

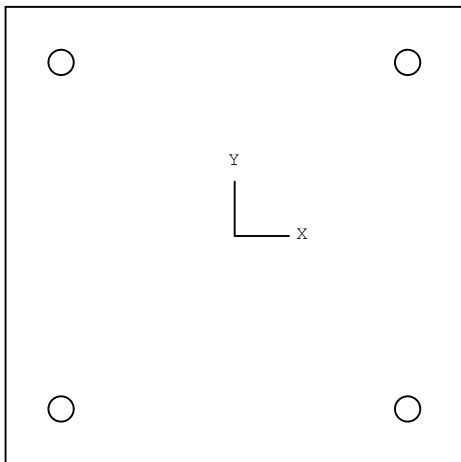
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_4#9_NX2_NY2_cc2.439



Section 1 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

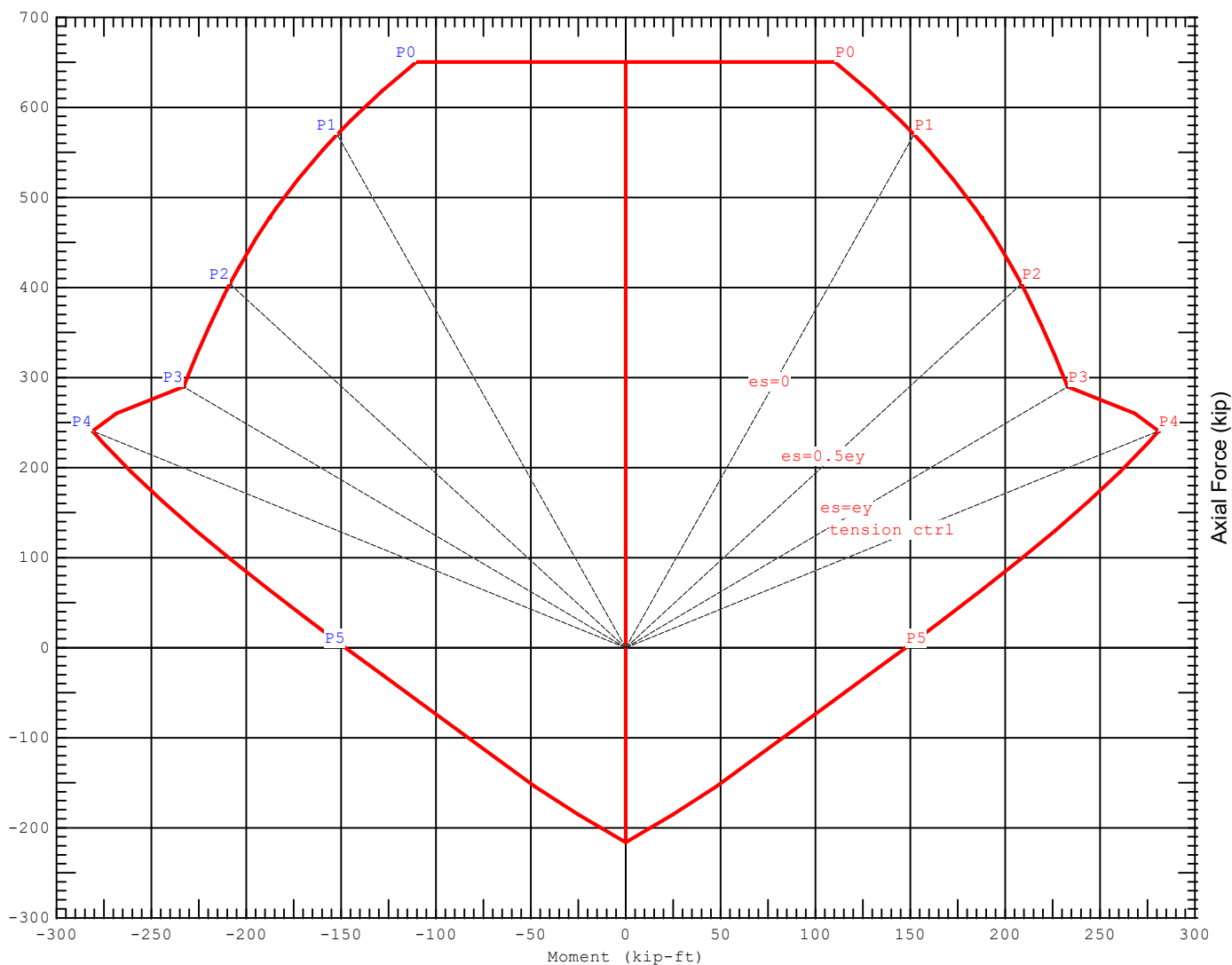
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 4 # 9
Confinement: Tied
Ag: 400.00 in²
As: 4.00 in²
Roh: 1.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.99 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	649.90	110.06	-0.00036
P1	569.51	151.65	0.00000
P2	403.63	208.09	0.00103
P3	289.54	232.45	0.00207
P4	240.24	280.34	0.00507
P5	-0.00	147.35	0.01752
Pmin	-216.00	0.00	0.20000

PT	P	My (-)	max es
P0	649.90	-110.06	-0.00036
P1	569.51	-151.65	0.00000
P2	403.63	-208.09	0.00103
P3	289.54	-232.45	0.00207
P4	240.24	-280.34	0.00507
P5	-0.00	-147.35	0.01752
Pmin	-216.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_4#10_NX2_NY2_cc2.51

Y

X

Section 2 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 4 # 10

Confinement: Tied

Ag: 400.00 in^2

As: 5.08 in^2

Roh: 1.27%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

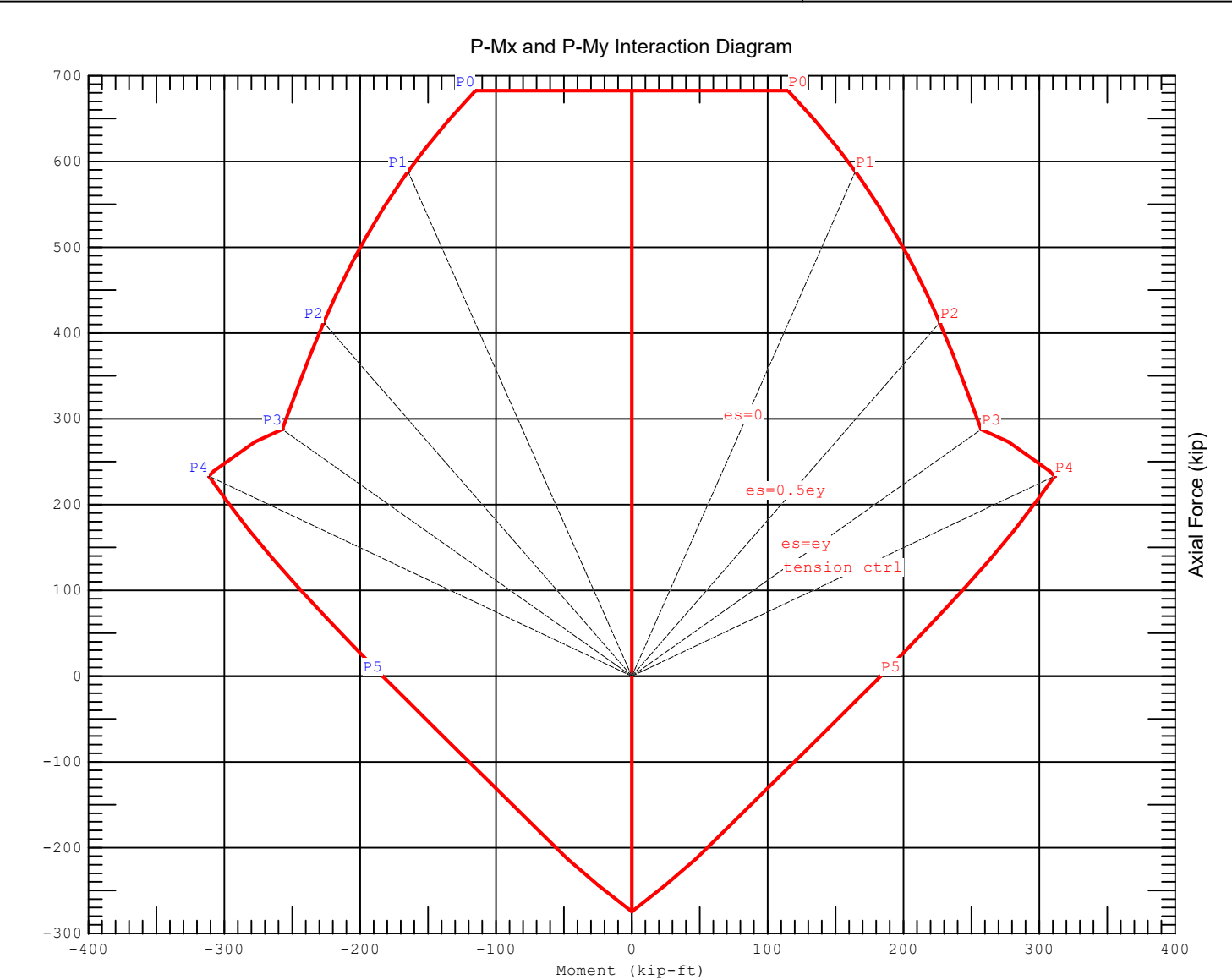
Y0: 0.00 in

Clear spacing: 13.71 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	682.15	114.98	-0.00040
P1	587.67	164.62	0.00000
P2	411.78	226.71	0.00103
P3	287.46	257.16	0.00207
P4	232.83	311.18	0.00507
P5	-0.00	183.26	0.01527
Pmin	-274.32	0.00	0.20000

PT	P	My (-)	max es
P0	682.15	-114.98	-0.00040
P1	587.67	-164.62	0.00000
P2	411.78	-226.71	0.00103
P3	287.46	-257.16	0.00207
P4	232.83	-311.18	0.00507
P5	-0.00	-183.26	0.01527
Pmin	-274.32	0.00	0.20000



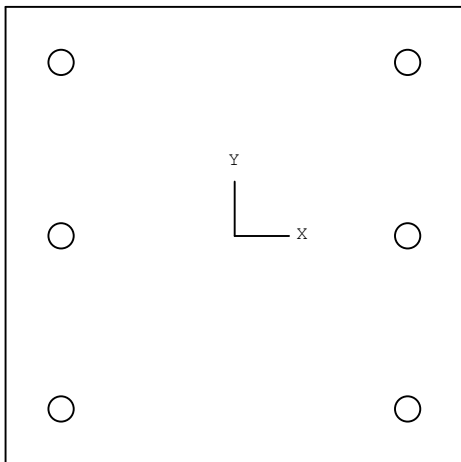
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_6#9_NX3_NY2_cc2.439



Section 3 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

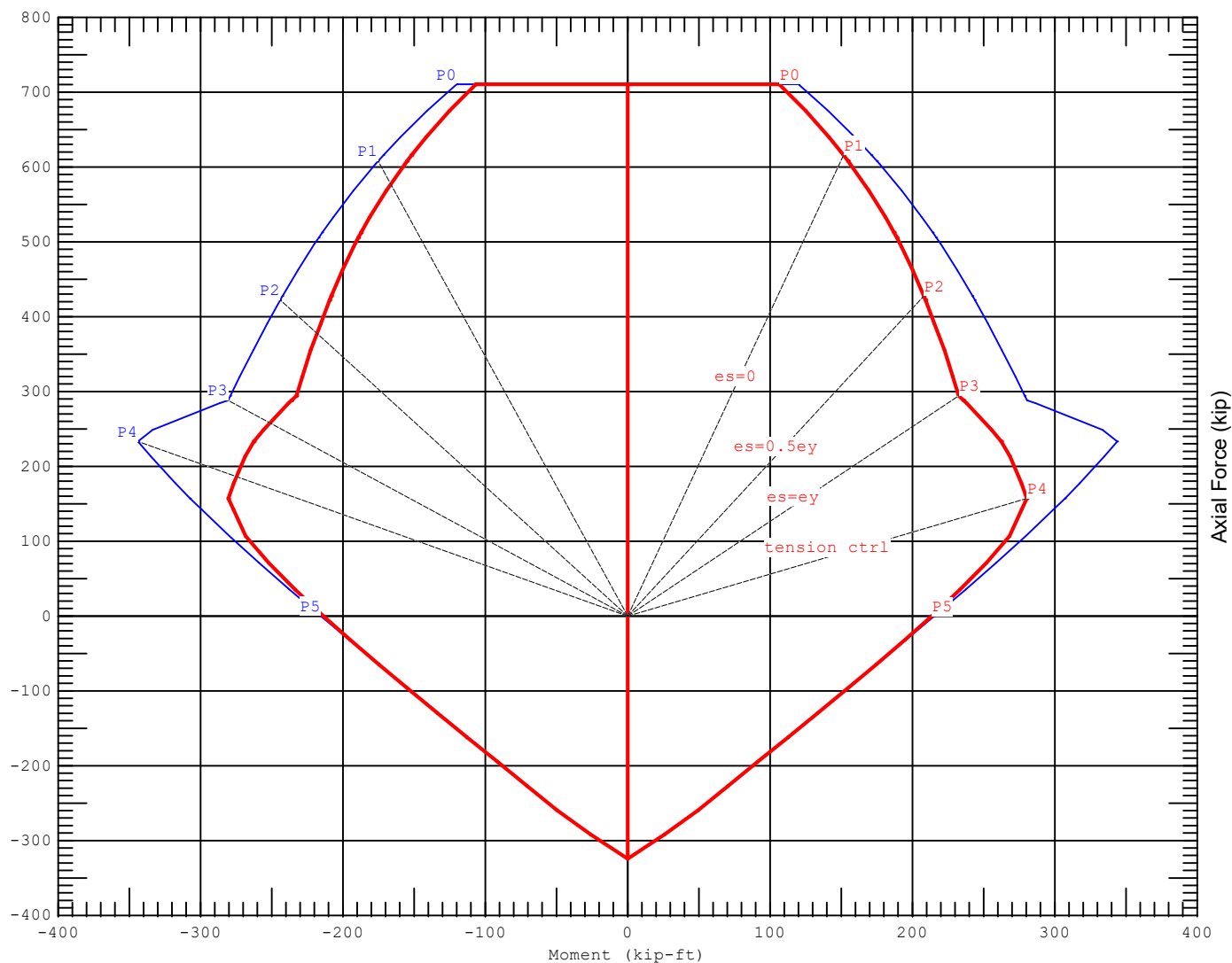
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 400.00 in²
As: 6.00 in²
Roh: 1.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

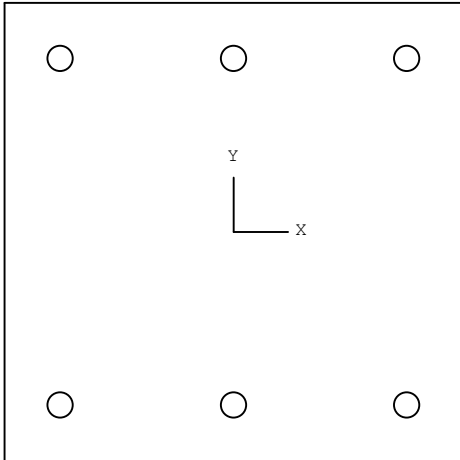
Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	709.64	106.42	-0.00038
P1	614.89	151.65	0.00000
P2	426.80	208.09	0.00103
P3	293.82	232.45	0.00207
P4	156.99	280.34	0.00507
P5	-0.01	213.58	0.00999
Pmin	-324.00	0.00	0.20000

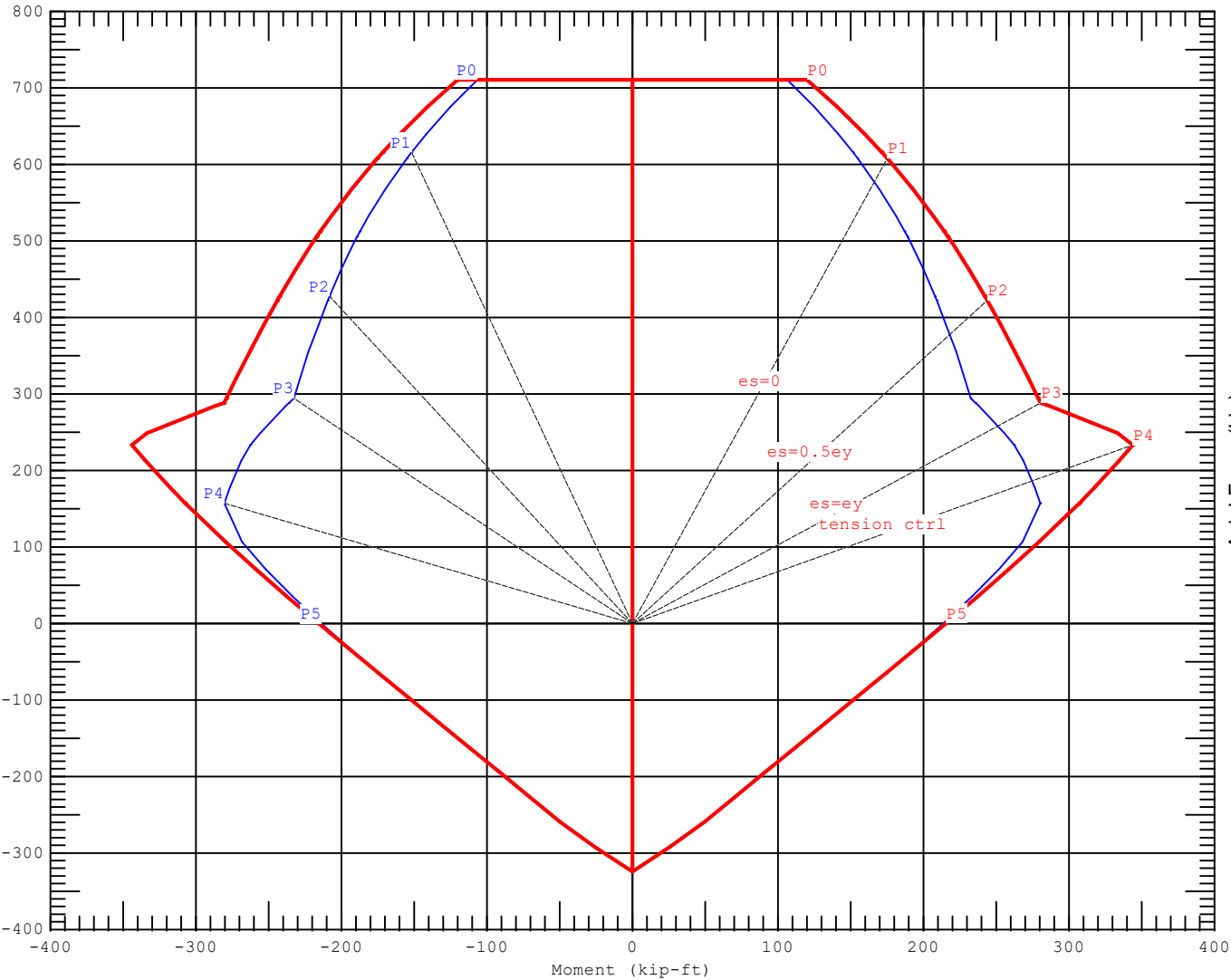
PT	P	My (-)	max es
P0	709.64	-119.92	-0.00041
P1	606.85	-175.18	0.00000
P2	421.47	-243.90	0.00103
P3	287.88	-280.55	0.00207
P4	233.00	-343.83	0.00507
P5	0.01	-215.47	0.01411
Pmin	-324.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:		cColumn v10 (C) Computations & Graphics, Inc.																																																																											
Engineer:		Date & Time: 06/19/2023 10:27																																																																											
Rect20x20_fc3_fy60_6#9_NX2_NY3_cc2.439  Section 4 of 238		Code: ACI 318-19 Strength reduction: Auto Neutral axis steps: 250 Biaxial angle steps: 16 Axial capacity steps: 20 Excl. displ'd concrete: Yes b x h: 20 x 20 in fc: 3.00 kip/in^2 fy: 60.00 kip/in^2 Cover (t.c): 2.439 in Bars: 6 # 9 Confinement: Tied Ag: 400.00 in^2 As: 6.00 in^2 Roh: 1.50% Ix: 13333.3 in^4 Iy: 13333.3 in^4 X0: 0.00 in Y0: 0.00 in Clear spacing: 6.43 in		Control Points (kip, kip-ft) <table><tr><th>PT</th><th>P</th><th>Mx (+)</th><th>max es</th></tr><tr><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr><tr><td>P0</td><td>709.64</td><td>119.92</td><td>-0.00041</td></tr><tr><td>P1</td><td>606.85</td><td>175.18</td><td>0.00000</td></tr><tr><td>P2</td><td>421.47</td><td>243.90</td><td>0.00103</td></tr><tr><td>P3</td><td>287.88</td><td>280.55</td><td>0.00207</td></tr><tr><td>P4</td><td>233.00</td><td>343.83</td><td>0.00507</td></tr><tr><td>P5</td><td>0.01</td><td>215.47</td><td>0.01411</td></tr><tr><td>Pmin</td><td>-324.00</td><td>0.00</td><td>0.20000</td></tr></table> <table><tr><th>PT</th><th>P</th><th>My (-)</th><th>max es</th></tr><tr><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr><tr><td>P0</td><td>709.64</td><td>-106.42</td><td>-0.00038</td></tr><tr><td>P1</td><td>614.89</td><td>-151.65</td><td>0.00000</td></tr><tr><td>P2</td><td>426.80</td><td>-208.09</td><td>0.00103</td></tr><tr><td>P3</td><td>293.82</td><td>-232.45</td><td>0.00207</td></tr><tr><td>P4</td><td>156.99</td><td>-280.34</td><td>0.00507</td></tr><tr><td>P5</td><td>-0.01</td><td>-213.58</td><td>0.00999</td></tr><tr><td>Pmin</td><td>-324.00</td><td>0.00</td><td>0.20000</td></tr></table>		PT	P	Mx (+)	max es	-----	-----	-----	-----	P0	709.64	119.92	-0.00041	P1	606.85	175.18	0.00000	P2	421.47	243.90	0.00103	P3	287.88	280.55	0.00207	P4	233.00	343.83	0.00507	P5	0.01	215.47	0.01411	Pmin	-324.00	0.00	0.20000	PT	P	My (-)	max es	-----	-----	-----	-----	P0	709.64	-106.42	-0.00038	P1	614.89	-151.65	0.00000	P2	426.80	-208.09	0.00103	P3	293.82	-232.45	0.00207	P4	156.99	-280.34	0.00507	P5	-0.01	-213.58	0.00999	Pmin	-324.00	0.00	0.20000
PT	P	Mx (+)	max es																																																																										
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P5	-0.01	-213.58	0.00999																																																																										
Pmin	-324.00	0.00	0.20000																																																																										

P-Mx and P-My Interaction Diagram



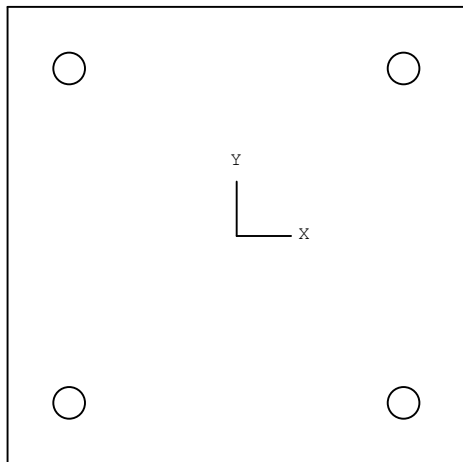
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_4#11_NX2_NY2_cc2.705



Section 5 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

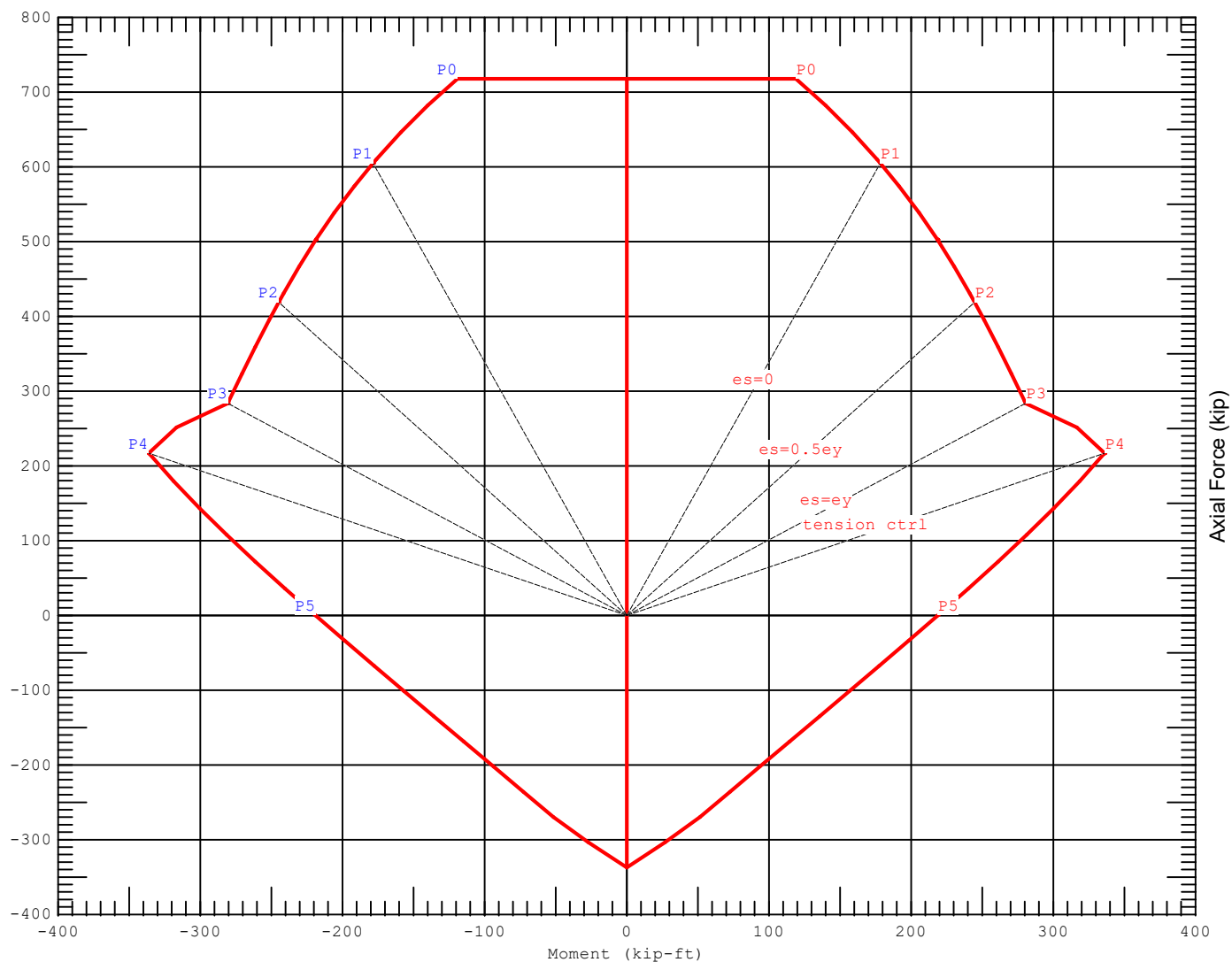
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 4 # 11
Confinement: Tied
Ag: 400.00 in²
As: 6.24 in²
Roh: 1.56%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.18 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	716.81	119.02	-0.00047
P1	603.84	178.43	0.00000
P2	418.04	244.74	0.00103
P3	283.25	280.59	0.00207
P4	216.76	336.03	0.00507
P5	0.00	218.81	0.01259
Pmin	-336.96	0.00	0.20000

PT	P	My (-)	max es
P0	716.81	-119.02	-0.00047
P1	603.84	-178.43	0.00000
P2	418.04	-244.74	0.00103
P3	283.25	-280.59	0.00207
P4	216.76	-336.03	0.00507
P5	0.00	-218.81	0.01259
Pmin	-336.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

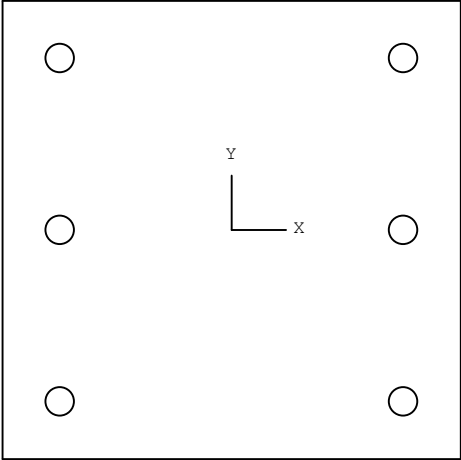
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_6#10_NX3_NY2_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 6 # 10

Confinement: Tied

Ag: 400.00 in^2

As: 7.62 in^2

Roh: 1.90%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

Y0: 0.00 in

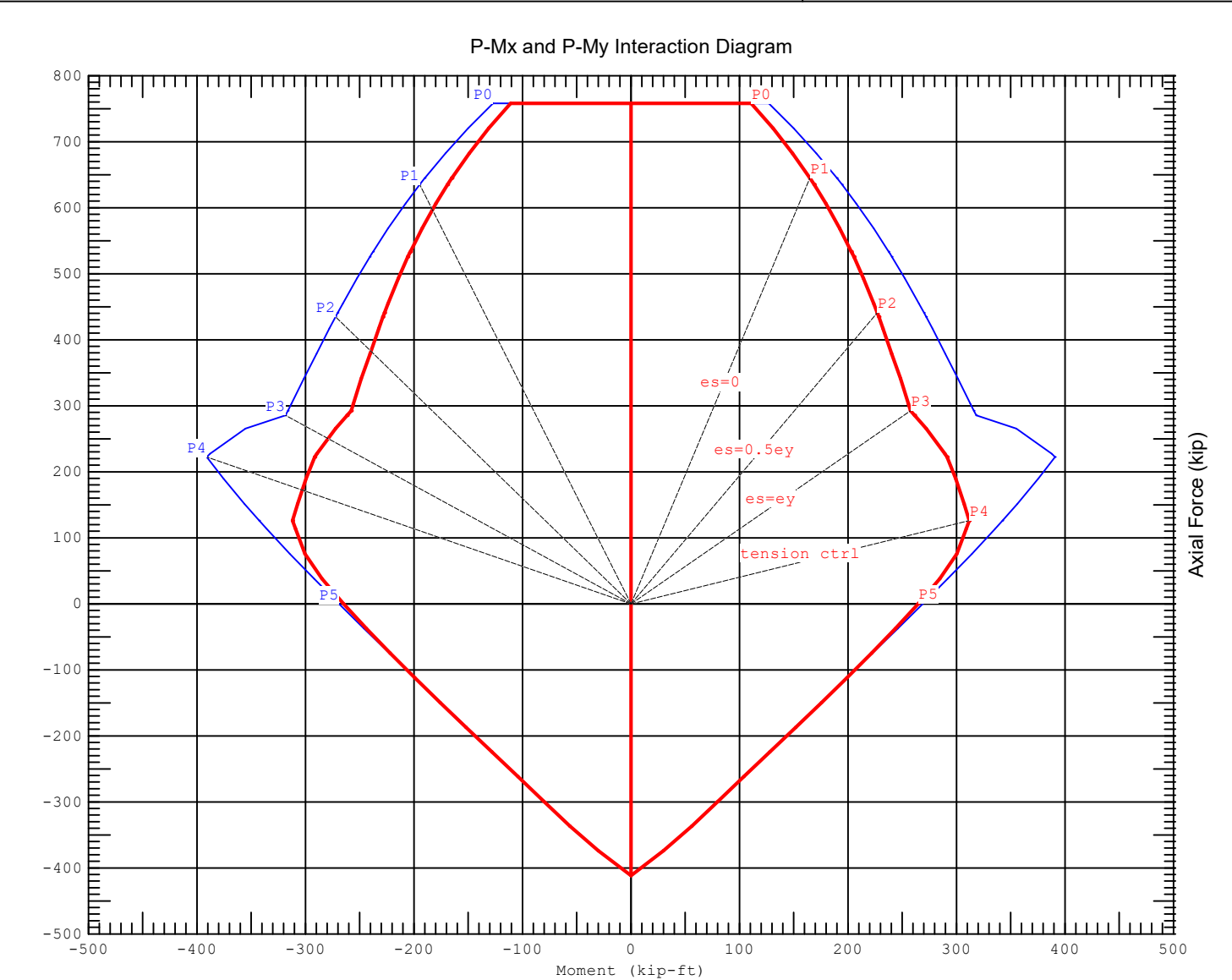
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	758.04	110.75	-0.00042
P1	644.98	164.62	0.00000
P2	440.76	226.71	0.00103
P3	292.34	257.16	0.00207
P4	125.86	311.18	0.00507
P5	0.01	264.34	0.00801
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	758.04	-126.91	-0.00048
P1	635.10	-194.22	0.00000
P2	434.44	-271.76	0.00103
P3	285.36	-317.68	0.00207
P4	222.39	-390.28	0.00507
P5	-0.01	-268.55	0.01227
Pmin	-411.48	0.00	0.20000

Section 6 of 238



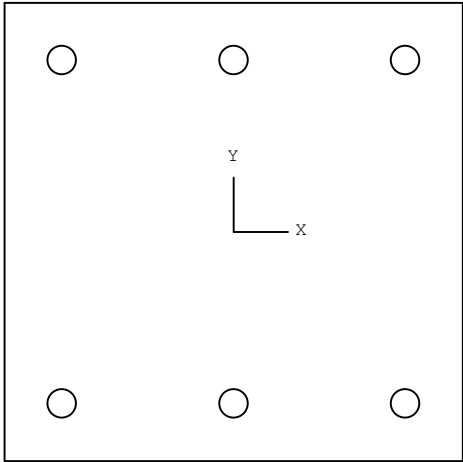
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_6#10_NX2_NY3_cc2.51



