3.76	3.76	3.76	3.76
Vu, ton:	10.19	9.41	7.21	5.13	3.22	1.73	3.50	5.00	6.52	8.23	8.84
Tu, ton-m:	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN: A2-AG — 11 #3 @ 7.5 | 24 #3 @ 17.5 | 11 #3 @ 7.5 — A1-AG

BEAM: AG(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-6.97	-4.69	-2.74	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39
Mu(+), ton-m:	2.32	1.39	1.39	1.39	2.01	2.49	2.63	2.50	2.06	1.39	1.39
As(-), cm2:	5.12	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.02	9.02	8.25	7.06	5.87	4.68	3.49	3.68	4.87	5.64	5.64
Tu, ton-m:	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AG — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AG

BEAM: AF(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.92 m, a = 0.23 m, c = 0.30 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.82	1.41	2.00	2.59	3.18	3.77	4.37	4.96	5.55	6.14
Mu(-), ton-m:	-8.77	-4.23	-2.47	-2.47	-2.47	-2.47	-2.47	-2.47	-2.84	-7.08	-12.33
Mu(+), ton-m:	2.92	2.47	2.47	3.97	4.94	5.08	4.11	2.61	2.47	2.47	4.11
As(-), cm2:	6.55	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	5.21	9.52
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.25	8.55	6.77	5.08	3.39	2.86	4.55	6.23	7.97	9.90	10.57
Tu, ton-m:	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AF — 11 #3 @ 7.5 | 24 #3 @ 17.5 | 11 #3 @ 7.5 — A2-AF

BEAM: AF(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.92 m, a = 0.30 m, c = 0.23 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.30	0.89	1.48	2.07	2.67	3.26	3.85	4.44	5.03	5.62	6.22
Mu(-), ton-m:	-11.31	-5.98	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-5.42	-10.14
Mu(+), ton-m:	3.77	2.26	2.26	3.43	4.70	5.21	4.50	2.98	2.26	2.26	3.38
As(-), cm2:	8.65	4.36	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.93	7.66
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.78	3.76	3.76	3.76	3.76	3.76
Vu, ton:	10.19	9.40	7.21	5.19	3.28	1.84	3.65	5.14	6.64	8.33	8.94
Tu, ton-m:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AF — 11 #3 @ 7.5 | 24 #3 @ 17.5 | 11 #3 @ 7.5 — A1-AF

BEAM: AF(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-7.11	-4.79	-2.80	-1.42	-1.42	-1.42	-1.42	-1.42	-1.42	-1.42	-1.42
Mu(+), ton-m:	2.37	1.42	1.42	1.46	2.17	2.63	2.76	2.59	2.13	1.42	1.42
As(-), cm2:	5.23	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.16	9.16	8.38	7.17	5.96	4.74	3.53	3.80	5.02	5.79	5.79
Tu, ton-m:	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AF — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AF

BEAM: AE(A3-A1) FLOOR: 2

Length: L = 12.88 m, Lu = 12.28 m; a = 0.30 m, c = 0.30 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.30	1.53	2.76	3.98	5.21	6.44	7.67	8.90	10.12	11.35	12.58
Mu(-), ton-m:	-5.14	-2.62	-1.19	-1.19	-1.19	-1.19	-1.19	-1.19	-1.19	-3.28	-5.97
Mu(+), ton-m:	1.71	1.19	1.19	1.93	2.42	2.65	2.27	1.62	1.19	1.19	1.99
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.35
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.52	2.18	1.70	1.28	0.85	0.56	0.99	1.41	1.84	2.34	2.68
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

A3-AE — 12 #3 @ 7.5 | 60 #3 @ 17.5 | 12 #3 @ 7.5 — A1-AE

BEAM: AE(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.72 m; a = 0.30 m, c = 0.10 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.30	0.57	0.84	1.12	1.39	1.66	1.93	2.20	2.48	2.75	3.02
Mu(-), ton-m:	-7.91	-5.55	-3.52	-1.89	-1.58	-1.58	-1.58	-1.58	-1.58	-1.58	-1.58
Mu(+), ton-m:	2.64	1.58	1.98	2.56	3.03	3.31	3.26	2.88	2.14	1.58	1.58
As(-), cm2:	5.86	4.03	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.15	9.15	8.44	7.26	6.08	4.90	3.71	4.48	5.66	6.38	6.38
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AE — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AE

BEAM: AD(A3-A1) FLOOR: 2

Length: L = 12.88 m, Lu = 12.28 m; a = 0.30 m, c = 0.30 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.30	1.53	2.76	3.98	5.21	6.44	7.67	8.90	10.12	11.35	12.58
Mu(-), ton-m:	-5.23	-2.70	-1.22	-1.22	-1.22	-1.22	-1.22	-1.22	-1.22	-3.37	-6.09
Mu(+), ton-m:	1.74	1.22	1.22	1.98	2.43	2.65	2.28	1.67	1.22	1.22	2.03
As(-), cm2:	3.79	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.44
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.53	2.20	1.74	1.31	0.89	0.60	1.02	1.45	1.87	2.36	2.69
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

A3-AD — 12 #3 @ 7.5 | 60 #3 @ 17.5 | 12 #3 @ 7.5 — A1-AD

BEAM: AD(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.72 m; a = 0.30 m, c = 0.10 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.30	0.57	0.84	1.12	1.39	1.66	1.93	2.20	2.48	2.75	3.02
Mu(-), ton-m:	-8.24	-5.82	-3.73	-2.05	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65
Mu(+), ton-m:	2.75	1.65	2.21	2.77	3.21	3.47	3.39	2.97	2.17	1.65	1.65
As(-), cm2:	6.13	4.24	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.38	9.38	8.66	7.46	6.26	5.05	3.85	4.67	5.87	6.60	6.60
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AD — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AD

BEAM: AC(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-9.32	-4.52	-2.57	-2.57	-2.57	-2.57	-2.57	-2.57	-2.78	-7.27	-12.83
Mu(+), ton-m:	3.11	2.57	2.57	4.26	5.20	5.47	4.35	2.70	2.57	2.57	4.28
As(-), cm2:	6.99	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	5.36	9.95
As(+), cm2:	3.76	3.76	3.76	3.76	3.77	3.97	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.56	8.82	6.91	5.15	3.38	2.82	4.59	6.36	8.21	10.24	10.98
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AC — 11 #3 @ 7.5 25 #3 @ 17.5 11 #3 @ 7.5 — A2-AC

BEAM: AC(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-11.67	-6.10	-2.33	-2.33	-2.33	-2.33	-2.33	-2.33	-2.33	-5.85	-10.95
Mu(+), ton-m:	3.89	2.33	2.33	3.54	5.01	5.59	4.79	3.28	2.33	2.33	3.65
As(-), cm2:	8.95	4.45	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.26	8.34
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	4.06	3.76	3.76	3.76	3.76	3.76
Vu, ton:	10.58	9.76	7.50	5.41	3.44	1.84	3.75	5.38	7.05	8.91	9.59
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AC — 11 #3 @ 7.5 25 #3 @ 17.5 11 #3 @ 7.5 — A1-AC

BEAM: AC(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-7.98	-5.51	-3.40	-1.72	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60
Mu(+), ton-m:	2.66	1.60	1.60	1.70	2.37	2.80	2.88	2.60	2.14	1.60	1.60
As(-), cm2:	5.91	4.00	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.78	9.78	8.98	7.74	6.50	5.25	4.01	4.13	5.38	6.17	6.17
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AC — 11 #3 @ 7.5 6 #3 @ 17.5 11 #3 @ 7.5 — F-AC

BEAM: AB(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-15.76	-6.99	-4.53	-4.53	-4.53	-4.53	-4.53	-4.53	-4.53	-12.06	-22.67
Mu(+), ton-m:	5.25	4.53	4.53	7.88	10.33	10.87	8.76	4.89	4.53	4.53	7.56
As(-), cm2:	12.61	5.14	3.76	3.76	3.76	3.76	3.76	3.76	3.76	9.29	18.40
As(+), cm2:	3.81	3.76	3.76	5.84	7.82	8.27	6.54	3.76	3.76	3.76	5.58
Vu, ton:	17.76	16.34	12.46	8.68	5.33	4.25	7.60	11.19	15.08	18.96	20.37
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AB — 11 #3 @ 7.5 25 #3 @ 17.5 11 #3 @ 7.5 — A2-AB

BEAM: AB(A2-A1) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-21.13	-10.58	-4.23	-4.23	-4.23	-4.23	-4.23	-4.23	-4.23	-8.47	-17.10
Mu(+), ton-m:	7.04	4.23	4.23	5.50	8.87	10.13	8.85	5.70	4.23	4.23	5.70
As(-), cm2:	17.27	8.03	3.76	3.76	3.76	3.76	3.76	3.76	3.76	6.31	13.90
As(+), cm2:	5.18	3.76	3.76	3.99	6.63	7.66	6.61	4.15	3.76	3.76	4.15
Vu, ton:	19.15	17.64	13.48	9.32	5.44	2.19	5.46	8.48	11.75	15.02	16.22
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A2-AB — 11 #3 @ 7.5 25 #3 @ 17.5 11 #3 @ 7.5 — A1-AB

BEAM: AB(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-9.74	-7.17	-4.92	-3.01	-1.95	-1.95	-1.95	-1.95	-1.95	-1.95	-1.95
Mu(+), ton-m:	3.25	1.95	1.95	1.95	1.95	1.97	2.18	2.05	1.95	1.95	1.95
As(-), cm2:	7.34	5.28	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	10.92	10.92	10.15	8.97	7.78	6.59	5.40	4.21	5.32	6.08	6.08
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AB — 11 #3 @ 7.5 6 #3 @ 17.5 11 #3 @ 7.5 — F-AB

BEAM: AA(A3-A2) FLOOR: 2

Length: L = 6.44 m, Lu = 5.99 m, a = 0.23 m, c = 0.23 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.82	1.42	2.02	2.62	3.22	3.82	4.42	5.02	5.62	6.22
Mu(-), ton-m:	-9.91	-4.93	-2.65	-2.65	-2.65	-2.65	-2.65	-2.65	-2.83	-7.49	-13.27
Mu(+), ton-m:	3.30	2.65	3.27	5.01	5.73	5.91	4.78	3.23	2.65	2.65	4.42
As(-), cm2:	7.48	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	5.53	10.34
As(+), cm2:	3.76	3.76	3.76	3.76	4.17	4.30	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.94	9.26	7.47	5.68	3.89	3.33	5.12	6.91	8.70	10.60	11.35
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A3-AA — 11 #3 @ 7.5 25 #3 @ 17.5 11 #3 @ 7.5 — A2-AA

BEAM: AA(A2-A1') FLOOR: 2

Length: L = 3.74 m, Lu = 3.39 m, a = 0.23 m, c = 0.13 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.56	0.90	1.24	1.58	1.92	2.26	2.60	2.94	3.28	3.62
Mu(-), ton-m:	-10.47	-7.56	-4.97	-2.76	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09
Mu(+), ton-m:	3.49	2.09	2.09	2.09	2.09	2.94	3.61	3.90	4.16	4.11	3.85
As(-), cm2:	7.94	5.58	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	9.52	9.52	8.64	7.64	6.63	5.63	4.63	3.62	2.75	3.49	3.49
Tu, ton-m:	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A2-AA — 11 #3 @ 7.5 10 #3 @ 17.5 11 #3 @ 7.5 — A1'-AA

BEAM: AA(A1'-A1) FLOOR: 2

Length: L = 2.70 m, Lu = 2.35 m, a = 0.13 m, c = 0.23 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.13	0.36	0.60	0.83	1.07	1.30	1.54	1.77	2.01	2.24	2.48
Mu(-), ton-m:	-1.84	-1.84	-1.84	-1.84	-1.84	-1.84	-2.59	-3.97	-5.55	-7.29	-9.20
Mu(+), ton-m:	3.66	3.43	3.09	2.75	2.32	1.84	1.84	1.84	1.84	1.84	3.07
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.03	5.37	6.89
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	3.78	3.78	4.04	4.72	5.40	6.08	6.76	7.44	8.13	8.39	8.39
Tu, ton-m:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

A1'-AA — 11 #3 @ 7.5 | 4 #3 @ 17.5 | 11 #3 @ 7.5 — A1-AA

BEAM: AA(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.80 m, a = 0.23 m, c = 0.10 m | Section: b = 30.0 cm, h = 40.0 cm | Sec: 30x40 | Mat: RConcrete1

X, m:	0.23	0.50	0.78	1.06	1.34	1.62	1.90	2.18	2.46	2.74	3.02
Mu(-), ton-m:	-6.65	-4.68	-2.97	-1.65	-1.33	-1.33	-1.33	-1.33	-1.33	-1.33	-1.33
Mu(+), ton-m:	2.22	1.33	1.73	2.22	2.63	2.78	2.65	2.24	1.71	1.33	1.33
As(-), cm2:	4.88	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	7.61	7.61	6.99	6.02	5.05	4.08	3.11	3.72	4.69	5.31	5.31
Tu, ton-m:	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-AA — 11 #3 @ 7.5 | 6 #3 @ 17.5 | 11 #3 @ 7.5 — F-AA

BEAM: 10(A1-F) FLOOR: 2

Length: L = 3.12 m, Lu = 2.72 m, a = 0.25 m, c = 0.15 m | Section: b = 25.0 cm, h = 40.0 cm | Sec: 25x40 | Mat: RConcrete1

X, m:	0.25	0.52	0.79	1.07	1.34	1.61	1.88	2.15	2.43	2.70	2.97
Mu(-), ton-m:	-0.43	-0.31	-0.21	-0.12	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09
Mu(+), ton-m:	0.45	0.51	0.56	0.59	0.59	0.58	0.54	0.49	0.40	0.30	0.19
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	0.53	0.53	0.49	0.42	0.35	0.28	0.29	0.36	0.42	0.46	0.46
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

A1-10 — 12 #3 @ 7.5 | 5 #3 @ 17.5 | 12 #3 @ 7.5 — F-10

BEAM: AA'(A1'-A1'a) FLOOR: 2

Length: L = 0.60 m, Lu = 0.50 m, a = 0.10 m, c = 0.00 m | Section: b = 25.0 cm, h = 40.0 cm | Sec: 25x40 | Mat: RConcrete1

X, m:	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60
Mu(-), ton-m:	-3.67	-2.98	-2.30	-1.62	-0.94	-0.73	-0.73	-1.00	-1.49	-1.98	-2.48
Mu(+), ton-m:	2.68	2.18	1.68	1.18	0.73	0.73	0.73	1.28	1.95	2.61	3.28
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	17.69	17.69	17.69	17.69	17.69	17.69	17.69	17.69	17.69	17.69	17.69
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50

DESIGN

A1'-AA' — 7 #3 @ 7.5 — AA':A1'a

BEAM: AA'(A1'a-A1'b) FLOOR: 2

Length: L = 1.50 m, Lu = 1.50 m, a = 0.00 m, c = 0.00 m; Section: b = 25.0 cm, h = 40.0 cm; Sec: 25x40, Mat: RConcrete1

X, m:	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50
Mu(-), ton-m:	-2.53	-1.99	-1.47	-0.98	-0.77	-0.74	-1.04	-1.37	-1.96	-2.72	-3.51
Mu(+), ton-m:	3.11	2.70	2.25	1.76	1.50	1.35	1.45	1.54	1.81	2.19	2.55
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	4.92	4.92	4.92	5.03	5.29	5.56	5.82	6.08	6.21	6.21	6.21
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50

DESIGN: AA':A1'a — 20 #3 @ 7.5 — AA':A1'b

BEAM: AA'(A1'b-A1) FLOOR: 2

Length: L = 0.60 m, Lu = 0.50 m, a = 0.00 m, c = 0.10 m; Section: b = 25.0 cm, h = 40.0 cm; Sec: 25x40, Mat: RConcrete1

X, m:	0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
Mu(-), ton-m:	-3.52	-2.80	-2.09	-1.38	-0.75	-0.70	-0.70	-1.14	-1.66	-2.21	-2.75
Mu(+), ton-m:	2.67	2.13	1.59	1.05	0.70	0.70	0.83	1.47	2.16	2.87	3.57
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	17.87	17.87	17.87	17.87	17.87	17.87	17.87	17.87	17.87	17.87	17.87
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50

DESIGN: AA':A1'b — 7 #3 @ 7.5 — A1-AA'

BRACE SECTIONS

Number of prismatic sections = 4

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	2x254x67x2.5	Box/Tub	13.40	25.40	0.25	0.25	-	-	20.2	1828	627	1493
2	2x305x80x3.0	Box/Tub	22.00	30.50	0.30	0.30	-	-	31.1	4346	2644	5146
3	x355x110x3.0	Box/Tub	22.00	35.50	0.30	0.30	-	-	36.1	6711	2957	6365
4	300x150x8.0	Box/Tub	15.00	30.00	0.80	0.80	-	-	62.2	7086	2436	7200

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm2

Design Results - Walls (DMO)

NOTE: Shear Walls are designed according to NSR-10
Method selected for design of boundary elements: Displacement-based method
Height of plasic zone: Larger of Lw and Mu/4Vu (Lw: Individual wall length)
Provitions for confinement above plastic zone to prevent compression failure are considered
Boundary elements are extended vertically above hinge area until c/Lw < 0.4

Wall	Story	B (m)	H (m)	t (cm)	Mat -	HORIZONTAL REINFORCEMENT LCmb crit	Vu (ton)	Reinforcement	VERTICAL REINFORCEMENT LCmb crit	Pu (ton)	Mu2 (ton-m)	As tot (cm2)	As ctr (cm2)	As end (cm2)	Ends
AA'(A1'b-A1)															
	1	0.70	3.00	15.0	2	29	4.01	#3@19 .0025	25	19.68	8.68	11.60	1.83	4.88	15x2C

Wall	Story	B	H	t	Mat	LCmb	Vu	Reinforcement	LCmb	Pu	Mu2	As tot	As ctr	As end	Ends
AA'(A1'-A1'a)															
	1	0.70	3.00	15.0	2	29	3.22	#3@19 .0025	39	-6.19	7.61	9.47	1.50	3.99	15x20
									Est #3 @15 cm			XTies:	T: 0	X: 0	
A1(10a-AA')															
	1	2.30	3.00	15.0	2	26	34.63	2Ly#3@33 .0029	26	-0.22	74.80	20.07	11.81	4.13	20x15
						*26	Confine 0	cm each end	Est #3 @10 cm			XTies:	T: 0	X: 0	
A1'(D-AA')															
	1	2.30	3.00	15.0	2	27	29.37	2Ly#3@37 .0025	33	8.60	68.73	17.02	9.43	3.79	20x15
						*33	Confine 0	cm each end	Est #3 @10 cm			XTies:	T: 0	X: 0	

* : Wall requires confinement Boundary Elements at its ends. Provide confinement Stirrups (Est)
Cross-ties (Xties)are assumed same diameter as stirrups. T: Long. X-ties, X: Transv. X-ties

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
F-AI	1	FI200x5.0	300	300	0.149	0.014	0.008
F-AH	1	FI200x5.0	300	300	0.228	0.017	0.011
F-AG	1	FI200x5.0	300	300	0.203	0.017	0.008
F-AF	1	FI200x5.0	300	300	0.209	0.018	0.009
F-AE	1	FI200x5.0	300	300	0.239	0.020	0.010
F-AD	1	FI200x5.0	300	300	0.232	0.021	0.008
F-AC	1	FI200x5.0	300	300	0.224	0.021	0.008
F-AB	1	FI200x5.0	300	300	0.220	0.020	0.009
F-AA	1	FI200x5.0	300	300	0.233	0.023	0.009

