Company: PDelta Ingenieria Estructural S.A.S Engineer: Ing. Osvaldo Guzman A
Project: P046-2024 - PLAZA DOÑA CEIBA (LOCALES) 5:48:46 p. m. 26/06/2024
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MATERIALS

Number of materials = 1

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

f'c: Compressive strength of concrete
fy: Yield strength of longitudinal reinforcement
fys1: Yiel strength of shear reinforcement, bar sizes <= 3/8"
fys2: Yiel strength of shear reinforcement, bar sizes > 3/8"

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	VG-25X30	Rectang	25.00	30.00	-	-	-	-	750.0	56250	39062	74219
2	VG-20X30	Rectang	20.00	30.00	-	-	-	-	600.0	45000	20000	46400
3	VC-25X25	Rectang	25.00	25.00	-	-	-	-	625.0	32552	32552	48177

Design Results - Beams (DMO)

BEAM: A(1-2) FLOOR: 1

Length: L = 4.04 m a = 0.13 m Section: b = 25.0 cm Sec: VC-25X25
Lu = 3.79 m c = 0.13 m h = 25.0 cm Mat: RConcrete1

X, m:	0.13	0.50	0.88	1.26	1.64	2.02	2.40	2.78	3.16	3.54	3.92
Mu(-), ton-m:	-0.22	-0.10	-0.02	0.00	0.00	0.00	0.00	0.00	-0.02	-0.10	-0.22
Mu(+), ton-m:	0.00	0.00	0.01	0.05	0.09	0.11	0.09	0.05	0.01	0.00	0.00
As(-), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
As(+), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Vu, ton:	0.32	0.28	0.20	0.13	0.06	0.00	0.06	0.13	0.20	0.28	0.32
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:	4.00	4.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	4.00	4.00

DESIGN

A-1 14 #3 @ 4 29 #3 @ 9 14 #3 @ 4 A-2

BEAM: B(1-2) FLOOR: 1

Length: L = 4.04 m a = 0.13 m Section: b = 25.0 cm Sec: VC-25X25
Lu = 3.79 m c = 0.13 m h = 25.0 cm Mat: RConcrete1

X, m:	0.13	0.50	0.88	1.26	1.64	2.02	2.40	2.78	3.16	3.54	3.92
Mu(-), ton-m:	-0.22	-0.10	-0.02	0.00	0.00	0.00	0.00	0.00	-0.02	-0.10	-0.22
Mu(+), ton-m:	0.00	0.00	0.01	0.05	0.09	0.11	0.09	0.05	0.01	0.00	0.00
As(-), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
As(+), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Vu, ton:	0.32	0.28	0.20	0.13	0.06	0.00	0.06	0.13	0.20	0.28	0.32
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:	4.00	4.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	4.00	4.00

DESIGN

B-1 14 #3 @ 4 29 #3 @ 9 14 #3 @ 4 B-2

BEAM: A(1-2) FLOOR: 2

Length: L = 4.04 m a = 0.13 m Section: b = 25.0 cm Sec: VG-25X30
Lu = 3.79 m c = 0.13 m h = 30.0 cm Mat: RConcrete1

X, m:	0.13	0.50	0.88	1.26	1.64	2.02	2.40	2.78	3.16	3.54	3.92
Mu(-), ton-m:	-1.68	-0.83	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34	-0.83	-1.68
Mu(+), ton-m:	0.56	0.34	0.70	1.11	1.50	1.87	1.50	1.11	0.70	0.34	0.56
As(-), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
As(+), cm2:	2.01	2.01	2.01	2.01	2.01	2.15	2.01	2.01	2.01	2.01	2.01
Vu, ton:	2.64	2.53	2.25	1.96	1.67	1.38	1.67	1.96	2.25	2.53	2.64
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:	6.00	6.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	6.00	6.00

DESIGN

A-1 11 #3 @ 6 20 #3 @ 12 11 #3 @ 6 A-2

BEAM: B(1-2) FLOOR: 2

Length: L = 4.04 m a = 0.13 m Section: b = 25.0 cm Sec: VG-25X30
Lu = 3.79 m c = 0.13 m h = 30.0 cm Mat: RConcrete1

X, m:	0.13	0.50	0.88	1.26	1.64	2.02	2.40	2.78	3.16	3.54	3.92
Mu(-), ton-m:	-1.68	-0.83	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34	-0.83	-1.68
Mu(+), ton-m:	0.56	0.34	0.70	1.11	1.50	1.87	1.50	1.11	0.70	0.34	0.56
As(-), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
As(+), cm2:	2.01	2.01	2.01	2.01	2.01	2.15	2.01	2.01	2.01	2.01	2.01
Vu, ton:	2.64	2.53	2.25	1.96	1.67	1.38	1.67	1.96	2.25	2.53	2.64
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:	6.00	6.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	6.00	6.00