Section 7 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

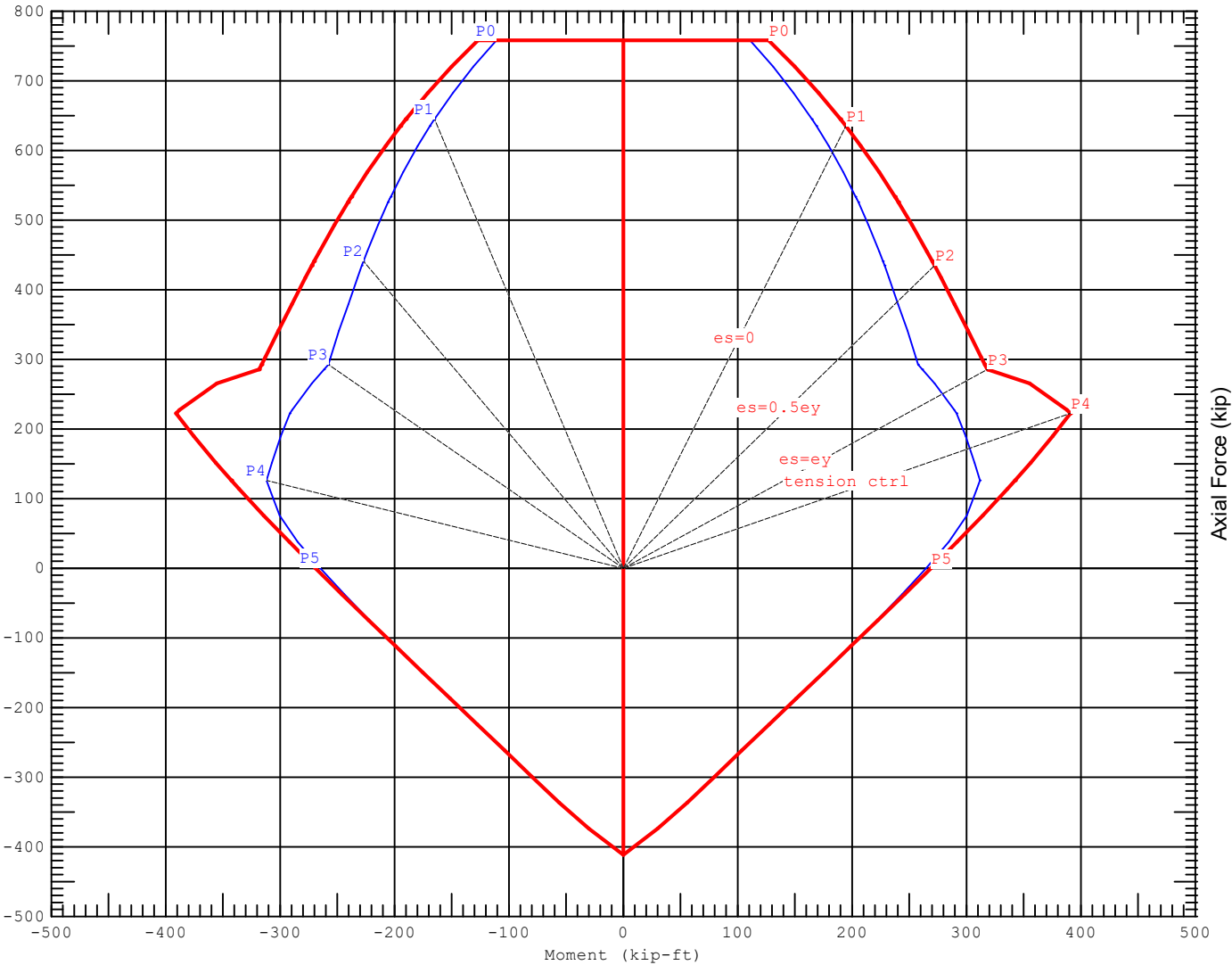
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 400.00 in²
As: 7.62 in²
Roh: 1.90%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	758.04	126.91	-0.00048
P1	635.10	194.22	0.00000
P2	434.44	271.76	0.00103
P3	285.36	317.68	0.00207
P4	222.39	390.28	0.00507
P5	-0.01	268.55	0.01227
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	758.04	-110.75	-0.00042
P1	644.98	-164.62	0.00000
P2	440.76	-226.71	0.00103
P3	292.34	-257.16	0.00207
P4	125.86	-311.18	0.00507
P5	0.01	-264.34	0.00801
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram



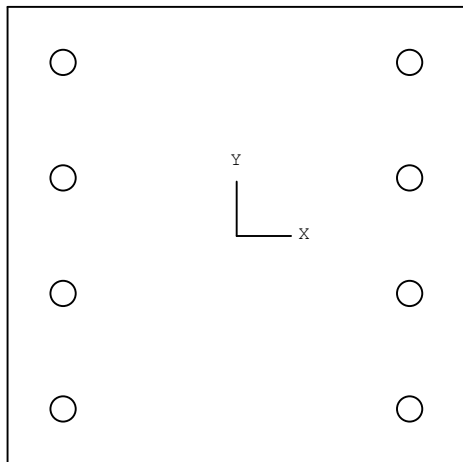
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#9_NX4_NY2_cc2.439



Section 8 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

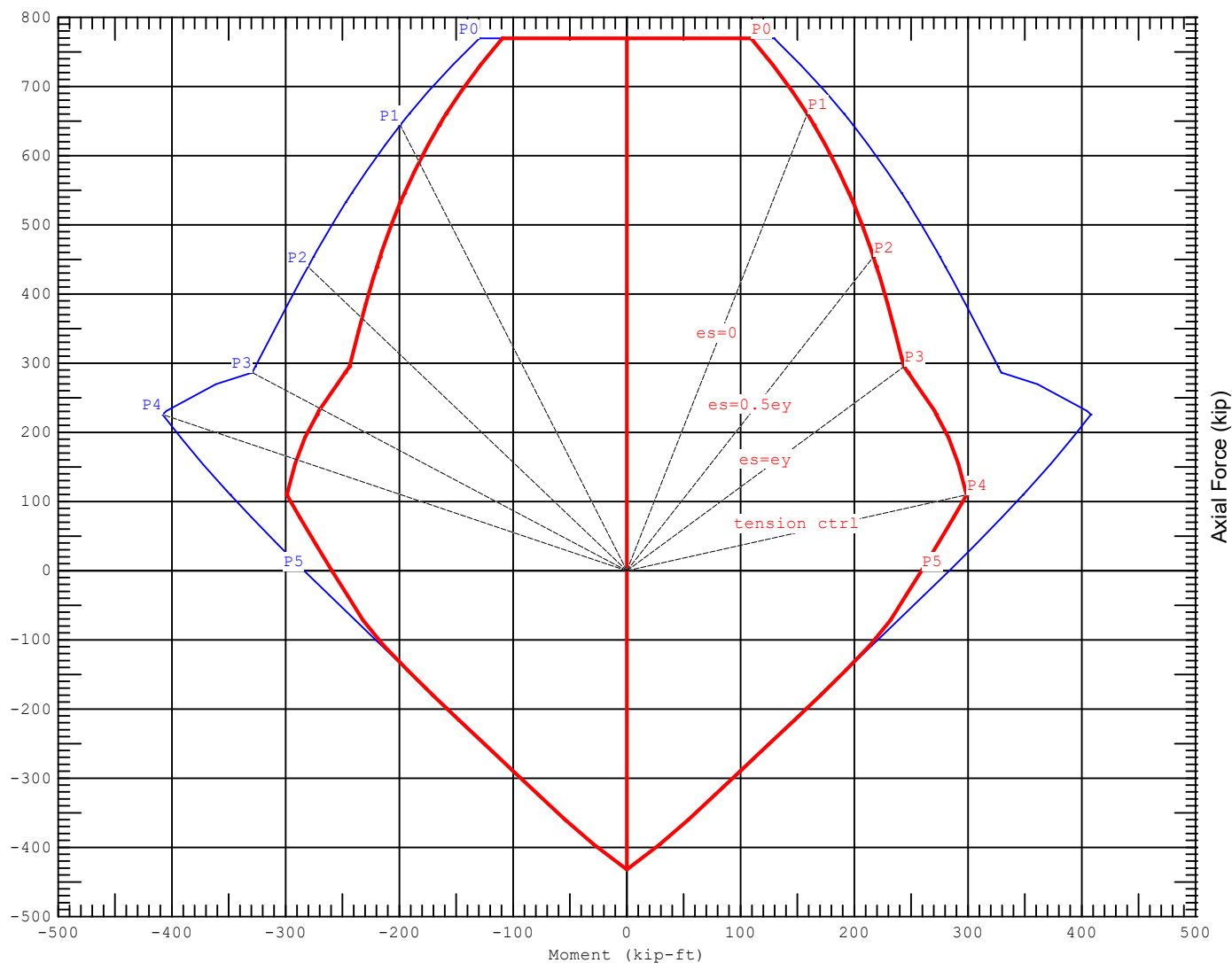
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 400.00 in²
As: 8.00 in²
Roh: 2.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	769.39	109.13	-0.00040
P1	660.27	158.47	0.00000
P2	453.29	216.56	0.00103
P3	294.78	243.28	0.00207
P4	109.44	298.24	0.00507
P5	-0.00	258.72	0.00707
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	769.39	-129.33	-0.00048
P1	644.20	-198.71	0.00000
P2	439.32	-279.72	0.00103
P3	286.23	-328.66	0.00207
P4	225.75	-407.31	0.00507
P5	-0.01	-283.12	0.01232
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



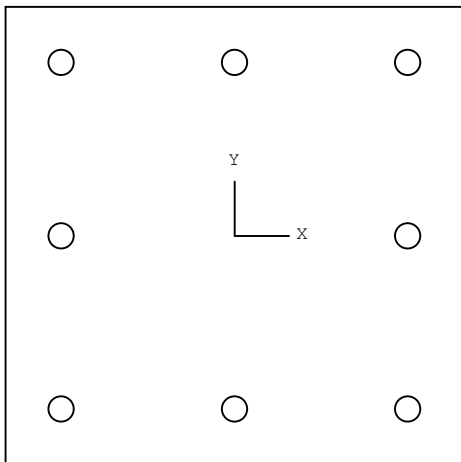
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#9_NX3_NY3_cc2.439



Section 9 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

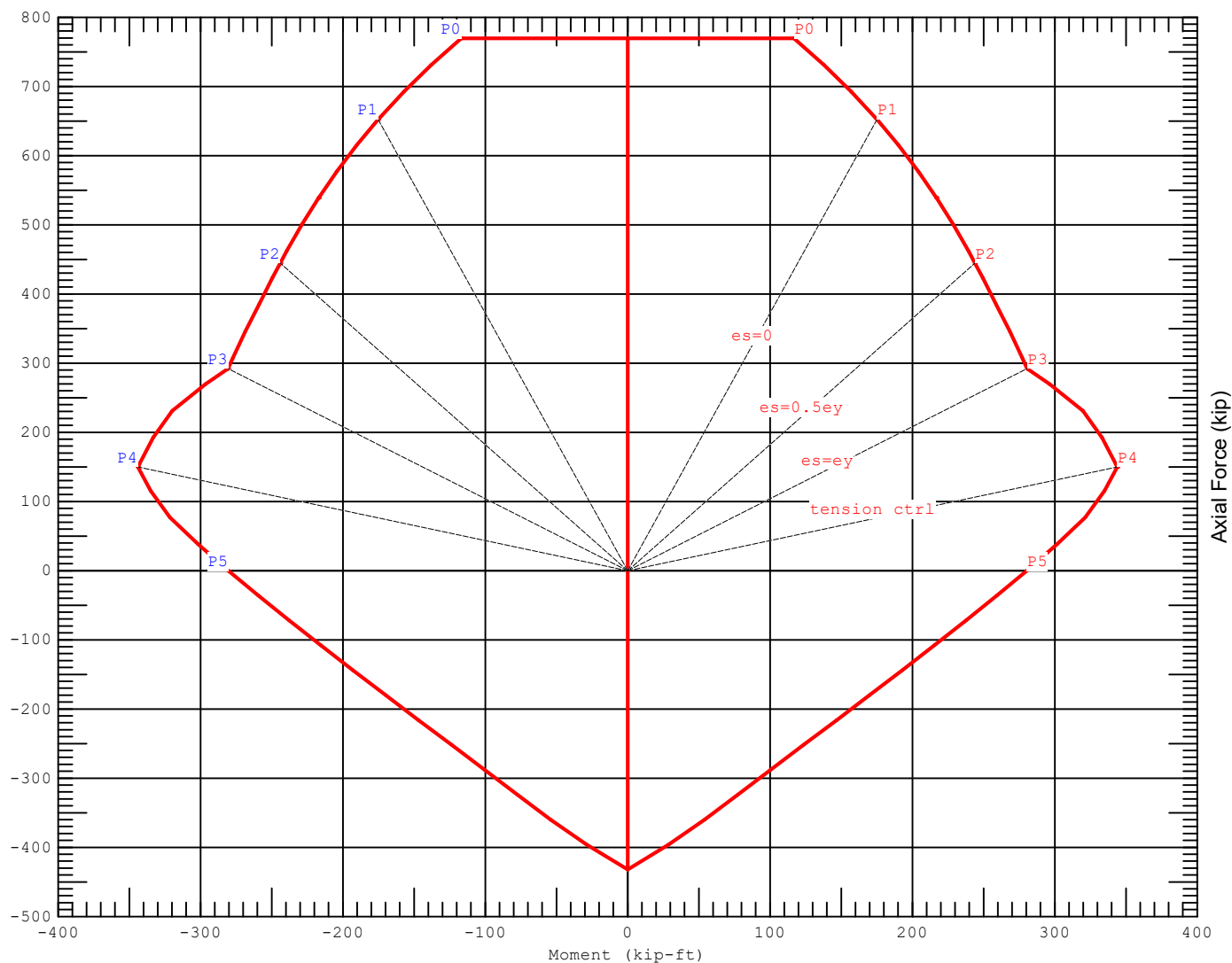
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 400.00 in²
As: 8.00 in²
Roh: 2.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	769.39	116.78	-0.00043
P1	652.23	175.18	0.00000
P2	444.65	243.90	0.00103
P3	292.16	280.55	0.00207
P4	149.75	343.83	0.00507
P5	-0.01	280.30	0.00895
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	769.39	-116.78	-0.00043
P1	652.23	-175.18	0.00000
P2	444.65	-243.90	0.00103
P3	292.16	-280.55	0.00207
P4	149.75	-343.83	0.00507
P5	-0.01	-280.30	0.00895
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#9_NX2_NY4_cc2.439

Y

X

Section 10 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 8 # 9

Confinement: Tied

Ag: 400.00 in^2

As: 8.00 in^2

Roh: 2.00%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

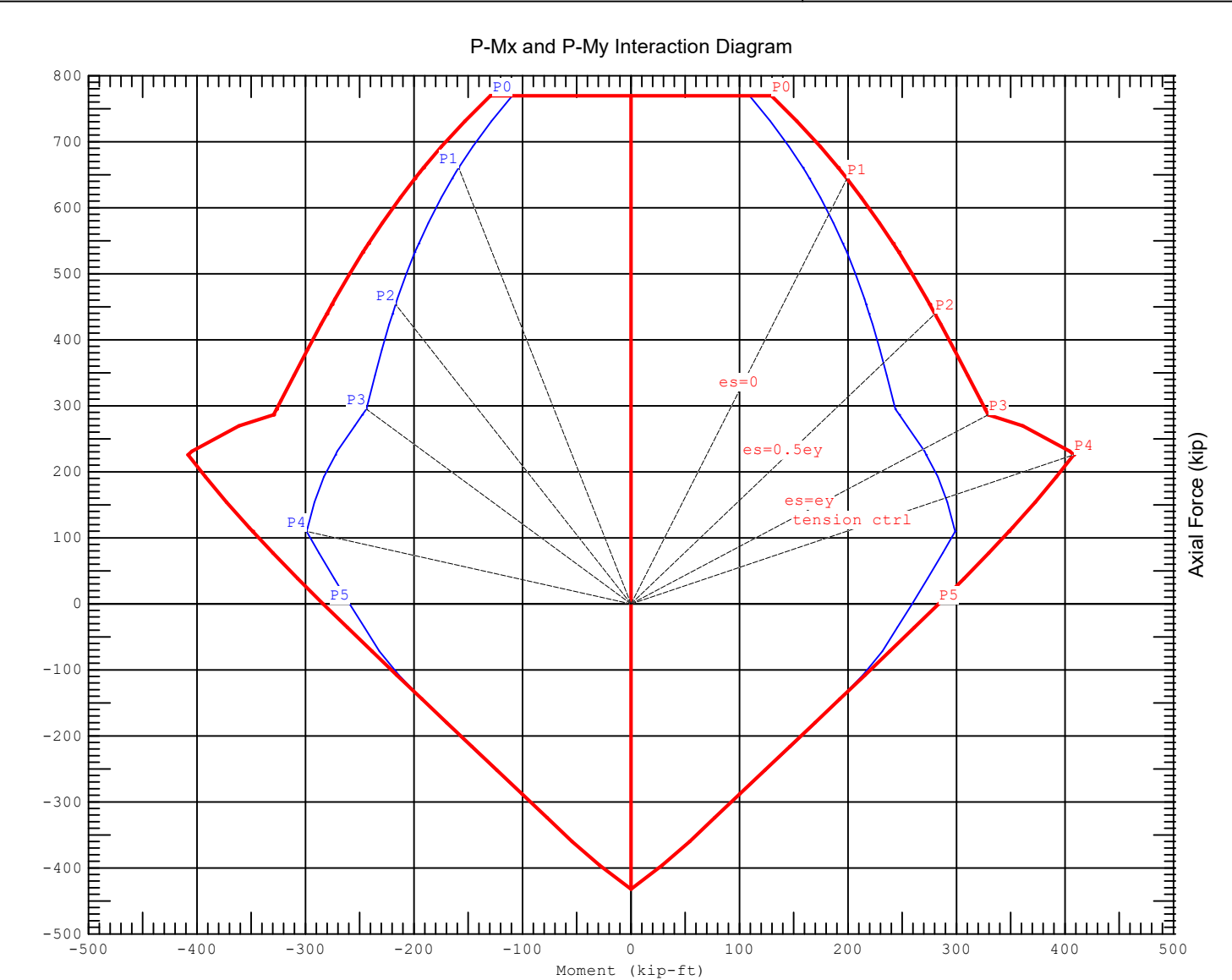
Y0: 0.00 in

Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	769.39	129.33	-0.00048
P1	644.20	198.71	0.00000
P2	439.32	279.72	0.00103
P3	286.23	328.66	0.00207
P4	225.75	407.31	0.00507
P5	-0.01	283.12	0.01232
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	769.39	-109.13	-0.00040
P1	660.27	-158.47	0.00000
P2	453.29	-216.56	0.00103
P3	294.78	-243.28	0.00207
P4	109.44	-298.24	0.00507
P5	-0.00	-258.72	0.00707
Pmin	-432.00	0.00	0.20000



Project/Job:

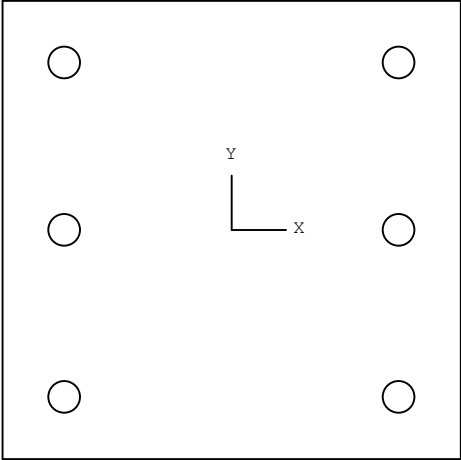
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_6#11_NX3_NY2_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 400.00 in^2

As: 9.36 in^2

Roh: 2.34%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

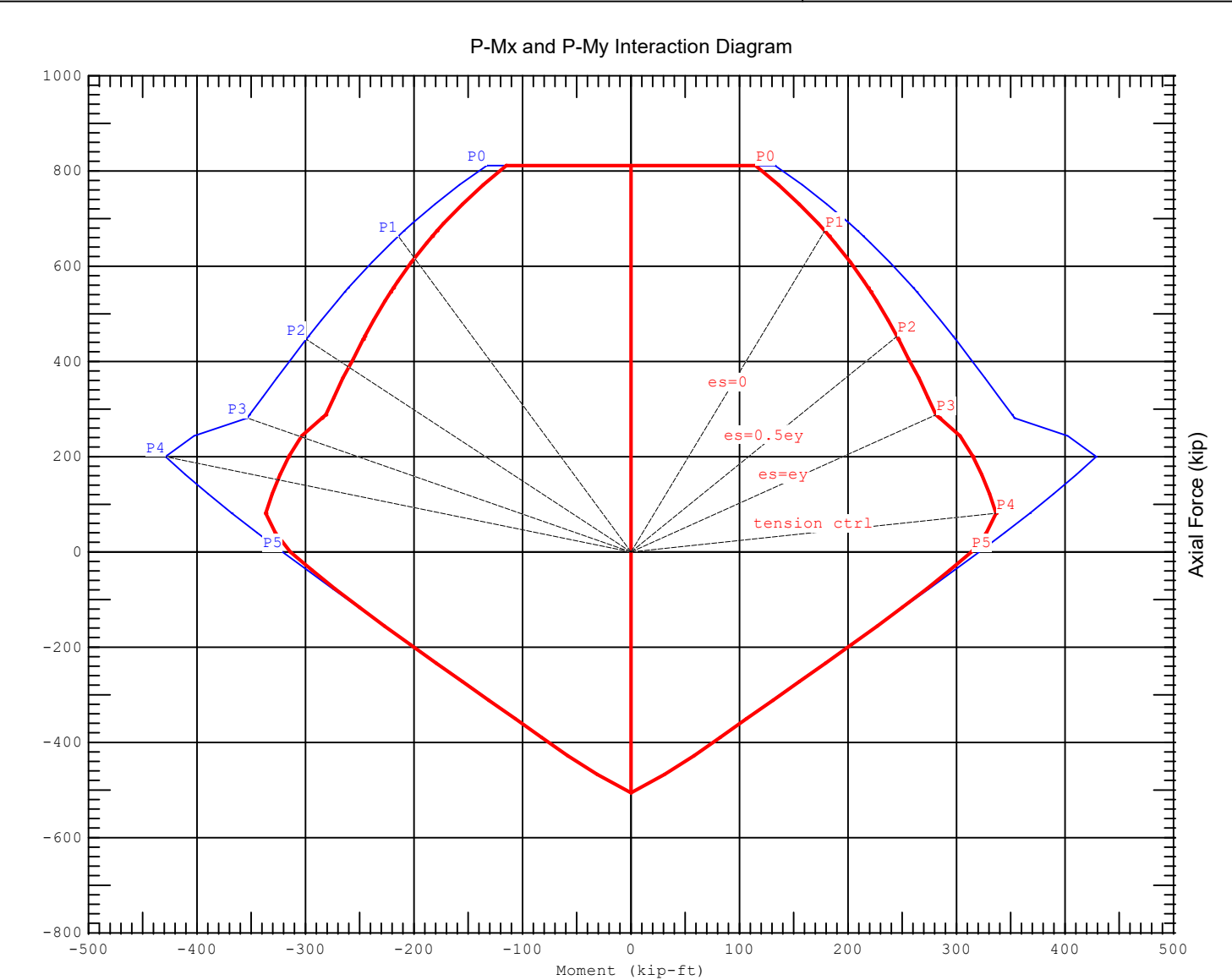
Y0: 0.00 in

Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	810.02	114.57	-0.00049
P1	673.09	178.43	0.00000
P2	452.11	244.74	0.00103
P3	287.31	280.59	0.00207
P4	81.14	336.03	0.00507
P5	-0.01	313.25	0.00628
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	810.01	-132.62	-0.00054
P1	662.09	-213.84	0.00000
P2	445.88	-298.65	0.00103
P3	280.66	-352.99	0.00207
P4	199.70	-428.09	0.00507
P5	-0.01	-320.56	0.01034
Pmin	-505.44	-0.00	0.20000



Project/Job:

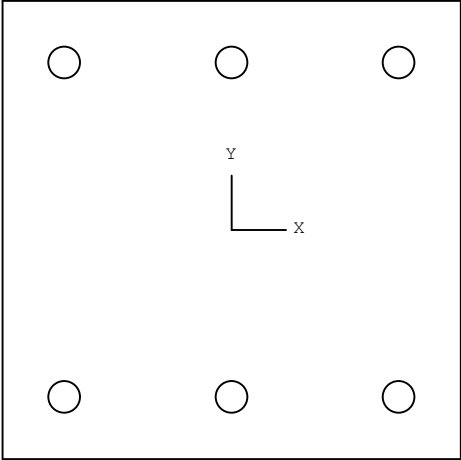
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_6#11_NX2_NY3_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 400.00 in^2

As: 9.36 in^2

Roh: 2.34%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

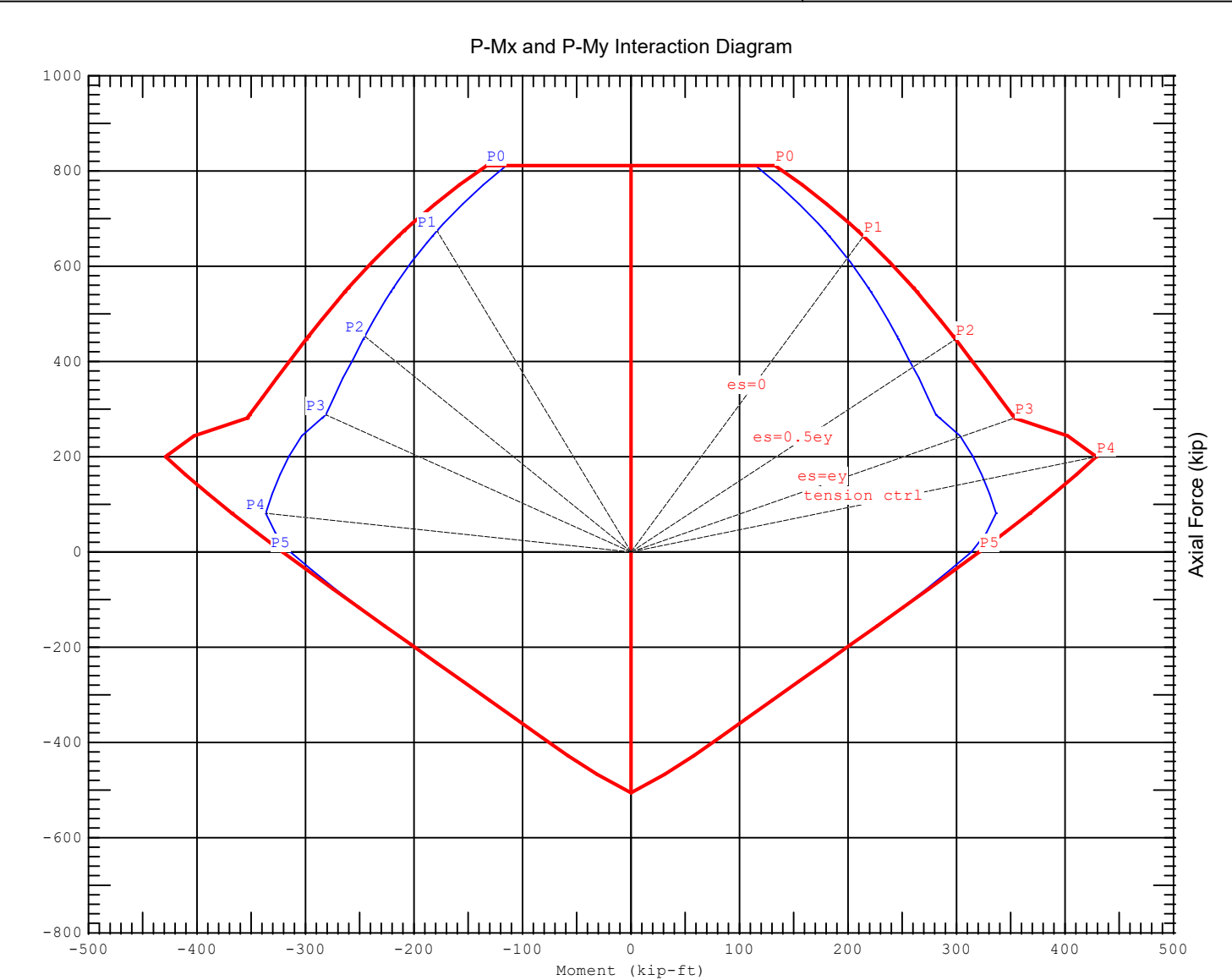
Y0: 0.00 in

Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	810.01	132.62	-0.00054
P1	662.09	213.84	0.00000
P2	445.88	298.65	0.00103
P3	280.66	352.99	0.00207
P4	199.70	428.09	0.00507
P5	-0.01	320.56	0.01034
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	810.02	-114.57	-0.00049
P1	673.09	-178.43	0.00000
P2	452.11	-244.74	0.00103
P3	287.31	-280.59	0.00207
P4	81.14	-336.03	0.00507
P5	-0.01	-313.25	0.00628
Pmin	-505.44	0.00	0.20000



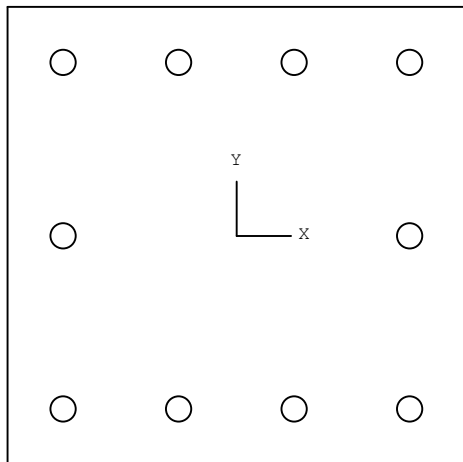
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#9_NX3_NY4_cc2.439



Section 13 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

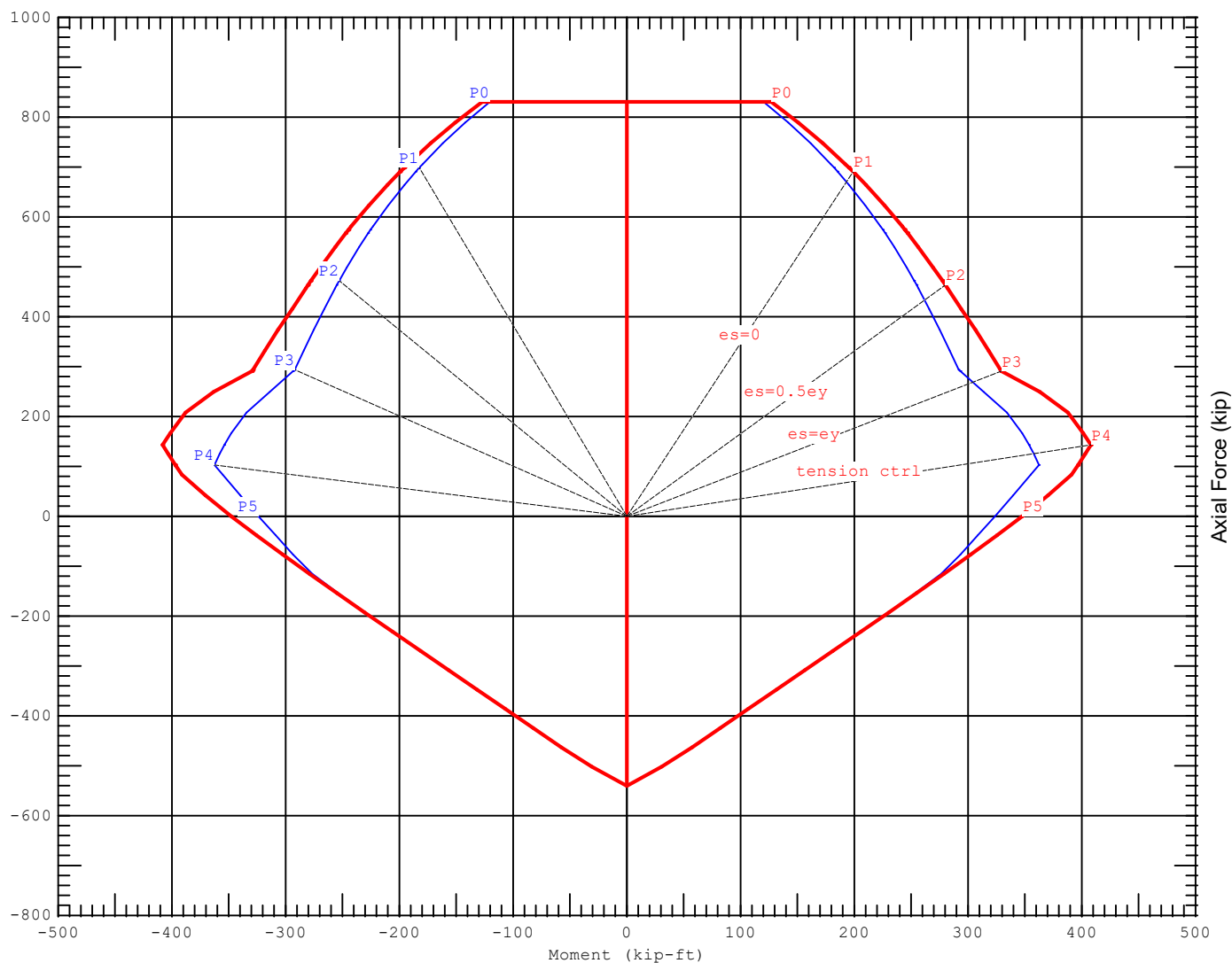
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 400.00 in²
As: 10.00 in²
Roh: 2.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	829.13	126.93	-0.00050
P1	689.58	198.71	0.00000
P2	462.49	279.72	0.00103
P3	290.50	328.66	0.00207
P4	142.50	407.31	0.00507
P5	-0.01	347.04	0.00824
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	829.14	-120.18	-0.00046
P1	697.61	-182.00	0.00000
P2	471.13	-252.38	0.00103
P3	293.13	-291.38	0.00207
P4	102.20	-361.72	0.00507
P5	0.01	-323.30	0.00680
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