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3
A2(AI-AH)	3	2x160x60x2.5	265	265	0.336	0.326	0.025
A2(AH-AG)	3	2x160x60x2.5	790	790	0.336	0.131	0.009

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
AI(A2-A1)	3-2	2x305x80x3.0	645	645	0.334	0.008	0.001
AH(A2-A1)	3-2	2x305x80x3.0	645	645	1.076*	0.009	0.001
AG(A2-A1)	3-2	2x305x80x3.0	645	645	0.799	0.009	0.001
AF(A2-A1)	3-2	2x305x80x3.0	645	645	0.503	0.010	0.001
AE(A2-A1)	3-2	300x150x8.0	645	645	0.859	0.044	0.003
AD(A2-A1)	3-2	300x150x8.0	645	645	0.925	0.048	0.003
AC(A2-A1)	3-2	2x305x80x3.0	645	645	0.555	0.010	0.001
AI(A3-A2)	4-3	2x305x80x3.0	645	645	0.355	0.008	0.001
AH(A3-A2)	4-3	2x305x80x3.0	645	645	1.150*	0.010	0.002
AG(A3-A2)	4-3	2x305x80x3.0	645	645	0.985	0.016	0.002
AF(A3-A2)	4-3	2x305x80x3.0	645	645	0.676	0.016	0.002
AE(A3-A2)	4-3	300x150x8.0	645	645	0.829	0.044	0.003
AD(A3-A2)	4-3	300x150x8.0	645	645	0.894	0.047	0.003
AC(A3-A2)	4-3	2x305x80x3.0	645	645	0.710	0.017	0.001

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - BLOQUE B - TOCANCIPA
File: C:\RCB\Structures\JARDINTOCANCIPA-B-viento.rcb

Engineer: Jose Vicente Vinueza
09:11:40 p.m. 07/11/2018

LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL2 + 1.4DL
2	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + 1.6SL
3	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + 1.6SL
4	1.2D0 + 1.2DL2 + 1.2DL + .5LL + 1.6SL
5	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + 1.6LL + .5SL
6	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + .5SL
7	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL + .5SL
8	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLX
9	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLX
10	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLY
11	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLY
12	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL+.75WLX+.75WLY
13	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL-.75WLX-.75WLY
14	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLX
15	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLX
16	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLY
17	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLY
18	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .375WLX + .375WLY
19	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .375WLX - .375WLY
20	.9D0 + .9DL2 + .9DL + WLX
21	.9D0 + .9DL2 + .9DL - WLX
22	.9D0 + .9DL2 + .9DL + WLY
23	.9D0 + .9DL2 + .9DL - WLY
24	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX + .3EQY
25	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX - .3EQY
26	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX - .3EQY
27	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX + .3EQY
28	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX + EQY
29	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX - EQY
30	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX + EQY
31	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX - EQY
32	.9D0 + .9DL2 + .9DL + EQX + .3EQY
33	.9D0 + .9DL2 + .9DL - EQX - .3EQY
34	.9D0 + .9DL2 + .9DL + EQX - .3EQY
35	.9D0 + .9DL2 + .9DL - EQX + .3EQY
36	.9D0 + .9DL2 + .9DL + .3EQX + EQY
37	.9D0 + .9DL2 + .9DL - .3EQX - EQY
38	.9D0 + .9DL2 + .9DL - .3EQX + EQY
39	.9D0 + .9DL2 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 2

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0

COLUMN SECTIONS

Number of prismatic sections = 3

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	40x40	Rectang	40.00	40.00	-	-	-	-	1600.0	213333	213333	315733
2	25x25	Rectang	25.00	25.00	-	-	-	-	625.0	32552	32552	48177
3	FI21.9	Pipe	21.90	21.90	0.55	0.55	-	-	36.9	2103	2103	4207

Design Results - Columns (DMO)

Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	XTIES	Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm
BE-B6	2	0.80	0.40	1	40x40	3 #3 @ 12 cm	1 (b)	Top	2	6.58	6.64	0.84	0.0100	16.
				1		---	1 (h)	Bot	2	6.58	4.84	1.76	0.0100	16.
BD-B6	2	0.80	0.40	1	40x40	3 #3 @ 12 cm	1 (b)	Top	2	6.58	6.17	2.59	0.0100	16.
				1		---	1 (h)	Bot	2	6.58	5.08	0.90	0.0100	16.
BD-B2	2	0.80	0.40	1	40x40	3 #3 @ 12 cm	1 (b)	Top	2	6.46	6.06	0.28	0.0100	16.
				1		---	1 (h)	Bot	2	6.46	4.74	2.18	0.0100	16.
BE-B2	2	0.80	0.40	1	40x40	3 #3 @ 12 cm	1 (b)	Top	2	6.40	5.77	0.37	0.0100	16.
				1		---	1 (h)	Bot	2	6.40	4.10	2.09	0.0100	16.
BD-2'	2	0.80	0.48	2	25x25	6 #3 @ 8 cm	1 (b)	Top	3	3.70	1.18	0.65	0.0100	6.
				1		---	1 (h)	Bot	24	2.43	0.91	4.49	0.0218	13.
BE-2'	2	0.80	0.48	2	25x25	6 #3 @ 8 cm	1 (b)	Top	2	3.75	1.22	0.61	0.0100	6.
				1		---	1 (h)	Bot	5	3.17	0.95	4.14	0.0201	12.

BEAM SECTIONS

Number of prismatic sections = 3

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
2	25x40	Rectang	25.00	40.00	-	-	-	-	1000.0	133333	52083	126302
3	20x40	Rectang	20.00	40.00	-	-	-	-	800.0	106667	26667	73067

Design Results - Beams (DMO)

BEAM: A(B2-B2a) FLOOR: 2

Length: L = 4.56 m a = 0.00 m Section: b = 25.0 cm Sec: 25x40
Lu = 4.56 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.46	0.91	1.37	1.82	2.28	2.74	3.19	3.65	4.10	4.56
Mu(-), ton-m:	-0.58	-0.27	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.27	-0.59
Mu(+), ton-m:	0.19	0.12	0.12	0.15	0.25	0.29	0.25	0.15	0.12	0.12	0.20
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	0.64	0.61	0.46	0.31	0.15	0.00	0.15	0.31	0.46	0.61	0.64
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A-B2 12 #3 @ 7.5 16 #3 @ 17.5 12 #3 @ 7.5 A:B2a

BEAM: A(B2a-B4) FLOOR: 2

Length: L = 4.56 m a = 0.00 m Section: b = 25.0 cm Sec: 25x40
Lu = 4.56 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.46	0.91	1.37	1.82	2.28	2.74	3.19	3.65	4.10	4.56
Mu(-), ton-m:	-0.58	-0.27	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.27	-0.58
Mu(+), ton-m:	0.19	0.12	0.12	0.15	0.25	0.29	0.25	0.15	0.12	0.12	0.19
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	0.64	0.61	0.46	0.31	0.15	0.00	0.15	0.31	0.46	0.61	0.64
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A:B2a 12 #3 @ 7.5 16 #3 @ 17.5 12 #3 @ 7.5 A-B4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - BLOQUE B - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:11:40 p.m. 07/11/2018

BEAM: BE(B0-B1) FLOOR: 2

Length: L = 1.55 m, Lu = 1.44 m, a = 0.00 m, c = 0.11 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.00	0.14	0.29	0.43	0.58	0.72	0.86	1.01	1.15	1.30	1.44
Mu(-), ton-m:	0.00	0.00	-0.17	-0.52	-0.90	-1.31	-1.84	-2.43	-3.04	-3.65	-4.27
Mu(+), ton-m:	1.60	1.05	0.48	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
As(+), cm2:	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Vu, ton:	3.82	3.87	3.92	3.97	4.02	4.07	4.12	4.17	4.19	4.19	4.19
Tu, ton-m:	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

BE-B0 — 9 #3 @ 17.5 — BE-B1

BEAM: BE(B1-B2) FLOOR: 2

Length: L = 3.75 m, Lu = 3.44 m, a = 0.11 m, c = 0.20 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.11	0.45	0.80	1.14	1.49	1.83	2.17	2.52	2.86	3.21	3.55
Mu(-), ton-m:	-3.81	-2.86	-1.95	-1.25	-1.25	-1.25	-1.25	-1.25	-2.35	-4.29	-6.26
Mu(+), ton-m:	1.27	1.25	1.25	1.25	1.25	1.25	1.32	1.25	1.25	1.25	2.09
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.57
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.51	4.51	4.41	4.30	4.18	4.07	3.96	7.33	7.43	7.53	7.53
Tu, ton-m:	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.14	0.14	0.14	0.14
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

BE-B1 — 11 #3 @ 7.5 10 #3 @ 17.5 11 #3 @ 7.5 — BE-B2

BEAM: BE(B2-B4) FLOOR: 2

Length: L = 8.90 m, Lu = 8.50 m, a = 0.20 m, c = 0.20 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.20	1.05	1.90	2.75	3.60	4.45	5.30	6.15	7.00	7.85	8.70
Mu(-), ton-m:	-11.81	-5.27	-2.36	-2.36	-2.36	-2.36	-2.36	-2.36	-2.36	-4.43	-10.75
Mu(+), ton-m:	3.94	2.36	2.36	3.66	5.98	6.86	6.22	4.15	2.36	2.36	3.58
As(-), cm2:	9.07	3.82	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	8.18
As(+), cm2:	3.76	3.76	3.76	3.76	4.36	5.04	4.54	3.76	3.76	3.76	3.76
Vu, ton:	7.98	7.04	5.36	3.67	1.99	0.32	1.72	3.40	5.09	6.78	7.71
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-B2 — 11 #3 @ 7.5 39 #3 @ 17.5 11 #3 @ 7.5 — BE-B4

BEAM: BE(B4-B5) FLOOR: 2

Length: L = 4.70 m, Lu = 4.30 m, a = 0.20 m, c = 0.20 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.20	0.63	1.06	1.49	1.92	2.35	2.78	3.21	3.64	4.07	4.50
Mu(-), ton-m:	-4.32	-3.12	-2.15	-1.48	-1.02	-0.86	-0.86	-0.87	-1.18	-1.67	-2.34
Mu(+), ton-m:	1.44	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	3.19	3.13	2.62	2.12	1.61	1.10	0.68	1.05	1.55	2.06	2.11
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

BE-B4 — 12 #3 @ 7.5 14 #3 @ 17.5 12 #3 @ 7.5 — BE-B5

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - BLOQUE B - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:11:40 p.m. 07/11/2018

BEAM: BE(B5-B6) FLOOR: 2

Length: L = 9.35 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.95 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	1.09	1.99	2.88	3.78	4.67	5.57	6.46	7.36	8.25	9.15
Mu(-), ton-m:	-2.49	-1.05	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.98	-2.38
Mu(+), ton-m:	0.83	0.50	0.50	1.19	1.61	1.75	1.58	1.15	0.50	0.50	0.79
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.71	1.50	1.14	0.78	0.42	0.09	0.39	0.75	1.12	1.48	1.68
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-B5 12 #3 @ 7.5 41 #3 @ 17.5 12 #3 @ 7.5 BE-B6

BEAM: BD(B0-B1) FLOOR: 2

Length: L = 1.55 m a = 0.00 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.44 m c = 0.11 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.14	0.29	0.43	0.58	0.72	0.86	1.01	1.15	1.30	1.44
Mu(-), ton-m:	0.00	0.00	-0.18	-0.54	-0.93	-1.34	-1.88	-2.48	-3.09	-3.71	-4.33
Mu(+), ton-m:	1.60	1.04	0.47	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26
As(+), cm2:	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26
Vu, ton:	3.87	3.92	3.97	4.02	4.07	4.12	4.17	4.22	4.23	4.23	4.23
Tu, ton-m:	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

BD-B0 9 #3 @ 17.5 BD-B1

BEAM: BD(B1-B2) FLOOR: 2

Length: L = 3.75 m a = 0.11 m Section: b = 30.0 cm Sec: 30x40
Lu = 3.44 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.11	0.45	0.80	1.14	1.49	1.83	2.17	2.52	2.86	3.21	3.55
Mu(-), ton-m:	-3.92	-2.90	-1.92	-1.06	-1.06	-1.06	-1.06	-1.06	-1.62	-3.43	-5.28
Mu(+), ton-m:	1.31	1.06	1.06	1.06	1.06	1.06	1.65	1.06	1.06	1.06	1.76
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.83
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.45	4.45	4.35	4.24	4.12	4.01	3.90	6.73	6.83	6.92	6.92
Tu, ton-m:	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.12	0.12	0.12	0.12
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50	7.50

DESIGN

BD-B1 11 #3 @ 7.5 10 #3 @ 17.5 11 #3 @ 7.5 BD-B2

BEAM: BD(B2-B4) FLOOR: 2

Length: L = 8.90 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.50 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	1.05	1.90	2.75	3.60	4.45	5.30	6.15	7.00	7.85	8.70
Mu(-), ton-m:	-7.52	-3.37	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-2.84	-6.85
Mu(+), ton-m:	2.51	1.50	1.50	2.32	3.79	4.35	3.95	2.64	1.50	1.50	2.28
As(-), cm2:	5.55	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	5.03
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	5.07	4.48	3.41	2.34	1.27	0.21	1.10	2.17	3.24	4.31	4.90
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BD-B2 12 #3 @ 7.5 38 #3 @ 17.5 12 #3 @ 7.5 BD-B4

BEAM: BD(B4-B5) FLOOR: 2

Length: L = 2.39 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.99 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.79	1.99	2.19
Mu(-), ton-m:	-4.41	-4.04	-3.72	-3.46	-3.23	-3.06	-2.94	-2.88	-2.86	-2.89	-2.96
Mu(+), ton-m:	1.47	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.99
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	3.04	3.04	3.01	2.72	2.44	2.15	1.86	1.57	1.29	1.26	1.26
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	7.50	17.50	7.50	7.50	7.50	7.50	7.50

DESIGN

BD-B4 12 #3 @ 7.5 1 #3 @ 17.5 12 #3 @ 7.5 BD-B5

BEAM: BD(B5-B6) FLOOR: 2

Length: L = 9.35 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.95 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	1.09	1.99	2.88	3.78	4.67	5.57	6.46	7.36	8.25	9.15
Mu(-), ton-m:	-2.45	-1.02	-0.49	-0.49	-0.49	-0.49	-0.49	-0.49	-0.49	-0.99	-2.40
Mu(+), ton-m:	0.82	0.49	0.49	1.16	1.58	1.73	1.58	1.15	0.49	0.49	0.80
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.70	1.49	1.13	0.77	0.41	0.08	0.39	0.76	1.12	1.48	1.68
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BD-B5 12 #3 @ 7.5 41 #3 @ 17.5 12 #3 @ 7.5 BD-B6

BEAM: F(B2-Ea) FLOOR: 2

Length: L = 4.64 m a = 0.00 m Section: b = 25.0 cm Sec: 25x40
Lu = 4.64 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.46	0.93	1.39	1.85	2.32	2.78	3.25	3.71	4.17	4.64
Mu(-), ton-m:	-0.60	-0.28	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.28	-0.60
Mu(+), ton-m:	0.20	0.12	0.12	0.15	0.26	0.30	0.26	0.16	0.12	0.12	0.20
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	0.65	0.62	0.47	0.31	0.16	0.00	0.16	0.31	0.47	0.62	0.65
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

E-B2 12 #3 @ 7.5 16 #3 @ 17.5 12 #3 @ 7.5 F:Ea

BEAM: F(Ea-B4) FLOOR: 2

Length: L = 4.64 m a = 0.00 m Section: b = 25.0 cm Sec: 25x40
Lu = 4.64 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.46	0.93	1.39	1.85	2.32	2.78	3.25	3.71	4.17	4.64
Mu(-), ton-m:	-0.60	-0.28	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.28	-0.60
Mu(+), ton-m:	0.20	0.12	0.12	0.16	0.26	0.30	0.26	0.16	0.12	0.12	0.20
As(-), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
As(+), cm2:	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Vu, ton:	0.65	0.62	0.47	0.31	0.16	0.00	0.16	0.31	0.47	0.62	0.65
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

F:Ea 12 #3 @ 7.5 16 #3 @ 17.5 12 #3 @ 7.5 E-B4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - BLOQUE B - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:11:40 p.m. 07/11/2018

BEAM: B0(BE-BD) FLOOR: 2

Length: L = 9.00 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	1.02	1.89	2.76	3.63	4.50	5.37	6.24	7.11	7.98	8.85
Mu(-), ton-m:	-0.28	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.29
Mu(+), ton-m:	0.19	1.28	2.36	3.13	3.60	3.76	3.60	3.13	2.36	1.28	0.19
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.60	1.40	1.05	0.70	0.35	0.03	0.35	0.70	1.05	1.40	1.60
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-B0 12 #3 @ 7.5 39 #3 @ 17.5 12 #3 @ 7.5 BD-B0

BEAM: 2'(BE-BD) FLOOR: 2

Length: L = 9.00 m a = 0.15 m Section: b = 20.0 cm Sec: 20x40
Lu = 8.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	1.02	1.89	2.76	3.63	4.50	5.37	6.24	7.11	7.98	8.85
Mu(-), ton-m:	-5.03	-2.05	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-2.05	-5.02
Mu(+), ton-m:	1.68	1.01	1.01	2.03	3.06	3.42	3.06	2.03	1.01	1.01	1.67
As(-), cm2:	3.71	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	3.71
As(+), cm2:	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51
Vu, ton:	3.55	3.12	2.34	1.57	0.80	0.06	0.80	1.57	2.34	3.11	3.55
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-2' 12 #3 @ 7.5 39 #3 @ 17.5 12 #3 @ 7.5 BD-2'

BEAM: B2(B-BE) FLOOR: 2

Length: L = 5.55 m a = 0.00 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.35 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.00	0.54	1.07	1.61	2.14	2.68	3.21	3.75	4.28	4.82	5.35
Mu(-), ton-m:	-1.02	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.69	-1.41	-2.28
Mu(+), ton-m:	0.46	0.46	0.53	0.70	0.73	0.66	0.48	0.46	0.46	0.46	0.76
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.54	1.46	1.18	0.90	0.62	0.73	1.01	1.29	1.57	1.85	1.93
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A-B2 12 #3 @ 7.5 20 #3 @ 17.5 12 #3 @ 7.5 BE-B2

BEAM: B2(BE-BD) FLOOR: 2

Length: L = 9.00 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.60 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	1.06	1.92	2.78	3.64	4.50	5.36	6.22	7.08	7.94	8.80
Mu(-), ton-m:	-6.24	-2.88	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-2.79	-6.13
Mu(+), ton-m:	2.08	1.25	1.25	1.74	2.92	3.34	2.94	1.79	1.25	1.25	2.04
As(-), cm2:	4.56	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.47
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.07	3.58	2.70	1.83	0.95	0.12	0.92	1.80	2.68	3.56	4.05
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-B2 12 #3 @ 7.5 39 #3 @ 17.5 12 #3 @ 7.5 BD-B2

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - BLOQUE B - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:11:40 p.m. 07/11/2018

BEAM: B2(BD-F) FLOOR: 2

Length: L = 2.65 m Lu = 2.45 m | a = 0.20 m c = 0.00 m | Section: b = 30.0 cm h = 40.0 cm | Sec: 30x40 Mat: RConcrete1