DESIGN

B-1 11 #3 @ 6 20 #3 @ 12 11 #3 @ 6 B-2

BEAM: 1(A-B) FLOOR: 1

Length: L = 2.39 m a = 0.13 m Section: b = 25.0 cm Sec: VC-25X25
Lu = 2.14 m c = 0.13 m h = 25.0 cm Mat: RConcrete1

X, m:	0.13	0.34	0.55	0.77	0.98	1.20	1.41	1.62	1.84	2.05	2.27
Mu(-), ton-m:	-0.08	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.04	-0.08
Mu(+), ton-m:	0.00	0.00	0.00	0.02	0.03	0.04	0.03	0.02	0.00	0.00	0.00
As(-), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
As(+), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Vu, ton:	0.18	0.18	0.13	0.09	0.04	0.00	0.04	0.09	0.13	0.18	0.18
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:	4.00	4.00	4.00	9.00	9.00	9.00	9.00	9.00	4.00	4.00	4.00

DESIGN

A-1 52 #3 @ 4 B-1

BEAM: 2(A-B) FLOOR: 1

Length: L = 2.39 m a = 0.13 m Section: b = 25.0 cm Sec: VC-25X25
Lu = 2.14 m c = 0.13 m h = 25.0 cm Mat: RConcrete1

X, m:	0.13	0.34	0.55	0.77	0.98	1.20	1.41	1.62	1.84	2.05	2.27
Mu(-), ton-m:	-0.08	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.04	-0.08
Mu(+), ton-m:	0.00	0.00	0.00	0.02	0.03	0.04	0.03	0.02	0.00	0.00	0.00
As(-), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
As(+), cm2:	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Vu, ton:	0.18	0.18	0.13	0.09	0.04	0.00	0.04	0.09	0.13	0.18	0.18
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:	4.00	4.00	4.00	9.00	9.00	9.00	9.00	9.00	4.00	4.00	4.00

DESIGN

A-2 52 #3 @ 4 B-2

BEAM: 1(A-B) FLOOR: 2

Length:	L = 2.39 m		a = 0.13 m	Section:	b = 25.0 cm		Sec:	VG-25X30		
	Lu = 2.14 m		c = 0.13 m		h = 30.0 cm		Mat:	RConcrete1		
X, m:	0.13	0.34	0.55	0.77	0.98	1.20	1.41	1.62	1.84	2.05	2.27
Mu(-), ton-m:	-0.78	-0.53	-0.31	-0.16	-0.16	-0.16	-0.16	-0.16	-0.31	-0.53	-0.78
Mu(+), ton-m:	0.59	0.56	0.53	0.48	0.39	0.32	0.39	0.48	0.53	0.56	0.59
As(-), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
As(+), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
Vu, ton:	1.25	1.25	1.13	0.99	0.85	0.71	0.85	0.99	1.13	1.25	1.25
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:	6.00	6.00	6.00	12.00	12.00	12.00	12.00	12.00	6.00	6.00	6.00

DESIGN

A-1 35 #3 @ 6 B-1

BEAM: 1'(A-B) FLOOR: 2

Length:	L = 2.39 m		a = 0.13 m	Section:	b = 20.0 cm		Sec:	VG-20X30		
	Lu = 2.14 m		c = 0.13 m		h = 30.0 cm		Mat:	RConcrete1		
X, m:	0.13	0.34	0.55	0.77	0.98	1.20	1.41	1.62	1.84	2.05	2.27
Mu(-), ton-m:	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02
Mu(+), ton-m:	0.16	0.41	0.63	0.78	0.88	0.92	0.88	0.78	0.63	0.41	0.16
As(-), cm2:	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
As(+), cm2:	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
Vu, ton:	1.11	1.11	0.86	0.57	0.30	0.02	0.30	0.57	0.86	1.11	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:	6.00	6.00	6.00	12.00	12.00	12.00	12.00	12.00	6.00	6.00	6.00

DESIGN

A-1' 35 #3 @ 6 B-1'

BEAM: 2(A-B) FLOOR: 2

Length:	L = 2.39 m		a = 0.13 m	Section:	b = 25.0 cm		Sec:	VG-25X30		
	Lu = 2.14 m		c = 0.13 m		h = 30.0 cm		Mat:	RConcrete1		
X, m:	0.13	0.34	0.55	0.77	0.98	1.20	1.41	1.62	1.84	2.05	2.27
Mu(-), ton-m:	-0.78	-0.53	-0.31	-0.16	-0.16	-0.16	-0.16	-0.16	-0.31	-0.53	-0.78
Mu(+), ton-m:	0.59	0.56	0.53	0.48	0.39	0.32	0.39	0.48	0.53	0.56	0.59
As(-), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
As(+), cm2:	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
Vu, ton:	1.25	1.25	1.13	0.99	0.85	0.71	0.85	0.99	1.13	1.25	1.25
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:	6.00	6.00	6.00	12.00	12.00	12.00	12.00	12.00	6.00	6.00	6.00

DESIGN

A-2 35 #3 @ 6 B-2