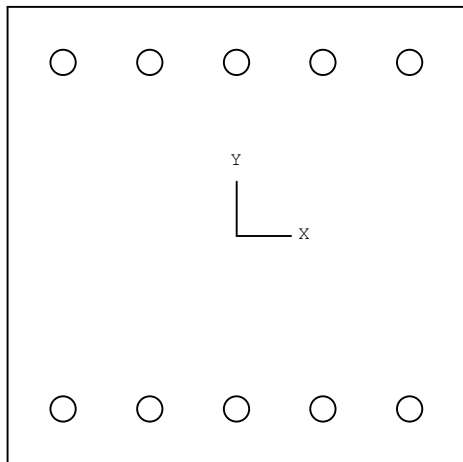
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#9_NX2_NY5_cc2.439



Section 14 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

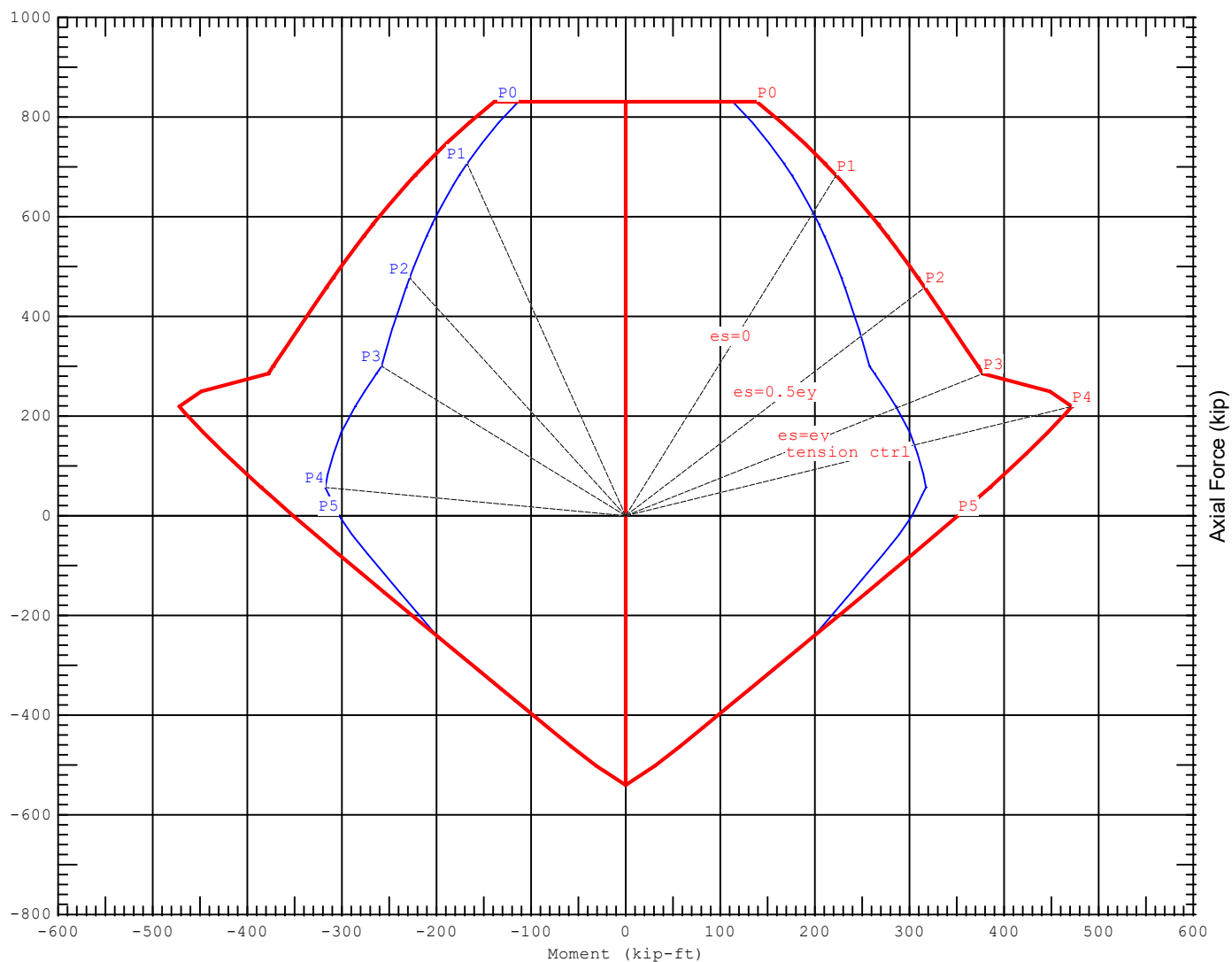
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 400.00 in²
As: 10.00 in²
Roh: 2.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	829.14	138.38	-0.00053
P1	681.54	222.24	0.00000
P2	457.16	315.53	0.00103
P3	284.57	376.76	0.00207
P4	218.51	470.79	0.00507
P5	-0.00	350.59	0.01111
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	829.13	-113.06	-0.00042
P1	705.65	-167.00	0.00000
P2	476.46	-227.67	0.00103
P3	299.06	-257.33	0.00207
P4	56.42	-316.71	0.00507
P5	-0.00	-302.22	0.00574
Pmin	-540.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



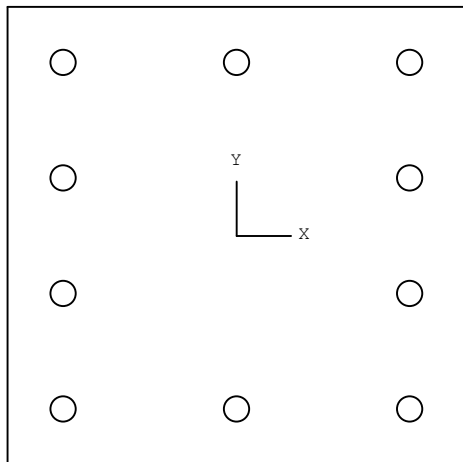
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#9_NX4_NY3_cc2.439



Section 15 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

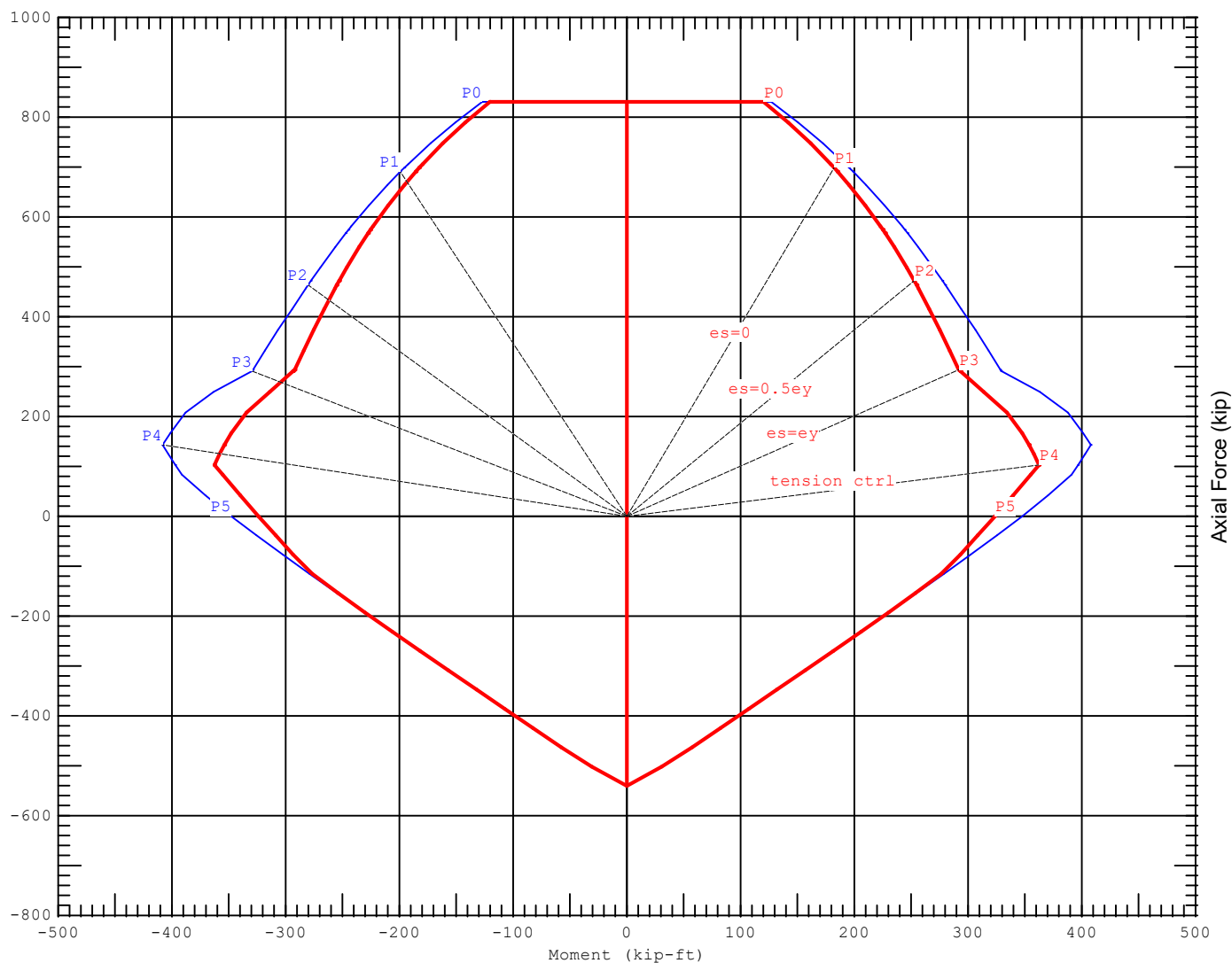
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 400.00 in²
As: 10.00 in²
Roh: 2.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	829.14	120.18	-0.00046
P1	697.61	182.00	0.00000
P2	471.13	252.38	0.00103
P3	293.13	291.38	0.00207
P4	102.20	361.72	0.00507
P5	0.01	323.30	0.00680
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	829.13	-126.93	-0.00050
P1	689.58	-198.71	0.00000
P2	462.49	-279.72	0.00103
P3	290.50	-328.66	0.00207
P4	142.50	-407.31	0.00507
P5	-0.01	-347.04	0.00824
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



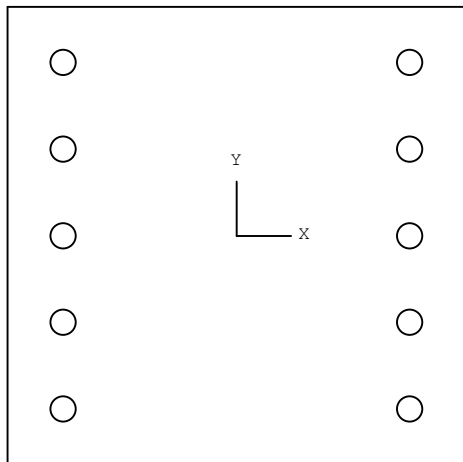
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#9_NX5_NY2_cc2.439



Section 16 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

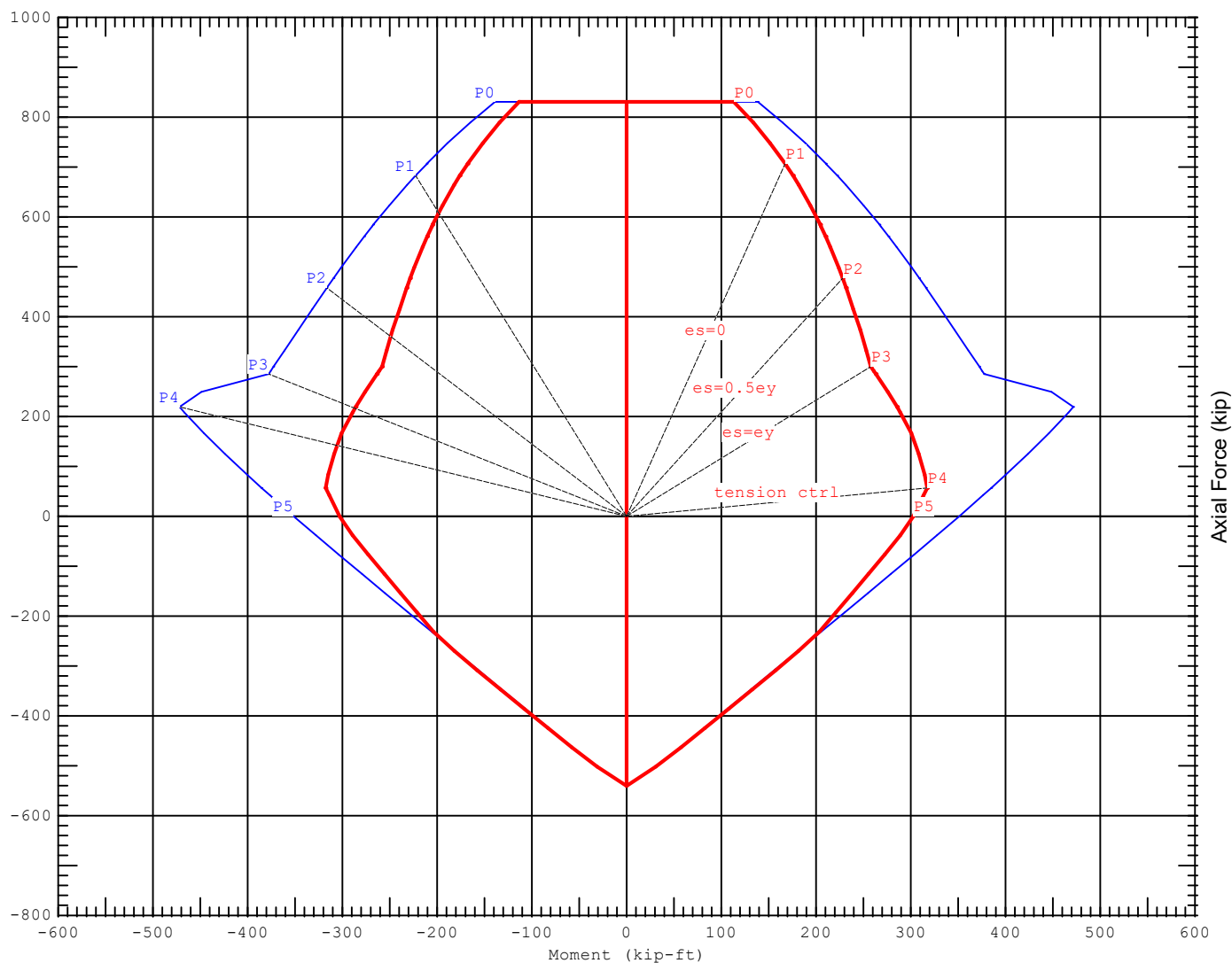
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 400.00 in²
As: 10.00 in²
Roh: 2.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	829.13	113.06	-0.00042
P1	705.65	167.00	0.00000
P2	476.46	227.67	0.00103
P3	299.06	257.33	0.00207
P4	56.42	316.71	0.00507
P5	-0.00	302.22	0.00574
Pmin	-540.00	-0.00	0.20000

PT	P	My (-)	max es
P0	829.14	-138.38	-0.00053
P1	681.54	-222.24	0.00000
P2	457.16	-315.53	0.00103
P3	284.57	-376.76	0.00207
P4	218.51	-470.79	0.00507
P5	-0.00	-350.59	0.01111
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



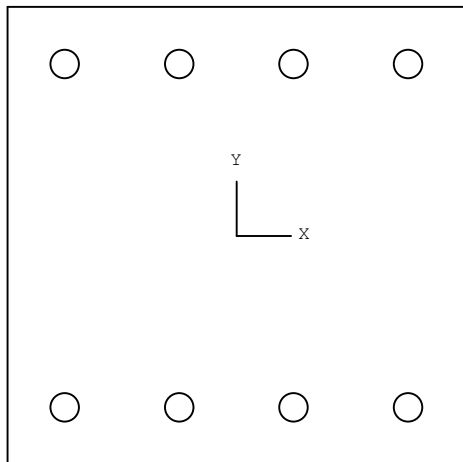
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#10_NX2_NY4_cc2.51



Section 17 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

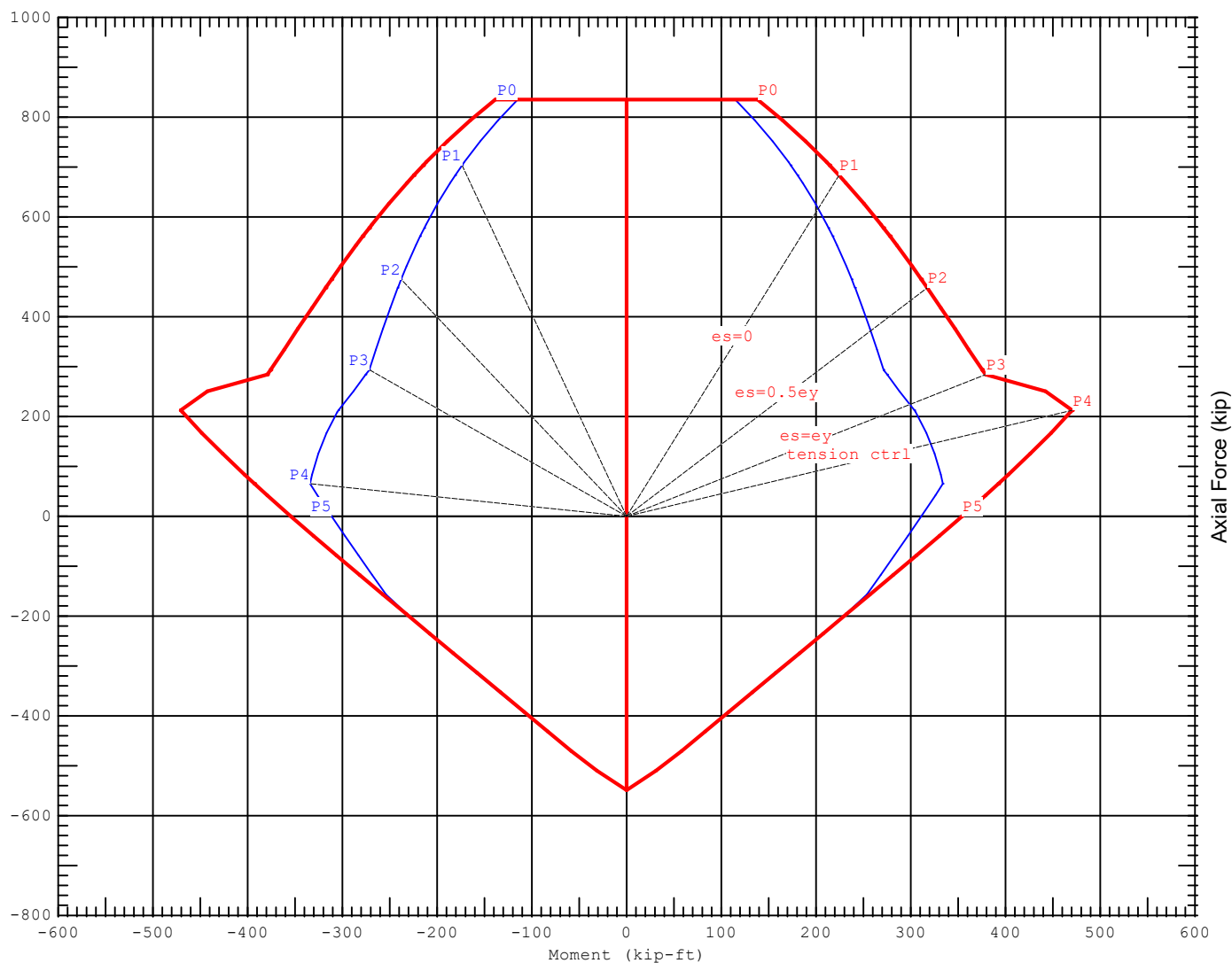
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 400.00 in²
As: 10.16 in²
Roh: 2.54%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	833.92	138.26	-0.00054
P1	682.52	223.82	0.00000
P2	457.10	316.82	0.00103
P3	283.25	378.20	0.00207
P4	211.95	469.37	0.00507
P5	-0.01	353.44	0.01072
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	833.92	-114.44	-0.00045
P1	702.28	-173.15	0.00000
P2	473.95	-237.30	0.00103
P3	293.00	-270.70	0.00207
P4	65.06	-333.35	0.00507
P5	-0.00	-310.67	0.00606
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



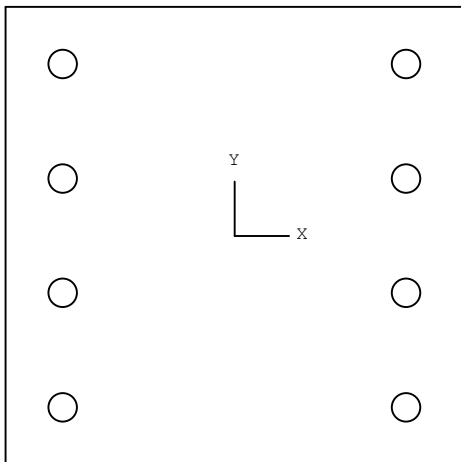
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#10_NX4_NY2_cc2.51



Section 18 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

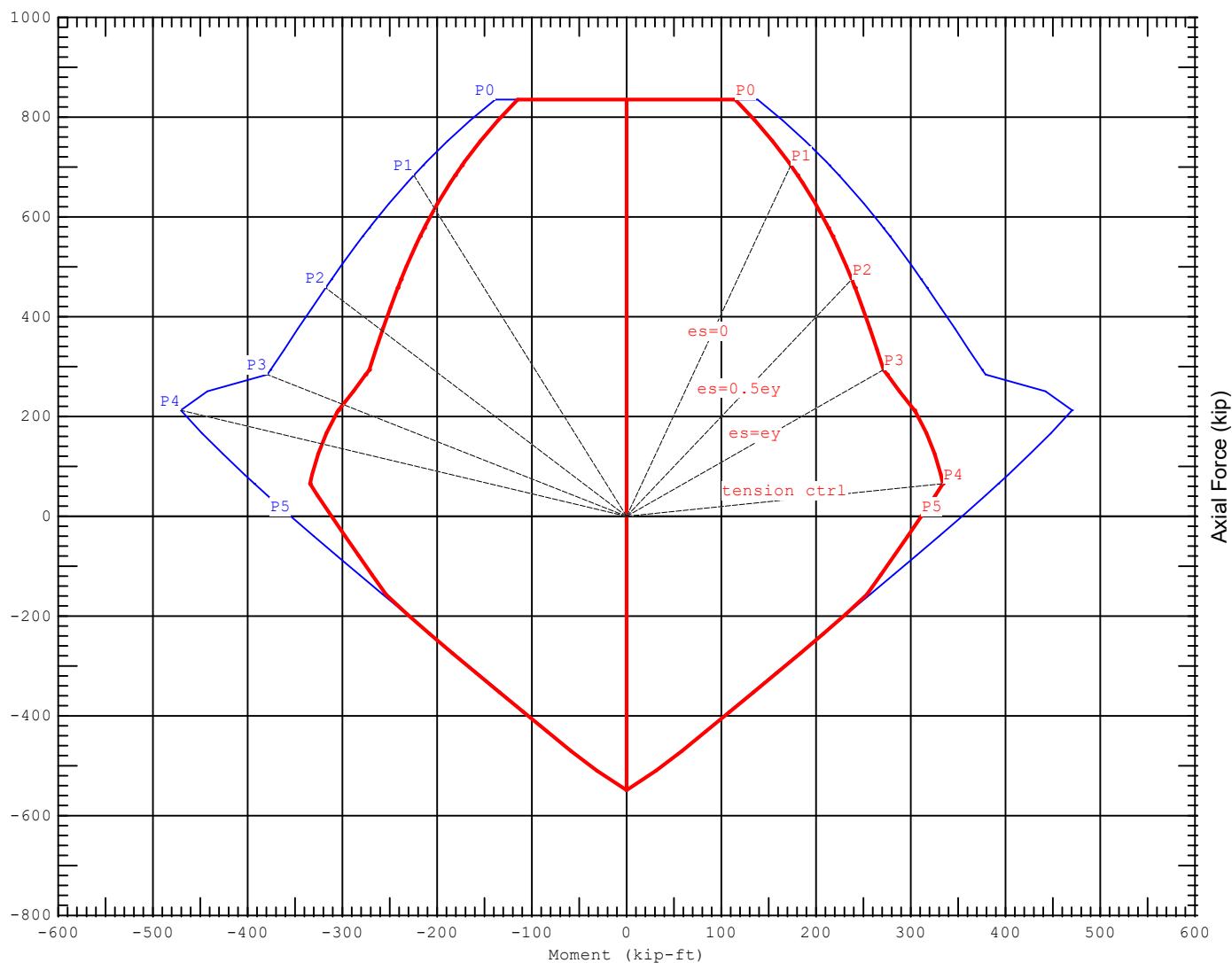
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 400.00 in²
As: 10.16 in²
Roh: 2.54%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

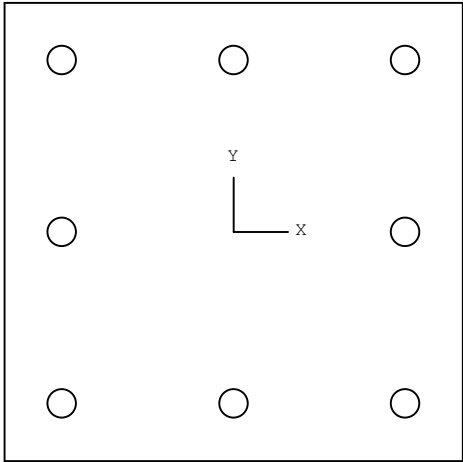
PT	P	Mx (+)	max es
P0	833.92	114.44	-0.00045
P1	702.28	173.15	0.00000
P2	473.95	237.30	0.00103
P3	293.00	270.70	0.00207
P4	65.06	333.35	0.00507
P5	-0.00	310.67	0.00606
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	833.92	-138.26	-0.00054
P1	682.52	-223.82	0.00000
P2	457.10	-316.82	0.00103
P3	283.25	-378.20	0.00207
P4	211.95	-469.37	0.00507
P5	-0.01	-353.44	0.01072
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



Rect20x20_fc3_fy60_8#10_NX3_NY3_cc2.51



Section 19 of 238

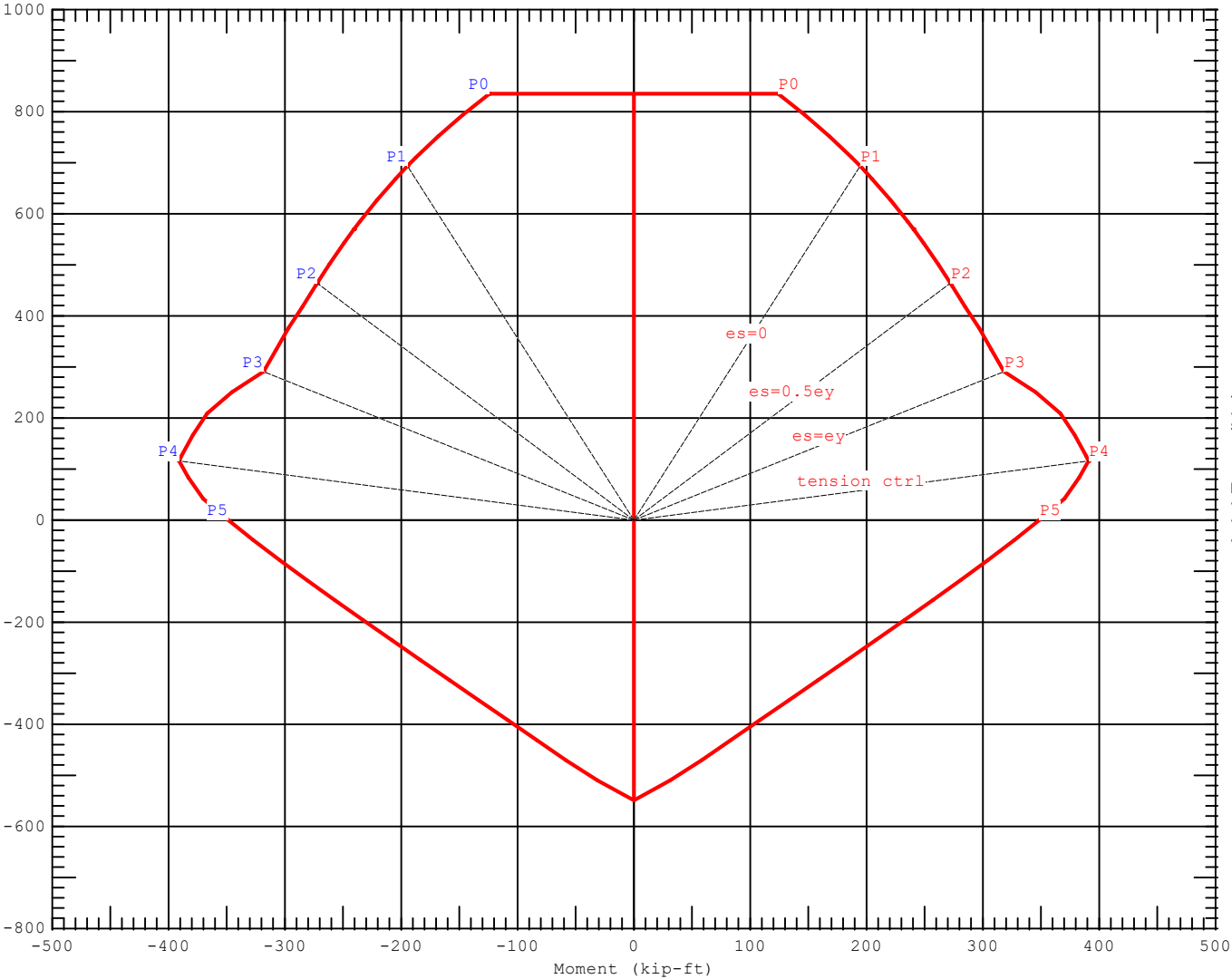
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

b x h: 20 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 400.00 in^2
As: 10.16 in^2
Roh: 2.54%
Ix: 13333.3 in^4
Iy: 13333.3 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)			
PT	P	Mx (+)	max es
P0	833.91	123.76	-0.00050
P1	692.40	194.22	0.00000
P2	463.42	271.76	0.00103
P3	290.23	317.68	0.00207
P4	115.43	390.28	0.00507
P5	0.01	348.02	0.00725
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	833.91	-123.76	-0.00050
P1	692.40	-194.22	0.00000
P2	463.42	-271.76	0.00103
P3	290.23	-317.68	0.00207
P4	115.43	-390.28	0.00507
P5	0.01	-348.02	0.00725
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



Engineer:

cColumn v10
(C) Computations & Graphics, Inc.