X, m:	0.20	0.45	0.69	0.94	1.18	1.43	1.67	1.92	2.16	2.41	2.65
Mu(-), ton-m:	-1.88	-1.50	-1.15	-0.83	-0.54	-0.38	-0.38	-0.38	-0.38	-0.45	-0.59
Mu(+), ton-m:	0.63	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.60
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.98	1.98	1.93	1.81	1.70	1.59	1.47	1.36	1.24	1.19	1.19
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

BD-B2 12 #3 @ 7.5 3 #3 @ 17.5 12 #3 @ 7.5 E-B2

BEAM: B4(B-BE) FLOOR: 2

Length: L = 5.55 m Lu = 5.35 m | a = 0.00 m c = 0.20 m | Section: b = 30.0 cm h = 40.0 cm | Sec: 30x40 Mat: RConcrete1

X, m:	0.00	0.54	1.07	1.61	2.14	2.68	3.21	3.75	4.28	4.82	5.35
Mu(-), ton-m:	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.98	-1.75	-2.69	-3.77
Mu(+), ton-m:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.26
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.46	1.38	1.10	0.87	1.13	1.41	1.69	1.97	2.25	2.53	2.61
Tu, ton-m:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

A-B4 12 #3 @ 7.5 20 #3 @ 17.5 12 #3 @ 7.5 BE-B4

BEAM: B4(BE-BD) FLOOR: 2

Length: L = 9.00 m Lu = 8.60 m | a = 0.20 m c = 0.20 m | Section: b = 30.0 cm h = 40.0 cm | Sec: 30x40 Mat: RConcrete1

X, m:	0.20	1.06	1.92	2.78	3.64	4.50	5.36	6.22	7.08	7.94	8.80
Mu(-), ton-m:	-9.92	-4.28	-2.08	-2.08	-2.08	-2.08	-2.08	-2.08	-2.08	-4.63	-10.38
Mu(+), ton-m:	3.31	2.08	2.08	3.42	5.35	6.00	5.26	3.24	2.08	2.08	3.46
As(-), cm2:	7.48	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	7.86
As(+), cm2:	3.76	3.76	3.76	3.76	3.88	4.37	3.81	3.76	3.76	3.76	3.76
Vu, ton:	6.82	5.99	4.50	3.01	1.52	0.17	1.63	3.12	4.61	6.09	6.92
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50

DESIGN

BE-B4 11 #3 @ 7.5 39 #3 @ 17.5 11 #3 @ 7.5 BD-B4

BEAM: B4(BD-F) FLOOR: 2

Length: L = 2.65 m Lu = 2.45 m | a = 0.20 m c = 0.00 m | Section: b = 30.0 cm h = 40.0 cm | Sec: 30x40 Mat: RConcrete1

X, m:	0.20	0.45	0.69	0.94	1.18	1.43	1.67	1.92	2.16	2.41	2.65
Mu(-), ton-m:	-3.79	-3.18	-2.61	-2.10	-1.61	-1.15	-0.76	-0.76	-0.76	-0.76	-0.76
Mu(+), ton-m:	1.26	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	1.12
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.22	4.22	4.17	4.06	3.95	3.83	3.72	3.60	3.49	3.44	3.44
Tu, ton-m:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	7.50	7.50	17.50	17.50	17.50	7.50	7.50	7.50	7.50

DESIGN

BD-B4 12 #3 @ 7.5 3 #3 @ 17.5 12 #3 @ 7.5 E-B4

BEAM: B5(BE-BD) FLOOR: 2

Length:	L = 8.40 m	a = 0.20 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 8.00 m	c = 0.20 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.20	1.00	1.80	2.60	3.40	4.20	5.00	5.80	6.60	7.40	8.20
Mu(-), ton-m:	-8.88	-3.71	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-3.81	-9.01
Mu(+), ton-m:	2.96	1.80	1.80	3.41	5.20	5.83	5.18	3.36	1.80	1.80	3.00
As(-), cm2:	6.64	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	6.74
As(+), cm2:	3.76	3.76	3.76	3.76	3.77	4.24	3.76	3.76	3.76	3.76	3.76
Vu, ton:	6.70	5.93	4.47	3.00	1.54	0.18	1.57	3.04	4.50	5.96	6.73
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	BE-B5			11 #3 @ 7.5		36 #3 @ 17.5		11 #3 @ 7.5			BD-B5

BEAM: B6(BE-BD) FLOOR: 2

Length:	L = 8.40 m	a = 0.20 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 8.00 m	c = 0.20 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.20	1.00	1.80	2.60	3.40	4.20	5.00	5.80	6.60	7.40	8.20
Mu(-), ton-m:	-2.95	-1.73	-0.73	-0.59	-0.59	-0.59	-0.59	-0.59	-0.73	-1.73	-2.95
Mu(+), ton-m:	0.98	0.59	0.74	1.04	1.15	1.20	1.15	1.04	0.74	0.59	0.98
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.74	1.60	1.34	1.07	0.81	0.55	0.81	1.07	1.34	1.60	1.74
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50
DESIGN	BE-B6			12 #3 @ 7.5		35 #3 @ 17.5		12 #3 @ 7.5			BD-B6

BEAM: 2'(BE-BD) FLOOR: 3

Length:	L = 9.00 m	a = 0.13 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 8.75 m	c = 0.13 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.13	1.00	1.88	2.75	3.63	4.50	5.38	6.25	7.13	8.00	8.88
Mu(-), ton-m:	-2.60	-1.23	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-1.22	-2.59
Mu(+), ton-m:	0.87	0.52	0.52	0.65	1.12	1.28	1.12	0.65	0.52	0.52	0.86
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.65	1.45	1.09	0.74	0.39	0.07	0.39	0.74	1.09	1.45	1.64
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50
DESIGN	BE-2'			12 #3 @ 7.5		39 #3 @ 17.5		12 #3 @ 7.5			BD-2'

BEAM: B2(BE-BD) FLOOR: 3

Length:	L = 9.00 m	a = 0.20 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 8.60 m	c = 0.20 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.20	1.06	1.92	2.78	3.64	4.50	5.36	6.22	7.08	7.94	8.80
Mu(-), ton-m:	-2.44	-1.12	-0.49	-0.49	-0.49	-0.49	-0.49	-0.49	-0.49	-1.05	-2.35
Mu(+), ton-m:	0.81	0.49	0.49	0.73	1.20	1.37	1.22	0.76	0.49	0.49	0.78
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.65	1.45	1.11	0.76	0.42	0.11	0.40	0.74	1.09	1.43	1.63
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50
DESIGN	BE-B2			12 #3 @ 7.5		39 #3 @ 17.5		12 #3 @ 7.5			BD-B2

BEAM: B6(BE-BD) FLOOR: 3

Length: L = 8.40 m a = 0.20 m Section: b = 30.0 cm Sec: 30x40
Lu = 8.00 m c = 0.20 m h = 40.0 cm Mat: RConcrete1

X, m:	0.20	1.00	1.80	2.60	3.40	4.20	5.00	5.80	6.60	7.40	8.20
Mu(-), ton-m:	-2.77	-1.58	-0.61	-0.55	-0.55	-0.55	-0.55	-0.55	-0.61	-1.58	-2.77
Mu(+), ton-m:	0.92	0.55	0.65	0.99	1.14	1.22	1.14	0.99	0.65	0.55	0.92
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.70	1.57	1.30	1.04	0.78	0.51	0.78	1.04	1.30	1.57	1.70
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

BE-B6 12 #3 @ 7.5 35 #3 @ 17.5 12 #3 @ 7.5 BD-B6

BRACE SECTIONS

Number of prismatic sections = 1

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	200x100x4.0	Box/Tub	10.00	20.00	0.40	0.40	-	-	21.1	1096	378	1067

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
BE(B0-2')	2-3	200x100x4.0	398	398	0.354	0.003	0.002
BE(B2-B4)	3-2	200x100x4.0	894	894	2.171*	0.000	0.000
BE(B5-B6)	2-3	200x100x4.0	938	938	2.410*	0.000	0.000
BD(B0-2')	2-3	200x100x4.0	398	398	0.358	0.003	0.002
BD(B2-B4)	3-2	200x100x4.0	894	894	2.000*	0.000	0.000
BD(B5-B6)	2-3	200x100x4.0	938	938	2.409*	0.000	0.000

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA
File: C:\RCB\Structures\JARDINTOCANCIPA-C-viento.rcb

Engineer: Jose Vicente Vinueza
09:30:29 p.m. 07/11/2018

LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL
2	1.2D0 + 1.2DL + .5LL + 1.6SL
3	1.2D0 + 1.2DL + 1.6LL + .5SL
4	1.2D0 + 1.2DL + .5LL + .5SL + WLX
5	1.2D0 + 1.2DL + .5LL + .5SL - WLX
6	1.2D0 + 1.2DL + .5LL + .5SL + WLY
7	1.2D0 + 1.2DL + .5LL + .5SL - WLY
8	1.2D0 + 1.2DL + .5LL + .5SL + .75WLX + .75WLY
9	1.2D0 + 1.2DL + .5LL + .5SL - .75WLX - .75WLY
10	1.2D0 + 1.2DL + 1.6SL + .5WLX
11	1.2D0 + 1.2DL + 1.6SL - .5WLX
12	1.2D0 + 1.2DL + 1.6SL + .5WLY
13	1.2D0 + 1.2DL + 1.6SL - .5WLY
14	1.2D0 + 1.2DL + 1.6SL + .375WLX + .375WLY
15	1.2D0 + 1.2DL + 1.6SL - .375WLX - .375WLY
16	.9D0 + .9DL + WLX
17	.9D0 + .9DL - WLX
18	.9D0 + .9DL + WLY
19	.9D0 + .9DL - WLY
20	1.2D0 + 1.2DL + .5LL + .2SL + EQX + .3EQY
21	1.2D0 + 1.2DL + .5LL + .2SL - EQX - .3EQY
22	1.2D0 + 1.2DL + .5LL + .2SL + EQX - .3EQY
23	1.2D0 + 1.2DL + .5LL + .2SL - EQX + .3EQY
24	1.2D0 + 1.2DL + .5LL + .2SL + .3EQX + EQY
25	1.2D0 + 1.2DL + .5LL + .2SL - .3EQX - EQY
26	1.2D0 + 1.2DL + .5LL + .2SL - .3EQX + EQY
27	1.2D0 + 1.2DL + .5LL + .2SL + .3EQX - EQY
28	.9D0 + .9DL + EQX + .3EQY
29	.9D0 + .9DL - EQX - .3EQY
30	.9D0 + .9DL + EQX - .3EQY
31	.9D0 + .9DL - EQX + .3EQY
32	.9D0 + .9DL + .3EQX + EQY
33	.9D0 + .9DL - .3EQX - EQY
34	.9D0 + .9DL - .3EQX + EQY
35	.9D0 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 2

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0

COLUMN SECTIONS

Number of prismatic sections = 3

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x45	Rectang	30.00	45.00	-	-	-	-	1350.0	227812	101250	234900
2	FI21.91X8.0	Pipe	21.91	21.91	0.80	0.80	-	-	53.1	2960	2960	5919
3	I150x150x5.0	Pipe	15.00	15.00	0.50	0.50	-	-	22.8	599	599	1199

Design Results - Columns (DMO)

Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA

Engineer: Jose Vicente Vinueza
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Column	Story	L	Lu	Sec	bxh	TIES	XTIES	Sec	LdCmb	Pu	Mu2	Mu3	RHO	As
CB-C5	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	1.55	0.48	0.13	0.0100	13..
				1		---	1 (h)	Bot	1	1.55	0.34	0.79	0.0100	13..
CB-C4	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.50	6.44	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.50	4.90	0.32	0.0100	13..
CB-C3	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.52	6.44	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.52	4.90	0.21	0.0100	13..
CB-C2	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.50	6.43	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.50	4.88	0.32	0.0100	13..
CB-C1	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	1.54	0.46	0.13	0.0100	13..
				1		---	1 (h)	Bot	1	1.54	0.31	0.79	0.0100	13..

BEAM SECTIONS

Number of prismatic sections = 4

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	40x40	Rectang	40.00	40.00	-	-	-	-	1600.0	213333	213333	315733
2	50x40	Rectang	50.00	40.00	-	-	-	-	2000.0	266667	416667	529067
3	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
4	25x35	Rectang	25.00	35.00	-	-	-	-	875.0	89323	45573	100260

Design Results - Beams (DMO)

BEAM: CC'(C1-C2) FLOOR: 2

Length: L = 5.88 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.73 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-1.66	-3.43
Mu(+), ton-m:	0.69	1.05	1.80	2.28	2.44	2.28	1.78	0.96	0.69	0.69	1.14
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.35	2.18	1.68	1.13	0.66	1.16	1.72	2.23	2.73	3.23	3.40
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C1 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 CC'-C2

BEAM: CC'(C2-C3) FLOOR: 2

Length: L = 6.00 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.85 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-3.40	-1.81	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-1.15	-2.56
Mu(+), ton-m:	1.13	0.68	0.68	0.68	0.99	1.25	1.16	0.73	0.68	0.68	0.85
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.81	2.61	2.03	1.46	0.88	0.32	0.59	1.17	1.74	2.32	2.52
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C2 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 CC'-C3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:30:29 p.m. 07/11/2018

BEAM: CC'(C3-C4) FLOOR: 2

Length: L = 6.00 m, Lu = 5.85 m, a = 0.08 m, c = 0.08 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-2.56	-1.15	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-1.81	-3.41
Mu(+), ton-m:	0.85	0.68	0.68	0.73	1.16	1.25	0.99	0.68	0.68	0.68	1.14
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.52	2.32	1.74	1.17	0.59	0.32	0.88	1.46	2.03	2.61	2.81
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C3 — 12 #3 @ 7.5, 23 #3 @ 17.5, 12 #3 @ 7.5 — CC'-C4

BEAM: CC'(C4-C5) FLOOR: 2

Length: L = 5.88 m, Lu = 5.73 m, a = 0.08 m, c = 0.08 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-3.43	-1.66	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69
Mu(+), ton-m:	1.14	0.69	0.69	0.96	1.78	2.29	2.45	2.29	1.80	1.05	0.69
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.40	3.23	2.73	2.23	1.72	1.16	0.66	1.13	1.68	2.18	2.35
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C4 — 12 #3 @ 7.5, 22 #3 @ 17.5, 12 #3 @ 7.5 — CC'-C5

BEAM: CC(C1-C2) FLOOR: 2

Length: L = 5.88 m, Lu = 5.58 m, a = 0.15 m, c = 0.15 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-3.27	-1.92	-0.94	-0.85	-0.85	-0.85	-0.85	-0.85	-1.22	-2.62	-4.27
Mu(+), ton-m:	1.33	1.66	1.95	2.07	1.94	1.64	1.31	1.13	0.85	0.85	1.42
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.89	2.74	2.26	1.79	1.32	1.39	1.86	2.34	2.81	3.28	3.43
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C1 — 12 #3 @ 7.5, 21 #3 @ 17.5, 12 #3 @ 7.5 — CC-C2

BEAM: CC(C2-C3) FLOOR: 2

Length: L = 6.00 m, Lu = 5.70 m, a = 0.15 m, c = 0.15 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-3.77	-2.28	-1.05	-0.75	-0.75	-0.75	-0.75	-0.75	-1.01	-2.19	-3.64
Mu(+), ton-m:	1.26	0.75	0.75	1.01	1.17	1.29	1.28	1.17	0.85	0.75	1.21
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.09	2.93	2.46	1.98	1.49	1.01	1.42	1.90	2.38	2.86	3.02
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C2 — 12 #3 @ 7.5, 22 #3 @ 17.5, 12 #3 @ 7.5 — CC-C3

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA 09:30:29 p.m. 07/11/2018

BEAM: CC(C3-C4) FLOOR: 2

Length: L = 6.00 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-3.64	-2.19	-1.01	-0.75	-0.75	-0.75	-0.75	-0.75	-1.05	-2.27	-3.76
Mu(+), ton-m:	1.21	0.75	0.85	1.17	1.28	1.29	1.17	1.01	0.75	0.75	1.25
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.02	2.86	2.38	1.90	1.42	1.01	1.49	1.98	2.46	2.93	3.09
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C3 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 CC-C4

BEAM: CC(C4-C5) FLOOR: 2

Length: L = 5.88 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.58 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-4.27	-2.61	-1.22	-0.85	-0.85	-0.85	-0.85	-0.85	-0.94	-1.93	-3.28
Mu(+), ton-m:	1.42	0.85	0.85	1.13	1.31	1.64	1.94	2.07	1.95	1.66	1.33
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.43	3.28	2.81	2.33	1.86	1.39	1.32	1.79	2.26	2.74	2.89
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C4 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 CC-C5

BEAM: CB(C1-C2) FLOOR: 2

Length: L = 5.88 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.58 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-2.36	-1.24	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.78	-1.86	-3.17
Mu(+), ton-m:	0.79	0.63	0.89	1.21	1.30	1.30	1.04	0.76	0.63	0.63	1.06
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.47	2.33	1.90	1.47	1.04	0.96	1.39	1.82	2.24	2.66	2.81
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CB-C1 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 CB-C2

BEAM: CB(C2-C3) FLOOR: 2

Length: L = 6.00 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-2.79	-1.55	-0.57	-0.57	-0.57	-0.57	-0.57	-0.57	-0.62	-1.62	-2.87
Mu(+), ton-m:	0.93	0.57	0.57	0.84	1.06	1.21	1.05	0.82	0.57	0.57	0.96
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.46	2.29	1.83	1.40	0.98	0.58	1.00	1.43	1.86	2.32	2.49
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CB-C2 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 CB-C3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:30:29 p.m. 07/11/2018

BEAM: CB(C3-C4) FLOOR: 2

Length: L = 6.00 m, Lu = 5.70 m, a = 0.15 m, c = 0.15 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-2.87	-1.62	-0.62	-0.57	-0.57	-0.57	-0.57	-0.57	-0.57	-1.55	-2.79
Mu(+), ton-m:	0.96	0.57	0.57	0.82	1.05	1.21	1.06	0.84	0.57	0.57	0.93
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.49	2.32	1.86	1.43	1.00	0.58	0.98	1.40	1.83	2.29	2.46
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CB-C3 — 12 #3 @ 7.5, 22 #3 @ 17.5, 12 #3 @ 7.5 — CB-C4

BEAM: CB(C4-C5) FLOOR: 2

Length: L = 5.88 m, Lu = 5.58 m, a = 0.15 m, c = 0.15 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-3.17	-1.86	-0.78	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-1.24	-2.36
Mu(+), ton-m:	1.06	0.63	0.63	0.76	1.04	1.30	1.30	1.21	0.89	0.63	0.79
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.81	2.66	2.24	1.82	1.39	0.96	1.04	1.47	1.90	2.33	2.47
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CB-C4 — 12 #3 @ 7.5, 21 #3 @ 17.5, 12 #3 @ 7.5 — CB-C5

BEAM: CB(C1-C2) FLOOR: 3

Length: L = 5.88 m, Lu = 5.58 m, a = 0.15 m, c = 0.15 m, Section: b = 25.0 cm, h = 35.0 cm, Sec: 25x35, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-0.75	-0.39	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.26	-0.62	-1.05
Mu(+), ton-m:	0.25	0.21	0.23	0.35	0.39	0.40	0.32	0.22	0.21	0.21	0.35
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.79	0.74	0.60	0.46	0.32	0.29	0.43	0.57	0.71	0.85	0.90
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

