

Concrete Column Design

Job: Sample Output
Column ID:
Time: 9/29/2003 2:26

Designed By: Clint Auderer
Checked By:
Program: Concrete Column Design v2.00

DESCRIPTION :

CODE	METHOD	MODE	TYPE	SHAPE	ANALYSIS
ACI 2002	STRENGTH	DESIGN	TIED	RECTANGULAR	LINEAR

M A T E R I A L D A T A

F_y K /In ²	E_s K /In ²	F'_c K /In ²	W_c Lb/Ft ²	E_c K /In ²
60.000	29000.000	4.000	144.000	3606.514

C O L U M N D A T A

COLUMN ID	WIDTH In	DEPTH In	COVER In	BRACED	X AXIS			Y AXIS			
					L_u Ft	K_b	K_s	BRACED	L_u Ft	K_b	K_s
1	21.00	31.00	1.50	N	14.00	1.00	1.20	N	14.00	1.00	1.10

L O A D D A T A

LOAD ID	AXIS	-----NONSWAY			CASE-----			-----SWAY			CASE-----	
		AXIAL K	TRANS	MTOP K -Ft	MBOT K -Ft	β_d	AXIAL K	TRANS	MTOP K -Ft	MBOT K -Ft	β_d	$\Sigma P_u / \Sigma P_c$
DESCRIPTION :												
1	X	-650.00	N	23.00	7.00	0.21	-290.00	N	86.00	-79.00	0.50	0.48
1	Y	-650.00	N	36.00	-18.00	0.17	-290.00	N	-135.00	0.00	0.50	0.46
DESCRIPTION :												
2	X	-650.00	N	50.00	7.00	0.21	-290.00	N	86.00	-79.00	0.50	0.48
2	Y	-650.00	N	36.00	-18.00	0.17	-290.00	N	-135.00	0.00	0.50	0.46
DESCRIPTION :												
3	X	-650.00	N	23.00	7.00	0.21	-290.00	N	86.00	-79.00	0.50	0.48
3	Y	-650.00	N	50.00	-18.00	0.17	-290.00	N	-135.00	0.00	0.50	0.46
DESCRIPTION :												
4	X	-650.00	N	23.00	50.00	0.21	-290.00	N	86.00	-79.00	0.50	0.48
4	Y	-650.00	N	36.00	-18.00	0.17	-290.00	N	-135.00	0.00	0.50	0.46
DESCRIPTION :												
5	X	-650.00	N	23.00	7.00	0.21	-290.00	N	86.00	-79.00	0.50	0.48
5	Y	-650.00	N	36.00	50.00	0.17	-290.00	N	-135.00	0.00	0.50	0.46
DESCRIPTION :												

6 X	-650.00 N	23.00	7.00	0.21	-290.00 N	50.00	-79.00	0.50	0.48
6 Y	-650.00 N	36.00	-18.00	0.17	-290.00 N	-135.00	0.00	0.50	0.46
DESCRIPTION :									
7 X	-650.00 N	23.00	7.00	0.21	-290.00 N	86.00	-79.00	0.50	0.48
7 Y	-650.00 N	36.00	-18.00	0.17	-290.00 N	50.00	0.00	0.50	0.46
DESCRIPTION :									
8 X	-650.00 N	23.00	7.00	0.21	-290.00 N	86.00	50.00	0.50	0.48
8 Y	-650.00 N	36.00	-18.00	0.17	-290.00 N	-135.00	0.00	0.50	0.46
DESCRIPTION :									
9 X	-50.00 N	23.00	7.00	0.21	500.00 N	86.00	-79.00	0.50	0.48
9 Y	-50.00 N	36.00	-18.00	0.17	500.00 N	-135.00	0.00	0.50	0.46
DESCRIPTION :									
10 X	-650.00 N	23.00	7.00	0.21	-290.00 N	345.00	-79.00	0.50	0.48
10 Y	-650.00 N	36.00	-18.00	0.17	-290.00 N	-135.00	0.00	0.50	0.46

R E I N F O R C I N G S E L E C T I O N

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	#10	1.270	1.270	0.0195	12.700	10	6	8

C O L U M N P R O P E R T Y

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	1381.044	52134.250	27155.001	18857.640	260.400	1041.824	1231.011
Y	648.615	23924.250	10779.511	6948.776	260.400	972.064	872.266

F A C T O R S U M M A R Y

LOAD ID	SLENDERNESS		NONSWAY CASE		SWAY CASE		REDUCTION FACTOR	
	XDIR	YDIR	δ_x	δ_y	δ_x	δ_y	ϕ Loc 1	ϕ Loc 2
1	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
2	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
3	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
4	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
5	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
6	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
7	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
8	N	Y	1.000	1.000	1.000	2.586	0.650	0.000
9	N	N	1.000	1.000	1.000	1.000	0.900	0.000
10	N	Y	1.000	1.000	1.000	2.586	0.650	0.000

C A P A C I T Y S U M M A R Y

LOAD		R E Q U I R E D				P R O V I D E D			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	-940.000	109.000	313.138	-940.000	159.452	457.983	0.875	
2	1	-940.000	136.000	313.138	-939.999	193.545	445.698	0.880	
3	1	-940.000	109.000	299.138	-940.000	166.062	455.658	0.863	
4	1	-940.000	109.000	313.138	-940.000	159.452	457.983	0.875	
5	1	-940.000	109.000	313.138	-940.000	159.452	457.983	0.875	
6	1	-940.000	73.000	313.138	-940.002	110.642	474.425	0.870	
7	1	-940.000	109.000	165.310	-940.000	272.472	413.169	0.747	
8	1	-940.000	109.000	313.138	-940.000	159.452	457.983	0.875	
9	1	450.000	109.000	99.000	450.000	184.253	167.336	0.821	
10	1	-940.000	368.000	313.138	-940.000	404.012	343.724	0.961	

LOAD ID # 10 GOVERNS
COLUMN DESIGN OK