A 4x4 grid of circles is shown. In the center of the grid, there is a coordinate system with a vertical y-axis and a horizontal x-axis. The y-axis is labeled 'y' at the top, and the x-axis is labeled 'x' at the right. The origin (0,0) is located at the intersection of the two axes, which is the center of the grid. The circles are arranged in a 4x4 pattern, with the center of the grid being the intersection of the two axes. The circles are arranged in a 4x4 pattern, with the center of the grid being the intersection of the two axes. The circles are arranged in a 4x4 pattern, with the center of the grid being the intersection of the two axes.

```
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes
```

```
b x h: 20 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c.): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 400.00 in^2
As: 12.00 in^2
Roh: 3.00%
Ix: 13333.3 in^4
Iy: 13333.3 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in
```

PT	P	Mx (+)	max es
P0	888.88	130.47	-0.00051
P1	734.96	205.53	0.00000
P2	488.98	288.19	0.00103
P3	291.47	339.48	0.00207
P4	94.95	425.20	0.00507
P5	0.00	388.27	0.00657
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	888.88	-130.47	-0.00051
P1	734.96	-205.53	0.00000
P2	488.98	-288.19	0.00103
P3	291.47	-339.48	0.00207
P4	94.95	-425.20	0.00507
P5	0.00	-388.27	0.00657
Pmin	-648.00	-0.00	0.20000

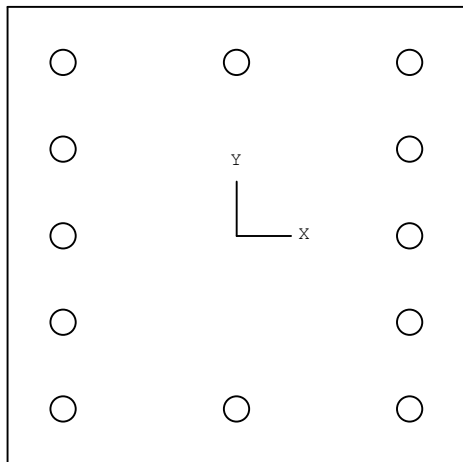
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#9_NX5_NY3_cc2.439



Section 21 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

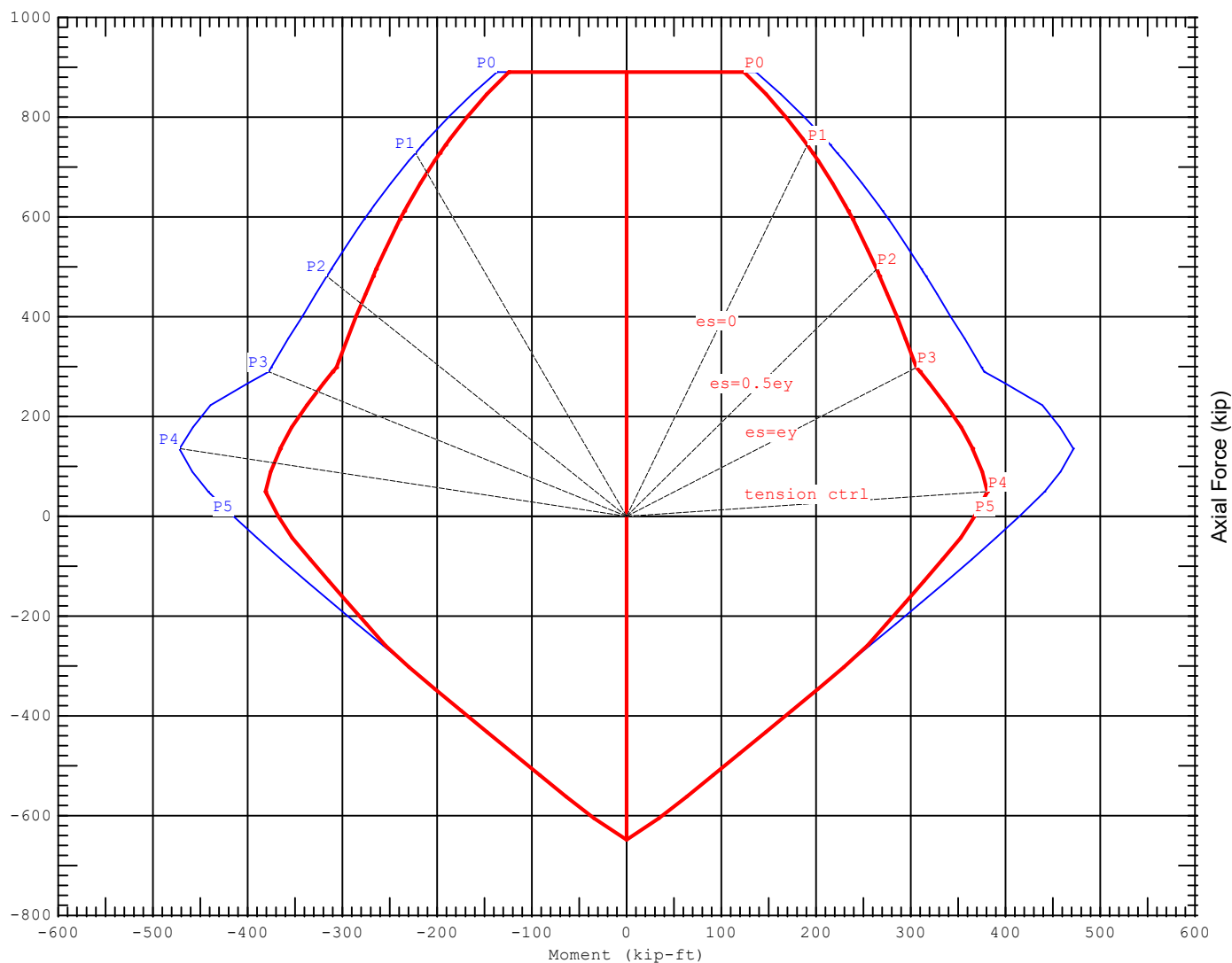
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 400.00 in²
As: 12.00 in²
Roh: 3.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	888.89	123.77	-0.00048
P1	743.00	190.52	0.00000
P2	494.31	263.49	0.00103
P3	297.41	305.43	0.00207
P4	49.17	380.19	0.00507
P5	0.01	366.84	0.00562
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	888.88	-136.51	-0.00054
P1	726.92	-222.24	0.00000
P2	480.33	-315.53	0.00103
P3	288.85	-376.76	0.00207
P4	135.26	-470.79	0.00507
P5	-0.01	-413.85	0.00771
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



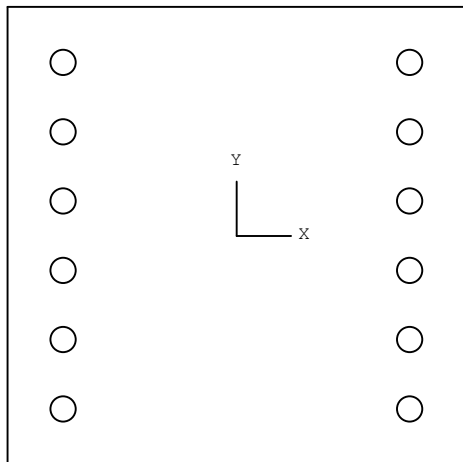
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#9_NX6_NY2_cc2.439



Section 22 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

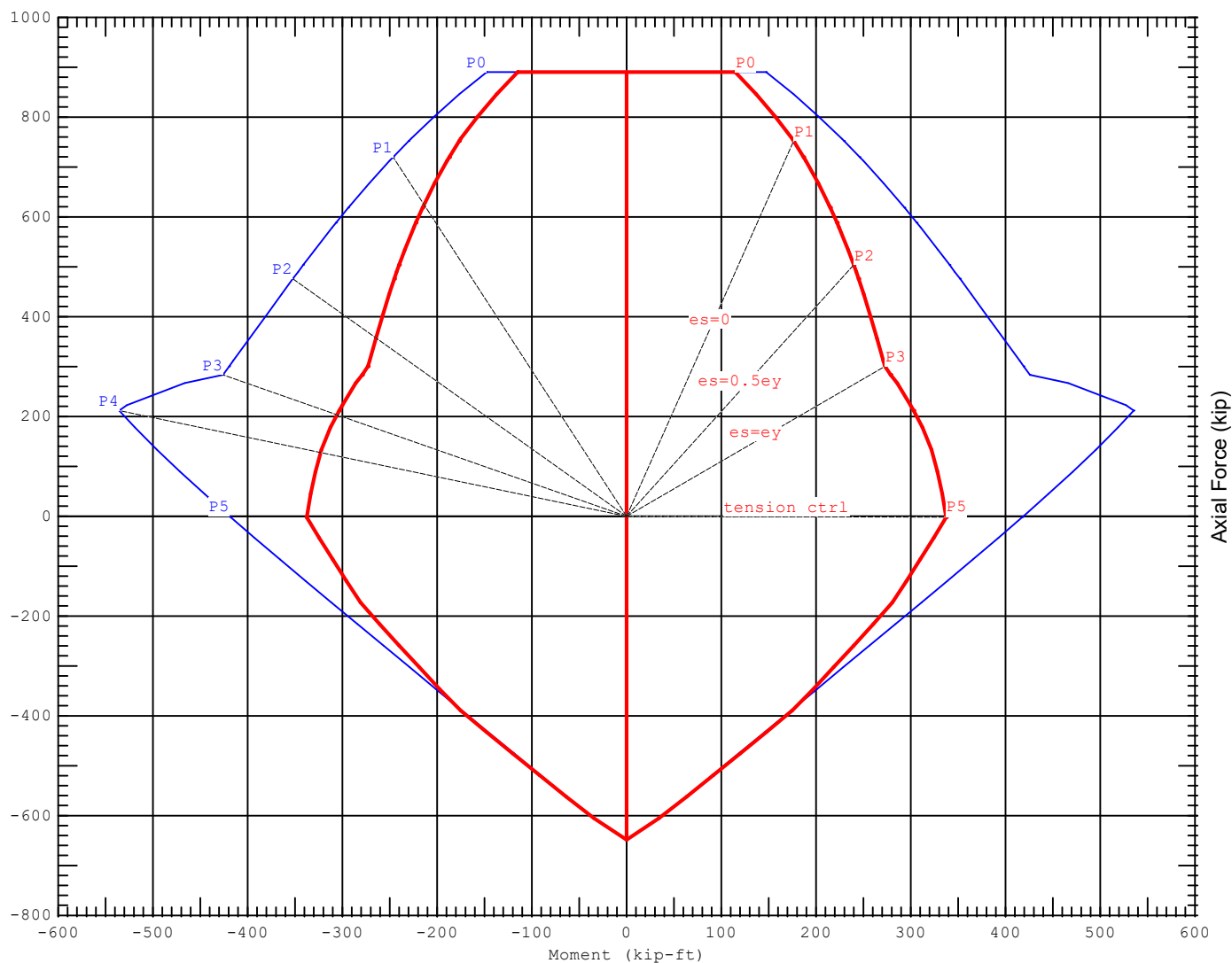
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 400.00 in²
As: 12.00 in²
Roh: 3.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	888.88	114.70	-0.00046
P1	751.03	176.20	0.00000
P2	502.95	239.43	0.00103
P3	300.03	272.26	0.00207
P4	-1.77	336.79	0.00507
P5	0.01	336.66	0.00505
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	888.89	-147.22	-0.00057
P1	718.88	-245.77	0.00000
P2	475.00	-351.35	0.00103
P3	282.91	-424.86	0.00207
P4	211.26	-534.28	0.00507
P5	0.00	-417.95	0.01022
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



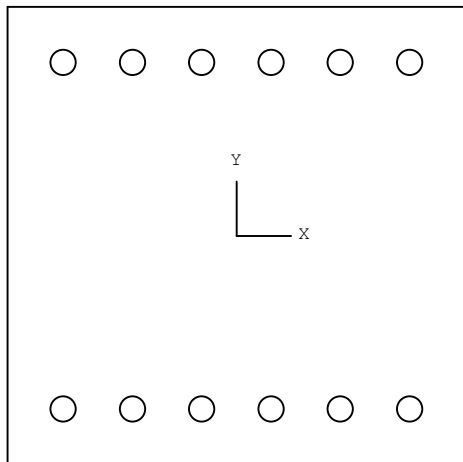
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#9_NX2_NY6_cc2.439



Section 23 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

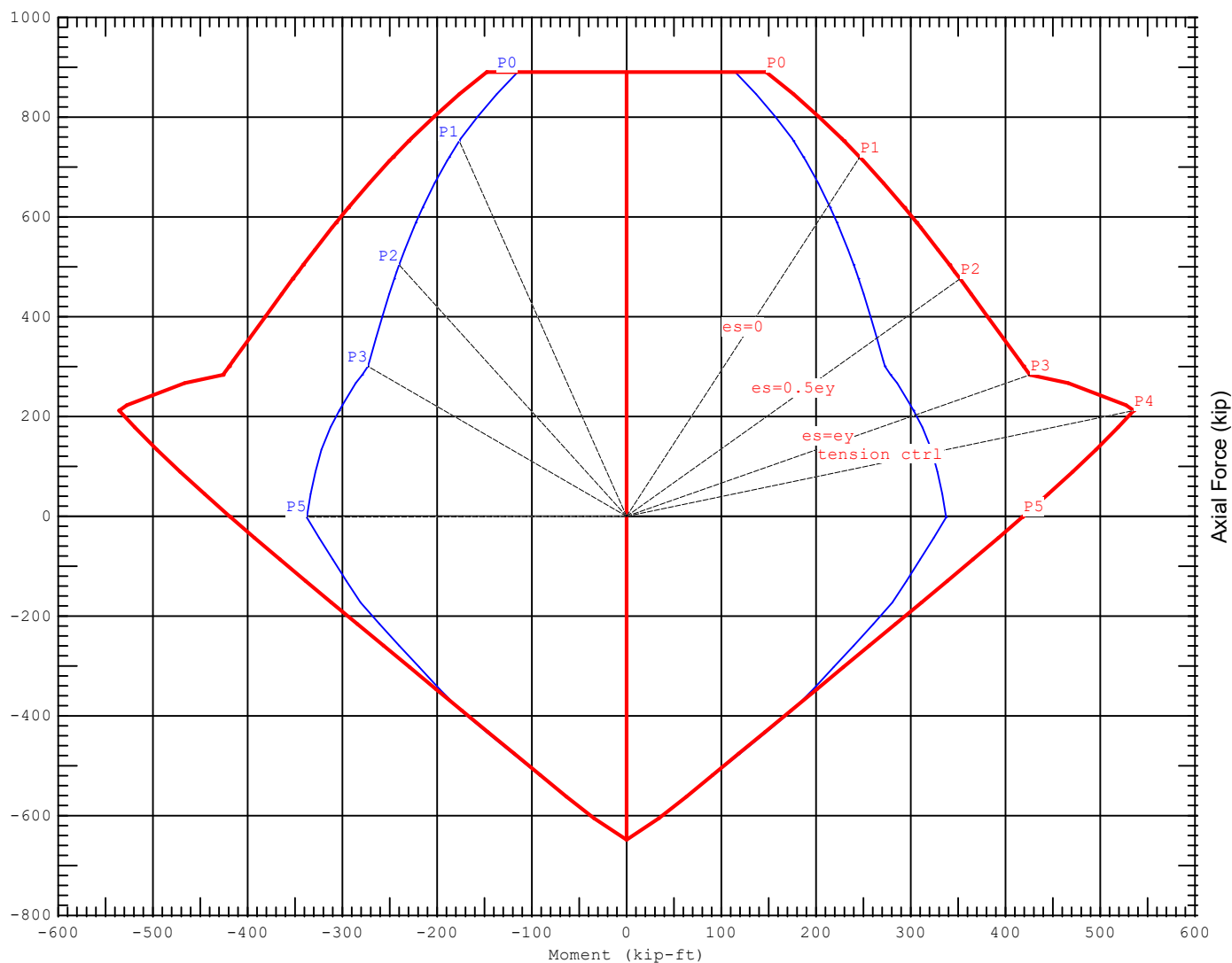
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 400.00 in²
As: 12.00 in²
Roh: 3.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	888.89	147.22	-0.00057
P1	718.88	245.77	0.00000
P2	475.00	351.35	0.00103
P3	282.91	424.86	0.00207
P4	211.26	534.28	0.00507
P5	0.00	417.95	0.01022
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	888.88	-114.70	-0.00046
P1	751.03	-176.20	0.00000
P2	502.95	-239.43	0.00103
P3	300.03	-272.26	0.00207
P4	-1.77	-336.79	0.00507
P5	0.01	-336.66	0.00505
Pmin	-648.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



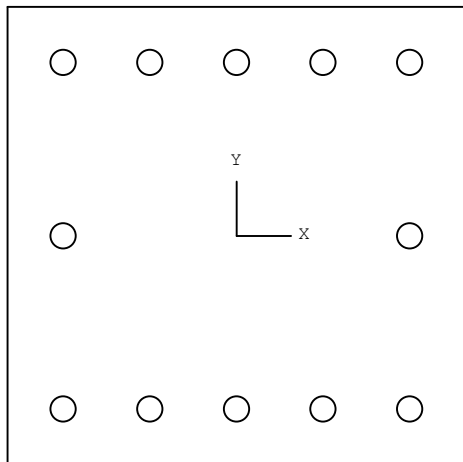
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#9_NX3_NY5_cc2.439



Section 24 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

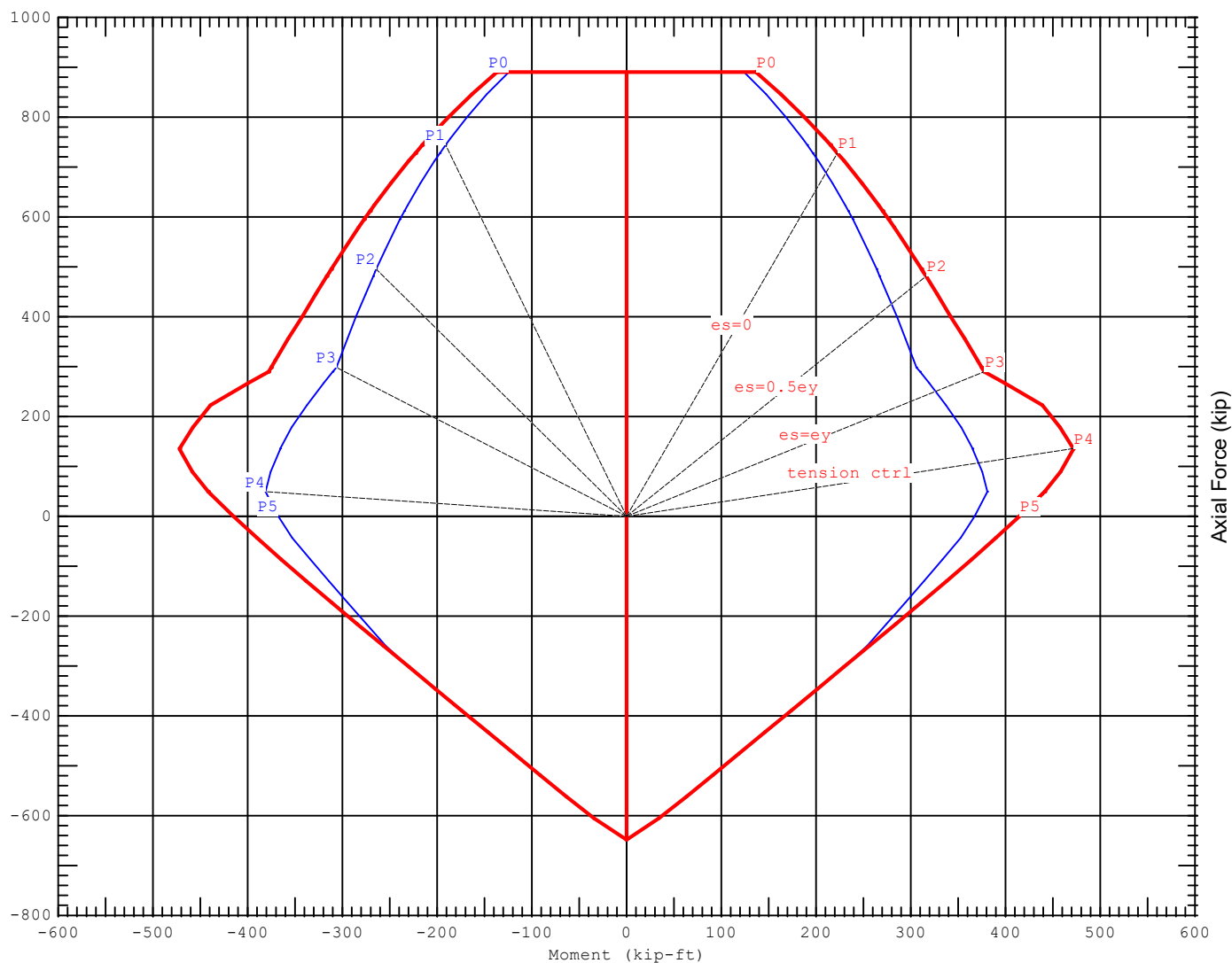
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 400.00 in²
As: 12.00 in²
Roh: 3.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	888.88	136.51	-0.00054
P1	726.92	222.24	0.00000
P2	480.33	315.53	0.00103
P3	288.85	376.76	0.00207
P4	135.26	470.79	0.00507
P5	-0.01	413.85	0.00771
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	888.89	-123.77	-0.00048
P1	743.00	-190.52	0.00000
P2	494.31	-263.49	0.00103
P3	297.41	-305.43	0.00207
P4	49.17	-380.19	0.00507
P5	0.01	-366.84	0.00562
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



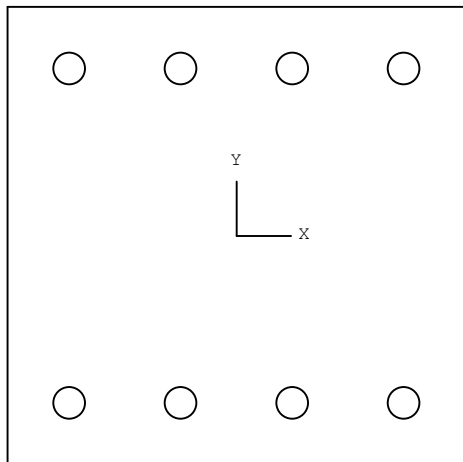
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#11_NX2_NY4_cc2.705



Section 25 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

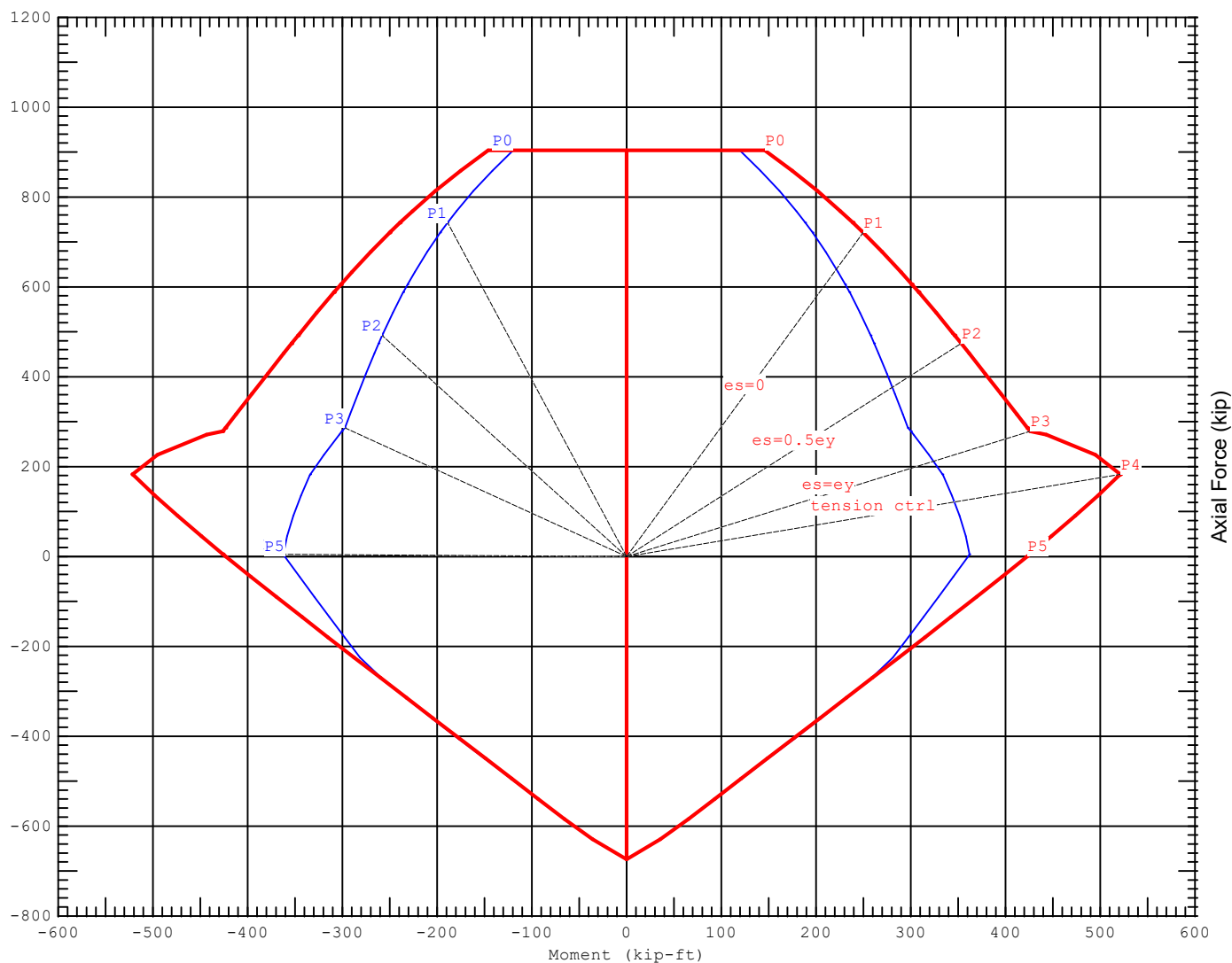
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 400.00 in²
As: 12.48 in²
Roh: 3.12%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	903.23	145.71	-0.00060
P1	720.35	249.26	0.00000
P2	473.71	352.55	0.00103
P3	278.08	425.39	0.00207
P4	182.65	520.14	0.00507
P5	0.00	421.89	0.00901
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	903.23	-119.24	-0.00051
P1	742.34	-188.48	0.00000
P2	491.36	-257.21	0.00103
P3	286.21	-296.53	0.00207
P4	5.04	-361.41	0.00507
P5	0.01	-359.72	0.00513
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



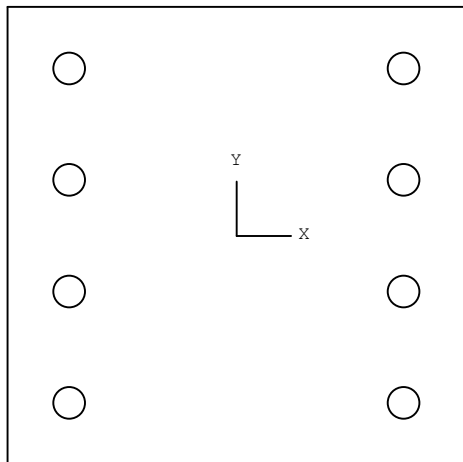
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#11_NX4_NY2_cc2.705



Section 26 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

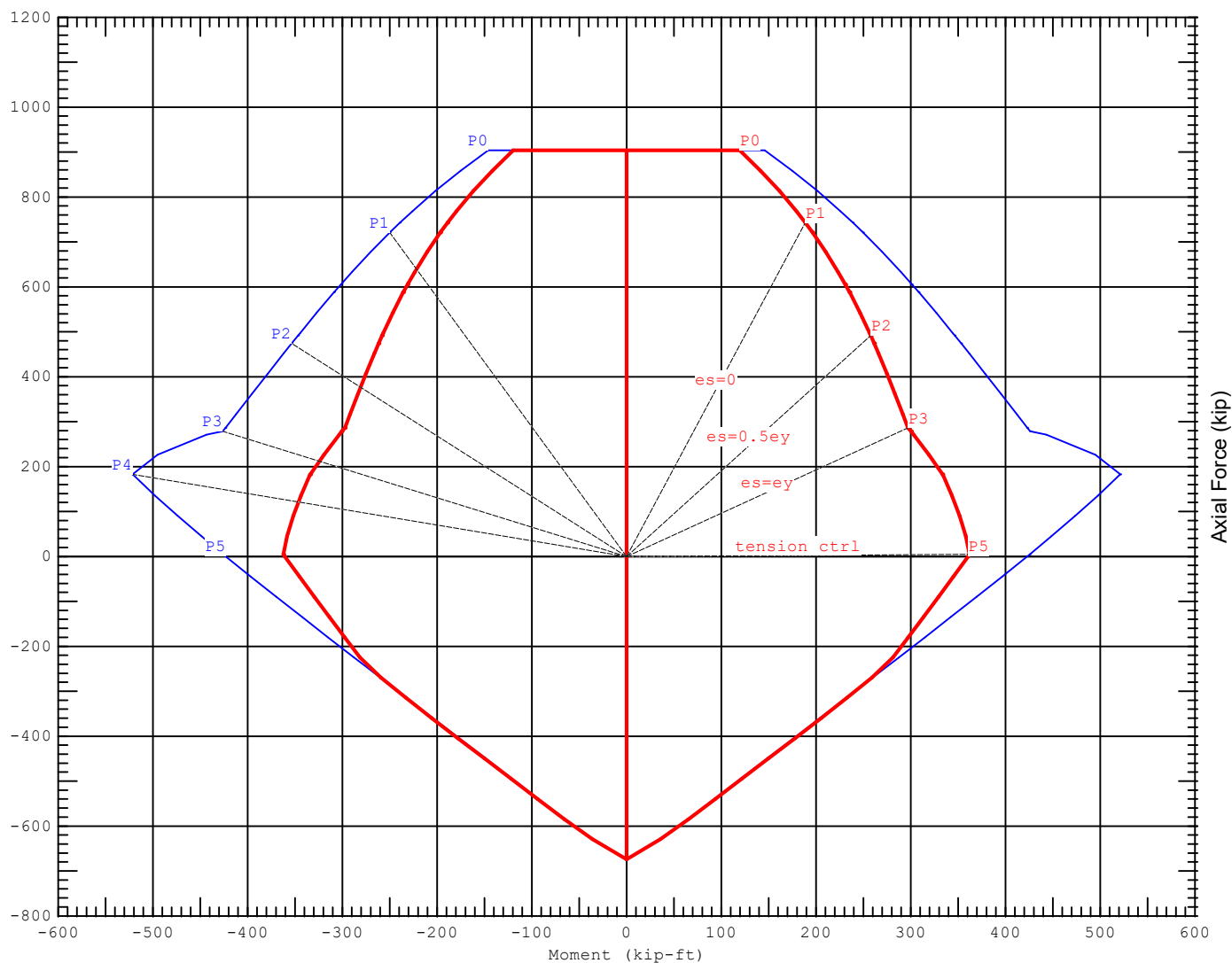
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 400.00 in²
As: 12.48 in²
Roh: 3.12%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	903.23	119.24	-0.00051
P1	742.34	188.48	0.00000
P2	491.36	257.21	0.00103
P3	286.21	296.53	0.00207
P4	5.04	361.41	0.00507
P5	0.01	359.72	0.00513
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	903.23	-145.71	-0.00060
P1	720.35	-249.26	0.00000
P2	473.71	-352.55	0.00103
P3	278.08	-425.39	0.00207
P4	182.65	-520.14	0.00507
P5	0.00	-421.89	0.00901
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



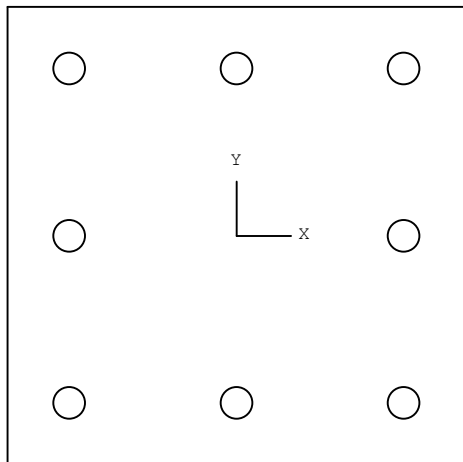
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_8#11_NX3_NY3_cc2.705



Section 27 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

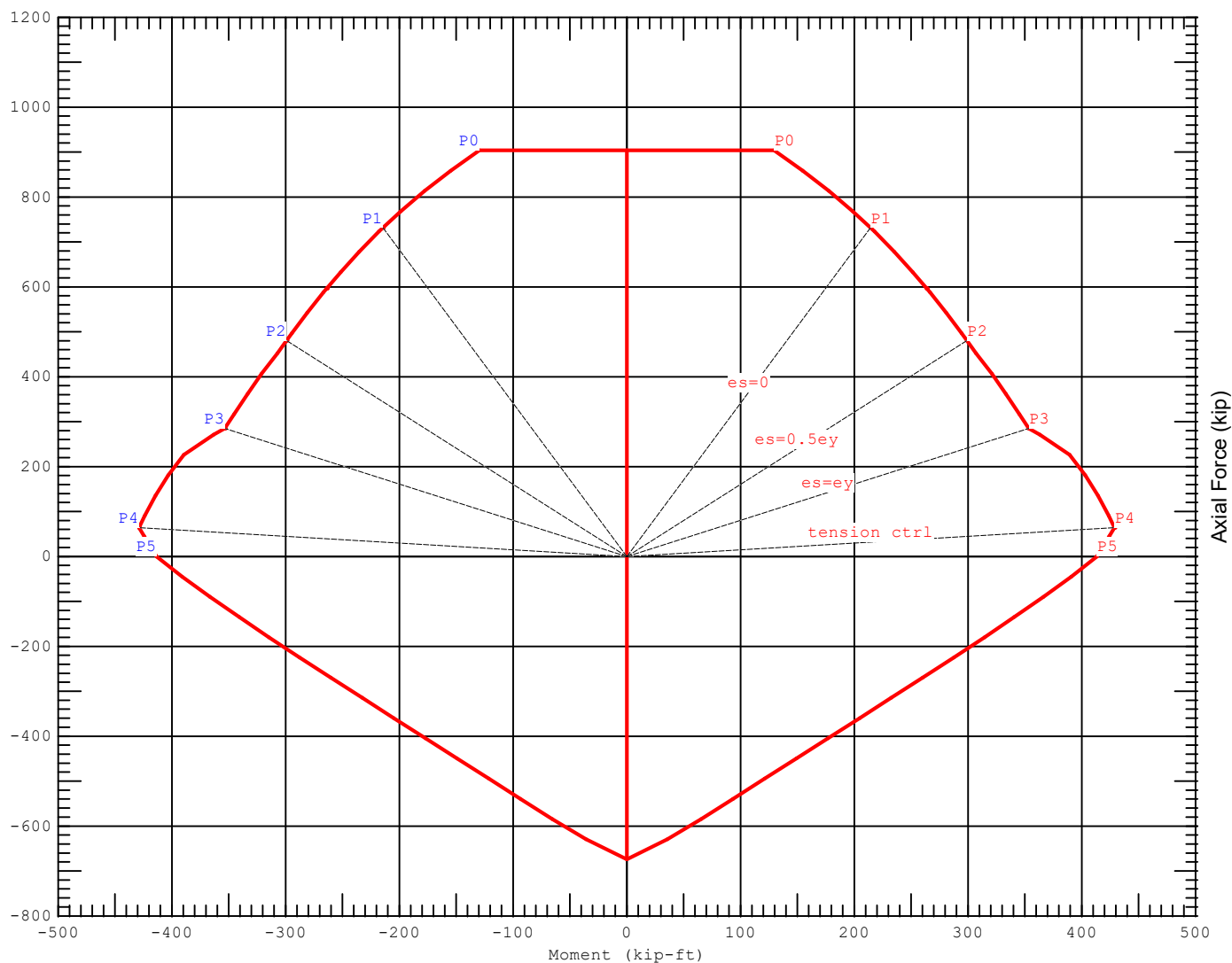
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 400.00 in²
As: 12.48 in²
Roh: 3.12%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx(+)	max es
P0	903.23	129.37	-0.00056
P1	731.34	213.84	0.00000
P2	479.95	298.65	0.00103
P3	284.73	352.99	0.00207
P4	64.08	428.09	0.00507
P5	0.00	412.58	0.00574
Pmin	-673.92	0.00	0.20000