CB-C1 — 11 #3 @ 7.5, 26 #3 @ 15, 11 #3 @ 7.5 — CB-C2

BEAM: CB(C2-C3) FLOOR: 3

Length: L = 6.00 m, Lu = 5.70 m, a = 0.15 m, c = 0.15 m, Section: b = 25.0 cm, h = 35.0 cm, Sec: 25x35, Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-0.86	-0.46	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.20	-0.54	-0.96
Mu(+), ton-m:	0.29	0.19	0.19	0.30	0.38	0.42	0.35	0.26	0.19	0.19	0.32
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.82	0.75	0.60	0.45	0.31	0.20	0.35	0.49	0.63	0.79	0.86
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

CB-C2 — 11 #3 @ 7.5, 27 #3 @ 15, 11 #3 @ 7.5 — CB-C3

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA 09:30:29 p.m. 07/11/2018

BEAM: CB(C3-C4) FLOOR: 3

Length: L = 6.00 m a = 0.15 m Section: b = 25.0 cm Sec: 25x35
Lu = 5.70 m c = 0.15 m h = 35.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-0.96	-0.54	-0.20	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.46	-0.86
Mu(+), ton-m:	0.32	0.19	0.19	0.26	0.35	0.42	0.38	0.30	0.19	0.19	0.29
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.86	0.79	0.63	0.49	0.35	0.20	0.31	0.45	0.60	0.75	0.82
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

CB-C3 11 #3 @ 7.5 27 #3 @ 15 11 #3 @ 7.5 CB-C4

BEAM: CB(C4-C5) FLOOR: 3

Length: L = 5.88 m a = 0.15 m Section: b = 25.0 cm Sec: 25x35
Lu = 5.58 m c = 0.15 m h = 35.0 cm Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-1.05	-0.62	-0.26	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.39	-0.75
Mu(+), ton-m:	0.35	0.21	0.21	0.22	0.32	0.40	0.39	0.35	0.23	0.21	0.25
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.90	0.85	0.71	0.57	0.43	0.29	0.32	0.46	0.60	0.74	0.79
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

CB-C4 11 #3 @ 7.5 26 #3 @ 15 11 #3 @ 7.5 CB-C5

BEAM: C1(CC'-CC) FLOOR: 2

Length: L = 5.20 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 4.90 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-1.08	-2.04	-3.17
Mu(+), ton-m:	0.63	0.68	1.15	1.40	1.51	1.47	1.24	0.85	0.63	0.63	1.06
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.91	1.83	1.46	1.08	0.82	1.18	1.56	1.93	2.31	2.68	2.76
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C1 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 CC-C1

BEAM: C1(CC-CB) FLOOR: 2

Length: L = 6.25 m a = 0.23 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.80 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.91	-1.89	-1.04	-0.58	-0.58	-0.58	-0.58	-0.58	-0.80	-1.56	-2.48
Mu(+), ton-m:	0.97	0.58	0.69	0.82	0.88	0.95	0.93	1.00	0.93	0.80	0.83
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.88	1.80	1.55	1.30	1.06	0.81	0.87	1.12	1.37	1.62	1.70
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C1 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 CB-C1

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA 09:30:29 p.m. 07/11/2018

BEAM: C1(CB-CA') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 40.0 cm Sec: 40x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-1.56	-1.26	-1.00	-0.77	-0.57	-0.40	-0.26	-0.15	-0.07	-0.02	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.32	1.32	1.32	1.16	0.99	0.83	0.66	0.50	0.33	0.17	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

CB-C1 12 #3 @ 17.5 CA'-C1

BEAM: C2(CC'-CC) FLOOR: 2

Length: L = 5.20 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 4.90 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.30	-2.44	-3.93
Mu(+), ton-m:	0.79	0.86	1.51	1.85	1.89	1.65	1.31	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.44	2.33	1.85	1.36	1.00	1.47	1.95	2.44	2.93	3.41	3.52
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C2 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 CC-C2

BEAM: C2(CC-CB) FLOOR: 2

Length: L = 6.25 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.80 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.31	-1.53	-0.87	-0.46	-0.46	-0.46	-0.46	-0.46	-0.66	-1.23	-1.93
Mu(+), ton-m:	0.77	0.46	0.56	0.76	0.90	0.92	0.84	0.80	0.75	0.66	0.64
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.46	1.40	1.21	1.02	0.84	0.65	0.67	0.85	1.04	1.22	1.29
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C2 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 CB-C2

BEAM: C2(CB-CA') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.11	-1.71	-1.36	-1.04	-0.77	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.80	1.80	1.80	1.58	1.35	1.13	0.90	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

CB-C2 12 #3 @ 17.5 CA'-C2

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA 09:30:29 p.m. 07/11/2018

BEAM: C3(CC'-CC) FLOOR: 2

Length: L = 5.20 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 4.90 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.29	-2.44	-3.94
Mu(+), ton-m:	0.79	0.88	1.53	1.88	1.92	1.67	1.32	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.46	2.35	1.86	1.37	1.00	1.47	1.96	2.45	2.94	3.43	3.54
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C3 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 CC-C3

BEAM: C3(CC-CB) FLOOR: 2

Length: L = 6.25 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.80 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.28	-1.51	-0.85	-0.46	-0.46	-0.46	-0.46	-0.46	-0.65	-1.21	-1.91
Mu(+), ton-m:	0.76	0.46	0.54	0.76	0.90	0.92	0.84	0.79	0.73	0.64	0.64
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.45	1.39	1.20	1.02	0.83	0.65	0.66	0.84	1.03	1.22	1.28
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C3 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 CB-C3

BEAM: C3(CB-CA') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.13	-1.72	-1.37	-1.05	-0.78	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.81	1.81	1.81	1.59	1.36	1.13	0.91	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

CB-C3 12 #3 @ 17.5 CA'-C3

BEAM: C4(CC'-CC) FLOOR: 2

Length: L = 5.20 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 4.90 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.30	-2.45	-3.94
Mu(+), ton-m:	0.79	0.87	1.51	1.85	1.89	1.65	1.32	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.44	2.33	1.85	1.36	1.00	1.47	1.96	2.44	2.93	3.41	3.52
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C4 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 CC-C4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA C - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:30:29 p.m. 07/11/2018

BEAM: C4(CC-CB) FLOOR: 2

Length: L = 6.25 m, Lu = 5.80 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.33	-1.54	-0.88	-0.47	-0.47	-0.47	-0.47	-0.47	-0.68	-1.25	-1.95
Mu(+), ton-m:	0.78	0.47	0.57	0.76	0.90	0.92	0.84	0.80	0.76	0.68	0.65
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.47	1.40	1.22	1.03	0.84	0.66	0.67	0.86	1.04	1.23	1.29
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C4 — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — CB-C4

BEAM: C4(CB-CA') FLOOR: 2

Length: L = 2.10 m, Lu = 1.88 m, a = 0.23 m, c = 0.00 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.11	-1.71	-1.36	-1.04	-0.77	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.80	1.80	1.80	1.58	1.35	1.13	0.90	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

CB-C4 — 12 #3 @ 17.5 — CA'-C4

BEAM: C5(CC'-CC) FLOOR: 2

Length: L = 5.20 m, Lu = 4.90 m, a = 0.08 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.93	-1.75	-2.71
Mu(+), ton-m:	0.54	0.57	0.98	1.21	1.27	1.24	1.06	0.73	0.54	0.54	0.90
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.65	1.58	1.26	0.94	0.70	1.01	1.33	1.65	1.97	2.29	2.36
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC'-C5 — 12 #3 @ 7.5 | 17 #3 @ 17.5 | 12 #3 @ 7.5 — CC-C5

BEAM: C5(CC-CB) FLOOR: 2

Length: L = 6.25 m, Lu = 5.80 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.33	-1.54	-0.87	-0.47	-0.47	-0.47	-0.47	-0.47	-0.68	-1.28	-2.00
Mu(+), ton-m:	0.78	0.50	0.61	0.68	0.68	0.72	0.71	0.79	0.76	0.69	0.67
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.45	1.39	1.20	1.01	0.83	0.64	0.69	0.88	1.06	1.25	1.31
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

CC-C5 — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — CB-C5

BEAM: C5(CB-CA') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-1.35	-1.10	-0.87	-0.67	-0.49	-0.35	-0.22	-0.13	-0.06	-0.02	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.15	1.15	1.15	1.01	0.86	0.72	0.58	0.43	0.29	0.14	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

CB-C5 — 12 #3 @ 17.5 — CA'-C5

BRACE SECTIONS

Number of prismatic sections = 1

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	2X254X67X3.0	Box/Tub	13.40	25.40	0.30	0.30	-	-	22.9	2029	759	1791

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
C1(CC-CB)	2-3	2X254X67X3.0	630	630	1.311*	0.002	0.000
C2(CC-CB)	2-3	2X254X67X3.0	630	630	2.634*	0.003	0.000
C3(CC-CB)	2-3	2X254X67X3.0	630	630	2.634*	0.003	0.000
C4(CC-CB)	2-3	2X254X67X3.0	630	630	2.633*	0.003	0.000
C5(CC-CB)	2-3	2X254X67X3.0	630	630	1.308*	0.002	0.000

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA
File: C:\RCB\Structures\JARDINTOCANCIPA-D-viento.rcb

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL2 + 1.4DL
2	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + 1.6SL
3	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + 1.6SL
4	1.2D0 + 1.2DL2 + 1.2DL + .5LL + 1.6SL
5	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + 1.6LL + .5SL
6	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + .5SL
7	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL + .5SL
8	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLX
9	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLX
10	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLY
11	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLY
12	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL+.75WLX+.75WLY
13	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL-.75WLX-.75WLY
14	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLX
15	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLX
16	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLY
17	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLY
18	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .375WLX + .375WLY
19	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .375WLX - .375WLY
20	.9D0 + .9DL2 + .9DL + WLX
21	.9D0 + .9DL2 + .9DL - WLX
22	.9D0 + .9DL2 + .9DL + WLY
23	.9D0 + .9DL2 + .9DL - WLY
24	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX + .3EQY
25	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX - .3EQY
26	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX - .3EQY
27	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX + .3EQY
28	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX + EQY
29	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX - EQY
30	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX + EQY
31	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX - EQY
32	.9D0 + .9DL2 + .9DL + EQX + .3EQY
33	.9D0 + .9DL2 + .9DL - EQX - .3EQY
34	.9D0 + .9DL2 + .9DL + EQX - .3EQY
35	.9D0 + .9DL2 + .9DL - EQX + .3EQY
36	.9D0 + .9DL2 + .9DL + .3EQX + EQY
37	.9D0 + .9DL2 + .9DL - .3EQX - EQY
38	.9D0 + .9DL2 + .9DL - .3EQX + EQY
39	.9D0 + .9DL2 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 2

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0

COLUMN SECTIONS

Number of prismatic sections = 2

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x45	Rectang	30.00	45.00	-	-	-	-	1350.0	227812	101250	234900
2	FI150x5.0	Pipe	15.00	15.00	0.50	0.50	-	-	22.8	599	599	1199

Design Results - Columns (DMO)

Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	XTIES	Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm
DB-D7	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	2.09	0.62	0.39	0.0100	13..
				1		---	1 (h)	Bot	26	1.94	1.11	3.48	0.0100	13..
DB-D6	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.77	4.20	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.72	4.55	0.86	0.0100	13..
DB-D5	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.80	4.21	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.74	4.50	0.44	0.0100	13..
DB-D4	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.78	4.20	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.72	4.45	0.21	0.0100	13..
DB-D3	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.80	4.20	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.73	4.39	0.11	0.0100	13..
DB-D2	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.77	4.19	0.16	0.0100	13..
				1		---	1 (h)	Bot	31	4.71	4.50	0.87	0.0100	13..
DB-D1	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	2.10	0.64	0.40	0.0100	13..
				1		---	1 (h)	Bot	25	1.94	0.91	2.91	0.0100	13..

BEAM SECTIONS

Number of prismatic sections = 2

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
2	40x40	Rectang	40.00	40.00	-	-	-	-	1600.0	213333	213333	315733

Design Results - Beams (DMO)

BEAM: DD(D1-D2) FLOOR: 2

Length: L = 5.88 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.73 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-3.28	-6.85
Mu(+), ton-m:	1.37	2.19	3.65	4.63	4.97	4.65	3.65	1.99	1.37	1.37	2.28
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.80	4.45	3.42	2.29	1.34	2.30	3.45	4.53	5.55	6.58	6.92
Tu, ton-m:	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN: DD-D1 — 12 #3 @ 7.5 | 22 #3 @ 17.5 | 12 #3 @ 7.5 — DD-D2

BEAM: DD(D2-D3) FLOOR: 2

Length: L = 6.00 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.85 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-6.80	-3.62	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-2.53	-5.43
Mu(+), ton-m:	2.27	1.36	1.36	1.36	1.95	2.45	2.22	1.36	1.36	1.36	1.81
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	5.58	5.17	4.01	2.84	1.68	0.56	1.21	2.37	3.54	4.70	5.11
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN: DD-D2 — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — DD-D3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: DD(D3-D4) FLOOR: 2

Length: L = 6.00 m Lu = 5.85 m a = 0.08 m c = 0.08 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-5.45	-2.46	-1.17	-1.17	-1.17	-1.17	-1.17	-1.17	-1.17	-2.77	-5.85
Mu(+), ton-m:	1.82	1.17	1.17	1.60	2.60	2.91	2.51	1.44	1.17	1.17	1.95
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	5.15	4.75	3.58	2.42	1.25	0.31	1.39	2.55	3.72	4.88	5.29
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D3 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DD-D4

BEAM: DD(D4-D5) FLOOR: 2

Length: L = 6.00 m Lu = 5.85 m a = 0.08 m c = 0.08 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-5.85	-2.77	-1.17	-1.17	-1.17	-1.17	-1.17	-1.17	-1.17	-2.45	-5.45
Mu(+), ton-m:	1.95	1.17	1.17	1.44	2.51	2.91	2.60	1.60	1.17	1.17	1.82
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	5.29	4.88	3.72	2.55	1.39	0.31	1.25	2.42	3.58	4.75	5.15
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D4 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DD-D5

BEAM: DD(D5-D6) FLOOR: 2

Length: L = 6.00 m Lu = 5.85 m a = 0.08 m c = 0.08 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-5.43	-2.53	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-3.62	-6.80
Mu(+), ton-m:	1.81	1.36	1.36	1.36	2.22	2.44	1.95	1.36	1.36	1.36	2.27
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	5.11	4.71	3.54	2.38	1.21	0.56	1.68	2.84	4.01	5.17	5.58
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D5 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DD-D6

BEAM: DD(D6-D7) FLOOR: 2

Length: L = 5.88 m Lu = 5.73 m a = 0.08 m c = 0.08 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-6.85	-3.28	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37	-1.37
Mu(+), ton-m:	2.28	1.37	1.37	2.00	3.65	4.66	4.98	4.65	3.66	2.20	1.37
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.93	6.58	5.56	4.53	3.45	2.31	1.34	2.29	3.42	4.45	4.79
Tu, ton-m:	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D6 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DD-D7

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: DC(D1-D2) FLOOR: 2

Length: L = 5.88 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.58 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-6.94	-4.10	-2.01	-1.80	-1.80	-1.80	-1.80	-1.80	-2.58	-5.51	-8.99
Mu(+), ton-m:	2.84	3.53	4.12	4.36	4.08	3.32	2.72	2.39	1.80	1.80	3.00
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	6.59
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.00	5.69	4.72	3.75	2.78	2.91	3.88	4.86	5.83	6.80	7.11
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D1 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DC-D2

BEAM: DC(D2-D3) FLOOR: 2

Length: L = 6.00 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-7.89	-4.78	-2.23	-1.58	-1.58	-1.58	-1.58	-1.58	-2.16	-4.64	-7.67
Mu(+), ton-m:	2.63	1.58	1.58	2.13	2.44	2.60	2.65	2.42	1.77	1.58	2.56
As(-), cm2:	5.75	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.58
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.41	6.08	5.09	4.09	3.10	2.11	2.96	3.96	4.95	5.95	6.28
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D2 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DC-D3

BEAM: DC(D3-D4) FLOOR: 2

Length: L = 6.00 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-7.85	-4.74	-2.20	-1.58	-1.58	-1.58	-1.58	-1.58	-2.22	-4.77	-7.89
Mu(+), ton-m:	2.62	1.58	1.82	2.46	2.69	2.71	2.65	2.41	1.76	1.58	2.63
As(-), cm2:	5.72	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.75
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.34	6.01	5.02	4.02	3.03	2.06	3.05	4.05	5.04	6.04	6.37
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D3 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DC-D4

BEAM: DC(D4-D5) FLOOR: 2

Length: L = 6.00 m a = 0.15 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-7.89	-4.77	-2.22	-1.58	-1.58	-1.58	-1.58	-1.58	-2.20	-4.74	-7.85
Mu(+), ton-m:	2.63	1.58	1.76	2.41	2.65	2.71	2.69	2.46	1.82	1.58	2.62
As(-), cm2:	5.75	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.72
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.37	6.04	5.04	4.05	3.06	2.06	3.03	4.02	5.02	6.01	6.34
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D4 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DC-D5

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: DC(D5-D6) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m | a = 0.15 m c = 0.15 m | Section: b = 40.0 cm h = 40.0 cm | Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-7.67	-4.64	-2.16	-1.58	-1.58	-1.58	-1.58	-1.58	-2.22	-4.78	-7.89
Mu(+), ton-m:	2.56	1.58	1.76	2.42	2.65	2.60	2.44	2.13	1.58	1.58	2.63
As(-), cm2:	5.58	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.75
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	6.28	5.95	4.95	3.96	2.96	2.10	3.10	4.09	5.09	6.08	6.41
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D5 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DC-D6

BEAM: DC(D6-D7) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m | a = 0.15 m c = 0.15 m | Section: b = 40.0 cm h = 40.0 cm | Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-8.99	-5.51	-2.58	-1.80	-1.80	-1.80	-1.80	-1.80	-2.02	-4.12	-6.96
Mu(+), ton-m:	3.00	1.80	1.80	2.39	2.72	3.32	4.08	4.36	4.13	3.53	2.85
As(-), cm2:	6.59	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.04
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	7.11	6.80	5.83	4.85	3.88	2.91	2.78	3.75	4.72	5.69	6.00
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D6 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DC-D7

BEAM: DB(D1-D2) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m | a = 0.15 m c = 0.15 m | Section: b = 40.0 cm h = 40.0 cm | Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-4.53	-2.34	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.41	-3.49	-6.04
Mu(+), ton-m:	1.51	1.21	1.57	2.25	2.48	2.50	2.01	1.44	1.21	1.21	2.01
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.74	4.47	3.65	2.82	1.99	1.76	2.59	3.41	4.24	5.07	5.35
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D1 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DB-D2

BEAM: DB(D2-D3) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m | a = 0.15 m c = 0.15 m | Section: b = 40.0 cm h = 40.0 cm | Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-5.32	-2.92	-1.11	-1.11	-1.11	-1.11	-1.11	-1.11	-1.16	-3.11	-5.56
Mu(+), ton-m:	1.77	1.11	1.11	1.60	2.06	2.33	2.02	1.51	1.11	1.11	1.85
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.71	4.39	3.50	2.66	1.81	1.05	1.89	2.74	3.58	4.48	4.80
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D2 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: DB(D3-D4) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-5.40	-2.98	-1.09	-1.09	-1.09	-1.09	-1.09	-1.09	-1.11	-3.05	-5.47
Mu(+), ton-m:	1.80	1.09	1.09	1.58	2.06	2.34	2.04	1.54	1.09	1.09	1.82
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.72	4.39	3.50	2.65	1.81	0.99	1.84	2.68	3.53	4.42	4.75
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D3 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D4

