
Project Information

Project
Job No
Company
Designer
Remarks

Software CSICOL (Version: 9.0 (Rev. 1))
File Name D:\PROYECTOS 2021\6. E.T. COBERTIZO
LOSA\Calculos\Diseno de columnas \ColCir

Working Units Metric (m, Ton, Ton-m, kg/cm²)
Design Code ACI-318-02

Column:C-1

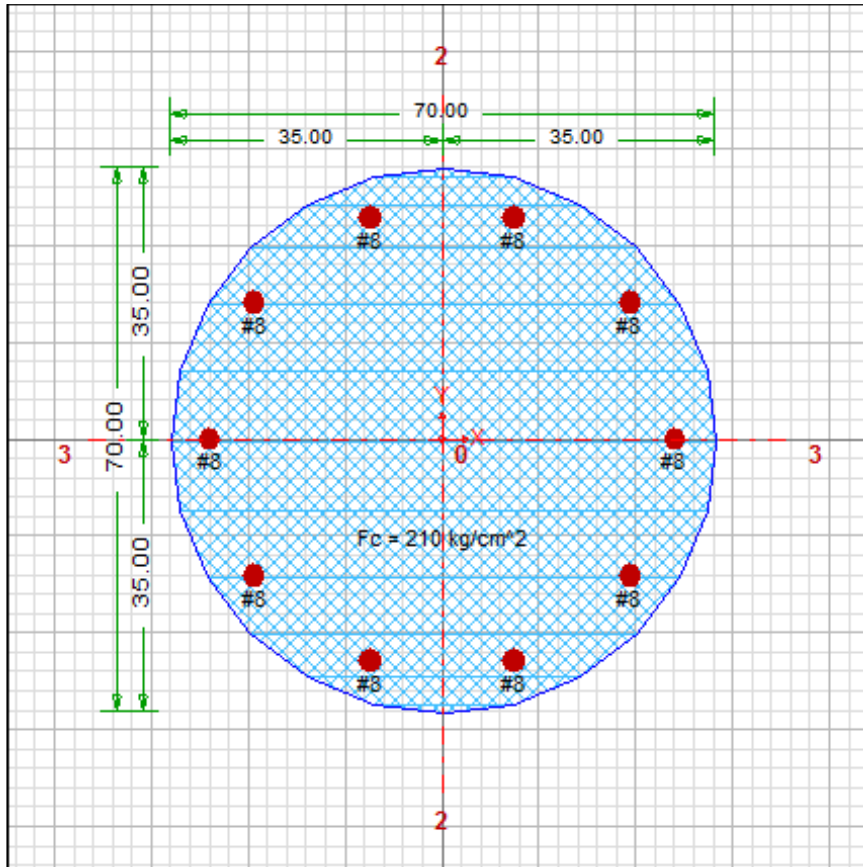
Basic Design Parameters

Caption	= C-1	
Default Concrete Strength, Fc	= 210	kg/cm ²
Default Concrete Modulus, Ec	= 218820	kg/cm ²
Maximum Concrete Strain	= 0.003	in/in

Rebar Set	= ASTM	
Default Rebar Yield Strength, Fy	= 4200	kg/cm ²
Default Rebar Modulus, Es	= 2000000	kg/cm ²
Default Cover to Rebars	= 5.00	cm
Maximum Steel Strain	= Infinity	

Transverse Rebar Type	= Ties
-----------------------	--------

Total Shapes in Section	= 1
Consider Slenderness	= No



Section Diagram

Cross-section Shapes

Shape	Width cm	Height cm	Conc Fc kg/cm ²	S/S Curve	Rebars
Circle	70.00	70.00	210.00	ACI-Whitney Rectangular	10-#8

Rebar Properties

Sr.No	Designation	Area cm ²	Cord-X cm	Cord-Y cm	Fy kg/cm ²	S/S Curve
1	#8	5.1	65.00	35.00	4200	Elasto-Plastic
2	#8	5.1	59.27	52.63	4200	Elasto-Plastic
3	#8	5.1	44.27	63.53	4200	Elasto-Plastic
4	#8	5.1	25.73	63.53	4200	Elasto-Plastic
5	#8	5.1	10.73	52.63	4200	Elasto-Plastic
6	#8	5.1	5.00	35.00	4200	Elasto-Plastic
7	#8	5.1	10.73	17.37	4200	Elasto-Plastic
8	#8	5.1	25.73	6.47	4200	Elasto-Plastic
9	#8	5.1	44.27	6.47	4200	Elasto-Plastic
10	#8	5.1	59.27	17.37	4200	Elasto-Plastic

10-#8

Total Area = 51.0 cm²
Steel Ratio = 1.27 %

Basic Section Properties:

Total Width	= 70.00	cm
Total Height	= 70.00	cm
Center, Xo	= 0.00	cm
Center, Yo	= 0.00	cm
X-bar (Right)	= 35.00	cm
X-bar (Left)	= 35.00	cm
Y-bar (Top)	= 35.00	cm
Y-bar (Bot)	= 35.00	cm

Transformed Properties:		
Base Material	= Custom	
Area, A	= 3,848.5	cm ²
Inertia, I33	= 1.18E+06	cm ⁴
Inertia, I22	= 1.18E+06	cm ⁴
Inertia, I32	= 0.00E+00	cm ⁴
Radius, r3	= 17.50	cm
Radius, r2	= 17.50	cm

Additional Section Properties:

Transformed Properties:		
Base Material	= Custom	
Modulus, S3(Top)	= 3.37E+04	cm ³
Modulus, S3(Bot)	= 3.37E+04	cm ³
Modulus, S2(Left)	= 3.37E+04	cm ³
Modulus, S2(Right)	= 3.37E+04	cm ³
Plastic Modulus, Z3	= 6.09E+04	cm ³
Plastic Modulus, Z2	= 6.26E+04	cm ³
Torsional, J	= 2.26E+06	cm ⁴
Shear Area, A3	= 3,363.4	cm ²
Shear Area, A2	= 3,362.4	cm ²
Principal Angle	= 0.00E+00	Deg
Inertia, I33'	= 1.18E+06	cm ⁴
Inertia, I22'	= 1.18E+06	cm ⁴

Framing Along-X

Total C/C Length, Lc	= 3.500	m
Unsupported Length, Lu	= 3.000	m
Framing Type	= 4	
Framing Case	= 0	
K Factor, Braced	= 1.00	
Kl/r, Braced	= 17.14	
K Factor, Unbraced	= 1.00	
Kl/r, Unbraced	= 17.14	

Framing Along-Y

Total C/C Length, Lc	= 3.500	m
Unsupported Length, Lu	= 3.000	m
Framing Type	= 4	
Framing Case	= 0	
K Factor, Braced	= 1.00	
Kl/r, Braced	= 17.14	
K Factor, Unbraced	= 1.00	
Kl/r, Unbraced	= 17.14	

Final Design Loads

Sr.No	Combination	Load Pu ton	Mux-Bot ton-m	Muy-Bot ton-m	Mux-Top ton-m	Muy-Top ton-m
1	Combination1	12.14	29.22	14.41	5.43	1.12

Result Summary

Sr.No	Combination	Pu (ton)	Cap. Ratio-Bot	Cap. Ratio-Top	Remarks
1	Combination1	12.14	0.845	0.127	Capacity OK

Moment Magnification Calculations

Combination1- Along X

Bracing Condition = Non-Sway

Non-Sway Part of Loading:

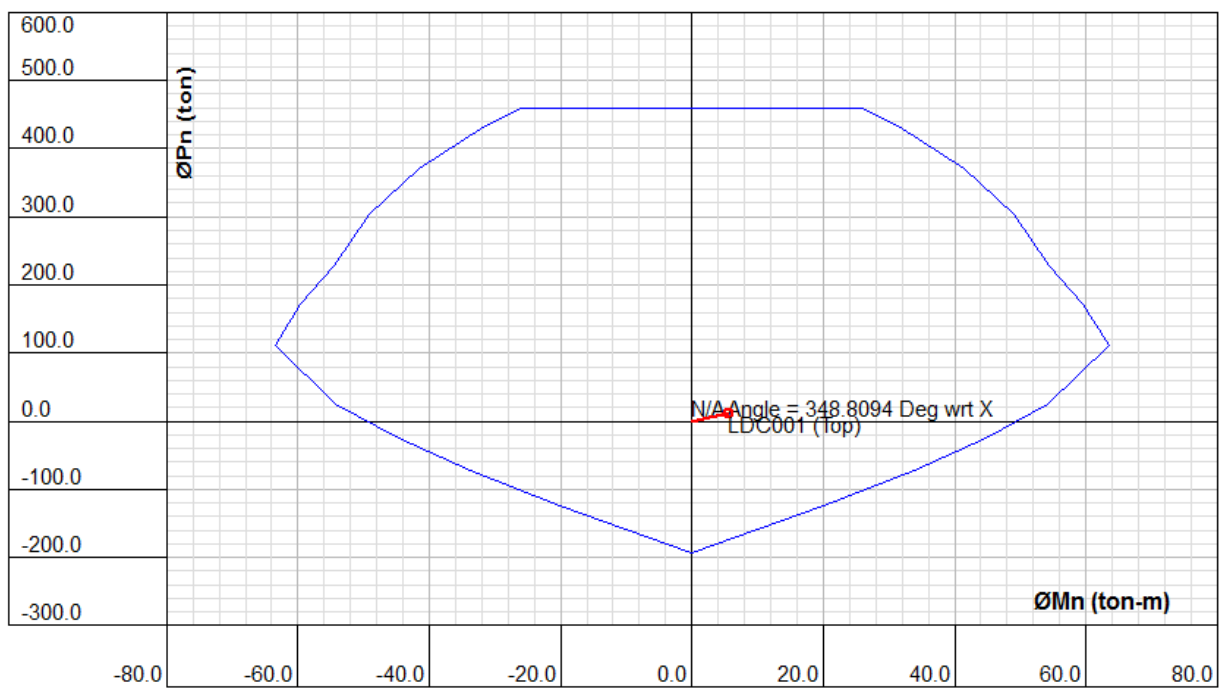
Design Load, Pu	= 0.000	ton
Sustained Load, Pud	= 0.000	ton
End Moment, M1	= 0.00	ton-m
End Moment, M2	= 0.00	ton-m
Minimum Moment, Mmin	= 0.00	ton-m
Design Moment, Mc	= 0.00	ton-m
Creep Factor, Bd	= 0.00	
Section Stiffness, EI For Pcr	= 0.00E+00	kg-cm ²
Euler Buckling Load, Pcr	= 0.000	ton
Buckling Failure	= Pcr < Pu	