PT	P	My(-)	max es
P0	903.23	-129.37	-0.00056
P1	731.34	-213.84	0.00000
P2	479.95	-298.65	0.00103
P3	284.73	-352.99	0.00207
P4	64.08	-428.09	0.00507
P5	0.00	-412.58	0.00574
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



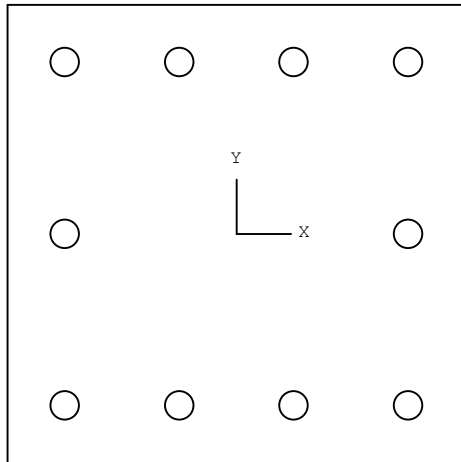
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#10_NX3_NY4_cc2.51



Section 28 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

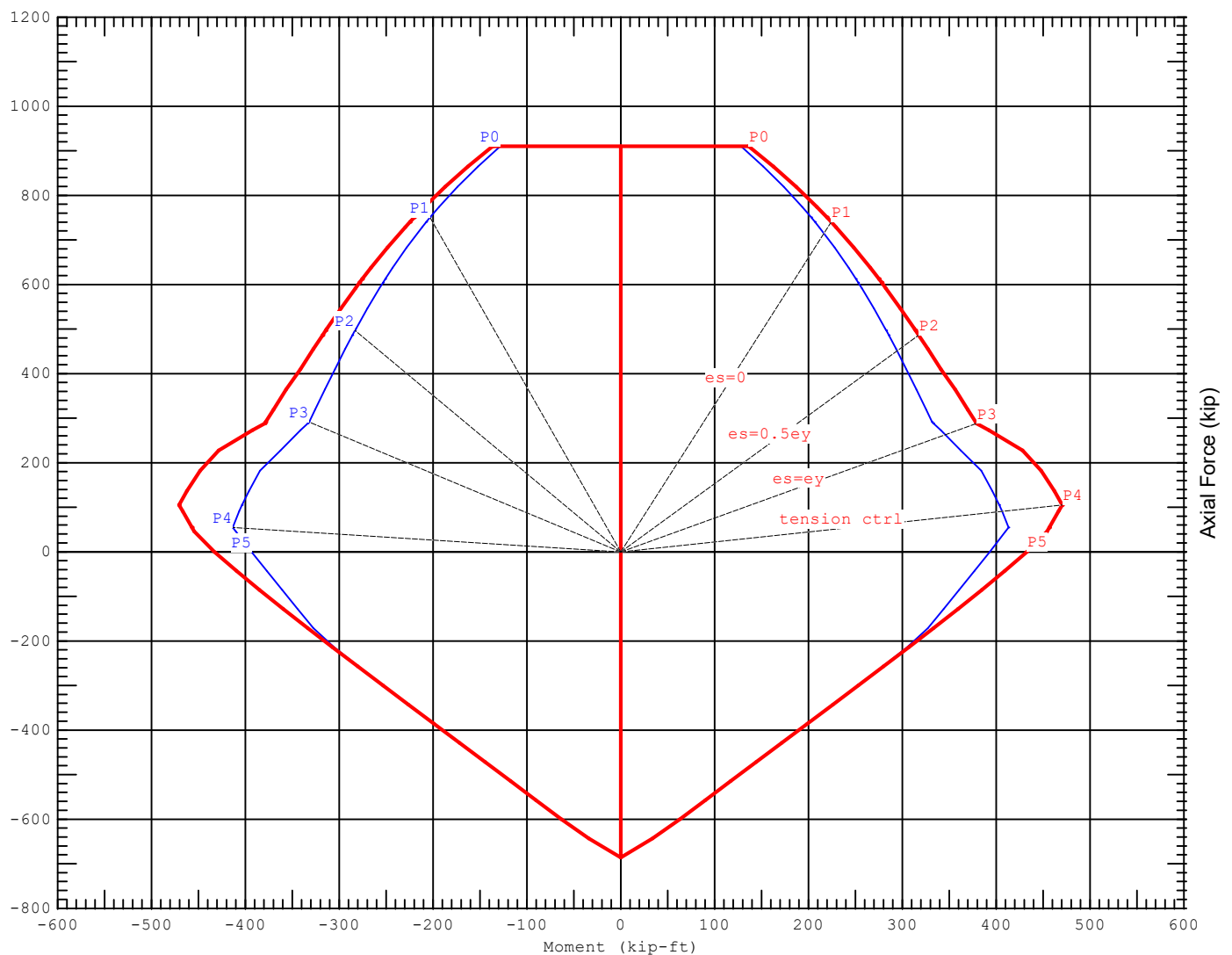
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 400.00 in²
As: 12.70 in²
Roh: 3.17%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	909.80	135.92	-0.00055
P1	739.83	223.82	0.00000
P2	486.08	316.82	0.00103
P3	288.13	378.20	0.00207
P4	104.99	469.37	0.00507
P5	0.01	431.87	0.00673
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	909.80	-128.12	-0.00051
P1	749.70	-202.75	0.00000
P2	496.61	-282.36	0.00103
P3	290.89	-331.22	0.00207
P4	54.63	-412.45	0.00507
P5	-0.00	-392.49	0.00583
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



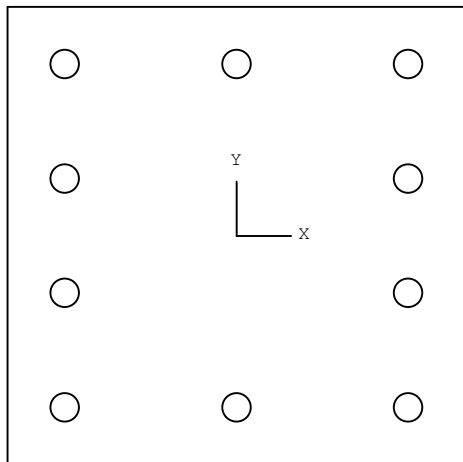
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#10_NX4_NY3_cc2.51



Section 29 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

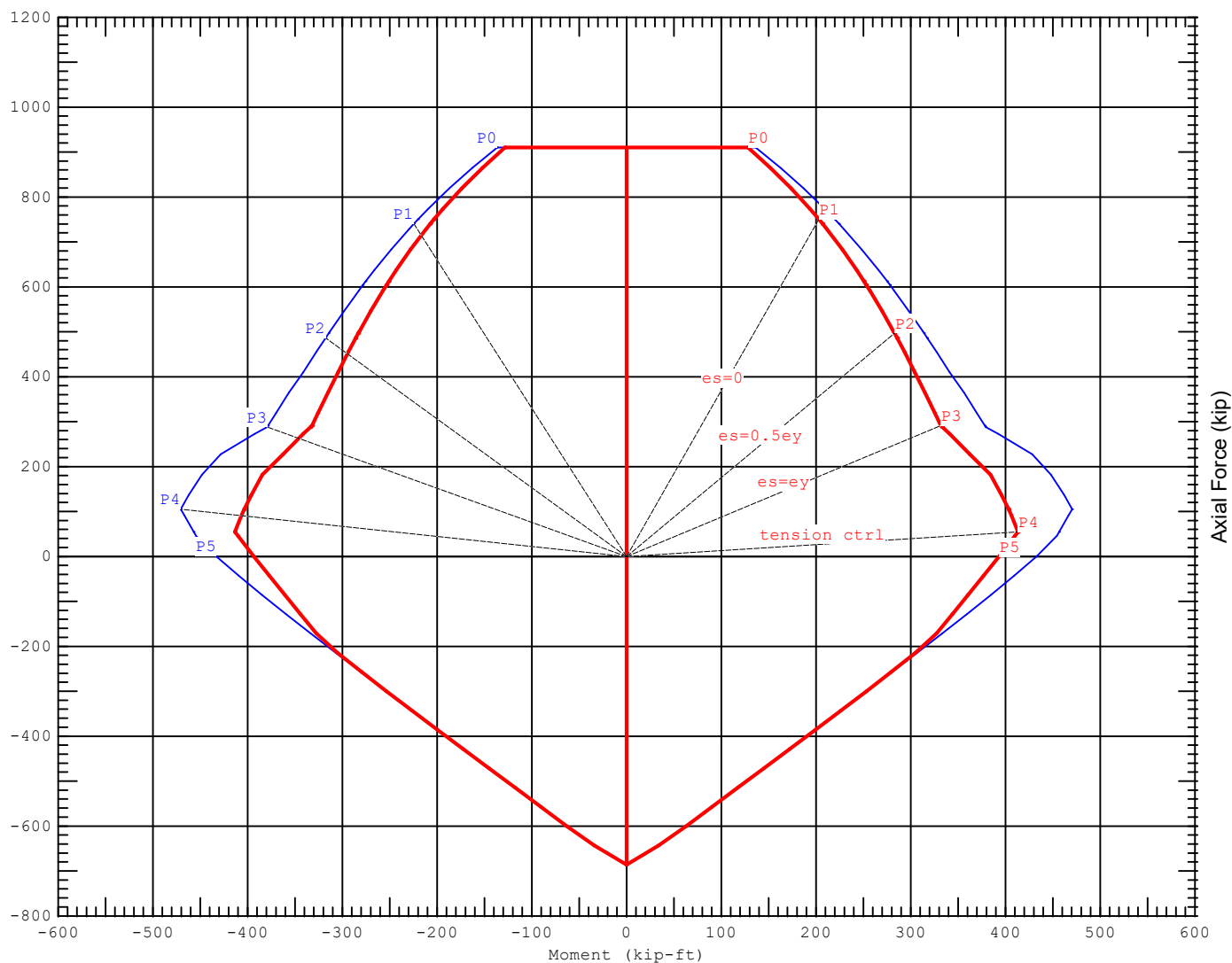
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 400.00 in²
As: 12.70 in²
Roh: 3.17%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	909.80	128.12	-0.00051
P1	749.70	202.75	0.00000
P2	496.61	282.36	0.00103
P3	290.89	331.22	0.00207
P4	54.63	412.45	0.00507
P5	-0.00	392.49	0.00583
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	909.80	-135.92	-0.00055
P1	739.83	-223.82	0.00000
P2	486.08	-316.82	0.00103
P3	288.13	-378.20	0.00207
P4	104.99	-469.37	0.00507
P5	0.01	-431.87	0.00673
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



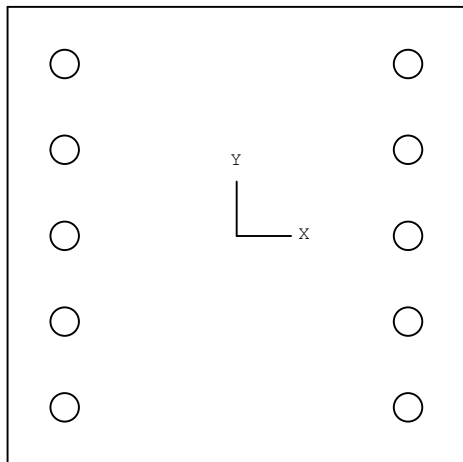
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#10_NX5_NY2_cc2.51



Section 30 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

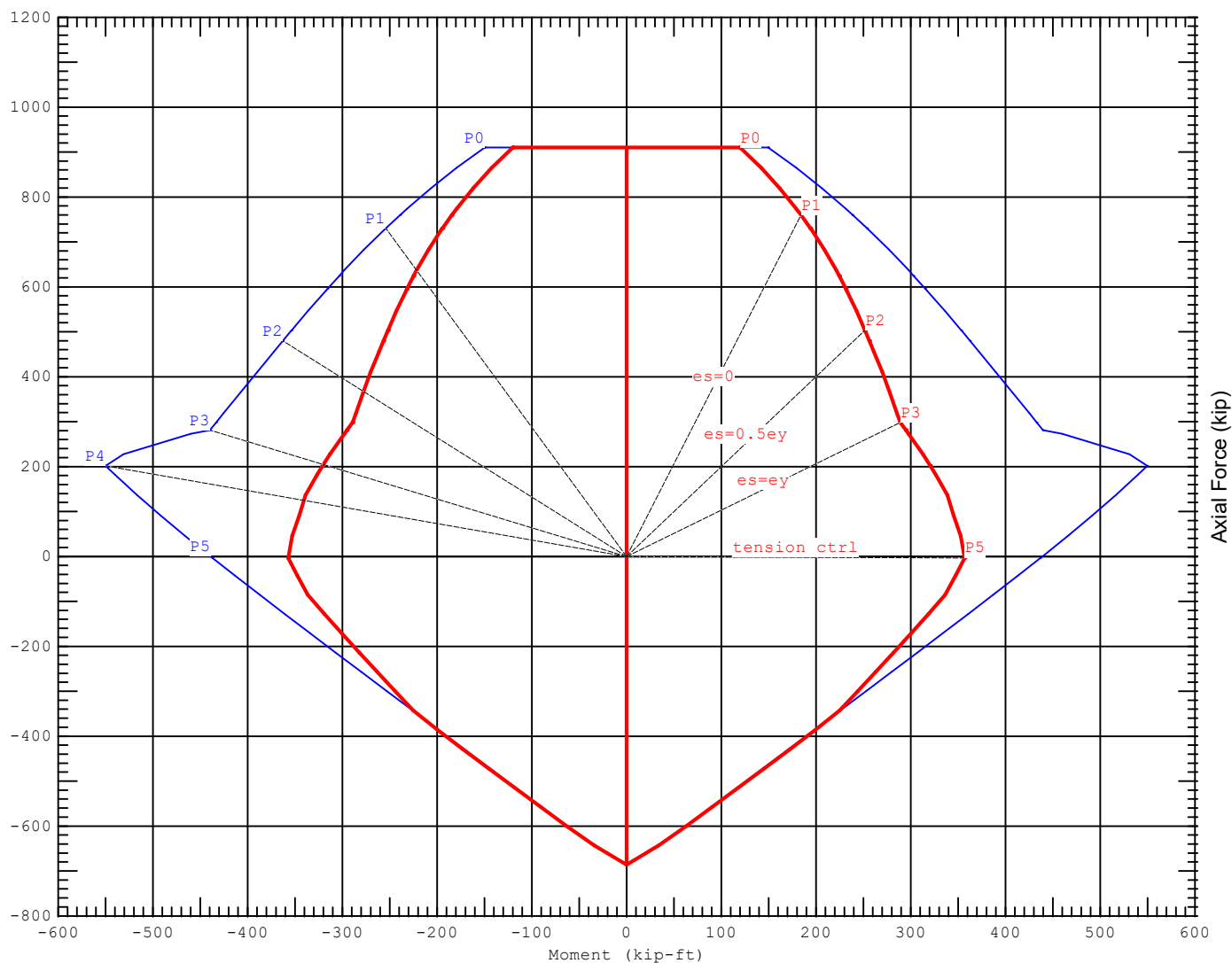
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 400.00 in²
As: 12.70 in²
Roh: 3.17%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	909.79	119.67	-0.00048
P1	759.58	183.81	0.00000
P2	502.94	251.21	0.00103
P3	297.87	288.29	0.00207
P4	-3.72	356.35	0.00507
P5	-0.01	356.06	0.00503
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	909.79	-149.30	-0.00059
P1	729.95	-253.42	0.00000
P2	479.76	-361.88	0.00103
P3	281.15	-438.71	0.00207
P4	201.52	-548.47	0.00507
P5	0.00	-438.15	0.00967
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



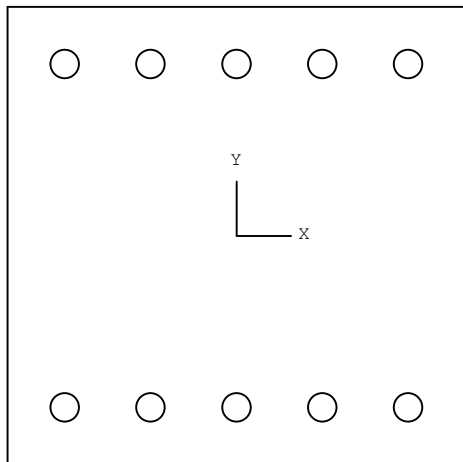
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#10_NX2_NY5_cc2.51



Section 31 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

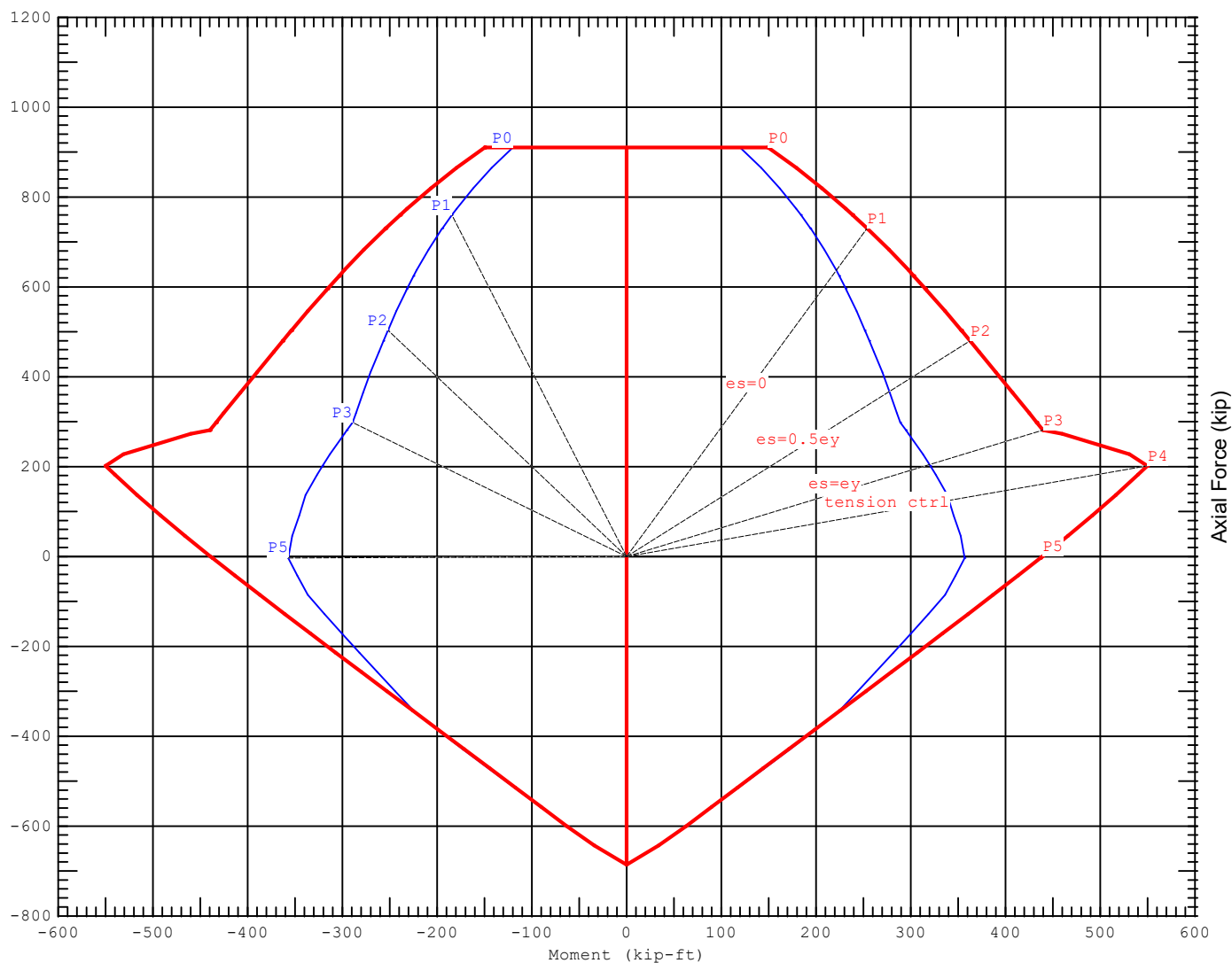
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 400.00 in²
As: 12.70 in²
Roh: 3.17%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	909.79	149.30	-0.00059
P1	729.95	253.42	0.00000
P2	479.76	361.88	0.00103
P3	281.15	438.71	0.00207
P4	201.52	548.47	0.00507
P5	0.00	438.15	0.00967
Pmin	-685.80	-0.00	0.20000

PT	P	My (-)	max es
P0	909.79	-119.67	-0.00048
P1	759.58	-183.81	0.00000
P2	502.94	-251.21	0.00103
P3	297.87	-288.29	0.00207
P4	-3.72	-356.35	0.00507
P5	-0.01	-356.06	0.00503
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



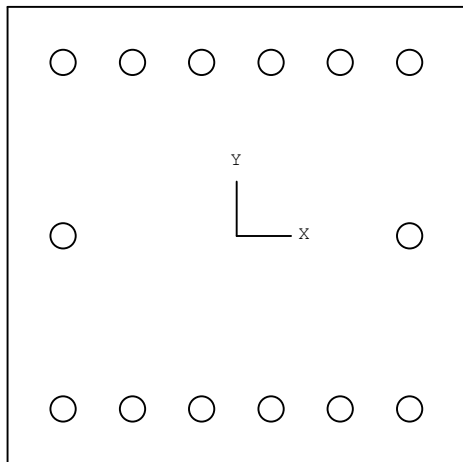
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#9_NX3_NY6_cc2.439



Section 32 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

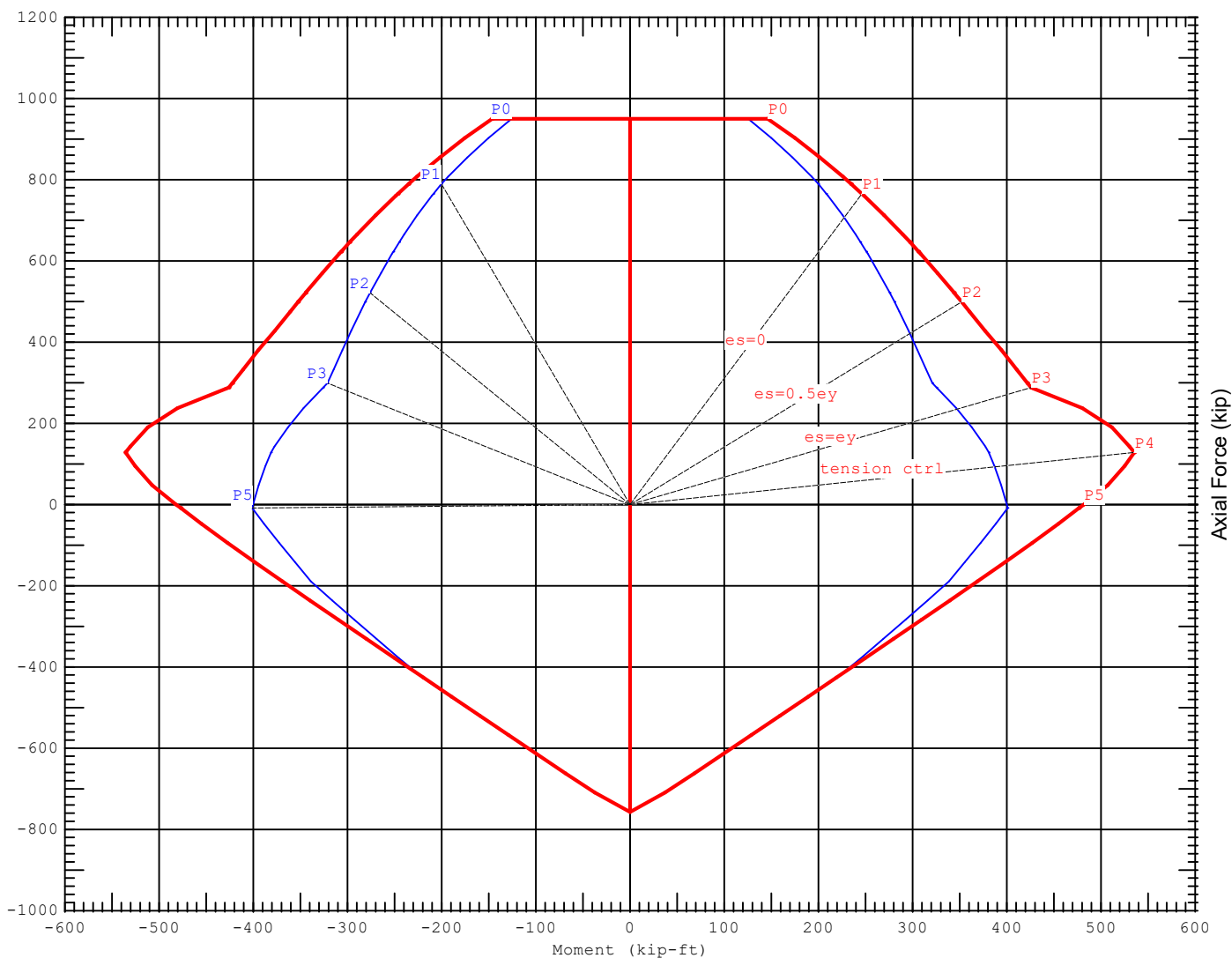
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 400.00 in²
As: 14.00 in²
Roh: 3.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	948.64	145.83	-0.00057
P1	764.26	245.77	0.00000
P2	498.17	351.35	0.00103
P3	287.19	424.86	0.00207
P4	128.01	534.28	0.00507
P5	0.00	480.72	0.00729
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	948.63	-125.37	-0.00050
P1	788.38	-199.73	0.00000
P2	520.79	-275.24	0.00103
P3	298.37	-320.36	0.00207
P4	-9.01	-400.27	0.00507
P5	0.00	-399.27	0.00496
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



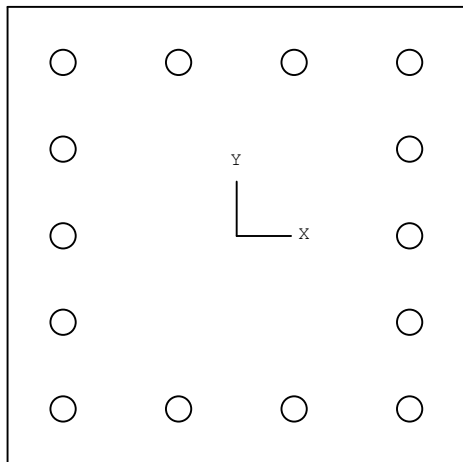
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#9_NX5_NY4_cc2.439



Section 33 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

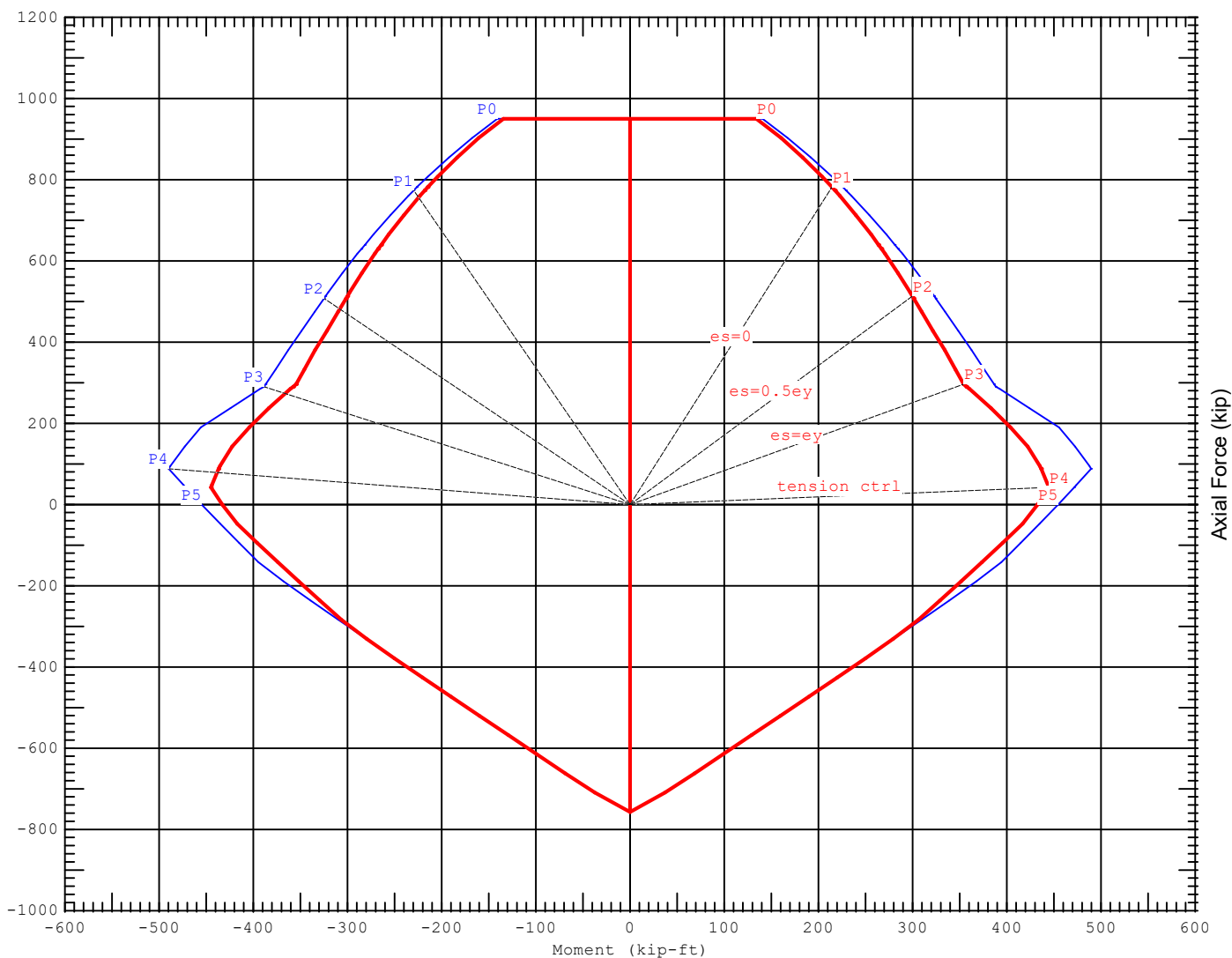
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 400.00 in²
As: 14.00 in²
Roh: 3.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	948.64	133.84	-0.00052
P1	780.34	214.05	0.00000
P2	512.15	299.30	0.00103
P3	295.75	353.53	0.00207
P4	41.93	443.67	0.00507
P5	0.01	431.72	0.00552
Pmin	-756.00	-0.00	0.20000

PT	P	My (-)	max es
P0	948.64	-140.40	-0.00055
P1	772.30	-229.06	0.00000
P2	506.82	-324.01	0.00103
P3	289.81	-387.58	0.00207
P4	87.71	-488.69	0.00507
P5	0.01	-453.58	0.00637
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



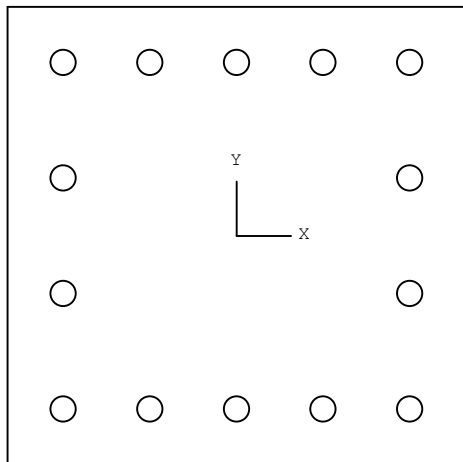
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#9_NX4_NY5_cc2.439