BEAM: DB(D4-D5) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-5.47	-3.04	-1.11	-1.09	-1.09	-1.09	-1.09	-1.09	-1.09	-2.98	-5.40
Mu(+), ton-m:	1.82	1.09	1.09	1.54	2.04	2.34	2.06	1.58	1.09	1.09	1.80
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.75	4.42	3.53	2.68	1.84	0.99	1.81	2.65	3.50	4.39	4.72
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D4 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D5

BEAM: DB(D5-D6) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-5.56	-3.11	-1.16	-1.11	-1.11	-1.11	-1.11	-1.11	-1.11	-2.92	-5.32
Mu(+), ton-m:	1.85	1.11	1.11	1.51	2.02	2.33	2.07	1.60	1.11	1.11	1.77
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.80	4.48	3.58	2.74	1.89	1.05	1.81	2.66	3.50	4.39	4.71
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D5 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D6

BEAM: DB(D6-D7) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-6.03	-3.49	-1.41	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-2.34	-4.54
Mu(+), ton-m:	2.01	1.21	1.21	1.44	2.02	2.50	2.48	2.25	1.56	1.21	1.51
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	5.34	5.06	4.23	3.41	2.58	1.76	1.99	2.82	3.64	4.47	4.73
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D6 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DB-D7

BEAM: DB(D1-D2) FLOOR: 3

Length: L = 5.88 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.58 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-1.17	-0.64	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.59	-1.16	-1.83
Mu(+), ton-m:	0.39	0.41	0.56	0.65	0.62	0.55	0.46	0.37	0.37	0.37	0.61
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.11	1.05	0.86	0.68	0.50	0.57	0.75	0.94	1.12	1.30	1.36
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D1 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DB-D2

BEAM: DB(D2-D3) FLOOR: 3

Length: L = 6.00 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-1.27	-0.71	-0.33	-0.33	-0.33	-0.33	-0.33	-0.33	-0.48	-1.02	-1.67
Mu(+), ton-m:	0.42	0.33	0.45	0.58	0.60	0.58	0.50	0.40	0.33	0.33	0.56
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.14	1.08	0.89	0.71	0.52	0.49	0.67	0.86	1.05	1.23	1.30
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D2 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D3

BEAM: DB(D3-D4) FLOOR: 3

Length: L = 6.00 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-1.41	-0.81	-0.33	-0.30	-0.30	-0.30	-0.30	-0.30	-0.39	-0.90	-1.51
Mu(+), ton-m:	0.47	0.30	0.32	0.48	0.55	0.57	0.52	0.44	0.30	0.30	0.50
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.18	1.11	0.93	0.74	0.55	0.41	0.59	0.78	0.97	1.15	1.22
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D3 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D4

BEAM: DB(D4-D5) FLOOR: 3

Length: L = 6.00 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.70 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-1.51	-0.90	-0.39	-0.30	-0.30	-0.30	-0.30	-0.30	-0.33	-0.81	-1.41
Mu(+), ton-m:	0.50	0.30	0.30	0.44	0.52	0.57	0.55	0.48	0.32	0.30	0.47
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.22	1.15	0.97	0.78	0.59	0.41	0.55	0.74	0.93	1.11	1.18
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D4 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 DB-D5

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: DB(D5-D6) FLOOR: 3

Length: L = 6.00 m, Lu = 5.70 m, a = 0.15 m, c = 0.15 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-1.67	-1.02	-0.48	-0.33	-0.33	-0.33	-0.33	-0.33	-0.33	-0.71	-1.27
Mu(+), ton-m:	0.56	0.33	0.33	0.40	0.50	0.58	0.60	0.58	0.45	0.33	0.42
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.30	1.23	1.05	0.86	0.67	0.49	0.52	0.71	0.89	1.08	1.14
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D5 — 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 — DB-D6

BEAM: DB(D6-D7) FLOOR: 3

Length: L = 5.88 m, Lu = 5.58 m, a = 0.15 m, c = 0.15 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-1.83	-1.16	-0.59	-0.37	-0.37	-0.37	-0.37	-0.37	-0.37	-0.65	-1.17
Mu(+), ton-m:	0.61	0.37	0.37	0.37	0.47	0.55	0.62	0.64	0.56	0.41	0.39
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.36	1.30	1.12	0.93	0.75	0.57	0.50	0.68	0.87	1.05	1.11
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DB-D6 — 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 — DB-D7

BEAM: D1(DD-DC) FLOOR: 2

Length: L = 5.75 m, Lu = 5.45 m, a = 0.08 m, c = 0.23 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.71	-4.08	-6.99
Mu(+), ton-m:	1.40	1.90	3.36	4.22	4.47	4.27	3.69	2.63	1.40	1.40	2.33
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.07
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	4.61	4.33	3.40	2.48	1.58	2.36	3.28	4.21	5.13	6.06	6.34
Tu, ton-m:	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D1 — 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 — DC-D1

BEAM: D1(DC-DB) FLOOR: 2

Length: L = 6.27 m, Lu = 5.82 m, a = 0.23 m, c = 0.23 m, Section: b = 40.0 cm, h = 40.0 cm, Sec: 40x40, Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.95	-4.40	-2.99	-1.74	-1.19	-1.19	-1.19	-1.19	-1.60	-2.45	-3.47
Mu(+), ton-m:	1.98	1.19	1.19	1.19	1.19	1.19	1.19	1.69	2.15	2.45	2.68
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.19	3.11	2.86	2.61	2.36	2.11	1.86	1.68	1.93	2.18	2.27
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D1 — 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 — DB-D1

BEAM: D1(DB-DA) FLOOR: 2

Length: L = 2.08 m, Lu = 1.85 m, a = 0.23 m, c = 0.00 m; Section: b = 40.0 cm, h = 40.0 cm; Sec: 40x40; Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-2.96	-2.40	-1.90	-1.46	-1.08	-0.76	-0.49	-0.28	-0.13	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.54	2.54	2.54	2.24	1.92	1.60	1.28	0.96	0.64	0.32	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D1 11 #3 @ 17.5 DA-D1

BEAM: D2(DD-DC) FLOOR: 2

Length: L = 5.75 m, Lu = 5.45 m, a = 0.08 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-5.80	-10.94
Mu(+), ton-m:	2.19	2.93	5.44	6.91	7.33	6.78	5.23	3.19	2.19	2.19	3.65
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.22	8.33
As(+), cm2:	3.76	3.76	3.95	5.07	5.41	4.97	3.79	3.76	3.76	3.76	3.76
Vu, ton:	7.57	7.10	5.53	3.95	2.44	3.77	5.34	6.91	8.47	10.04	10.51
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D2 11 #3 @ 7.5 21 #3 @ 17.5 11 #3 @ 7.5 DC-D2

BEAM: D2(DC-DB) FLOOR: 2

Length: L = 6.27 m, Lu = 5.82 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.45	-4.15	-2.95	-1.88	-1.09	-1.09	-1.09	-1.09	-1.34	-1.96	-2.66
Mu(+), ton-m:	1.82	1.09	1.09	1.09	1.09	1.09	1.09	1.24	1.72	2.09	2.34
As(-), cm2:	3.95	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.82	2.76	2.57	2.38	2.20	2.01	1.82	1.64	1.52	1.71	1.78
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D2 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D2

BEAM: D2(DB-DA) FLOOR: 2

Length: L = 2.08 m, Lu = 1.85 m, a = 0.23 m, c = 0.00 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40; Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-4.99	-4.03	-3.20	-2.46	-1.82	-1.27	-0.82	-0.47	-0.22	-0.06	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.28	4.28	4.28	3.77	3.23	2.69	2.15	1.61	1.08	0.54	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D2 11 #3 @ 17.5 DA-D2

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:28 p.m. 07/11/2018

BEAM: D3(DD-DC) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-5.82	-11.02
Mu(+), ton-m:	2.20	3.02	5.54	7.02	7.45	6.88	5.31	3.23	2.20	2.20	3.67
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.23	8.40
As(+), cm2:	3.76	3.76	4.03	5.16	5.49	5.05	3.85	3.76	3.76	3.76	3.76
Vu, ton:	7.63	7.15	5.57	3.98	2.47	3.81	5.40	6.98	8.56	10.14	10.62
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D3 11 #3 @ 7.5 21 #3 @ 17.5 11 #3 @ 7.5 DC-D3

BEAM: D3(DC-DB) FLOOR: 2

	Length:	L = 6.27 m Lu = 5.82 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.45	-4.15	-2.96	-1.88	-1.09	-1.09	-1.09	-1.09	-1.32	-1.94	-2.63
Mu(+), ton-m:	1.82	1.09	1.09	1.09	1.09	1.09	1.09	1.23	1.71	2.07	2.33
As(-), cm2:	3.96	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.83	2.76	2.58	2.39	2.20	2.01	1.83	1.64	1.52	1.70	1.77
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D3 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D3

BEAM: D3(DB-DA) FLOOR: 2

	Length:	L = 2.08 m Lu = 1.85 m	a = 0.23 m c = 0.00 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-5.03	-4.07	-3.23	-2.48	-1.83	-1.28	-0.83	-0.48	-0.22	-0.06	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.32	4.32	4.32	3.80	3.26	2.72	2.17	1.63	1.09	0.54	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D3 11 #3 @ 17.5 DA-D3

BEAM: D4(DD-DC) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-5.81	-11.02
Mu(+), ton-m:	2.20	3.02	5.55	7.02	7.45	6.88	5.31	3.22	2.20	2.20	3.67
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.23	8.40
As(+), cm2:	3.76	3.76	4.03	5.16	5.50	5.05	3.85	3.76	3.76	3.76	3.76
Vu, ton:	7.63	7.15	5.57	3.98	2.47	3.82	5.40	6.98	8.56	10.14	10.62
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D4 11 #3 @ 7.5 21 #3 @ 17.5 11 #3 @ 7.5 DC-D4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:43:29 p.m. 07/11/2018

BEAM: D4(DC-DB) FLOOR: 2

Length: L = 6.27 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.82 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.44	-4.14	-2.95	-1.88	-1.09	-1.09	-1.09	-1.09	-1.31	-1.92	-2.61
Mu(+), ton-m:	1.81	1.09	1.09	1.09	1.09	1.09	1.09	1.23	1.70	2.06	2.32
As(-), cm2:	3.95	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.82	2.76	2.57	2.39	2.20	2.01	1.83	1.64	1.51	1.70	1.76
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D4 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D4

BEAM: D4(DB-DA) FLOOR: 2

Length: L = 2.08 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.85 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-5.03	-4.07	-3.23	-2.48	-1.83	-1.28	-0.83	-0.48	-0.22	-0.06	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.32	4.32	4.32	3.80	3.26	2.72	2.17	1.63	1.09	0.54	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D4 11 #3 @ 17.5 DA-D4

BEAM: D5(DD-DC) FLOOR: 2

Length: L = 5.75 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.45 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-2.20	-5.84	-11.02
Mu(+), ton-m:	2.20	3.02	5.54	7.02	7.45	6.88	5.32	3.25	2.20	2.20	3.67
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.25	8.40
As(+), cm2:	3.76	3.76	4.03	5.16	5.50	5.05	3.86	3.76	3.76	3.76	3.76
Vu, ton:	7.63	7.16	5.57	3.99	2.47	3.81	5.39	6.98	8.56	10.14	10.62
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D5 11 #3 @ 7.5 21 #3 @ 17.5 11 #3 @ 7.5 DC-D5

BEAM: D5(DC-DB) FLOOR: 2

Length: L = 6.27 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.82 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.52	-4.21	-3.00	-1.91	-1.10	-1.10	-1.10	-1.10	-1.35	-1.98	-2.68
Mu(+), ton-m:	1.84	1.10	1.10	1.10	1.10	1.10	1.10	1.26	1.75	2.13	2.40
As(-), cm2:	4.01	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.86	2.79	2.61	2.42	2.23	2.05	1.86	1.67	1.54	1.73	1.79
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D5 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D5

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA D - TOCANCIPA 09:43:29 p.m. 07/11/2018

BEAM: D5(DB-DA) FLOOR: 2

Length: L = 2.08 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.85 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-5.03	-4.07	-3.23	-2.48	-1.83	-1.28	-0.83	-0.48	-0.22	-0.06	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.32	4.32	4.32	3.80	3.26	2.72	2.17	1.63	1.09	0.54	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D5 11 #3 @ 17.5 DA-D5

BEAM: D6(DD-DC) FLOOR: 2

Length: L = 5.75 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.45 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-2.19	-5.85	-10.95
Mu(+), ton-m:	2.19	2.94	5.45	6.92	7.35	6.79	5.25	3.23	2.19	2.19	3.65
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.26	8.34
As(+), cm2:	3.76	3.76	3.96	5.08	5.42	4.98	3.80	3.76	3.76	3.76	3.76
Vu, ton:	7.58	7.10	5.54	3.97	2.45	3.77	5.34	6.91	8.47	10.04	10.52
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D6 11 #3 @ 7.5 21 #3 @ 17.5 11 #3 @ 7.5 DC-D6

BEAM: D6(DC-DB) FLOOR: 2

Length: L = 6.27 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.82 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.59	-4.26	-3.04	-1.93	-1.12	-1.12	-1.12	-1.12	-1.39	-2.04	-2.76
Mu(+), ton-m:	1.86	1.12	1.12	1.12	1.12	1.12	1.12	1.30	1.80	2.20	2.48
As(-), cm2:	4.06	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.89	2.82	2.63	2.45	2.26	2.07	1.89	1.70	1.57	1.76	1.82
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D6 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D6

BEAM: D6(DB-DA) FLOOR: 2

Length: L = 2.08 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.85 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-4.99	-4.03	-3.20	-2.46	-1.82	-1.27	-0.82	-0.47	-0.22	-0.06	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.28	4.28	4.28	3.77	3.23	2.69	2.15	1.61	1.08	0.54	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D6 11 #3 @ 17.5 DA-D6

BEAM: D7(DD-DC) FLOOR: 2

Length: L = 5.75 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.45 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.63	-3.83	-6.54
Mu(+), ton-m:	1.31	1.67	3.05	3.86	4.10	3.87	3.33	2.36	1.31	1.31	2.18
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	4.79
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	4.32	4.05	3.19	2.32	1.46	2.19	3.05	3.92	4.78	5.65	5.91
Tu, ton-m:	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DD-D7 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 DC-D7

BEAM: D7(DC-DB) FLOOR: 2

Length: L = 6.27 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.82 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.81	1.39	1.97	2.55	3.14	3.72	4.30	4.88	5.46	6.04
Mu(-), ton-m:	-5.02	-3.75	-2.59	-1.55	-1.00	-1.00	-1.00	-1.00	-1.38	-2.09	-2.90
Mu(+), ton-m:	1.67	1.06	1.00	1.00	1.00	1.00	1.00	1.43	1.87	2.20	2.45
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.63	2.56	2.38	2.19	2.00	1.82	1.63	1.45	1.60	1.78	1.85
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

DC-D7 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 DB-D7

BEAM: D7(DB-DA) FLOOR: 2

Length: L = 2.08 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.85 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.78	0.97	1.15	1.34	1.52	1.71	1.89	2.08
Mu(-), ton-m:	-2.77	-2.24	-1.77	-1.36	-1.01	-0.71	-0.46	-0.26	-0.12	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.37	2.37	2.37	2.09	1.79	1.49	1.19	0.90	0.60	0.30	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

DB-D7 11 #3 @ 17.5 DA-D7

BRACE SECTIONS

Number of prismatic sections = 1

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	2x254x67x3.0	Box/Tub	13.40	25.40	0.30	0.30	-	-	24.1	2166	744	1791

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
D1(DC-DB)	2-3	2x254x67x3.0	632	632	0.851	0.006	0.001
D2(DC-DB)	2-3	2x254x67x3.0	632	632	1.654*	0.008	0.001
D3(DC-DB)	2-3	2x254x67x3.0	632	632	1.654*	0.008	0.001
D4(DC-DB)	2-3	2x254x67x3.0	632	632	1.654*	0.008	0.001
D5(DC-DB)	2-3	2x254x67x3.0	632	632	1.655*	0.008	0.001
D6(DC-DB)	2-3	2x254x67x3.0	632	632	1.655*	0.008	0.001
D7(DC-DB)	2-3	2x254x67x3.0	632	632	0.854	0.007	0.001

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA E - TOCANCIPA
File: C:\RCB\Structures\JARDINTOCANCIPA-E-viento.rcb

Engineer: Jose Vicente Vinueza
09:54:21 p.m. 07/11/2018

LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL
2	1.2D0 + 1.2DL + .5LL + 1.6SL
3	1.2D0 + 1.2DL + 1.6LL + .5SL
4	1.2D0 + 1.2DL + .5LL + .5SL + WLX
5	1.2D0 + 1.2DL + .5LL + .5SL - WLX
6	1.2D0 + 1.2DL + .5LL + .5SL + WLY
7	1.2D0 + 1.2DL + .5LL + .5SL - WLY
8	1.2D0 + 1.2DL + .5LL + .5SL + .75WLX + .75WLY
9	1.2D0 + 1.2DL + .5LL + .5SL - .75WLX - .75WLY
10	1.2D0 + 1.2DL + 1.6SL + .5WLX
11	1.2D0 + 1.2DL + 1.6SL - .5WLX
12	1.2D0 + 1.2DL + 1.6SL + .5WLY
13	1.2D0 + 1.2DL + 1.6SL - .5WLY
14	1.2D0 + 1.2DL + 1.6SL + .375WLX + .375WLY
15	1.2D0 + 1.2DL + 1.6SL - .375WLX - .375WLY
16	.9D0 + .9DL + WLX
17	.9D0 + .9DL - WLX
18	.9D0 + .9DL + WLY
19	.9D0 + .9DL - WLY
20	1.2D0 + 1.2DL + .5LL + .2SL + EQX + .3EQY
21	1.2D0 + 1.2DL + .5LL + .2SL - EQX - .3EQY
22	1.2D0 + 1.2DL + .5LL + .2SL + EQX - .3EQY
23	1.2D0 + 1.2DL + .5LL + .2SL - EQX + .3EQY
24	1.2D0 + 1.2DL + .5LL + .2SL + .3EQX + EQY
25	1.2D0 + 1.2DL + .5LL + .2SL - .3EQX - EQY
26	1.2D0 + 1.2DL + .5LL + .2SL - .3EQX + EQY
27	1.2D0 + 1.2DL + .5LL + .2SL + .3EQX - EQY
28	.9D0 + .9DL + EQX + .3EQY
29	.9D0 + .9DL - EQX - .3EQY
30	.9D0 + .9DL + EQX - .3EQY
31	.9D0 + .9DL - EQX + .3EQY
32	.9D0 + .9DL + .3EQX + EQY
33	.9D0 + .9DL - .3EQX - EQY
34	.9D0 + .9DL - .3EQX + EQY
35	.9D0 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 2

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0

COLUMN SECTIONS

Number of prismatic sections = 3

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x45	Rectang	30.00	45.00	-	-	-	-	1350.0	227812	101250	234900
2	FI21.91X8.0	Pipe	21.91	21.91	0.80	0.80	-	-	53.1	2960	2960	5919
3	I150x150x5.0	Pipe	15.00	15.00	0.50	0.50	-	-	22.8	599	599	1199

Design Results - Columns (DMO)

Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

Column	Story	L	Lu	Sec	bxh	TIES	XTIES	Sec	LdCmb	Pu	Mu2	Mu3	RHO	As
EB-E5	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	1.55	0.48	0.13	0.0100	13..
				1		---	1 (h)	Bot	1	1.55	0.34	0.79	0.0100	13..
EB-E4	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.50	6.44	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.50	4.90	0.32	0.0100	13..
EB-E3	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.52	6.44	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.52	4.90	0.21	0.0100	13..
EB-E2	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	8.50	6.43	0.21	0.0100	13..
				1		---	1 (h)	Bot	2	8.50	4.88	0.32	0.0100	13..
EB-E1	2	0.80	0.45	1	30x45	4 #3 @ 10 cm	2 (b)	Top	1	1.54	0.46	0.13	0.0100	13..
				1		---	1 (h)	Bot	1	1.54	0.31	0.79	0.0100	13..

