

Concrete Column Design

Job:
Column ID:
Date: 4/15/2020 11:11:15 AM

Designed By:
Checked By:
Program: Concrete Column Design 4.1

DESCRIPTION :

CODE	METHOD	MODE	TYPE	SHAPE	ANALYSIS
ACI 2011	STRENGTH	DESIGN	TIED	CIRCULAR	REFINED

MATERIAL DATA

F_y	E_s	F'_c	W_c	E_c
K/In ²	K/In ²	K/In ²	Lb/Ft ²	K/In ²
60.000	29000.000	5.000	144.000	4032.206

COLUMN DATA

COLUMN				X AXIS				Y AXIS			
ID	WIDTH	DEPTH	COVER	BRACED	L_u	K_b	K_s	BRACED	L_u	K_b	K_s
	In	In	In		Ft				Ft		
1	678.00	678.00	1.50	Y	14.50	1.00	1.00	Y	14.50	1.00	1.00

LOAD DATA

LOAD	-----	-----	NONSWAY	CASE	-----	-----	SWAY	CASE	-----	-----		
ID	AXIS	AXIAL	TRANS	M TOP	M BOT	β_d	AXIAL	TRANS	M TOP	M BOT	β_d	$\sum P_u / \sum P_c$
		K		K - Ft	K - Ft		K		K - Ft	K - Ft		
DESCRIPTION : Test												
1	X	-387.00	Y	12.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
1	Y	-387.00	Y	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00

REINFORCING SELECTION

TIE	OR	SPIRAL	BAR			REINFORCEMENT		NUMBER OF BARS		
DESIG	DIAMETER	AREA	DESIG	DIAMETER	AREA	RATIO	AREA	TOTAL	X-FACES	Y-FACES
	In	In ²		In	In ²		In ²			
#3	0.375	0.110	#3	0.375	0.110	0.0000	0.440	4	0	0

COLUMN PROPERTY

AXIS	I_{se}	I_g	P_{cb}	P_{cs}	$0.1 * F'_c * A_g$	P_{ub}	M_{ub}
	In ⁴	In ⁴	K	K	K	K	K - Ft
X	24975.913	10372624928.006	5453716954.763	5453716954.763	180517.485	712584.681	9155679.796
Y	24975.913	10372624928.006	5453716954.763	5453716954.763	180517.485	712584.681	9155679.796

FACTOR SUMMARY

LOAD	SLENDERNESS		NONSWAY	CASE	SWAY	CASE	REDUCTION	FACTOR
ID	XDIR	YDIR	δ_x	δ_y	δ_x	δ_y	ϕ Loc 1	ϕ Loc 2
1	N	N	1.000	1.000	1.000	1.000	0.900	0.000

CAPACITY SUMMARY

LOAD	REQUIRED				PROVIDED			LOADING
ID	LOC	P_u	M_{ux}	M_{uy}	ϕP_n	ϕM_{nx}	ϕM_{ny}	RATIO
		K	K-Ft	K-Ft	K	K-Ft	K-Ft	
1	1	-387.000	12.000	0.000	-386.995	11560.242	0.000	0.033

LOAD ID #1 GOVERNS
COLUMN DESIGN OK