Section 34 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

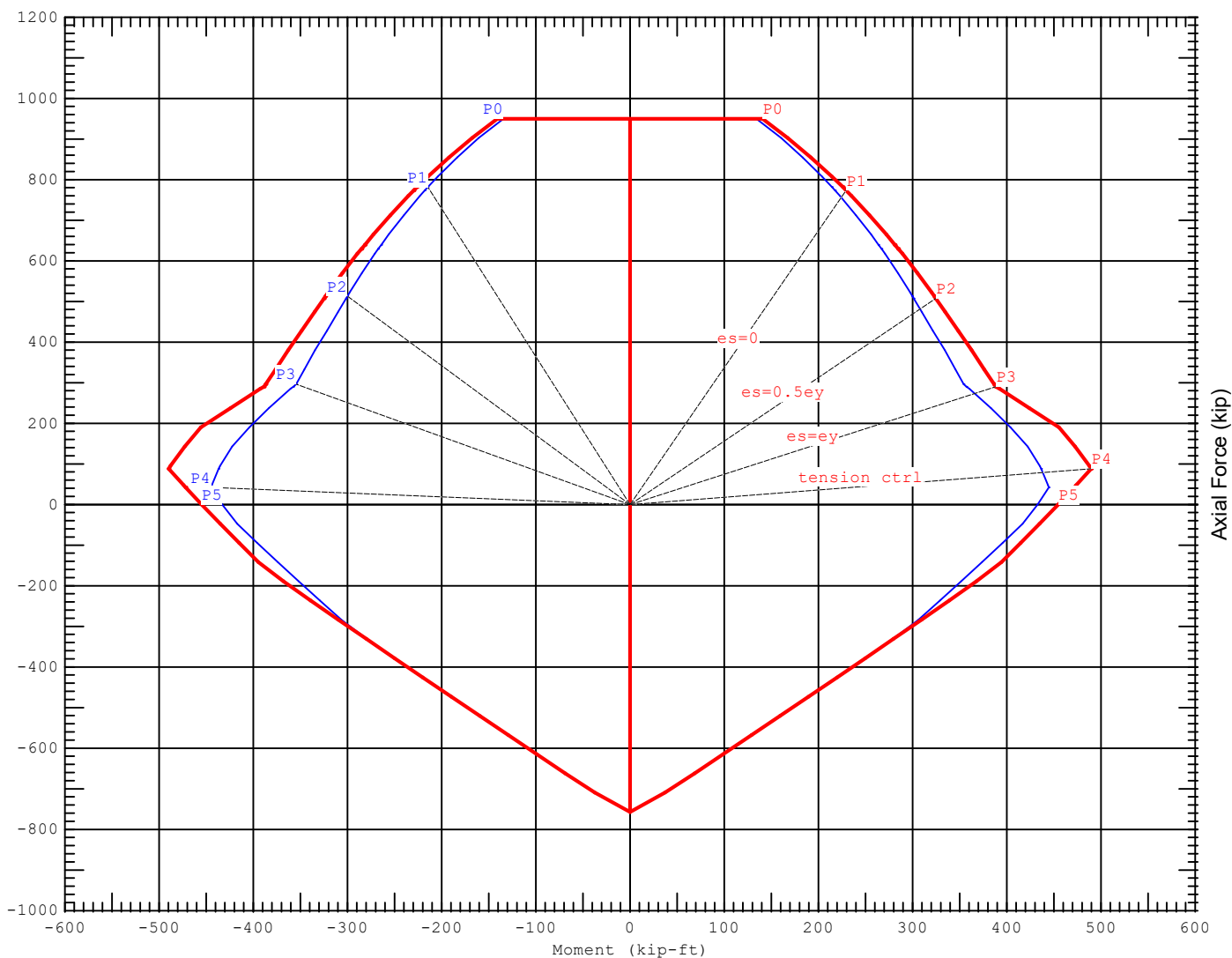
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 400.00 in²
As: 14.00 in²
Roh: 3.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	948.64	140.40	-0.00055
P1	772.30	229.06	0.00000
P2	506.82	324.01	0.00103
P3	289.81	387.58	0.00207
P4	87.71	488.69	0.00507
P5	0.01	453.58	0.00637
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	948.64	-133.84	-0.00052
P1	780.34	-214.05	0.00000
P2	512.15	-299.30	0.00103
P3	295.75	-353.53	0.00207
P4	41.93	-443.67	0.00507
P5	0.01	-431.72	0.00552
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



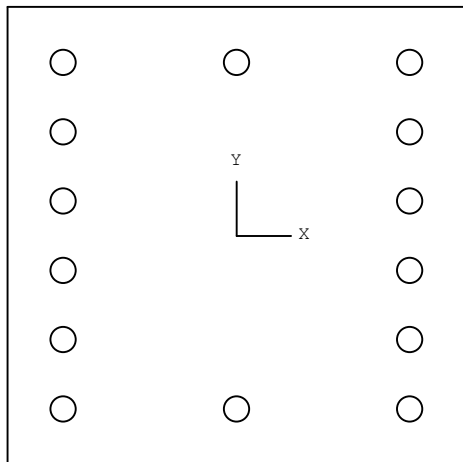
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#9_NX6_NY3_cc2.439



Section 35 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

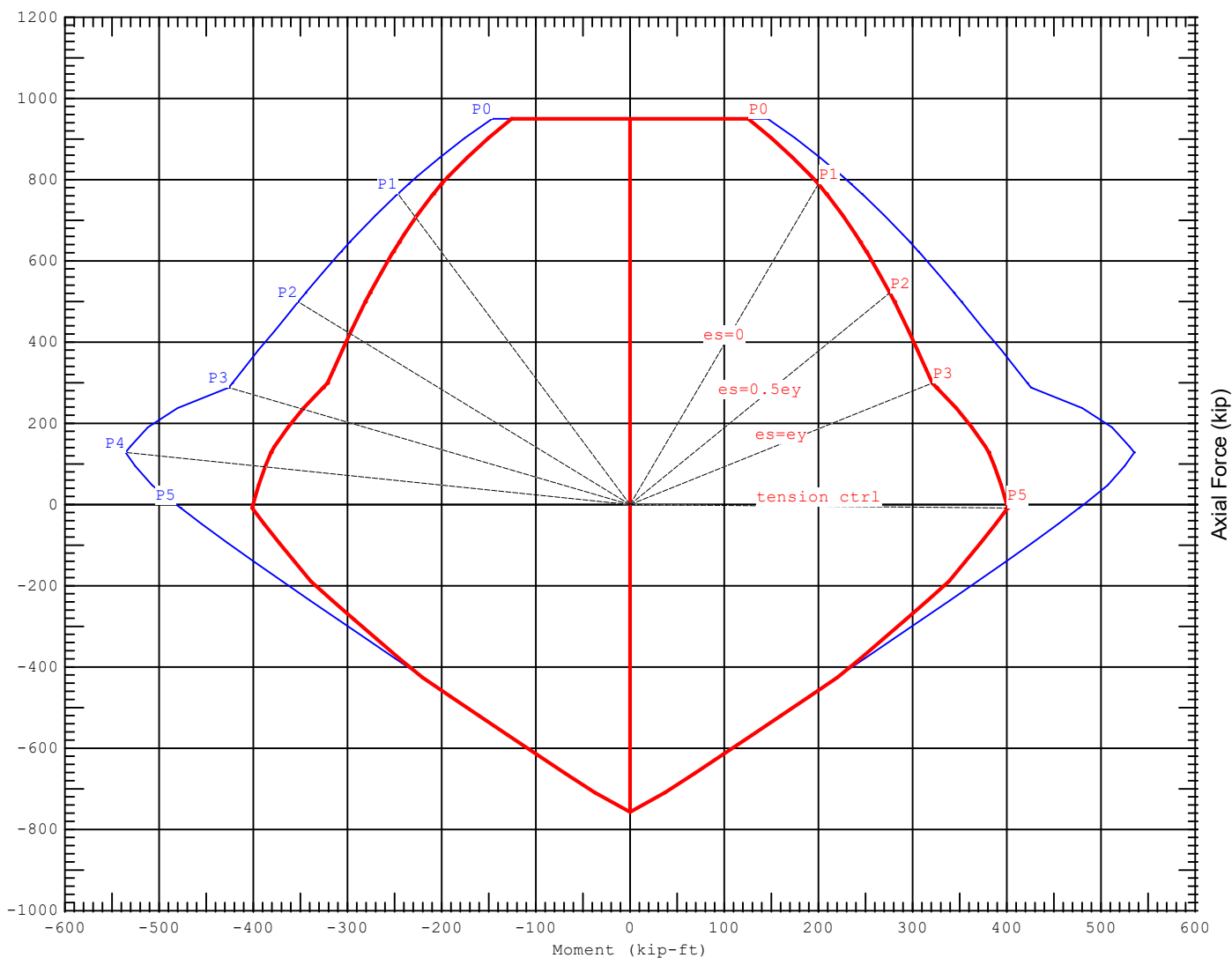
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 400.00 in²
As: 14.00 in²
Roh: 3.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	948.63	125.37	-0.00050
P1	788.38	199.73	0.00000
P2	520.79	275.24	0.00103
P3	298.37	320.36	0.00207
P4	-9.01	400.27	0.00507
P5	0.00	399.27	0.00496
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	948.64	-145.83	-0.00057
P1	764.26	-245.77	0.00000
P2	498.17	-351.35	0.00103
P3	287.19	-424.86	0.00207
P4	128.01	-534.28	0.00507
P5	0.00	-480.72	0.00729
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



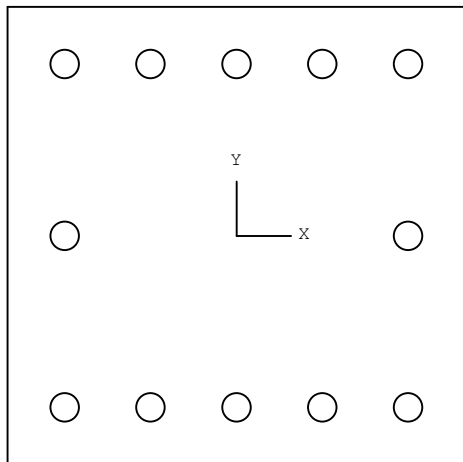
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#10_NX3_NY5_cc2.51



Section 36 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

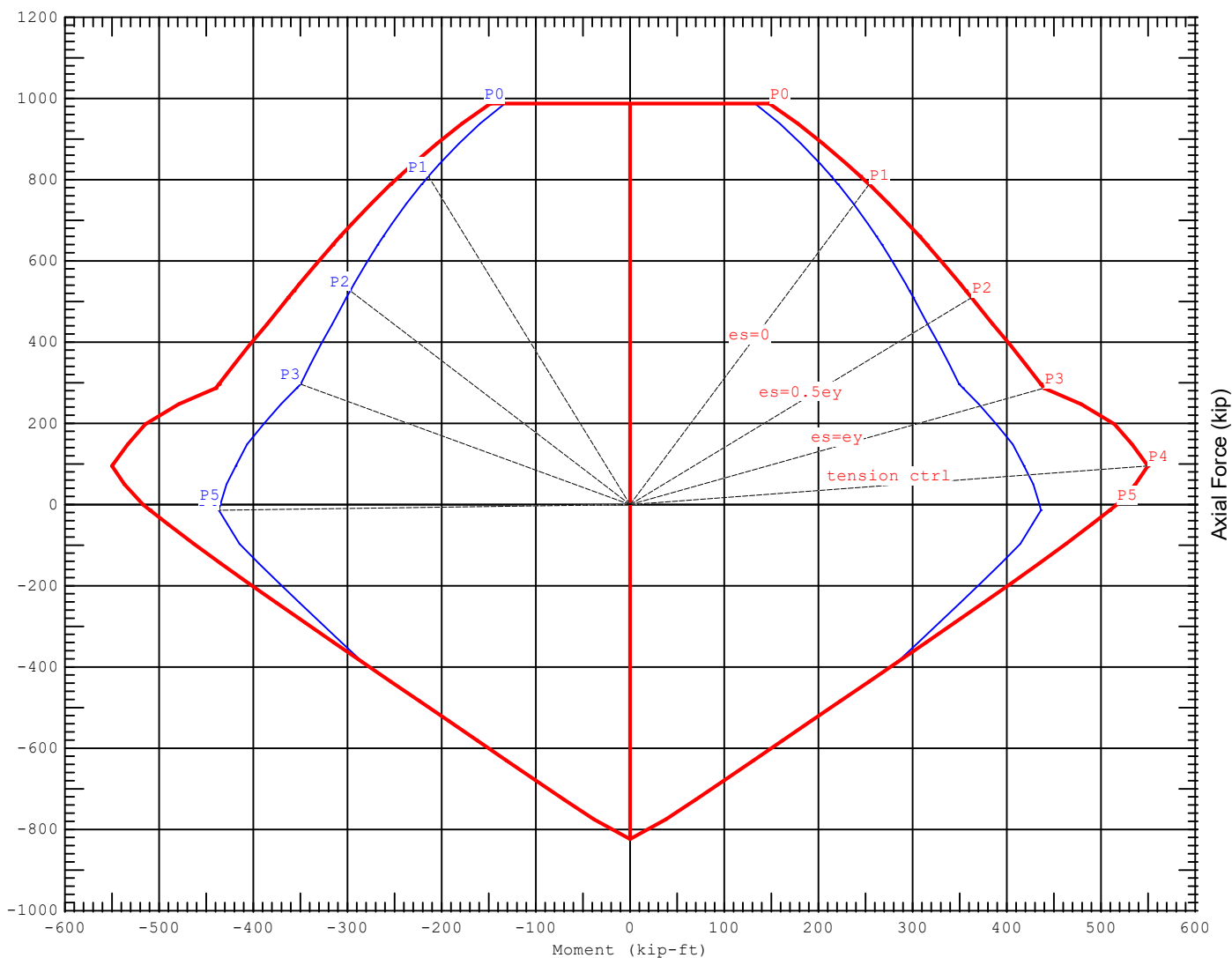
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 400.00 in²
As: 15.24 in²
Roh: 3.81%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	985.68	147.70	-0.00059
P1	787.25	253.42	0.00000
P2	508.74	361.88	0.00103
P3	286.02	438.71	0.00207
P4	94.55	548.47	0.00507
P5	-0.00	515.86	0.00633
Pmin	-822.96	-0.00	0.20000

PT	P	My (-)	max es
P0	985.68	-132.59	-0.00053
P1	807.00	-213.41	0.00000
P2	525.60	-296.27	0.00103
P3	295.77	-348.80	0.00207
P4	-14.16	-435.45	0.00507
P5	0.00	-433.80	0.00494
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



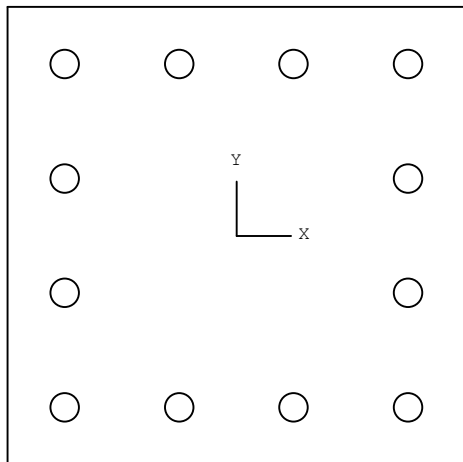
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#10_NX4_NY4_cc2.51



Section 37 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

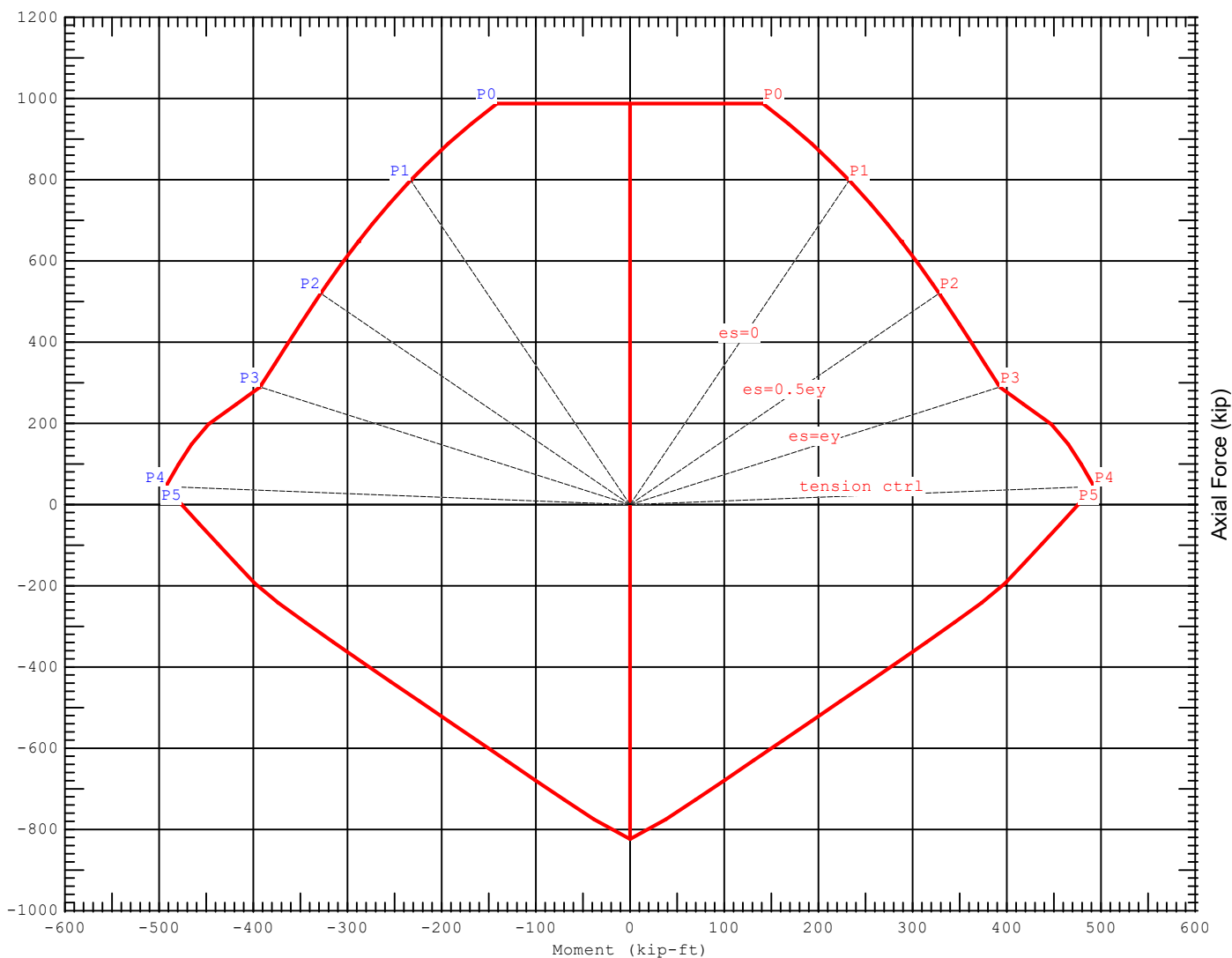
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 400.00 in²
As: 15.24 in²
Roh: 3.81%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	985.68	140.83	-0.00056
P1	797.13	232.35	0.00000
P2	519.27	327.42	0.00103
P3	288.79	391.74	0.00207
P4	44.19	491.54	0.00507
P5	-0.01	474.75	0.00564
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	985.68	-140.83	-0.00056
P1	797.13	-232.35	0.00000
P2	519.27	-327.42	0.00103
P3	288.79	-391.74	0.00207
P4	44.19	-491.54	0.00507
P5	-0.01	-474.75	0.00564
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



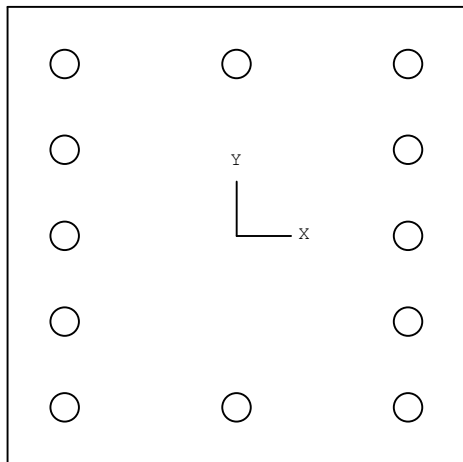
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#10_NX5_NY3_cc2.51



Section 38 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

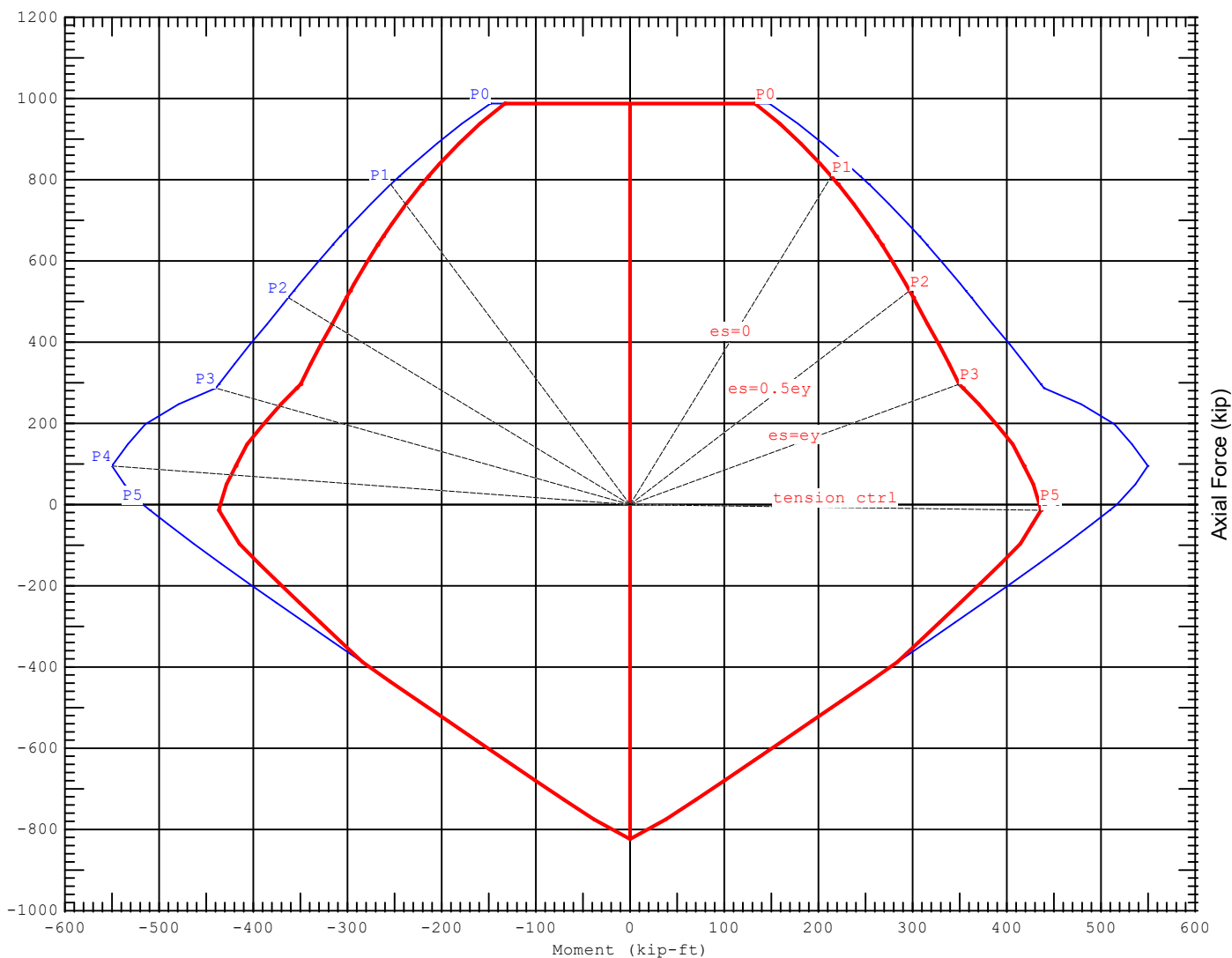
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 400.00 in²
As: 15.24 in²
Roh: 3.81%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	985.68	132.59	-0.00053
P1	807.00	213.41	0.00000
P2	525.60	296.27	0.00103
P3	295.77	348.80	0.00207
P4	-14.16	435.45	0.00507
P5	0.00	433.80	0.00494
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	985.68	-147.70	-0.00059
P1	787.25	-253.42	0.00000
P2	508.74	-361.88	0.00103
P3	286.02	-438.71	0.00207
P4	94.55	-548.47	0.00507
P5	-0.00	-515.86	0.00633
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



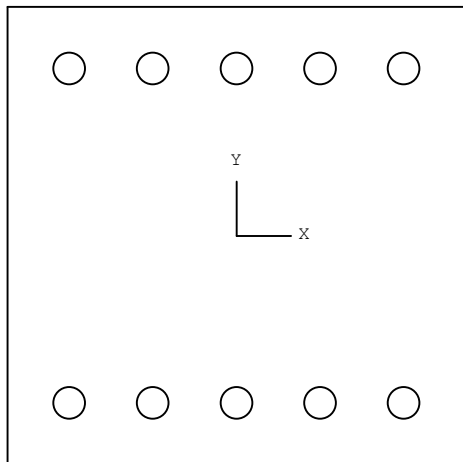
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#11_NX2_NY5_cc2.705



Section 39 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

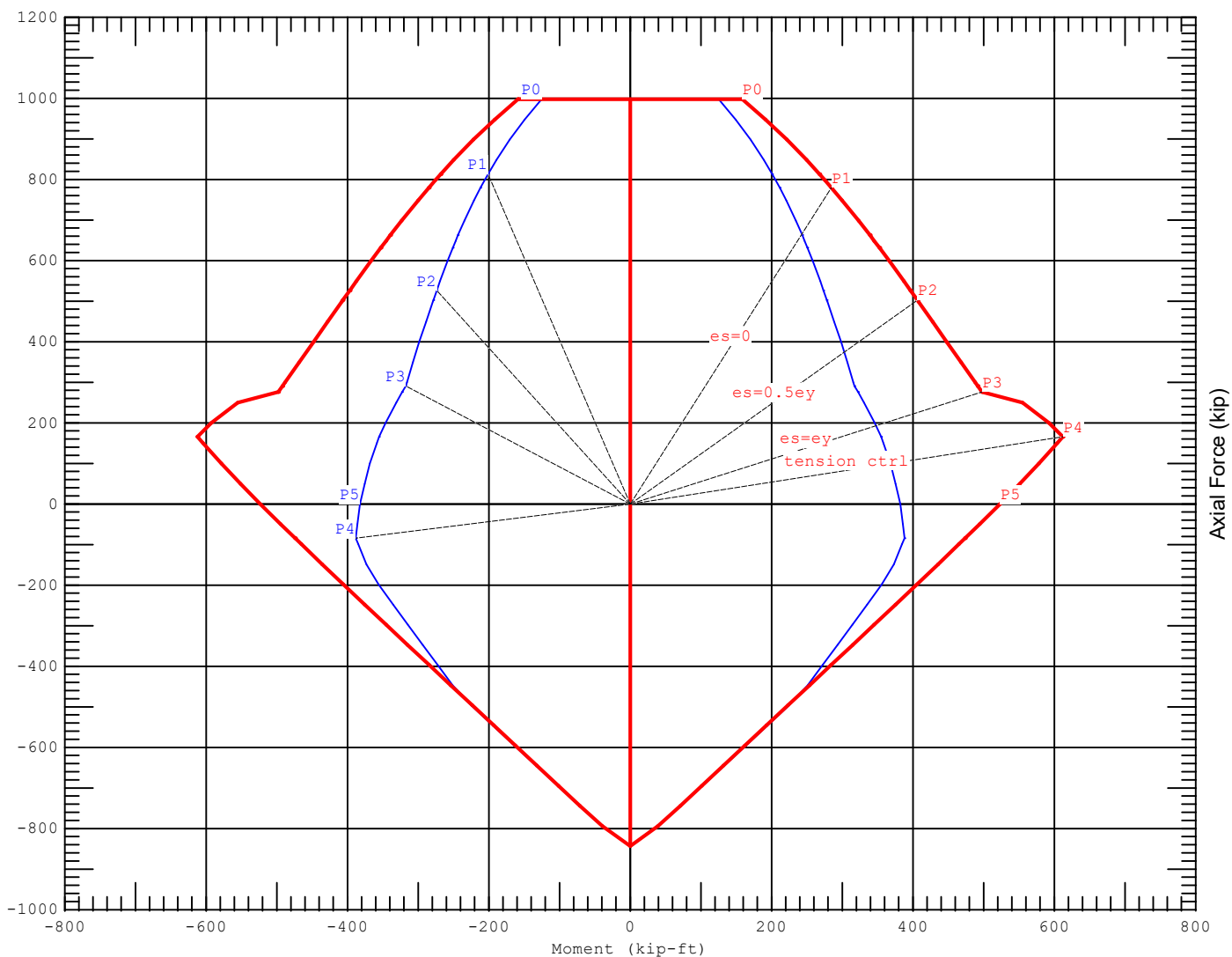
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 400.00 in²
As: 15.60 in²
Roh: 3.90%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	996.43	158.52	-0.00065
P1	778.60	284.67	0.00000
P2	501.54	406.46	0.00103
P3	275.49	497.79	0.00207
P4	165.59	612.19	0.00507
P5	-0.00	523.05	0.00811
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	996.42	-125.24	-0.00053
P1	811.59	-201.05	0.00000
P2	525.43	-273.59	0.00103
P3	290.27	-317.24	0.00207
P4	-84.39	-388.14	0.00507
P5	0.01	-382.13	0.00439
Pmin	-842.40	0.00	0.20000

P-Mx and P-My Interaction Diagram



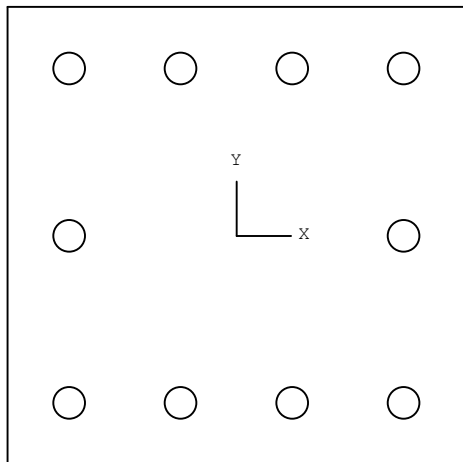
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#11_NX3_NY4_cc2.705



Section 40 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

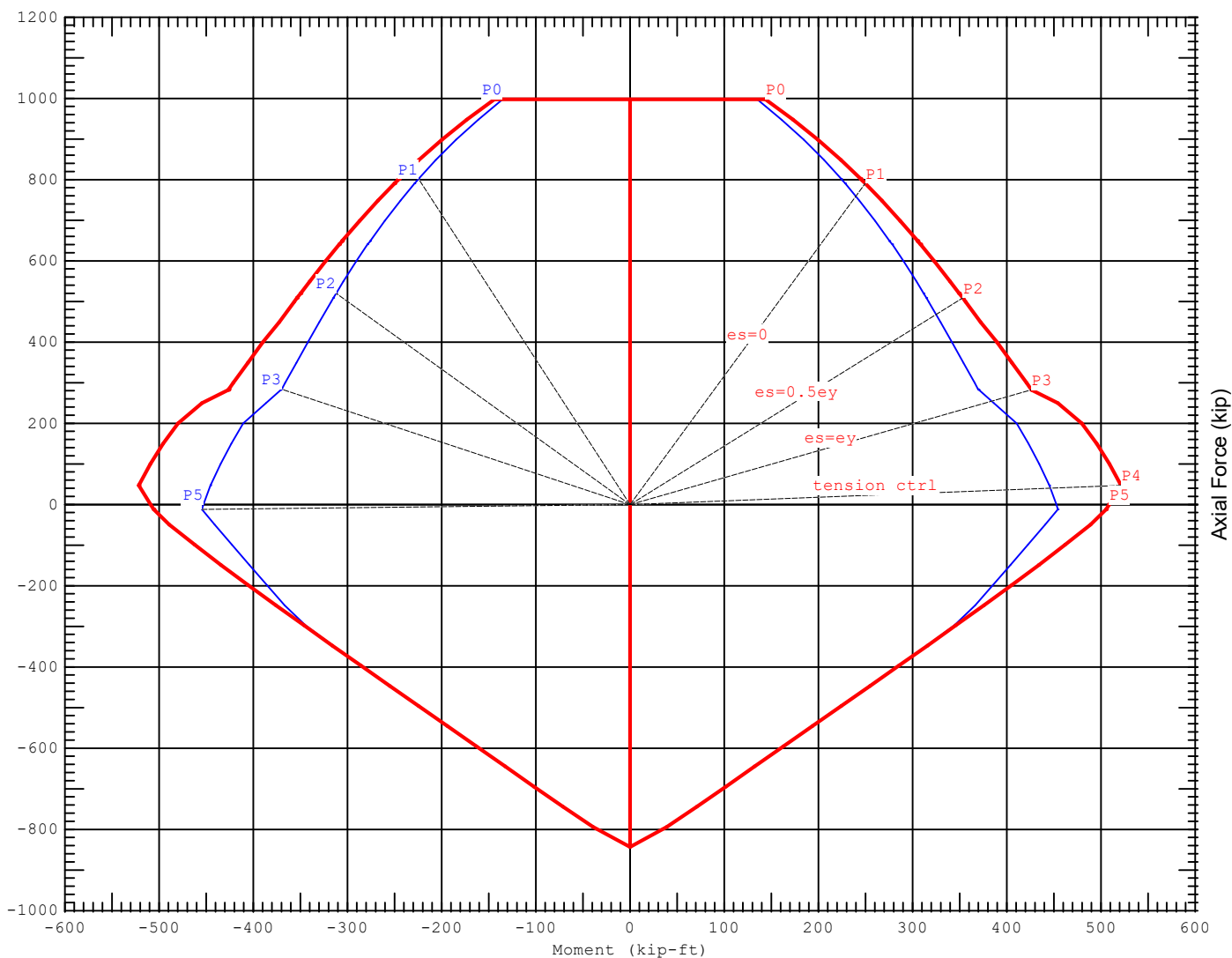
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 400.00 in²
As: 15.60 in²
Roh: 3.90%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	996.43	143.56	-0.00061
P1	789.60	249.26	0.00000
P2	507.78	352.55	0.00103
P3	282.14	425.39	0.00207
P4	47.02	520.14	0.00507
P5	-0.01	507.71	0.00553
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	996.43	-134.80	-0.00057
P1	800.59	-223.90	0.00000
P2	519.19	-311.12	0.00103
P3	283.62	-368.93	0.00207
P4	-12.02	-453.47	0.00507
P5	0.00	-451.84	0.00493
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