BEAM SECTIONS

Number of prismatic sections = 4

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	40x40	Rectang	40.00	40.00	-	-	-	-	1600.0	213333	213333	315733
2	50x40	Rectang	50.00	40.00	-	-	-	-	2000.0	266667	416667	529067
3	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
4	25x35	Rectang	25.00	35.00	-	-	-	-	875.0	89323	45573	100260

Design Results - Beams (DMO)

BEAM: EC'(E1-E2) FLOOR: 2

Length: L = 5.88 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.73 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-1.66	-3.43
Mu(+), ton-m:	0.69	1.05	1.80	2.28	2.44	2.28	1.78	0.96	0.69	0.69	1.14
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.35	2.18	1.68	1.13	0.66	1.16	1.72	2.23	2.73	3.23	3.40
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E1 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 EC'-E2

BEAM: EC'(E2-E3) FLOOR: 2

Length: L = 6.00 m a = 0.08 m Section: b = 40.0 cm Sec: 40x40
Lu = 5.85 m c = 0.08 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-3.40	-1.81	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-1.15	-2.56
Mu(+), ton-m:	1.13	0.68	0.68	0.68	0.99	1.25	1.16	0.73	0.68	0.68	0.85
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.81	2.61	2.03	1.46	0.88	0.32	0.59	1.17	1.74	2.32	2.52
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E2 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 EC'-E3

BEAM: EC'(E3-E4) FLOOR: 2

Length:	L = 6.00 m	a = 0.08 m	Section:	b = 40.0 cm	Sec:	40x40				
	Lu = 5.85 m	c = 0.08 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.08	0.66	1.25	1.83	2.42	3.00	3.59	4.17	4.76	5.34	5.93
Mu(-), ton-m:	-2.56	-1.15	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-1.81	-3.41
Mu(+), ton-m:	0.85	0.68	0.68	0.73	1.16	1.25	0.99	0.68	0.68	0.68	1.14
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.52	2.32	1.74	1.17	0.59	0.32	0.88	1.46	2.03	2.61	2.81
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E3 — 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 — EC'-E4

BEAM: EC'(E4-E5) FLOOR: 2

Length:	L = 5.88 m	a = 0.08 m	Section:	b = 40.0 cm	Sec:	40x40				
	Lu = 5.73 m	c = 0.08 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.08	0.65	1.22	1.79	2.37	2.94	3.51	4.08	4.66	5.23	5.80
Mu(-), ton-m:	-3.43	-1.66	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69	-0.69
Mu(+), ton-m:	1.14	0.69	0.69	0.96	1.78	2.29	2.45	2.29	1.80	1.05	0.69
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.40	3.23	2.73	2.23	1.72	1.16	0.66	1.13	1.68	2.18	2.35
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E4 — 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 — EC'-E5

BEAM: EC(E1-E2) FLOOR: 2

Length:	L = 5.88 m	a = 0.15 m	Section:	b = 40.0 cm	Sec:	40x40				
	Lu = 5.58 m	c = 0.15 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-3.27	-1.92	-0.94	-0.85	-0.85	-0.85	-0.85	-0.85	-1.22	-2.62	-4.27
Mu(+), ton-m:	1.33	1.66	1.95	2.07	1.94	1.64	1.31	1.13	0.85	0.85	1.42
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.89	2.74	2.26	1.79	1.32	1.39	1.86	2.34	2.81	3.28	3.43
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E1 — 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 — EC-E2

BEAM: EC(E2-E3) FLOOR: 2

Length:	L = 6.00 m	a = 0.15 m	Section:	b = 40.0 cm	Sec:	40x40				
	Lu = 5.70 m	c = 0.15 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-3.77	-2.28	-1.05	-0.75	-0.75	-0.75	-0.75	-0.75	-1.01	-2.19	-3.64
Mu(+), ton-m:	1.26	0.75	0.75	1.01	1.17	1.29	1.28	1.17	0.85	0.75	1.21
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.09	2.93	2.46	1.98	1.49	1.01	1.42	1.90	2.38	2.86	3.02
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E2 — 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 — EC-E3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA E - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:54:21 p.m. 07/11/2018

BEAM: EC(E3-E4) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-3.64	-2.19	-1.01	-0.75	-0.75	-0.75	-0.75	-0.75	-1.05	-2.27	-3.76
Mu(+), ton-m:	1.21	0.75	0.85	1.17	1.28	1.29	1.17	1.01	0.75	0.75	1.25
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.02	2.86	2.38	1.90	1.42	1.01	1.49	1.98	2.46	2.93	3.09
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E3 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 EC-E4

BEAM: EC(E4-E5) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-4.27	-2.61	-1.22	-0.85	-0.85	-0.85	-0.85	-0.85	-0.94	-1.93	-3.28
Mu(+), ton-m:	1.42	0.85	0.85	1.13	1.31	1.64	1.94	2.07	1.95	1.66	1.33
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	3.43	3.28	2.81	2.33	1.86	1.39	1.32	1.79	2.26	2.74	2.89
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E4 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 EC-E5

BEAM: EB(E1-E2) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-2.36	-1.24	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.78	-1.86	-3.17
Mu(+), ton-m:	0.79	0.63	0.89	1.21	1.30	1.30	1.04	0.76	0.63	0.63	1.06
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.47	2.33	1.90	1.47	1.04	0.96	1.39	1.82	2.24	2.66	2.81
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EB-E1 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 EB-E2

BEAM: EB(E2-E3) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-2.79	-1.55	-0.57	-0.57	-0.57	-0.57	-0.57	-0.57	-0.62	-1.62	-2.87
Mu(+), ton-m:	0.93	0.57	0.57	0.84	1.06	1.21	1.05	0.82	0.57	0.57	0.96
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.46	2.29	1.83	1.40	0.98	0.58	1.00	1.43	1.86	2.32	2.49
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EB-E2 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 EB-E3

BEAM: EB(E3-E4) FLOOR: 2

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-2.87	-1.62	-0.62	-0.57	-0.57	-0.57	-0.57	-0.57	-0.57	-1.55	-2.79
Mu(+), ton-m:	0.96	0.57	0.57	0.82	1.05	1.21	1.06	0.84	0.57	0.57	0.93
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.49	2.32	1.86	1.43	1.00	0.58	0.98	1.40	1.83	2.29	2.46
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EB-E3 — 12 #3 @ 7.5 22 #3 @ 17.5 12 #3 @ 7.5 — EB-E4

BEAM: EB(E4-E5) FLOOR: 2

Length: L = 5.88 m Lu = 5.58 m a = 0.15 m c = 0.15 m Section: b = 40.0 cm h = 40.0 cm Sec: 40x40 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-3.17	-1.86	-0.78	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-1.24	-2.36
Mu(+), ton-m:	1.06	0.63	0.63	0.76	1.04	1.30	1.30	1.21	0.89	0.63	0.79
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	2.81	2.66	2.24	1.82	1.39	0.96	1.04	1.47	1.90	2.33	2.47
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EB-E4 — 12 #3 @ 7.5 21 #3 @ 17.5 12 #3 @ 7.5 — EB-E5

BEAM: EB(E1-E2) FLOOR: 3

Length: L = 5.88 m Lu = 5.58 m a = 0.15 m c = 0.15 m Section: b = 25.0 cm h = 35.0 cm Sec: 25x35 Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-0.75	-0.39	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.26	-0.62	-1.05
Mu(+), ton-m:	0.25	0.21	0.23	0.35	0.39	0.40	0.32	0.22	0.21	0.21	0.35
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.79	0.74	0.60	0.46	0.32	0.29	0.43	0.57	0.71	0.85	0.90
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

EB-E1 — 11 #3 @ 7.5 26 #3 @ 15 11 #3 @ 7.5 — EB-E2

BEAM: EB(E2-E3) FLOOR: 3

Length: L = 6.00 m Lu = 5.70 m a = 0.15 m c = 0.15 m Section: b = 25.0 cm h = 35.0 cm Sec: 25x35 Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-0.86	-0.46	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.20	-0.54	-0.96
Mu(+), ton-m:	0.29	0.19	0.19	0.30	0.38	0.42	0.35	0.26	0.19	0.19	0.32
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.82	0.75	0.60	0.45	0.31	0.20	0.35	0.49	0.63	0.79	0.86
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

EB-E2 — 11 #3 @ 7.5 27 #3 @ 15 11 #3 @ 7.5 — EB-E3

BEAM: EB(E3-E4) FLOOR: 3

Length: L = 6.00 m, Lu = 5.70 m, a = 0.15 m, c = 0.15 m; Section: b = 25.0 cm, h = 35.0 cm; Sec: 25x35; Mat: RConcrete1

X, m:	0.15	0.72	1.29	1.86	2.43	3.00	3.57	4.14	4.71	5.28	5.85
Mu(-), ton-m:	-0.96	-0.54	-0.20	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.46	-0.86
Mu(+), ton-m:	0.32	0.19	0.19	0.26	0.35	0.42	0.38	0.30	0.19	0.19	0.29
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.86	0.79	0.63	0.49	0.35	0.20	0.31	0.45	0.60	0.75	0.82
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

EB-E3 — 11 #3 @ 7.5 27 #3 @ 15 11 #3 @ 7.5 — EB-E4

BEAM: EB(E4-E5) FLOOR: 3

Length: L = 5.88 m, Lu = 5.58 m, a = 0.15 m, c = 0.15 m; Section: b = 25.0 cm, h = 35.0 cm; Sec: 25x35; Mat: RConcrete1

X, m:	0.15	0.71	1.27	1.82	2.38	2.94	3.50	4.05	4.61	5.17	5.72
Mu(-), ton-m:	-1.05	-0.62	-0.26	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.39	-0.75
Mu(+), ton-m:	0.35	0.21	0.21	0.22	0.32	0.40	0.39	0.35	0.23	0.21	0.25
As(-), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
As(+), cm2:	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72	2.72
Vu, ton:	0.90	0.85	0.71	0.57	0.43	0.29	0.32	0.46	0.60	0.74	0.79
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

EB-E4 — 11 #3 @ 7.5 26 #3 @ 15 11 #3 @ 7.5 — EB-E5

BEAM: E1(EC'-EC) FLOOR: 2

Length: L = 5.20 m, Lu = 4.90 m, a = 0.08 m, c = 0.23 m; Section: b = 40.0 cm, h = 40.0 cm; Sec: 40x40; Mat: RConcrete1

X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-1.08	-2.04	-3.17
Mu(+), ton-m:	0.63	0.68	1.15	1.40	1.51	1.47	1.24	0.85	0.63	0.63	1.06
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.91	1.83	1.46	1.08	0.82	1.18	1.56	1.93	2.31	2.68	2.76
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E1 — 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 — EC-E1

BEAM: E1(EC-EB) FLOOR: 2

Length: L = 6.25 m, Lu = 5.80 m, a = 0.23 m, c = 0.23 m; Section: b = 40.0 cm, h = 40.0 cm; Sec: 40x40; Mat: RConcrete1

X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.91	-1.89	-1.04	-0.58	-0.58	-0.58	-0.58	-0.58	-0.80	-1.56	-2.48
Mu(+), ton-m:	0.97	0.58	0.69	0.82	0.88	0.95	0.93	1.00	0.93	0.80	0.83
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.88	1.80	1.55	1.30	1.06	0.81	0.87	1.12	1.37	1.62	1.70
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E1 — 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 — EB-E1

BEAM: E1(EB-EA') FLOOR: 2

Length:	L = 2.10 m	a = 0.23 m	Section:	b = 40.0 cm	Sec:	40x40				
	Lu = 1.88 m	c = 0.00 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-1.56	-1.26	-1.00	-0.77	-0.57	-0.40	-0.26	-0.15	-0.07	-0.02	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
As(+), cm2:	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02
Vu, ton:	1.32	1.32	1.32	1.16	0.99	0.83	0.66	0.50	0.33	0.17	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

EB-E1 — 12 #3 @ 17.5 — EA'-E1

BEAM: E2(EC'-EC) FLOOR: 2

Length:	L = 5.20 m	a = 0.08 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 4.90 m	c = 0.23 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.30	-2.44	-3.93
Mu(+), ton-m:	0.79	0.86	1.51	1.85	1.89	1.65	1.31	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.44	2.33	1.85	1.36	1.00	1.47	1.95	2.44	2.93	3.41	3.52
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E2 — 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 — EC-E2

BEAM: E2(EC-EB) FLOOR: 2

Length:	L = 6.25 m	a = 0.23 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 5.80 m	c = 0.23 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.31	-1.53	-0.87	-0.46	-0.46	-0.46	-0.46	-0.46	-0.66	-1.23	-1.93
Mu(+), ton-m:	0.77	0.46	0.56	0.76	0.90	0.92	0.84	0.80	0.75	0.66	0.64
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.46	1.40	1.21	1.02	0.84	0.65	0.67	0.85	1.04	1.22	1.29
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E2 — 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 — EB-E2

BEAM: E2(EB-EA') FLOOR: 2

Length:	L = 2.10 m	a = 0.23 m	Section:	b = 30.0 cm	Sec:	30x40				
	Lu = 1.88 m	c = 0.00 m		h = 40.0 cm	Mat:	RConcrete1				
X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.11	-1.71	-1.36	-1.04	-0.77	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.80	1.80	1.80	1.58	1.35	1.13	0.90	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

EB-E2 — 12 #3 @ 17.5 — EA'-E2

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA E - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:54:21 p.m. 07/11/2018

BEAM: E3(EC'-EC) FLOOR: 2

	Length:	L = 5.20 m Lu = 4.90 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.29	-2.44	-3.94
Mu(+), ton-m:	0.79	0.88	1.53	1.88	1.92	1.67	1.32	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.46	2.35	1.86	1.37	1.00	1.47	1.96	2.45	2.94	3.43	3.54
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E3 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 EC-E3

BEAM: E3(EC-EB) FLOOR: 2

	Length:	L = 6.25 m Lu = 5.80 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.28	-1.51	-0.85	-0.46	-0.46	-0.46	-0.46	-0.46	-0.65	-1.21	-1.91
Mu(+), ton-m:	0.76	0.46	0.54	0.76	0.90	0.92	0.84	0.79	0.73	0.64	0.64
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.45	1.39	1.20	1.02	0.83	0.65	0.66	0.84	1.03	1.22	1.28
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E3 12 #3 @ 7.5 23 #3 @ 17.5 12 #3 @ 7.5 EB-E3

BEAM: E3(EB-EA') FLOOR: 2

	Length:	L = 2.10 m Lu = 1.88 m	a = 0.23 m c = 0.00 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.13	-1.72	-1.37	-1.05	-0.78	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.81	1.81	1.81	1.59	1.36	1.13	0.91	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

EB-E3 12 #3 @ 17.5 EA'-E3

BEAM: E4(EC'-EC) FLOOR: 2

	Length:	L = 5.20 m Lu = 4.90 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-0.79	-1.30	-2.45	-3.94
Mu(+), ton-m:	0.79	0.87	1.51	1.85	1.89	1.65	1.32	0.80	0.79	0.79	1.31
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	2.44	2.33	1.85	1.36	1.00	1.47	1.96	2.44	2.93	3.41	3.52
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E4 12 #3 @ 7.5 17 #3 @ 17.5 12 #3 @ 7.5 EC-E4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA E - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:54:21 p.m. 07/11/2018

BEAM: E4(EC-EB) FLOOR: 2

	Length:	L = 6.25 m Lu = 5.80 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.33	-1.54	-0.88	-0.47	-0.47	-0.47	-0.47	-0.47	-0.68	-1.25	-1.95
Mu(+), ton-m:	0.78	0.47	0.57	0.76	0.90	0.92	0.84	0.80	0.76	0.68	0.65
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.47	1.40	1.22	1.03	0.84	0.66	0.67	0.86	1.04	1.23	1.29
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E4 — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — EB-E4

BEAM: E4(EB-EA') FLOOR: 2

	Length:	L = 2.10 m Lu = 1.88 m	a = 0.23 m c = 0.00 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.11	-1.71	-1.36	-1.04	-0.77	-0.54	-0.35	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.80	1.80	1.80	1.58	1.35	1.13	0.90	0.68	0.45	0.23	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

EB-E4 — 12 #3 @ 17.5 — EA'-E4

BEAM: E5(EC'-EC) FLOOR: 2

	Length:	L = 5.20 m Lu = 4.90 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.57	1.06	1.55	2.04	2.53	3.02	3.51	4.00	4.49	4.97
Mu(-), ton-m:	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.54	-0.93	-1.75	-2.71
Mu(+), ton-m:	0.54	0.57	0.98	1.21	1.27	1.24	1.06	0.73	0.54	0.54	0.90
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.65	1.58	1.26	0.94	0.70	1.01	1.33	1.65	1.97	2.29	2.36
Tu, ton-m:	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC'-E5 — 12 #3 @ 7.5 | 17 #3 @ 17.5 | 12 #3 @ 7.5 — EC-E5

BEAM: E5(EC-EB) FLOOR: 2

	Length:	L = 6.25 m Lu = 5.80 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.80	1.39	1.97	2.55	3.13	3.71	4.29	4.87	5.45	6.03
Mu(-), ton-m:	-2.33	-1.54	-0.87	-0.47	-0.47	-0.47	-0.47	-0.47	-0.68	-1.28	-2.00
Mu(+), ton-m:	0.78	0.50	0.61	0.68	0.68	0.72	0.71	0.79	0.76	0.69	0.67
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.45	1.39	1.20	1.01	0.83	0.64	0.69	0.88	1.06	1.25	1.31
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	7.50	7.50

DESIGN

EC-E5 — 12 #3 @ 7.5 | 23 #3 @ 17.5 | 12 #3 @ 7.5 — EB-E5

BEAM: E5(EB-EA') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-1.35	-1.10	-0.87	-0.67	-0.49	-0.35	-0.22	-0.13	-0.06	-0.02	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
As(+), cm2:	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76	3.76
Vu, ton:	1.15	1.15	1.15	1.01	0.86	0.72	0.58	0.43	0.29	0.14	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50

DESIGN

EB-E5 12 #3 @ 17.5 EA'-E5

BRACE SECTIONS

Number of prismatic sections = 1

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	2X254X67X3.0	Box/Tub	13.40	25.40	0.30	0.30	-	-	22.9	2029	759	1791

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	TRANSVERSE REINFORCEMENT XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
E1(EC-EB)	2-3	2X254X67X3.0	630	630	1.311*	0.002	0.000
E2(EC-EB)	2-3	2X254X67X3.0	630	630	2.634*	0.003	0.000
E3(EC-EB)	2-3	2X254X67X3.0	630	630	2.634*	0.003	0.000
E4(EC-EB)	2-3	2X254X67X3.0	630	630	2.633*	0.003	0.000
E5(EC-EB)	2-3	2X254X67X3.0	630	630	1.308*	0.002	0.000