Combination1- Along Y

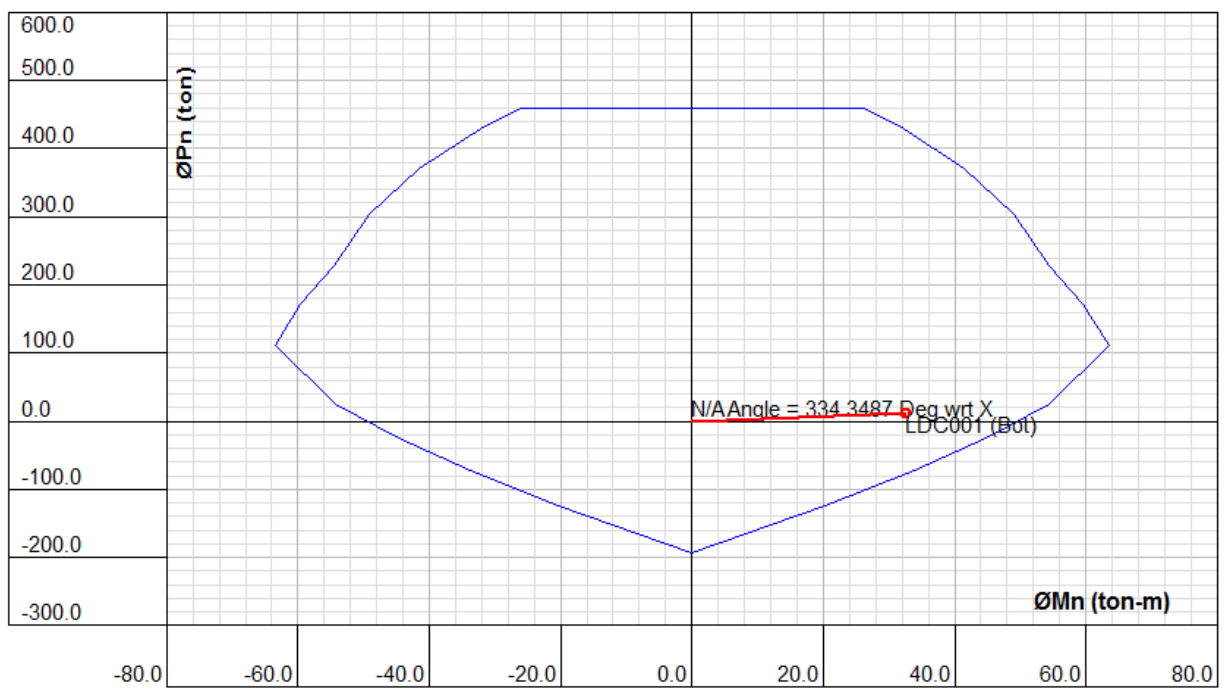
Bracing Condition = Non-Sway

Non-Sway Part of Loading:

Design Load, Pu	= 0.000	ton
Sustained Load, Pud	= 0.000	ton
End Moment, M1	= 0.00	ton-m
End Moment, M2	= 0.00	ton-m
Minimum Moment, Mmin	= 0.00	ton-m
Design Moment, Mc	= 0.00	ton-m
Creep Factor, Bd	= 0.00	
Section Stiffness, EI For Pcr	= 0.00E+00	kg-cm ²
Euler Buckling Load, Pcr	= 0.000	ton
Buckling Failure	= Pcr < Pu	



Load-Moment Interaction



Load-Moment Interaction