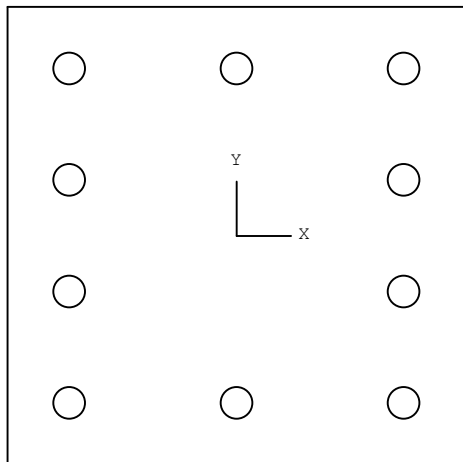
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#11_NX4_NY3_cc2.705



Section 41 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

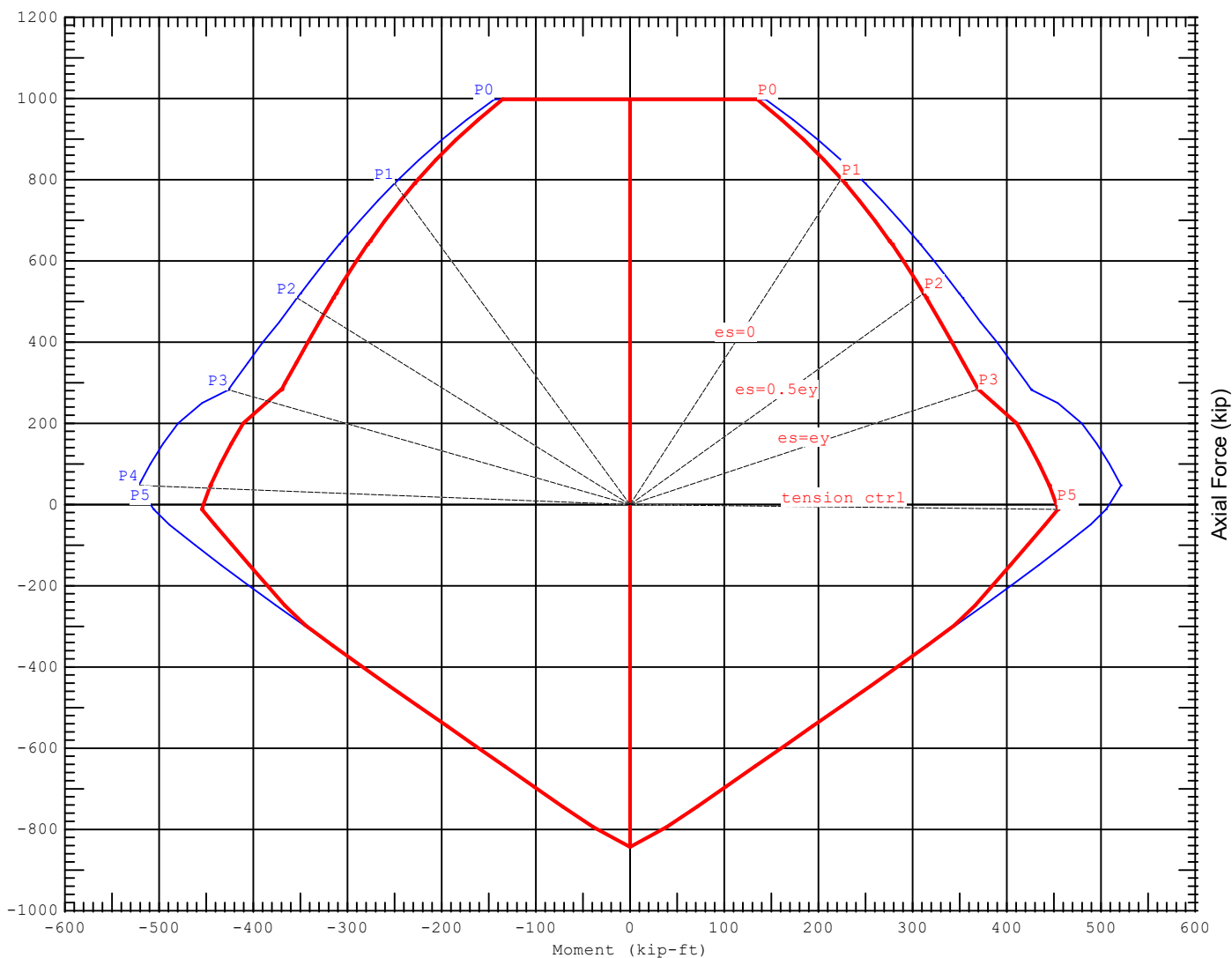
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 400.00 in²
As: 15.60 in²
Roh: 3.90%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	996.43	134.80	-0.00057
P1	800.59	223.90	0.00000
P2	519.19	311.12	0.00103
P3	283.62	368.93	0.00207
P4	-12.02	453.47	0.00507
P5	0.00	451.84	0.00493
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	996.43	-143.56	-0.00061
P1	789.60	-249.26	0.00000
P2	507.78	-352.55	0.00103
P3	282.14	-425.39	0.00207
P4	47.02	-520.14	0.00507
P5	-0.01	-507.71	0.00553
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



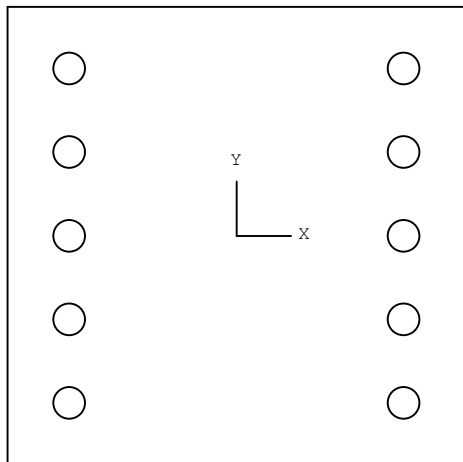
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_10#11_NX5_NY2_cc2.705



Section 42 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

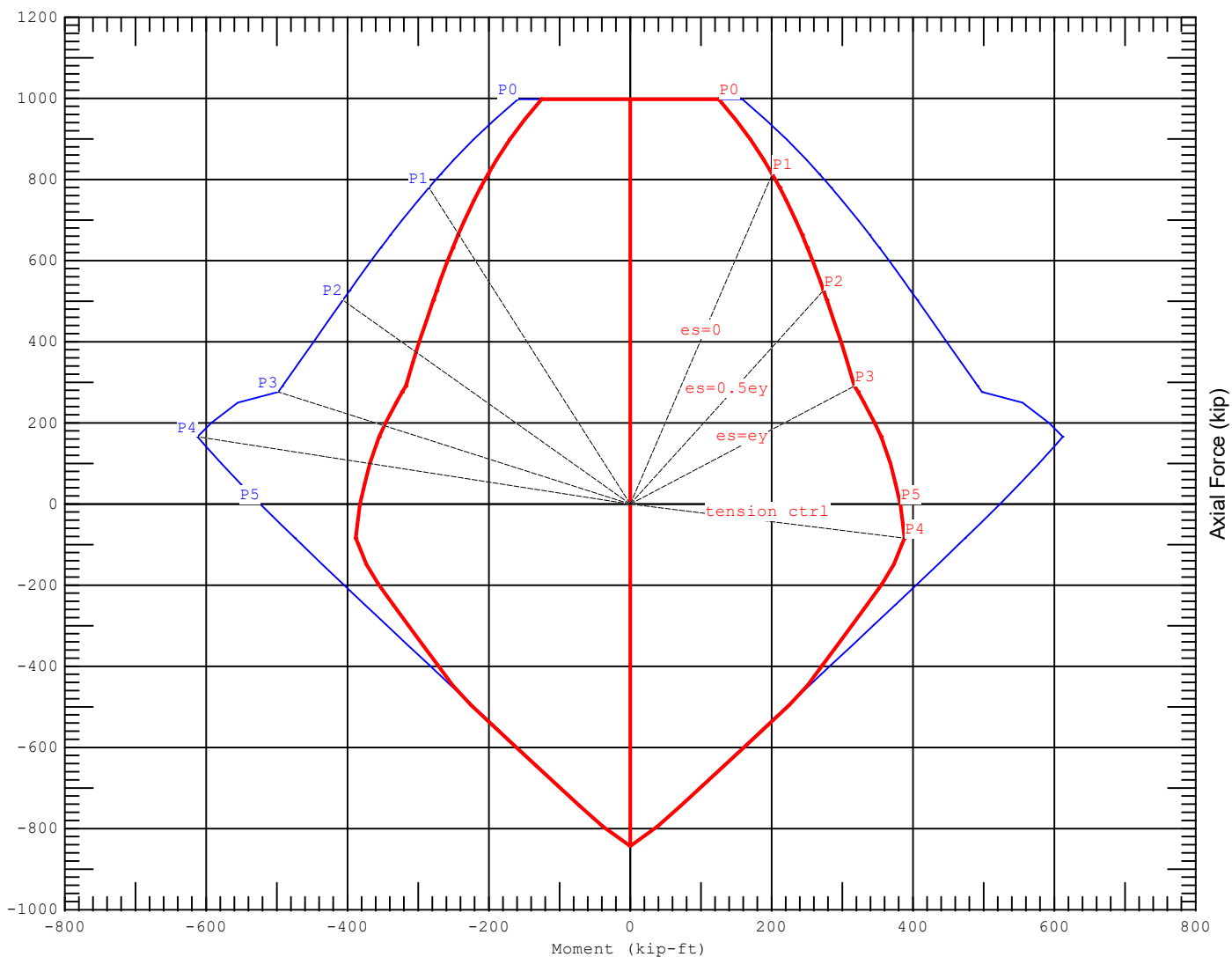
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 400.00 in²
As: 15.60 in²
Roh: 3.90%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	996.42	125.24	-0.00053
P1	811.59	201.05	0.00000
P2	525.43	273.59	0.00103
P3	290.27	317.24	0.00207
P4	-84.39	388.14	0.00507
P5	0.01	382.13	0.00439
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	996.43	-158.52	-0.00065
P1	778.60	-284.67	0.00000
P2	501.54	-406.46	0.00103
P3	275.49	-497.79	0.00207
P4	165.59	-612.19	0.00507
P5	-0.00	-523.05	0.00811
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



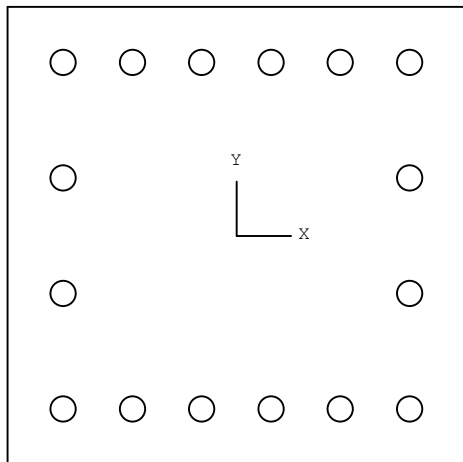
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_16#9_NX4_NY6_cc2.439



Section 43 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

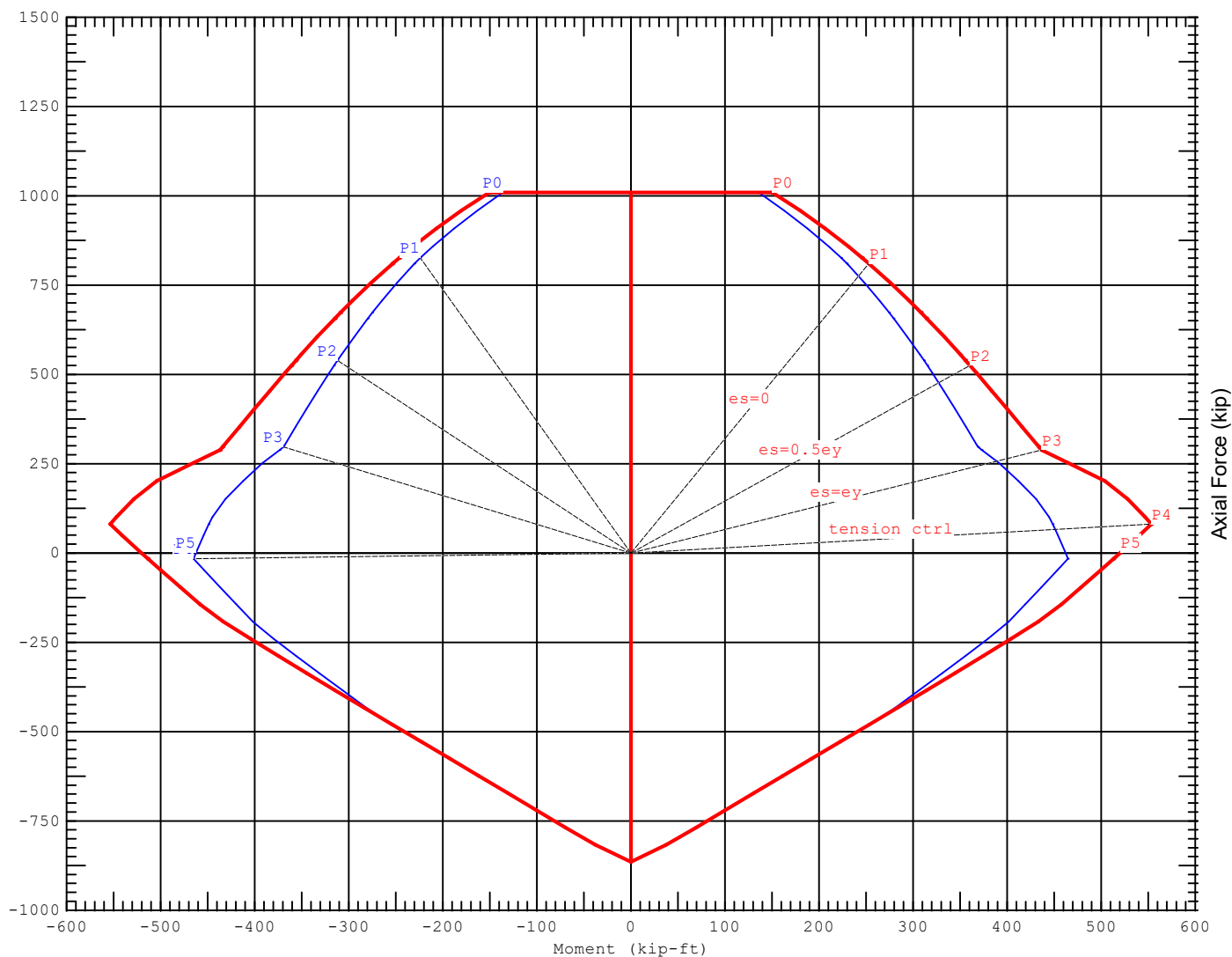
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 400.00 in²
As: 16.00 in²
Roh: 4.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1008.37	150.09	-0.00058
P1	809.64	252.59	0.00000
P2	524.66	359.82	0.00103
P3	288.15	435.69	0.00207
P4	80.46	552.17	0.00507
P5	0.00	519.14	0.00619
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1008.38	-135.67	-0.00054
P1	825.72	-223.26	0.00000
P2	538.64	-311.06	0.00103
P3	296.71	-368.46	0.00207
P4	-16.26	-463.76	0.00507
P5	0.00	-461.33	0.00488
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



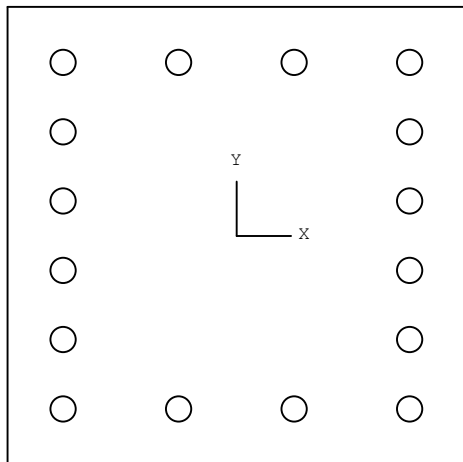
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_16#9_NX6_NY4_cc2.439



Section 44 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

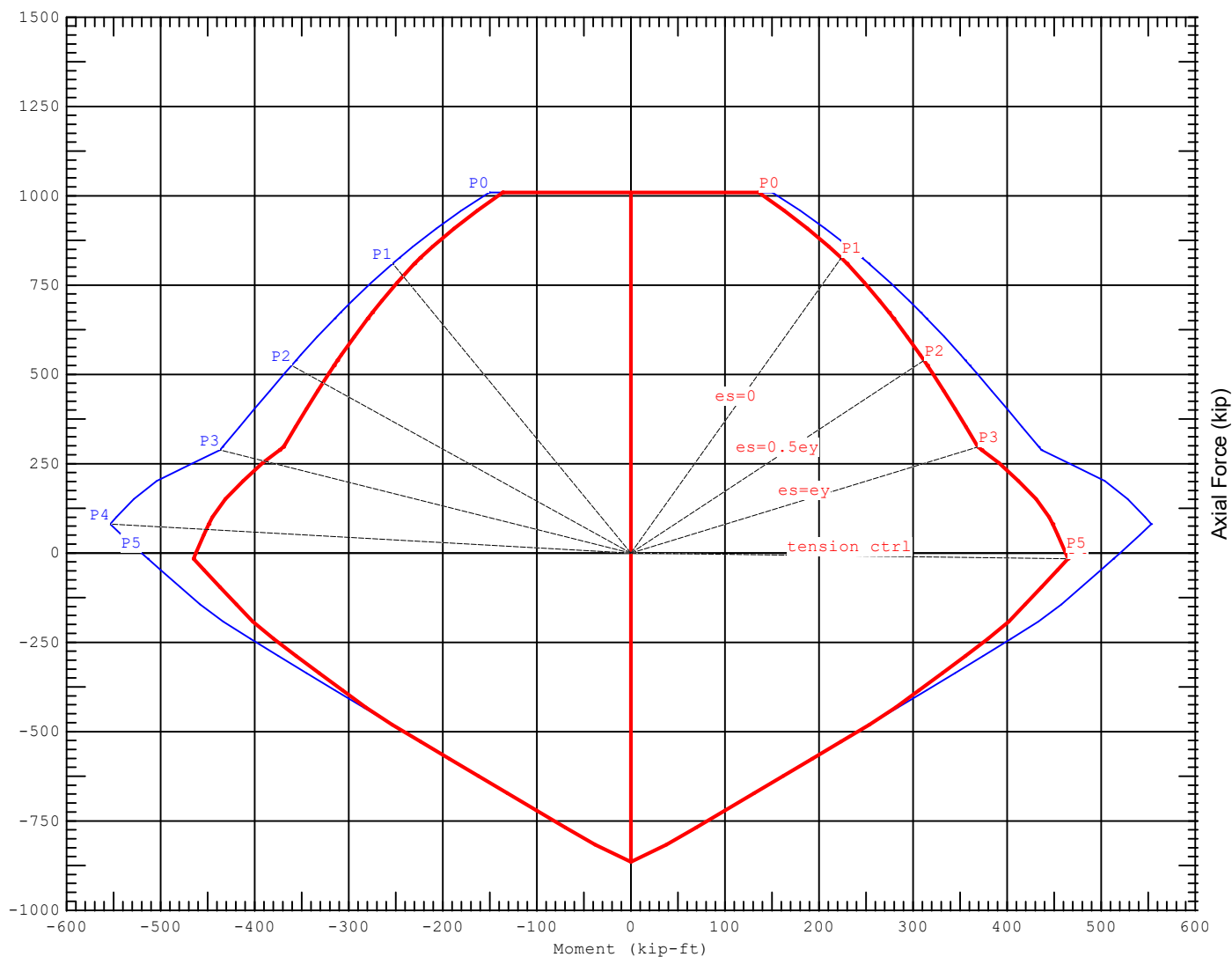
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 400.00 in²
As: 16.00 in²
Roh: 4.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1008.38	135.67	-0.00054
P1	825.72	223.26	0.00000
P2	538.64	311.06	0.00103
P3	296.71	368.46	0.00207
P4	-16.26	463.76	0.00507
P5	0.00	461.33	0.00488
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1008.37	-150.09	-0.00058
P1	809.64	-252.59	0.00000
P2	524.66	-359.82	0.00103
P3	288.15	-435.69	0.00207
P4	80.46	-552.17	0.00507
P5	0.00	-519.14	0.00619
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



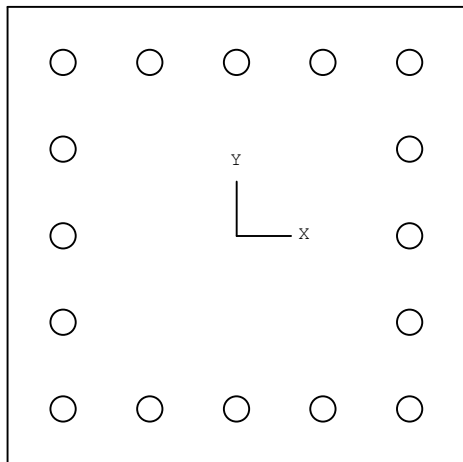
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_16#9_NX5_NY5_cc2.439



Section 45 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

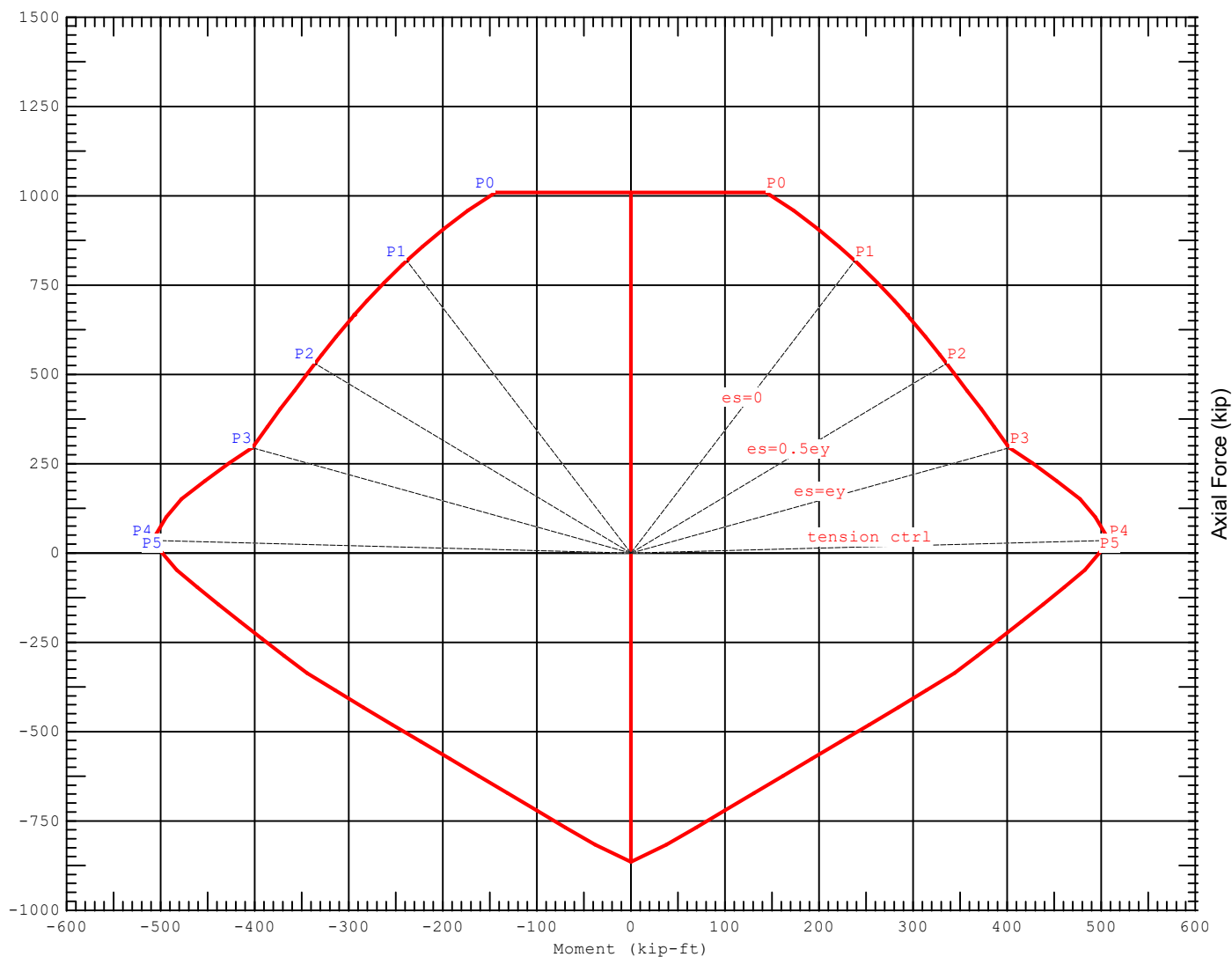
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 400.00 in²
As: 16.00 in²
Roh: 4.00%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1008.38	143.60	-0.00056
P1	817.68	237.58	0.00000
P2	529.99	335.12	0.00103
P3	294.09	401.64	0.00207
P4	34.68	507.16	0.00507
P5	0.00	496.83	0.00543
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1008.38	-143.60	-0.00056
P1	817.68	-237.58	0.00000
P2	529.99	-335.12	0.00103
P3	294.09	-401.64	0.00207
P4	34.68	-507.16	0.00507
P5	0.00	-496.83	0.00543
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



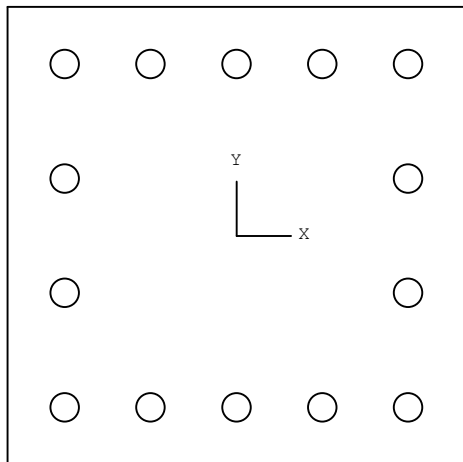
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#10_NX4_NY5_cc2.51



Section 46 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

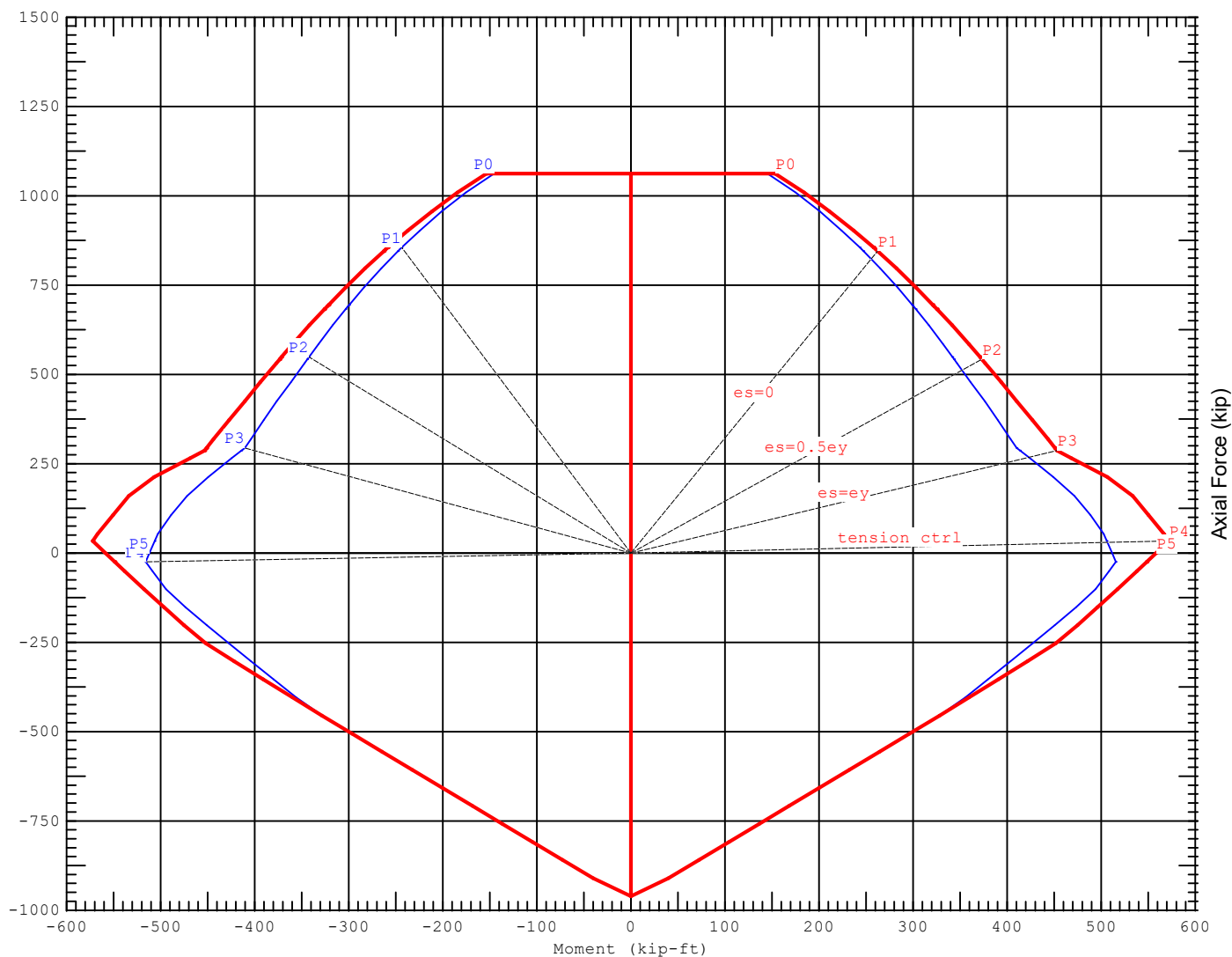
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 400.00 in²
As: 17.78 in²
Roh: 4.44%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.56	153.15	-0.00060
P1	844.55	261.95	0.00000
P2	541.93	372.48	0.00103
P3	286.68	452.25	0.00207
P4	33.75	570.64	0.00507
P5	-0.01	557.39	0.00548
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1061.55	-145.04	-0.00057
P1	854.43	-243.01	0.00000
P2	548.26	-341.33	0.00103
P3	293.66	-409.32	0.00207
P4	-24.59	-514.54	0.00507
P5	-0.00	-510.81	0.00485
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



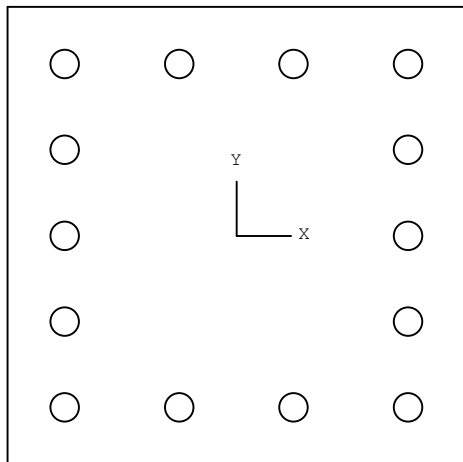
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#10_NX5_NY4_cc2.51



Section 47 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

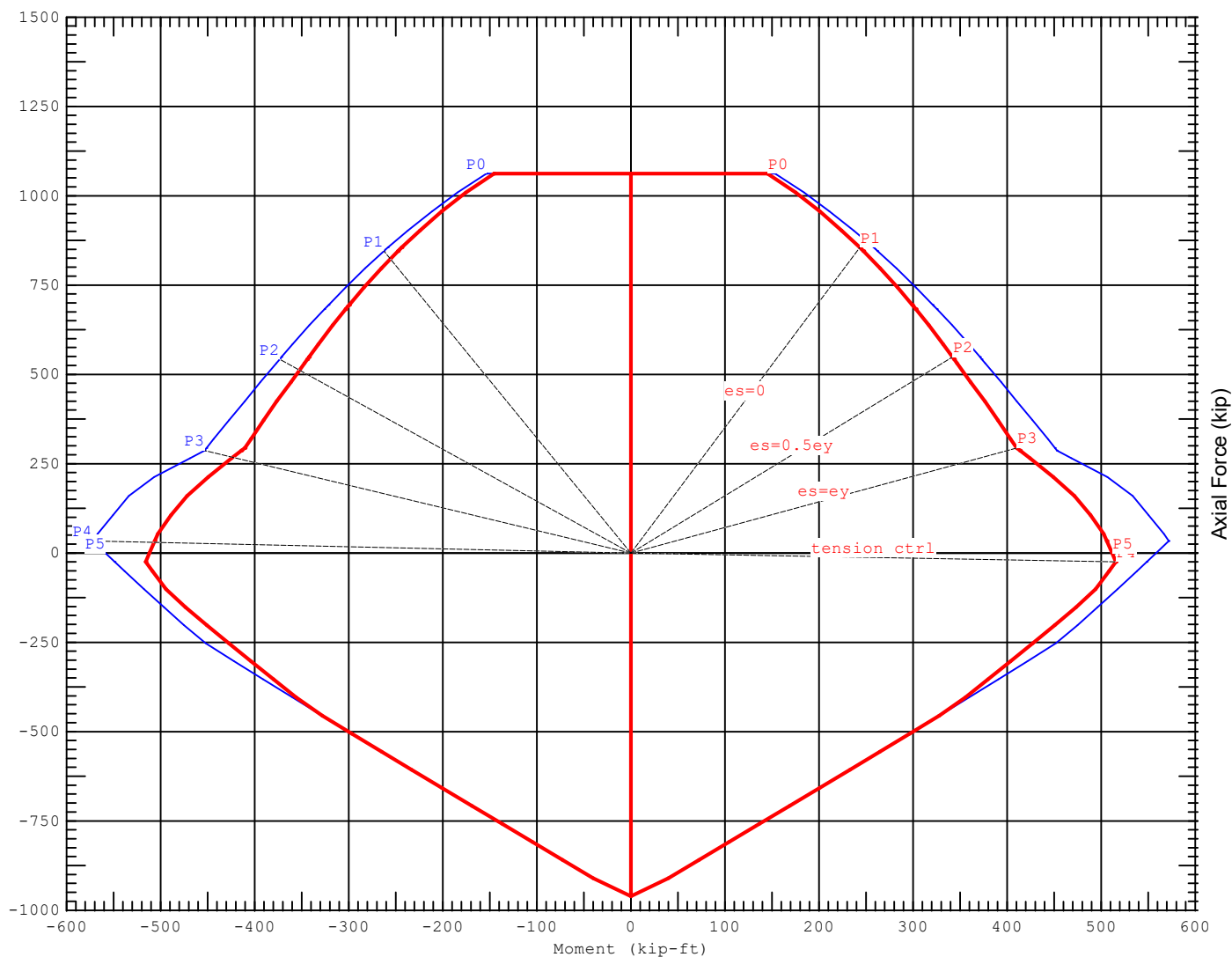
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 400.00 in²
As: 17.78 in²
Roh: 4.44%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.55	145.04	-0.00057
P1	854.43	243.01	0.00000
P2	548.26	341.33	0.00103
P3	293.66	409.32	0.00207
P4	-24.59	514.54	0.00507
P5	-0.00	510.81	0.00485
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1061.56	-153.15	-0.00060
P1	844.55	-261.95	0.00000
P2	541.93	-372.48	0.00103
P3	286.68	-452.25	0.00207
P4	33.75	-570.64	0.00507
P5	-0.01	-557.39	0.00548
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