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA
File: C:\RCB\Structures\JARDINTOCANCIPA-F-viento.rcb

Engineer: Jose Vicente Vinueza
09:59:36 p.m. 07/11/2018

LOAD COMBINATIONS

No	Load combination
1	1.4D0 + 1.4DL2 + 1.4DL
2	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + 1.6SL
3	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + 1.6SL
4	1.2D0 + 1.2DL2 + 1.2DL + .5LL + 1.6SL
5	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + 1.6LL + .5SL
6	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL2 + .5SL
7	1.2D0 + 1.2DL2 + 1.2DL + 1.6LL + .5SL
8	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLX
9	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLX
10	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL + WLY
11	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .5SL - WLY
12	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL+.75WLX+.75WLY
13	1.2D0+1.2DL2+1.2DL+.5LL2+.5LL+.5SL-.75WLX-.75WLY
14	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLX
15	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLX
16	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .5WLY
17	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .5WLY
18	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL + .375WLX + .375WLY
19	1.2D0 + 1.2DL2 + 1.2DL + 1.6SL - .375WLX - .375WLY
20	.9D0 + .9DL2 + .9DL + WLX
21	.9D0 + .9DL2 + .9DL - WLX
22	.9D0 + .9DL2 + .9DL + WLY
23	.9D0 + .9DL2 + .9DL - WLY
24	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX + .3EQY
25	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX - .3EQY
26	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + EQX - .3EQY
27	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - EQX + .3EQY
28	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX + EQY
29	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX - EQY
30	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL - .3EQX + EQY
31	1.2D0 + 1.2DL2 + 1.2DL + .5LL2 + .5LL + .2SL + .3EQX - EQY
32	.9D0 + .9DL2 + .9DL + EQX + .3EQY
33	.9D0 + .9DL2 + .9DL - EQX - .3EQY
34	.9D0 + .9DL2 + .9DL + EQX - .3EQY
35	.9D0 + .9DL2 + .9DL - EQX + .3EQY
36	.9D0 + .9DL2 + .9DL + .3EQX + EQY
37	.9D0 + .9DL2 + .9DL - .3EQX - EQY
38	.9D0 + .9DL2 + .9DL - .3EQX + EQY
39	.9D0 + .9DL2 + .9DL + .3EQX - EQY

MATERIALS

Number of materials = 2

REINFORCED CONCRETE

Mat	Name	f'c Kg/cm2	fy Kg/cm2	fys1 Kg/cm2	fys2 Kg/cm2	E Kg/cm2	G Kg/cm2	w Kg/m3
1	RConcrete1	210	4200	4200	4200	218540	87430	2400.0

COLUMN SECTIONS

Number of prismatic sections = 2

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x45	Rectang	30.00	45.00	-	-	-	-	1350.0	227812	101250	234900
2	FI150x5.0	Pipe	15.00	15.00	0.50	0.50	-	-	22.8	599	599	1199

Design Results - Columns (DMO)

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
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Column	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	XTIES	Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm
FB-F1	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	24	1.58	0.05	2.04	0.0100	13..
				1		---	1 (h)	Bot	24	1.58	1.02	4.56	0.0100	13..
FB-F1	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	27	12.14	1.09	5.46	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	30	10.70	6.04	2.72	0.0100	13..
FA-F1	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	25	13.64	4.90	6.48	0.0160	21..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	25	13.64	3.55	5.94	0.0125	16.
FB-F2	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.56	3.78	0.16	0.0100	13..
				1		---	1 (h)	Bot	25	4.28	2.60	1.87	0.0100	13..
FB-F2	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	32	13.30	3.94	3.16	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	24	19.77	4.95	3.16	0.0100	13..
FA-F2	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	25	22.38	7.75	5.19	0.0177	23.
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	25	22.38	4.48	5.37	0.0119	16.
FB-F3	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.57	3.80	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.49	3.59	0.59	0.0100	13..
FB-F3	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	32	13.24	3.41	3.40	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	24	19.65	4.27	3.40	0.0100	13..
FA-F3	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	25	22.34	7.28	5.40	0.0171	23.
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	25	22.34	3.78	5.50	0.0107	14.
FB-F4	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.55	3.81	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.46	3.54	0.32	0.0100	13..
FB-F4	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	19.77	3.34	3.64	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	36	12.56	6.67	1.11	0.0100	13..
FA-F4	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	25	22.49	6.78	5.41	0.0160	21..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	25	22.49	3.06	5.51	0.0101	13.
FB-F5	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.57	3.80	0.16	0.0100	13..
				1		---	1 (h)	Bot	29	4.47	3.44	0.11	0.0100	13..
FB-F5	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	19.93	2.81	3.87	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	28	19.01	6.98	1.48	0.0100	13..
FA-F5	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	26	22.34	7.25	5.40	0.0171	23.
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	26	22.34	3.75	5.49	0.0107	14.
FB-F6	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	2	6.56	3.78	0.16	0.0100	13..
				1		---	1 (h)	Bot	26	4.29	2.70	1.80	0.0100	13..
FB-F6	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	35	13.28	4.11	3.06	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	27	19.75	5.15	3.04	0.0100	13..
FA-F6	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	26	22.36	7.98	4.98	0.0171	23.
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	26	22.36	4.80	5.25	0.0119	16.
FB-F7	2	0.80	0.40	1	30x45	4 #3 @ 10 cm	2 (b)	Top	25	1.75	0.61	2.22	0.0100	13..
				1		---	1 (h)	Bot	25	1.75	0.13	4.72	0.0100	13..
FB-F7	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	24	12.14	1.03	5.51	0.0100	13..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	28	10.68	6.15	2.85	0.0100	13..
FA-F7	1	3.00	2.68	1	30x45	6 #3 @ 10 cm (end)	2 (b)	Top	26	13.64	4.14	5.23	0.0113	15..
				1		8 #3 @ 20 cm (ctr)	1 (h)	Bot	26	13.64	3.73	5.89	0.0125	16.

BEAM SECTIONS

Number of prismatic sections = 3

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	30x40	Rectang	30.00	40.00	-	-	-	-	1200.0	160000	90000	189900
2	50x40	Rectang	50.00	40.00	-	-	-	-	2000.0	266667	416667	529067
3	40x40	Rectang	40.00	40.00	-	-	-	-	1600.0	213333	213333	315733

Design Results - Beams (DMO)

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
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BEAM: FA'(F7-F6) FLOOR: 2

Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1				
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.69	4.21	4.73	5.25
Mu(-), ton-m:	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-2.97	-6.06
Mu(+), ton-m:	1.21	1.97	3.18	3.99	4.25	3.95	3.06	1.61	1.21	1.21	2.02
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	4.57	4.23	3.24	2.18	1.36	2.30	3.39	4.42	5.39	6.36	6.70
Tu, ton-m:	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F7 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F6

BEAM: FA'(F6-F5) FLOOR: 2

Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1				
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.70	4.21	4.73	5.25
Mu(-), ton-m:	-6.06	-3.43	-1.34	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-2.40	-4.76
Mu(+), ton-m:	2.02	1.21	1.21	1.21	1.21	1.62	1.46	1.21	1.21	1.21	1.59
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	5.24	4.87	3.79	2.71	1.63	0.59	1.13	2.21	3.29	4.37	4.74
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F6 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F5

BEAM: FA'(F5-F4) FLOOR: 2

Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1				
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.70	4.21	4.73	5.25
Mu(-), ton-m:	-4.77	-2.32	-1.02	-1.02	-1.02	-1.02	-1.02	-1.02	-1.02	-2.59	-5.12
Mu(+), ton-m:	1.59	1.02	1.02	1.02	1.83	2.09	1.76	1.02	1.02	1.02	1.71
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	4.78	4.41	3.33	2.25	1.17	0.30	1.30	2.38	3.46	4.54	4.91
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F5 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F4

BEAM: FA'(F4-F3) FLOOR: 2

Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1				
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.70	4.21	4.73	5.25
Mu(-), ton-m:	-5.12	-2.59	-1.02	-1.02	-1.02	-1.02	-1.02	-1.02	-1.02	-2.32	-4.77
Mu(+), ton-m:	1.71	1.02	1.02	1.02	1.76	2.09	1.83	1.02	1.02	1.02	1.59
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	4.91	4.54	3.46	2.38	1.30	0.30	1.17	2.25	3.33	4.41	4.78
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F4 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F3

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:59:36 p.m. 07/11/2018

BEAM: FA'(F3-F2) FLOOR: 2

	Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1			
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.70	4.21	4.73	5.25
Mu(-), ton-m:	-4.76	-2.40	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.34	-3.43	-6.06
Mu(+), ton-m:	1.59	1.21	1.21	1.21	1.46	1.62	1.21	1.21	1.21	1.21	2.02
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	4.74	4.37	3.29	2.21	1.13	0.59	1.63	2.71	3.79	4.87	5.24
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F3 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F2

BEAM: FA'(F2-F1) FLOOR: 2

	Length:	L = 5.32 m Lu = 5.17 m	a = 0.08 m c = 0.08 m	Section:	b = 50.0 cm h = 40.0 cm	Sec: Mat:	50x40 RConcrete1			
X, m:	0.08	0.59	1.11	1.63	2.14	2.66	3.18	3.69	4.21	4.73	5.25
Mu(-), ton-m:	-6.06	-2.97	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21
Mu(+), ton-m:	2.02	1.21	1.21	1.61	3.06	3.95	4.25	3.99	3.18	1.97	1.21
As(-), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
As(+), cm2:	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Vu, ton:	6.70	6.36	5.39	4.42	3.38	2.30	1.36	2.18	3.24	4.23	4.57
Tu, ton-m:	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Stirrup:	#3+1r	#3+1r	#3	#3	#3	#3	#3	#3	#3	#3+1r	#3+1r
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F2 12 #3+1r @ 7.5 22 #3 @ 15 12 #3+1r @ 7.5 FA'-F1

BEAM: FA(F7-F6) FLOOR: 2

	Length:	L = 5.82 m Lu = 5.52 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-6.11	-3.65	-1.76	-1.44	-1.44	-1.44	-1.44	-1.44	-2.00	-4.38	-7.22
Mu(+), ton-m:	2.04	2.56	3.07	3.38	3.24	2.76	2.35	2.12	1.60	1.44	2.41
As(-), cm2:	5.05	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.56	6.04
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.19	4.87	4.03	3.20	2.37	2.19	3.02	3.86	4.69	5.52	5.84
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F7 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F6

BEAM: FA(F6-F5) FLOOR: 2

	Length:	L = 5.82 m Lu = 5.52 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-6.58	-4.02	-1.91	-1.32	-1.32	-1.32	-1.32	-1.32	-1.75	-3.77	-6.25
Mu(+), ton-m:	2.19	1.32	1.32	1.81	2.05	2.17	2.21	2.07	1.56	1.32	2.08
As(-), cm2:	5.47	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.17
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.48	5.16	4.32	3.49	2.66	1.83	2.49	3.33	4.16	4.99	5.31
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F6 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F5

BEAM: FA(F5-F4) FLOOR: 2

Length: L = 5.82 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.52 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-6.42	-3.88	-1.81	-1.29	-1.29	-1.29	-1.29	-1.29	-1.81	-3.89	-6.43
Mu(+), ton-m:	2.14	1.29	1.55	2.06	2.23	2.26	2.22	2.04	1.53	1.29	2.14
As(-), cm2:	5.32	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.33
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.37	5.05	4.22	3.39	2.55	1.73	2.56	3.39	4.23	5.06	5.38
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F5 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F4

BEAM: FA(F4-F3) FLOOR: 2

Length: L = 5.82 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.52 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-6.42	-3.88	-1.81	-1.28	-1.28	-1.28	-1.28	-1.28	-1.81	-3.89	-6.42
Mu(+), ton-m:	2.14	1.28	1.53	2.04	2.22	2.26	2.23	2.05	1.54	1.28	2.14
As(-), cm2:	5.32	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.33
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.37	5.05	4.22	3.39	2.56	1.72	2.55	3.39	4.22	5.05	5.37
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F4 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F3

BEAM: FA(F3-F2) FLOOR: 2

Length: L = 5.82 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.52 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-6.25	-3.77	-1.75	-1.31	-1.31	-1.31	-1.31	-1.31	-1.89	-4.00	-6.55
Mu(+), ton-m:	2.08	1.31	1.56	2.07	2.22	2.18	2.06	1.82	1.31	1.31	2.18
As(-), cm2:	5.17	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.44
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.31	4.99	4.16	3.33	2.49	1.81	2.65	3.48	4.31	5.15	5.47
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F3 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F2

BEAM: FA(F2-F1) FLOOR: 2

Length: L = 5.82 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.52 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.70	1.25	1.81	2.36	2.91	3.46	4.02	4.57	5.12	5.67
Mu(-), ton-m:	-7.24	-4.40	-2.01	-1.45	-1.45	-1.45	-1.45	-1.45	-1.75	-3.63	-6.09
Mu(+), ton-m:	2.41	1.45	1.58	2.10	2.34	2.76	3.23	3.37	3.07	2.56	2.03
As(-), cm2:	6.05	3.57	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.03
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.85	5.53	4.70	3.86	3.03	2.20	2.36	3.19	4.03	4.86	5.18
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F2 12 #3 @ 7.5 25 #3 @ 15 12 #3 @ 7.5 FA-F1

BEAM: FB(F7-F6) FLOOR: 2

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-5.99	-3.03	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-1.51	-4.13	-7.39
Mu(+), ton-m:	2.00	1.48	1.48	2.55	3.12	3.35	2.77	1.84	1.48	1.48	2.46
As(-), cm2:	4.94	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	6.20
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.90	5.36	4.17	3.14	2.11	1.58	2.61	3.64	4.73	5.94	6.48
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F7 11 #3 @ 7.5 29 #3 @ 15 11 #3 @ 7.5 FB-F6

BEAM: FB(F6-F5) FLOOR: 2

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-6.66	-3.59	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-3.72	-6.81
Mu(+), ton-m:	2.22	1.36	1.36	1.94	2.70	3.09	2.67	1.87	1.36	1.36	2.27
As(-), cm2:	5.53	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.67
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.88	5.34	4.13	3.02	1.99	1.01	2.04	3.07	4.18	5.40	5.93
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F6 11 #3 @ 7.5 29 #3 @ 15 11 #3 @ 7.5 FB-F5

BEAM: FB(F5-F4) FLOOR: 2

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-6.67	-3.61	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-3.65	-6.73
Mu(+), ton-m:	2.22	1.35	1.35	1.90	2.69	3.09	2.68	1.88	1.35	1.35	2.24
As(-), cm2:	5.55	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.60
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.87	5.33	4.12	3.00	1.97	0.96	1.99	3.02	4.14	5.35	5.89
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F5 11 #3 @ 7.5 29 #3 @ 15 11 #3 @ 7.5 FB-F4

BEAM: FB(F4-F3) FLOOR: 2

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-6.73	-3.65	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-1.35	-3.60	-6.66
Mu(+), ton-m:	2.24	1.35	1.35	1.88	2.68	3.09	2.69	1.90	1.35	1.35	2.22
As(-), cm2:	5.59	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.54
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.89	5.35	4.14	3.02	1.99	0.96	1.97	3.00	4.11	5.33	5.86
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F4 11 #3 @ 7.5 29 #3 @ 15 11 #3 @ 7.5 FB-F3

BEAM: FB(F3-F2) FLOOR: 2

	Length:	L = 6.38 m Lu = 6.08 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-6.80	-3.71	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-1.36	-3.59	-6.65
Mu(+), ton-m:	2.27	1.36	1.36	1.87	2.67	3.09	2.70	1.93	1.36	1.36	2.22
As(-), cm2:	5.66	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.53
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	5.93	5.39	4.18	3.06	2.03	1.01	1.99	3.01	4.12	5.34	5.87
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FB-F3			11 #3 @ 7.5	29 #3 @ 15	11 #3 @ 7.5					FB-F2

BEAM: FB(F2-F1) FLOOR: 2

	Length:	L = 6.38 m Lu = 6.08 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-7.38	-4.11	-1.50	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-3.03	-5.98
Mu(+), ton-m:	2.46	1.48	1.48	1.84	2.77	3.35	3.12	2.55	1.48	1.48	1.99
As(-), cm2:	6.18	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.93
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	6.47	5.94	4.72	3.63	2.60	1.57	2.10	3.13	4.16	5.36	5.89
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FB-F2			11 #3 @ 7.5	29 #3 @ 15	11 #3 @ 7.5					FB-F1

BEAM: FB(F7-F6) FLOOR: 3

	Length:	L = 6.38 m Lu = 6.08 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-1.54	-0.88	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.76	-1.46	-2.28
Mu(+), ton-m:	0.51	0.60	0.75	0.82	0.77	0.66	0.58	0.48	0.46	0.46	0.76
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.26	1.18	0.98	0.78	0.58	0.65	0.85	1.05	1.25	1.45	1.54
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FB-F7			12 #3 @ 7.5	28 #3 @ 15	12 #3 @ 7.5					FB-F6

BEAM: FB(F6-F5) FLOOR: 3

	Length:	L = 6.38 m Lu = 6.08 m	a = 0.15 m c = 0.15 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-1.60	-0.92	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.63	-1.28	-2.05
Mu(+), ton-m:	0.53	0.43	0.61	0.73	0.72	0.67	0.62	0.52	0.41	0.41	0.68
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.28	1.19	0.99	0.79	0.59	0.56	0.76	0.96	1.16	1.36	1.45
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FB-F6			12 #3 @ 7.5	28 #3 @ 15	12 #3 @ 7.5					FB-F5

BEAM: FB(F5-F4) FLOOR: 3

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-1.74	-1.03	-0.45	-0.37	-0.37	-0.37	-0.37	-0.37	-0.52	-1.13	-1.86
Mu(+), ton-m:	0.58	0.37	0.46	0.62	0.66	0.65	0.63	0.57	0.40	0.37	0.62
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.31	1.22	1.02	0.82	0.62	0.47	0.67	0.87	1.07	1.27	1.36
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F5 12 #3 @ 7.5 28 #3 @ 15 12 #3 @ 7.5 FB-F4

BEAM: FB(F4-F3) FLOOR: 3

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-1.86	-1.13	-0.52	-0.37	-0.37	-0.37	-0.37	-0.37	-0.45	-1.03	-1.73
Mu(+), ton-m:	0.62	0.37	0.40	0.57	0.63	0.65	0.66	0.61	0.46	0.37	0.58
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.36	1.27	1.07	0.87	0.67	0.47	0.62	0.82	1.02	1.22	1.31
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F4 12 #3 @ 7.5 28 #3 @ 15 12 #3 @ 7.5 FB-F3

BEAM: FB(F3-F2) FLOOR: 3

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-2.05	-1.28	-0.63	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.92	-1.59
Mu(+), ton-m:	0.68	0.41	0.41	0.52	0.61	0.67	0.72	0.73	0.61	0.43	0.53
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.44	1.36	1.16	0.96	0.76	0.56	0.59	0.79	0.99	1.19	1.28
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F3 12 #3 @ 7.5 28 #3 @ 15 12 #3 @ 7.5 FB-F2

BEAM: FB(F2-F1) FLOOR: 3

Length: L = 6.38 m a = 0.15 m Section: b = 30.0 cm Sec: 30x40
Lu = 6.08 m c = 0.15 m h = 40.0 cm Mat: RConcrete1

X, m:	0.15	0.76	1.37	1.97	2.58	3.19	3.80	4.40	5.01	5.62	6.23
Mu(-), ton-m:	-2.28	-1.46	-0.76	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.88	-1.53
Mu(+), ton-m:	0.76	0.46	0.46	0.47	0.58	0.66	0.77	0.82	0.75	0.59	0.51
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.54	1.45	1.25	1.05	0.85	0.65	0.57	0.77	0.97	1.17	1.26
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FB-F2 12 #3 @ 7.5 28 #3 @ 15 12 #3 @ 7.5 FB-F1

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:59:37 p.m. 07/11/2018

BEAM: F7(FA'-FA) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.46	-3.63	-6.32
Mu(+), ton-m:	1.26	1.68	3.07	3.89	4.14	3.86	3.31	2.32	1.26	1.26	2.11
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.23
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	4.35	4.02	3.15	2.29	1.42	2.12	2.99	3.86	4.72	5.59	5.92
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F7 11 #3 @ 7.5 25 #3 @ 15 11 #3 @ 7.5 FA-F7

BEAM: F7(FA-FB) FLOOR: 2

	Length:	L = 6.35 m Lu = 5.90 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.81	1.40	1.99	2.58	3.17	3.76	4.35	4.94	5.53	6.12
Mu(-), ton-m:	-4.90	-3.64	-2.50	-1.48	-0.98	-0.98	-0.98	-0.98	-1.10	-1.73	-2.44
Mu(+), ton-m:	1.63	0.98	0.98	0.98	0.98	0.98	0.98	1.39	1.80	2.09	2.27
As(-), cm2:	3.99	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.64	2.56	2.37	2.18	1.99	1.80	1.61	1.42	1.47	1.66	1.74
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F7 12 #3 @ 7.5 27 #3 @ 15 12 #3 @ 7.5 FB-F7

BEAM: F7(FB-FC') FLOOR: 2

	Length:	L = 2.10 m Lu = 1.88 m	a = 0.23 m c = 0.00 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.08	-1.69	-1.34	-1.03	-0.76	-0.53	-0.34	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.82	1.82	1.77	1.55	1.33	1.11	0.89	0.67	0.44	0.22	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F7 13 #3 @ 15 FC'-F7

BEAM: F6(FA'-FA) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-5.45	-10.45
Mu(+), ton-m:	2.09	2.47	5.05	6.60	7.12	6.66	5.22	3.25	2.09	2.09	3.48
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.47	9.08
As(+), cm2:	3.37	3.37	4.12	5.48	5.95	5.53	4.27	3.37	3.37	3.37	3.37
Vu, ton:	7.73	7.15	5.59	3.89	2.40	3.52	5.08	6.63	8.19	9.74	10.33
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F6 11 #3 @ 7.5 25 #3 @ 15 11 #3 @ 7.5 FA-F6

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:59:37 p.m. 07/11/2018

BEAM: F6(FA-FB) FLOOR: 2

Length: L = 6.35 m, Lu = 5.90 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.81	1.40	1.99	2.58	3.17	3.76	4.35	4.94	5.53	6.12
Mu(-), ton-m:	-5.60	-4.25	-3.01	-1.90	-1.12	-1.12	-1.12	-1.12	-1.12	-1.59	-2.22
Mu(+), ton-m:	1.87	1.12	1.12	1.12	1.12	1.12	1.12	1.35	1.85	2.24	2.51
As(-), cm2:	4.60	3.44	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.01	2.93	2.74	2.55	2.36	2.17	1.98	1.79	1.60	1.64	1.72
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F6 — 12 #3 @ 7.5 27 #3 @ 15 12 #3 @ 7.5 — FB-F6

BEAM: F6(FB-FC') FLOOR: 2

Length: L = 2.10 m, Lu = 1.88 m, a = 0.23 m, c = 0.00 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-3.56	-2.88	-2.28	-1.76	-1.30	-0.91	-0.59	-0.34	-0.16	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.10	3.10	3.03	2.65	2.27	1.89	1.52	1.14	0.76	0.38	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F6 — 13 #3 @ 15 — FC'-F6

BEAM: F5(FA'-FA) FLOOR: 2

Length: L = 5.75 m, Lu = 5.45 m, a = 0.08 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.08	0.62	1.16	1.71	2.25	2.80	3.34	3.89	4.43	4.98	5.52
Mu(-), ton-m:	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-5.42	-10.48
Mu(+), ton-m:	2.10	2.62	5.17	6.70	7.20	6.72	5.26	3.24	2.10	2.10	3.49
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.45	9.11
As(+), cm2:	3.37	3.37	4.23	5.57	6.02	5.59	4.31	3.37	3.37	3.37	3.37
Vu, ton:	7.69	7.11	5.55	3.89	2.42	3.56	5.11	6.67	8.22	9.77	10.36
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F5 — 11 #3 @ 7.5 25 #3 @ 15 11 #3 @ 7.5 — FA-F5

BEAM: F5(FA-FB) FLOOR: 2

Length: L = 6.35 m, Lu = 5.90 m, a = 0.23 m, c = 0.23 m, Section: b = 30.0 cm, h = 40.0 cm, Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.82	1.41	2.00	2.59	3.18	3.77	4.36	4.95	5.54	6.13
Mu(-), ton-m:	-5.52	-4.19	-2.97	-1.86	-1.10	-1.10	-1.10	-1.10	-1.10	-1.52	-2.13
Mu(+), ton-m:	1.84	1.10	1.10	1.10	1.10	1.10	1.10	1.33	1.82	2.19	2.45
As(-), cm2:	4.53	3.39	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.99	2.91	2.72	2.53	2.34	2.15	1.96	1.77	1.58	1.61	1.69
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F5 — 12 #3 @ 7.5 27 #3 @ 15 12 #3 @ 7.5 — FB-F5

Company: JOSE VICENTE VINUEZA V. Engineer: Jose Vicente Vinueza
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA 09:59:37 p.m. 07/11/2018

BEAM: F5(FB-FC') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.87 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.97	1.16	1.35	1.54	1.72	1.91	2.10
Mu(-), ton-m:	-3.56	-2.88	-2.28	-1.75	-1.30	-0.91	-0.59	-0.34	-0.16	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.10	3.10	3.03	2.65	2.27	1.89	1.51	1.14	0.76	0.38	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F5 13 #3 @ 15 FC'-F5

BEAM: F4(FA'-FA) FLOOR: 2

Length: L = 5.75 m a = 0.08 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.45 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-5.37	-10.46
Mu(+), ton-m:	2.09	2.60	5.16	6.69	7.19	6.71	5.26	3.21	2.09	2.09	3.49
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.40	9.09
As(+), cm2:	3.37	3.37	4.22	5.56	6.01	5.58	4.30	3.37	3.37	3.37	3.37
Vu, ton:	7.69	7.10	5.55	3.89	2.41	3.55	5.10	6.66	8.21	9.77	10.35
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F4 11 #3 @ 7.5 25 #3 @ 15 11 #3 @ 7.5 FA-F4

BEAM: F4(FA-FB) FLOOR: 2

Length: L = 6.35 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 5.90 m c = 0.23 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.81	1.41	2.00	2.59	3.17	3.76	4.35	4.94	5.53	6.12
Mu(-), ton-m:	-5.44	-4.12	-2.91	-1.83	-1.09	-1.09	-1.09	-1.09	-1.09	-1.44	-2.04
Mu(+), ton-m:	1.81	1.09	1.09	1.09	1.09	1.09	1.09	1.29	1.77	2.12	2.37
As(-), cm2:	4.46	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.96	2.88	2.69	2.50	2.31	2.12	1.93	1.74	1.55	1.58	1.66
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F4 12 #3 @ 7.5 27 #3 @ 15 12 #3 @ 7.5 FB-F4

BEAM: F4(FB-FC') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.87 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.97	1.16	1.35	1.54	1.72	1.91	2.10
Mu(-), ton-m:	-3.56	-2.88	-2.28	-1.75	-1.30	-0.91	-0.59	-0.34	-0.16	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.10	3.10	3.03	2.65	2.27	1.89	1.51	1.14	0.76	0.38	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F4 13 #3 @ 15 FC'-F4

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:59:37 p.m. 07/11/2018

BEAM: F3(FA'-FA) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.16	1.71	2.25	2.80	3.34	3.89	4.43	4.98	5.52
Mu(-), ton-m:	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-5.41	-10.47
Mu(+), ton-m:	2.09	2.62	5.17	6.70	7.20	6.72	5.26	3.23	2.09	2.09	3.49
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.44	9.11
As(+), cm2:	3.37	3.37	4.23	5.57	6.02	5.59	4.31	3.37	3.37	3.37	3.37
Vu, ton:	7.69	7.10	5.55	3.89	2.42	3.56	5.11	6.67	8.22	9.77	10.36
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FA'-F3			11 #3 @ 7.5	25 #3 @ 15	11 #3 @ 7.5					FA-F3

BEAM: F3(FA-FB) FLOOR: 2

	Length:	L = 6.35 m Lu = 5.90 m	a = 0.23 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.82	1.41	2.00	2.59	3.18	3.77	4.36	4.95	5.54	6.13
Mu(-), ton-m:	-5.50	-4.17	-2.95	-1.86	-1.10	-1.10	-1.10	-1.10	-1.10	-1.50	-2.11
Mu(+), ton-m:	1.83	1.10	1.10	1.10	1.10	1.10	1.10	1.32	1.80	2.17	2.43
As(-), cm2:	4.52	3.38	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.98	2.90	2.71	2.52	2.33	2.14	1.95	1.76	1.57	1.61	1.69
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FA-F3			12 #3 @ 7.5	27 #3 @ 15	12 #3 @ 7.5					FB-F3

BEAM: F3(FB-FC') FLOOR: 2

	Length:	L = 2.10 m Lu = 1.87 m	a = 0.23 m c = 0.00 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.23	0.41	0.60	0.79	0.97	1.16	1.35	1.54	1.72	1.91	2.10
Mu(-), ton-m:	-3.56	-2.88	-2.28	-1.75	-1.30	-0.91	-0.59	-0.34	-0.16	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.10	3.10	3.03	2.65	2.27	1.89	1.51	1.14	0.76	0.38	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
DESIGN	FB-F3				13 #3 @ 15						FC'-F3

BEAM: F2(FA'-FA) FLOOR: 2

	Length:	L = 5.75 m Lu = 5.45 m	a = 0.08 m c = 0.23 m	Section:	b = 30.0 cm h = 40.0 cm	Sec: Mat:	30x40 RConcrete1			
X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-2.09	-5.42	-10.44
Mu(+), ton-m:	2.09	2.47	5.05	6.60	7.12	6.66	5.22	3.23	2.09	2.09	3.48
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	4.45	9.08
As(+), cm2:	3.37	3.37	4.12	5.48	5.94	5.53	4.27	3.37	3.37	3.37	3.37
Vu, ton:	7.73	7.14	5.59	3.89	2.40	3.52	5.08	6.63	8.19	9.74	10.33
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50
DESIGN	FA'-F2			11 #3 @ 7.5	25 #3 @ 15	11 #3 @ 7.5					FA-F2

Company: JOSE VICENTE VINUEZA V.
Project: HOGAR AGRUPADO - ZONA F y G - TOCANCIPA

Engineer: Jose Vicente Vinueza
09:59:37 p.m. 07/11/2018

BEAM: F2(FA-FB) FLOOR: 2

Length: L = 6.35 m, Lu = 5.90 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.81	1.40	1.99	2.58	3.17	3.76	4.35	4.94	5.53	6.12
Mu(-), ton-m:	-5.54	-4.21	-2.98	-1.87	-1.11	-1.11	-1.11	-1.11	-1.11	-1.56	-2.18
Mu(+), ton-m:	1.85	1.11	1.11	1.11	1.11	1.11	1.11	1.33	1.82	2.20	2.46
As(-), cm2:	4.55	3.41	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.99	2.91	2.72	2.53	2.34	2.15	1.96	1.77	1.58	1.63	1.71
Tu, ton-m:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F2 | 12 #3 @ 7.5 | 27 #3 @ 15 | 12 #3 @ 7.5 | FB-F2

BEAM: F2(FB-FC') FLOOR: 2

Length: L = 2.10 m, Lu = 1.88 m, a = 0.23 m, c = 0.00 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-3.56	-2.88	-2.28	-1.76	-1.30	-0.91	-0.59	-0.34	-0.16	-0.04	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	3.10	3.10	3.03	2.65	2.27	1.89	1.52	1.14	0.76	0.38	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F2 | 13 #3 @ 15 | FC'-F2

BEAM: F1(FA'-FA) FLOOR: 2

Length: L = 5.75 m, Lu = 5.45 m, a = 0.08 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40, Mat: RConcrete1

X, m:	0.08	0.62	1.17	1.71	2.26	2.80	3.35	3.89	4.44	4.98	5.53
Mu(-), ton-m:	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.26	-1.43	-3.59	-6.28
Mu(+), ton-m:	1.26	1.68	3.07	3.89	4.14	3.86	3.29	2.30	1.26	1.26	2.09
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.19
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	4.34	4.01	3.14	2.28	1.41	2.11	2.98	3.84	4.71	5.58	5.90
Tu, ton-m:	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA'-F1 | 11 #3 @ 7.5 | 25 #3 @ 15 | 11 #3 @ 7.5 | FA-F1

BEAM: F1(FA-FB) FLOOR: 2

Length: L = 6.35 m, Lu = 5.90 m, a = 0.23 m, c = 0.23 m; Section: b = 30.0 cm, h = 40.0 cm; Sec: 30x40, Mat: RConcrete1

X, m:	0.23	0.81	1.40	1.99	2.58	3.17	3.76	4.35	4.94	5.53	6.12
Mu(-), ton-m:	-4.84	-3.60	-2.47	-1.45	-0.97	-0.97	-0.97	-0.97	-1.06	-1.67	-2.37
Mu(+), ton-m:	1.61	0.97	0.97	0.97	0.97	0.97	0.97	1.37	1.77	2.05	2.22
As(-), cm2:	3.94	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	2.62	2.54	2.35	2.16	1.97	1.78	1.59	1.40	1.44	1.63	1.71
Tu, ton-m:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	7.50	7.50	15.00	15.00	15.00	15.00	15.00	15.00	15.00	7.50	7.50

DESIGN

FA-F1 | 12 #3 @ 7.5 | 27 #3 @ 15 | 12 #3 @ 7.5 | FB-F1

BEAM: F1(FB-FC') FLOOR: 2

Length: L = 2.10 m a = 0.23 m Section: b = 30.0 cm Sec: 30x40
Lu = 1.88 m c = 0.00 m h = 40.0 cm Mat: RConcrete1

X, m:	0.23	0.41	0.60	0.79	0.98	1.16	1.35	1.54	1.73	1.91	2.10
Mu(-), ton-m:	-2.08	-1.69	-1.34	-1.03	-0.76	-0.53	-0.34	-0.20	-0.09	-0.03	0.00
Mu(+), ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As(-), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
As(+), cm2:	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Vu, ton:	1.82	1.82	1.77	1.55	1.33	1.11	0.89	0.67	0.44	0.22	0.00
Tu, ton-m:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stirrup:	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3	#3
Spacing, cm:	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00

DESIGN

FB-F1 13 #3 @ 15 FC'-F1

BRACE SECTIONS

Number of prismatic sections = 1

Sec	Name	Shape	b (cm)	h (cm)	tw (cm)	tf (cm)	P1 (cm)	P2 (cm)	A (cm2)	I2 (cm4)	I3 (cm4)	J (cm4)
1	200x100x5.0	Box/Tub	10.00	20.00	0.50	0.50	-	-	29.0	1522	512	1333

Design Results - Brace (DMO)

Brace	Story	L (m)	Lu (m)	Sec Mat	bxh (cm)	TRANSVERSE REINFORCEMENT TIES	XTIES	LONGITUDINAL REINFORCEMENT Sec	LdCmb critc	Pu (ton)	Mu2 (ton-m)	Mu3 (ton-m)	RHO -	As (cm

STEEL DESIGN CHECK

COLUMN CAPACITY RATIOS

Column	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
FA'-F7	1	FI150x5.0	300	300	0.384	0.020	0.020
FA'-F6	1	FI150x5.0	300	300	0.624	0.014	0.025
FA'-F5	1	FI150x5.0	300	300	0.575	0.013	0.025
FA'-F4	1	FI150x5.0	300	300	0.578	0.013	0.025
FA'-F3	1	FI150x5.0	300	300	0.575	0.013	0.025
FA'-F2	1	FI150x5.0	300	300	0.623	0.014	0.025
FA'-F1	1	FI150x5.0	300	300	0.382	0.020	0.020

BEAM CAPACITY RATIOS

Beam	Floor	Sec	LbTop	LbBot	rMn	rMp	rV3

BRACE CAPACITY RATIOS

Brace	Story	Sec	Lb2	Lb3	rBA	rV3	rV2
F7(FA-FB)	2-3	200x100x5.0	640	640	0.455	0.002	0.000
F6(FA-FB)	2-3	200x100x5.0	640	640	0.872	0.003	0.000
F5(FA-FB)	2-3	200x100x5.0	640	640	0.874	0.003	0.000
F4(FA-FB)	2-3	200x100x5.0	640	640	0.874	0.002	0.000
F3(FA-FB)	2-3	200x100x5.0	640	640	0.874	0.002	0.000
F2(FA-FB)	2-3	200x100x5.0	640	640	0.872	0.003	0.000
F1(FA-FB)	2-3	200x100x5.0	640	640	0.455	0.002	0.000

CONEXION COLUMNA PEDESTAL

$P_u = 66.29\ Ton \rightarrow P = 57.6\ Ton \qquad M_{ux} = 1.60\ T_m \rightarrow M_x = 1.05\ T \times m$

$$\sigma_1 = \frac{57600\ kg}{40cm \times 40cm} = 36.00\ k/cm^2$$

$$\sigma_2 = \frac{6 \times 160000\ K \times cm}{40cm \times (40cm)^2} = 15.00\ k/cm^2$$

$\sigma_{max} = 36.00\ k/cm^2 + 15.00\ k/cm^2 = 51.00\ k/cm^2 < 52.5\ k/cm^2$ O.K. $(0.25 f'c)$

$\sigma_{min} = 36.0\ k/cm^2 - 15.00\ k/cm^2 = 21.00\ k/cm^2$

$$y = \frac{40cm - 30.0\ cm}{2} = 5.0\ cm$$

$$t_1 = \sqrt{\frac{3 \times 36\ k/cm^2 \times \overline{5.0cm}^2}{1900\ k/cm^2}} = 1.19\ cm$$

$d \cong 5.0\ cm.$

$$f_y = \frac{35.0\ cm}{40.0cm} \times 51.0 = 44.6\ k/cm^2$$

$$M = 47.25\ k/cm^2 \times \overline{5.0}^2/2 + 3.75\ k/cm \times \frac{\overline{5.0}^2}{3} = 621.8\ K \times cm$$

$$t_2 = \sqrt{\frac{6 \times 621.8\ K \times cm}{40cm \times 1900\ k/cm^2}} = 0.22\ cm.$$

$t = t_1 + t_2 = 1.19\ cm + 0.22\ cm = 1.41\ cm \rightarrow 3/8''$

PERNOS:

$$T_1 \cong \frac{621.8\ K \times cm}{40cm - 10cm} = 20.7\ kg. \qquad A_s = \frac{20.7\ K}{2100\ k/cm^2} = 0.01\ cm^2$$

$$T_2 = \frac{160000\ K \times cm}{30\ cm} = 5333\ kg. \qquad A_s = \frac{5333\ k}{2100\ k/cm^2} = 2.54\ cm^2$$

Colocamos 4 pernos ϕ 3/4"