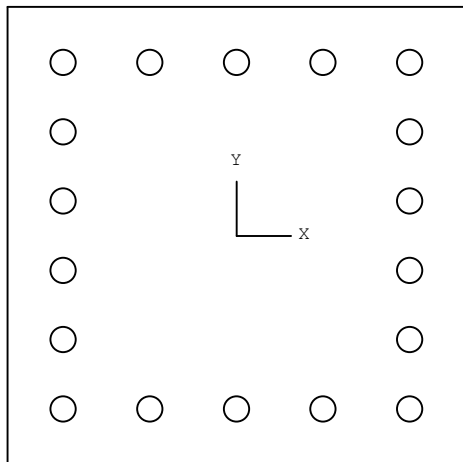
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_18#9_NX6_NY5_cc2.439



Section 48 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Bi-axial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in²fy: 60.00 kip/in²

Cover (t.c): 2.439 in

Bars: 18 # 9

Confinement: Tied

Ag: 400.00 in²As: 18.00 in²

Roh: 4.50%

Ix: 13333.3 in⁴Iy: 13333.3 in⁴

X0: 0.00 in

Y0: 0.00 in

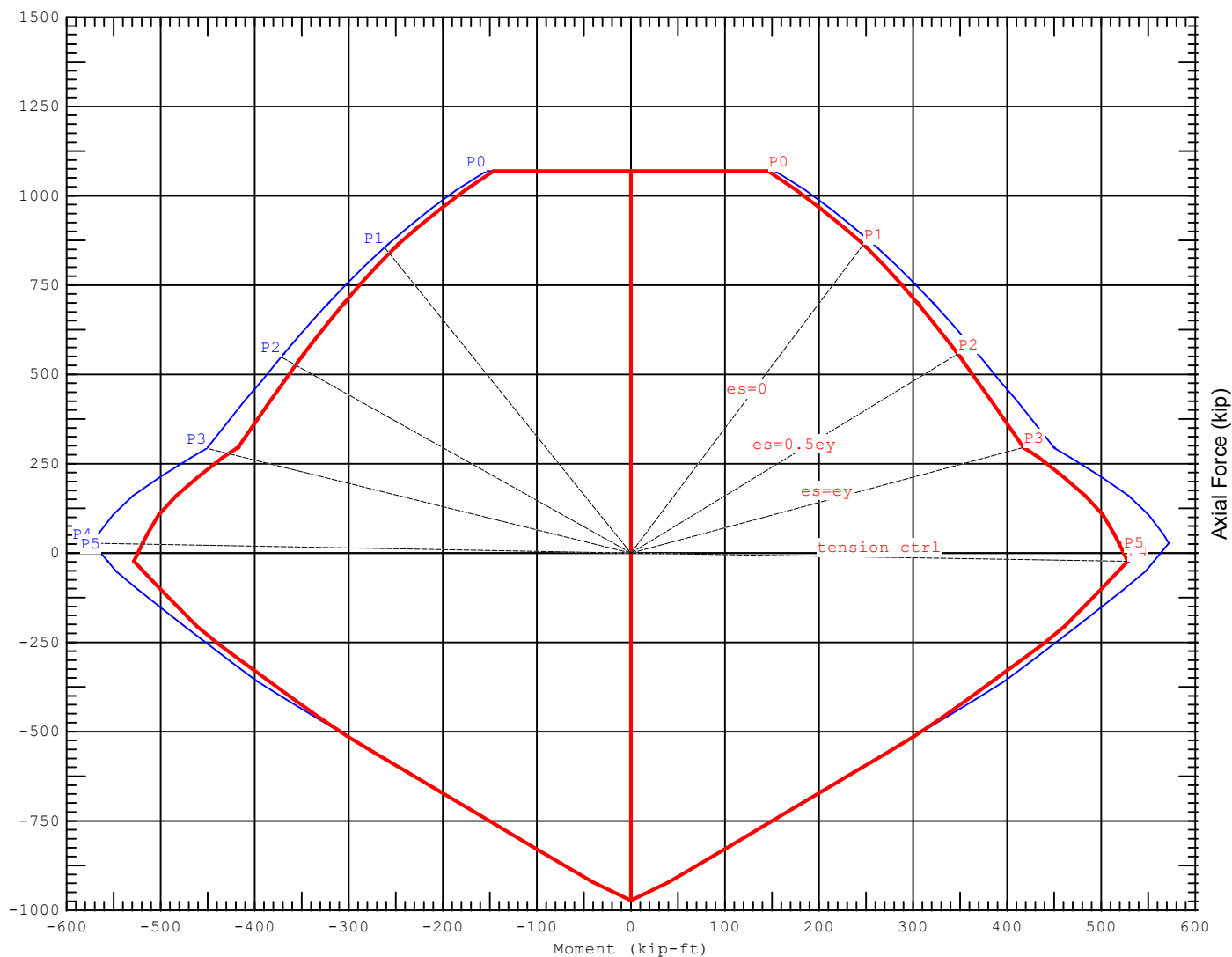
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1068.13	145.69	-0.00057
P1	863.06	246.79	0.00000
P2	556.48	346.87	0.00103
P3	295.06	416.56	0.00207
P4	-23.50	527.24	0.00507
P5	0.02	522.90	0.00481
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1068.13	-153.14	-0.00059
P1	855.02	-261.11	0.00000
P2	547.83	-370.94	0.00103
P3	292.43	-449.74	0.00207
P4	27.44	-570.64	0.00507
P5	-0.01	-562.15	0.00534
Pmin	-972.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



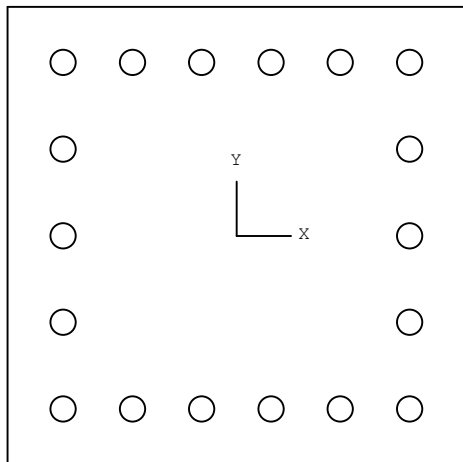
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_18#9_NX5_NY6_cc2.439



Section 49 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

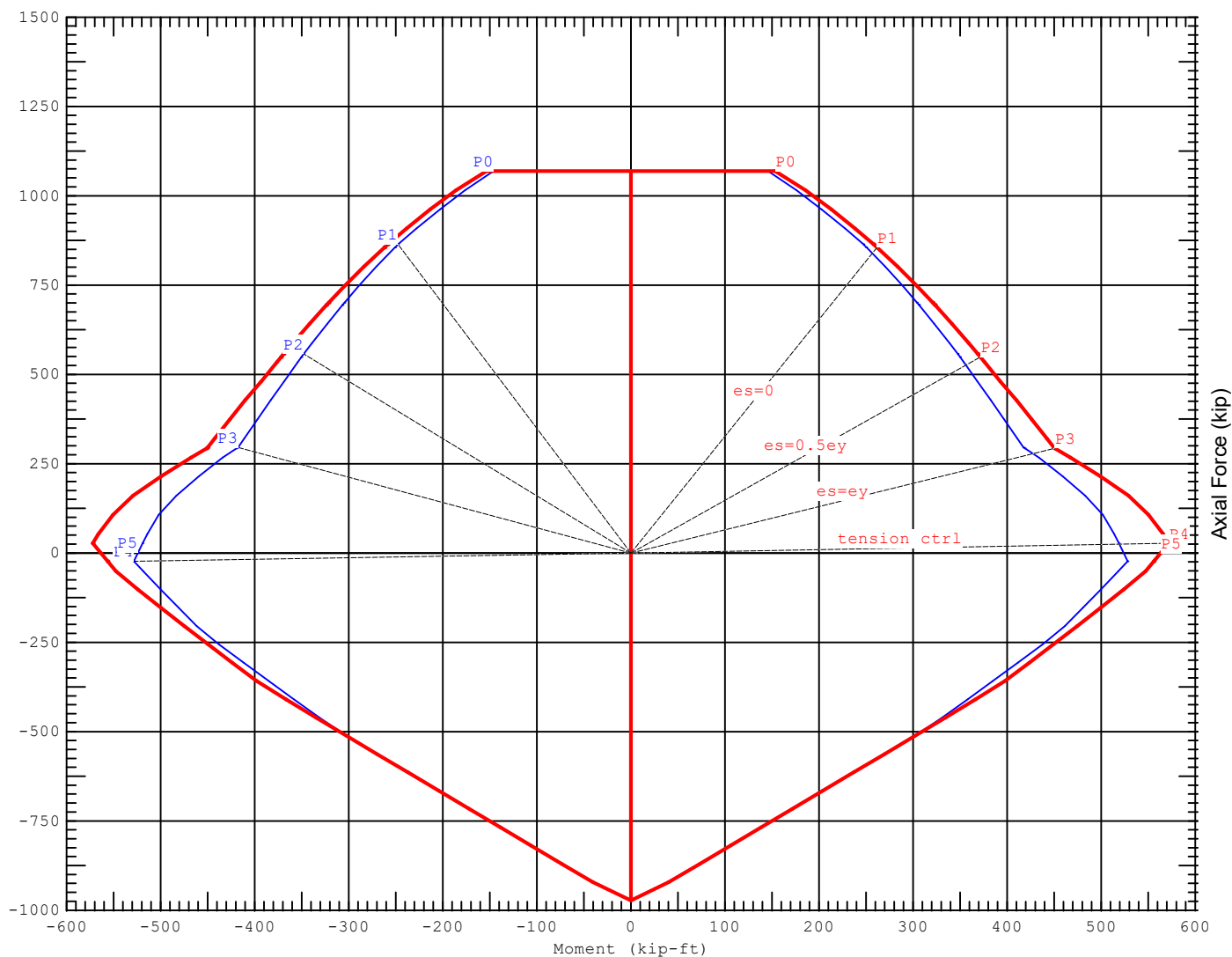
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 18 # 9
Confinement: Tied
Ag: 400.00 in²
As: 18.00 in²
Roh: 4.50%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1068.13	153.14	-0.00059
P1	855.02	261.11	0.00000
P2	547.83	370.94	0.00103
P3	292.43	449.74	0.00207
P4	27.44	570.64	0.00507
P5	-0.01	562.15	0.00534
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1068.13	-145.69	-0.00057
P1	863.06	-246.79	0.00000
P2	556.48	-346.87	0.00103
P3	295.06	-416.56	0.00207
P4	-23.50	-527.24	0.00507
P5	0.02	-522.90	0.00481
Pmin	-972.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



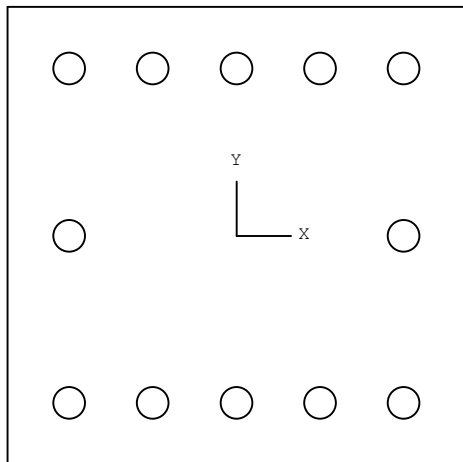
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#11_NX3_NY5_cc2.705



Section 50 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

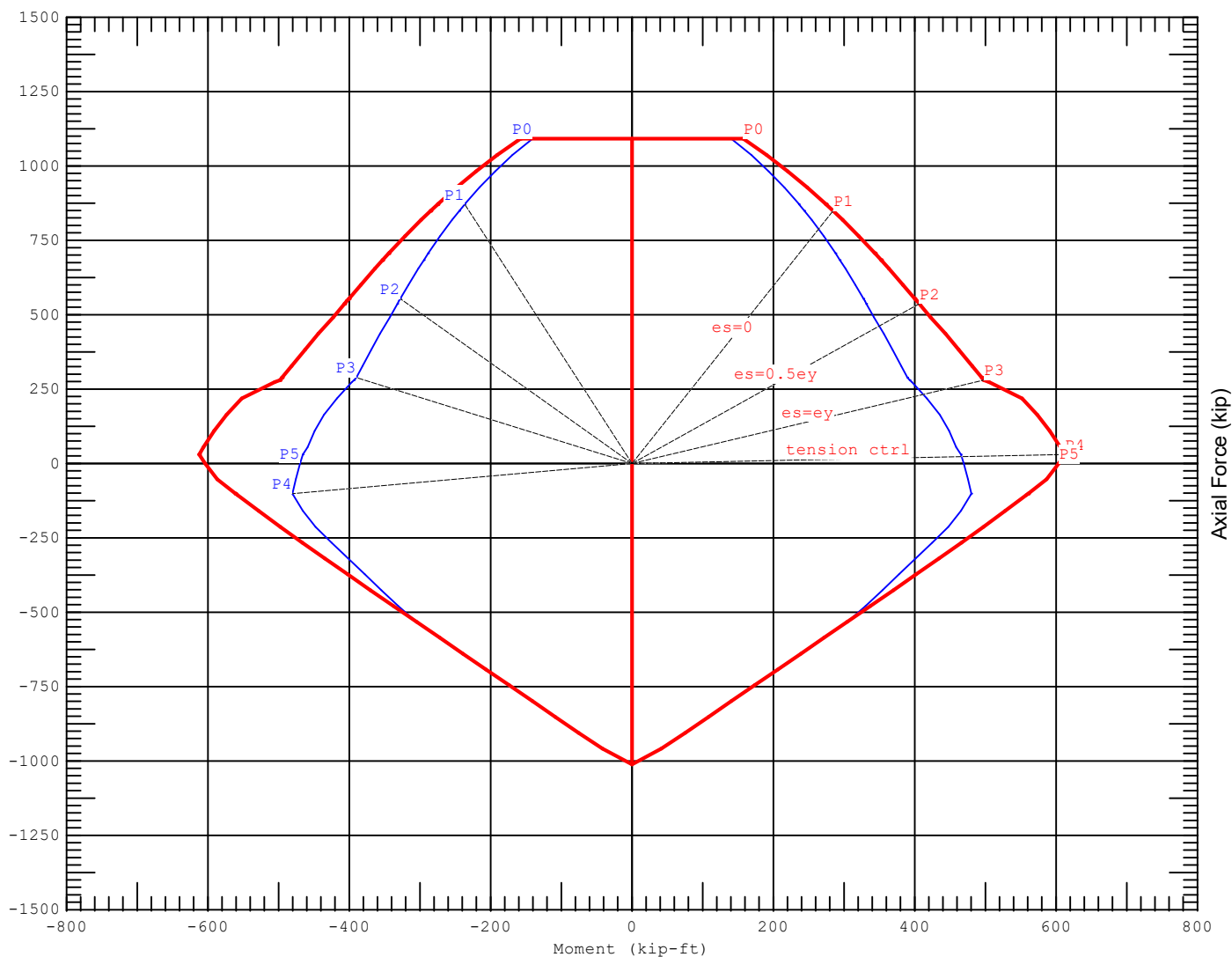
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 400.00 in²
As: 18.72 in²
Roh: 4.68%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1089.64	157.36	-0.00066
P1	847.85	284.67	0.00000
P2	535.62	406.46	0.00103
P3	279.56	497.79	0.00207
P4	29.97	612.19	0.00507
P5	-0.01	603.68	0.00534
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1089.64	-140.39	-0.00059
P1	869.84	-236.47	0.00000
P2	553.26	-327.50	0.00103
P3	287.69	-389.64	0.00207
P4	-101.45	-480.20	0.00507
P5	0.01	-469.34	0.00429
Pmin	-1010.88	0.00	0.20000

P-Mx and P-My Interaction Diagram

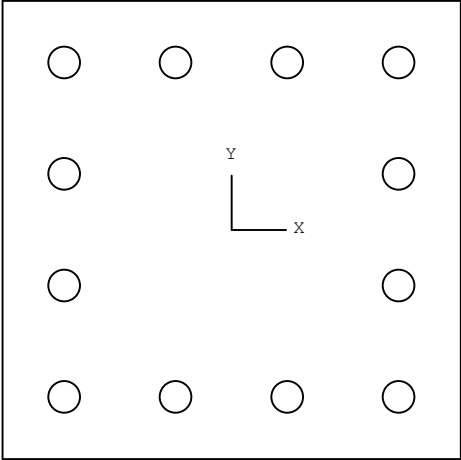


Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

Rect20x20_fc3_fy60_12#11_NX4_NY4_cc2.705



Section 51 of 238

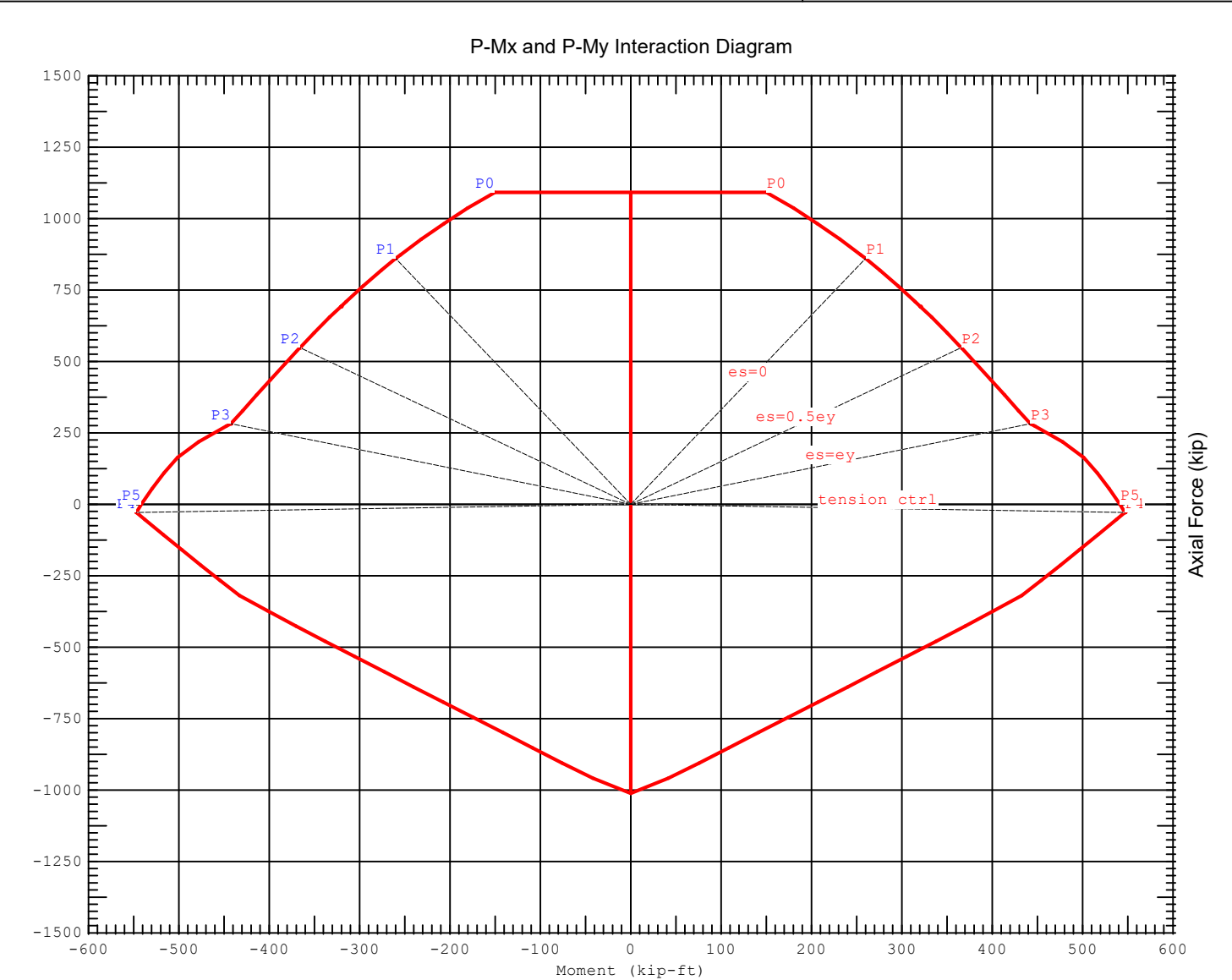
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

b x h: 20 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 400.00 in^2
As: 18.72 in^2
Roh: 4.68%
Ix: 13333.3 in^4
Iy: 13333.3 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1089.64	149.72	-0.00062
P1	858.85	259.31	0.00000
P2	547.02	365.03	0.00103
P3	281.04	441.33	0.00207
P4	-29.07	545.52	0.00507
P5	-0.01	540.27	0.00476
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1089.64	-149.72	-0.00062
P1	858.85	-259.31	0.00000
P2	547.02	-365.03	0.00103
P3	281.04	-441.33	0.00207
P4	-29.07	-545.52	0.00507
P5	-0.01	-540.27	0.00476
Pmin	-1010.88	-0.00	0.20000



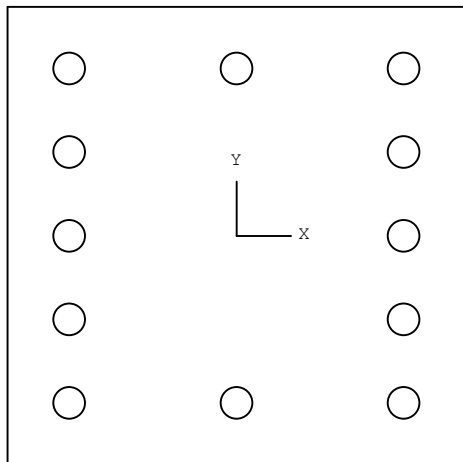
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_12#11_NX5_NY3_cc2.705



Section 52 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

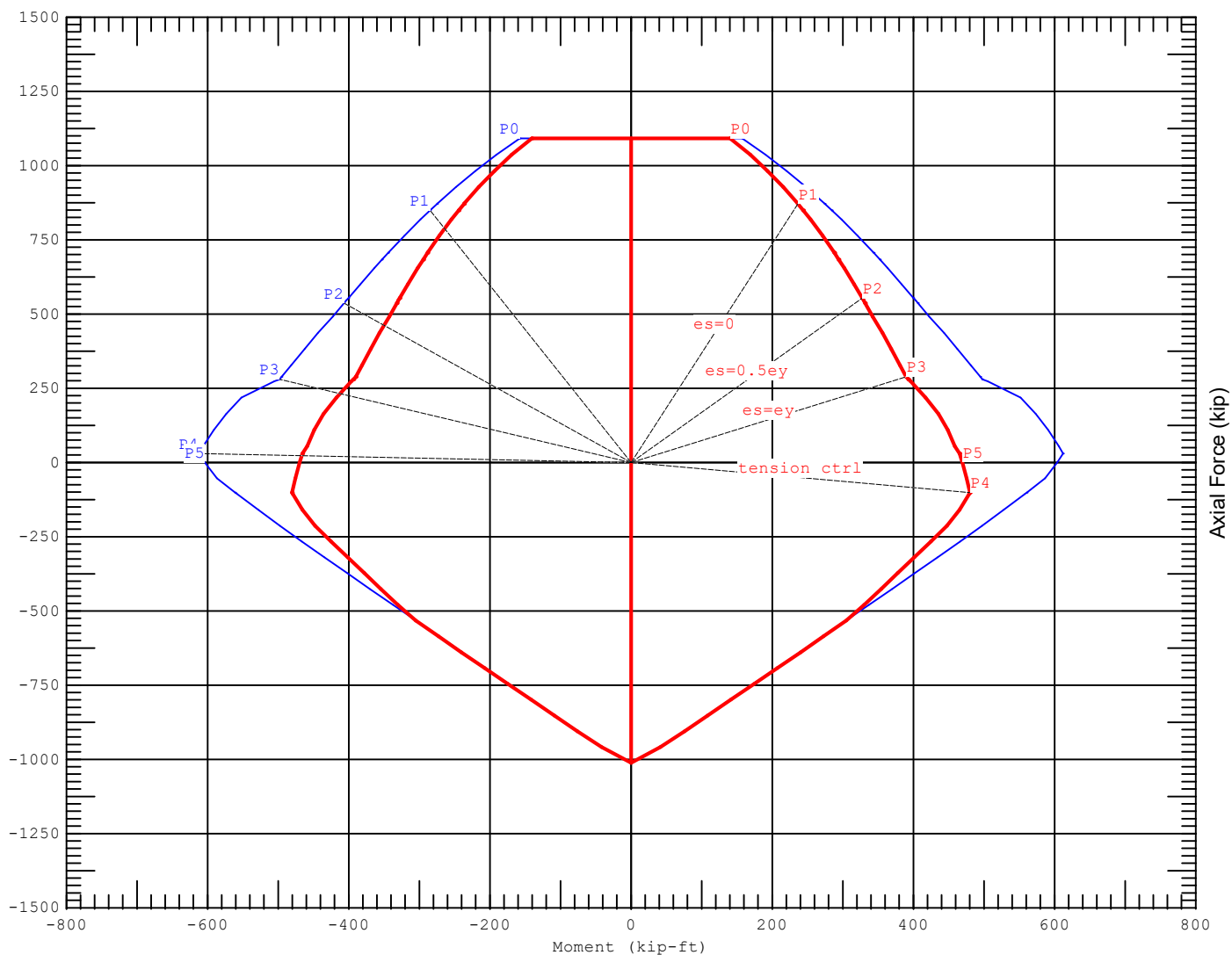
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 400.00 in²
As: 18.72 in²
Roh: 4.68%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1089.64	140.39	-0.00059
P1	869.84	236.47	0.00000
P2	553.26	327.50	0.00103
P3	287.69	389.64	0.00207
P4	-101.45	480.20	0.00507
P5	0.01	469.34	0.00429
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1089.64	-157.36	-0.00066
P1	847.85	-284.67	0.00000
P2	535.62	-406.46	0.00103
P3	279.56	-497.79	0.00207
P4	29.97	-612.19	0.00507
P5	-0.01	-603.68	0.00534
Pmin	-1010.88	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

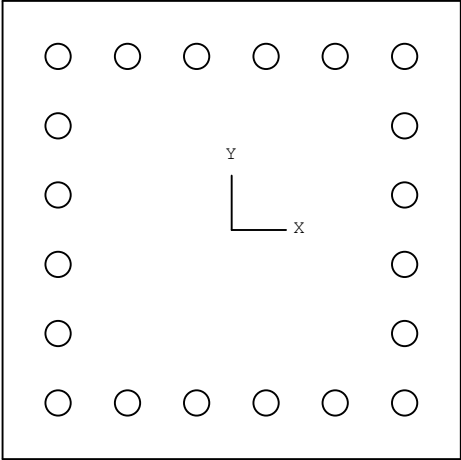
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_20#9_NX6_NY6_cc2.439



Section 53 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 20 # 9

Confinement: Tied

Ag: 400.00 in^2

As: 20.00 in^2

Roh: 5.00%

Ix: 13333.3 in^4

Iy: 13333.3 in^4

X0: 0.00 in

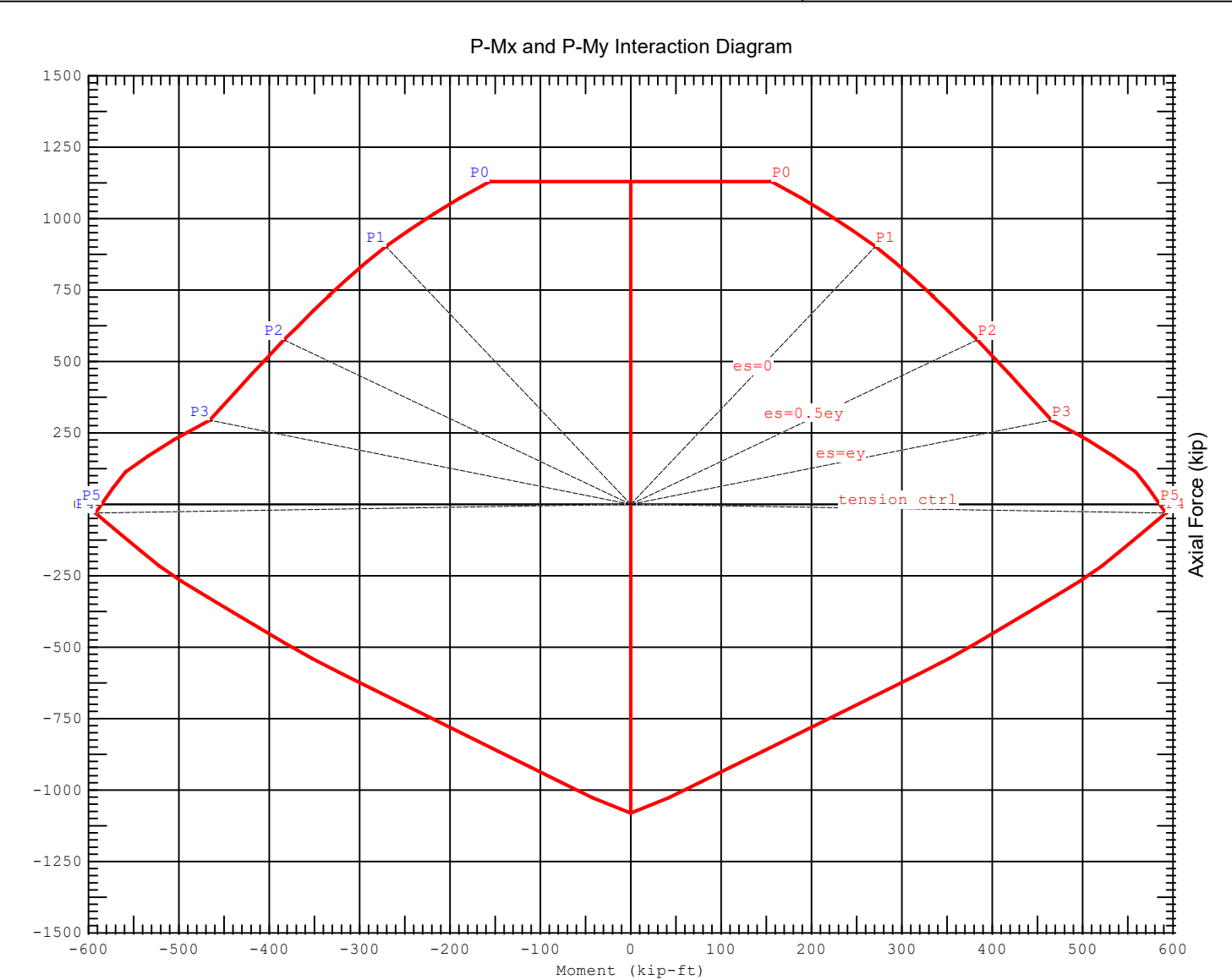
Y0: 0.00 in

Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1127.87	155.49	-0.00060
P1	900.40	270.32	0.00000
P2	574.32	382.69	0.00103
P3	293.40	464.66	0.00207
P4	-30.74	590.73	0.00507
P5	-0.02	584.06	0.00475
Pmin	-1080.00	0.00	0.20000

PT	P	My (-)	max es
P0	1127.87	-155.49	-0.00060
P1	900.40	-270.32	0.00000
P2	574.32	-382.69	0.00103
P3	293.40	-464.66	0.00207
P4	-30.74	-590.73	0.00507
P5	-0.02	-584.06	0.00475
Pmin	-1080.00	-0.00	0.20000



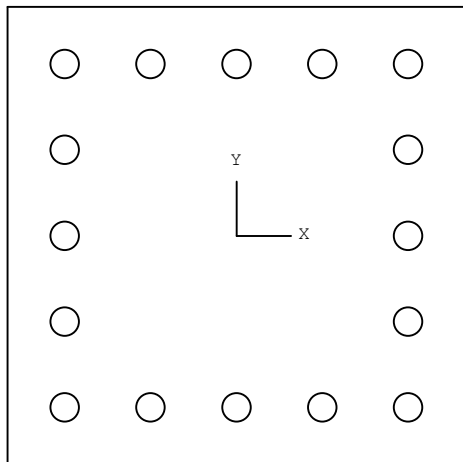
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_16#10_NX5_NY5_cc2.51



Section 54 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

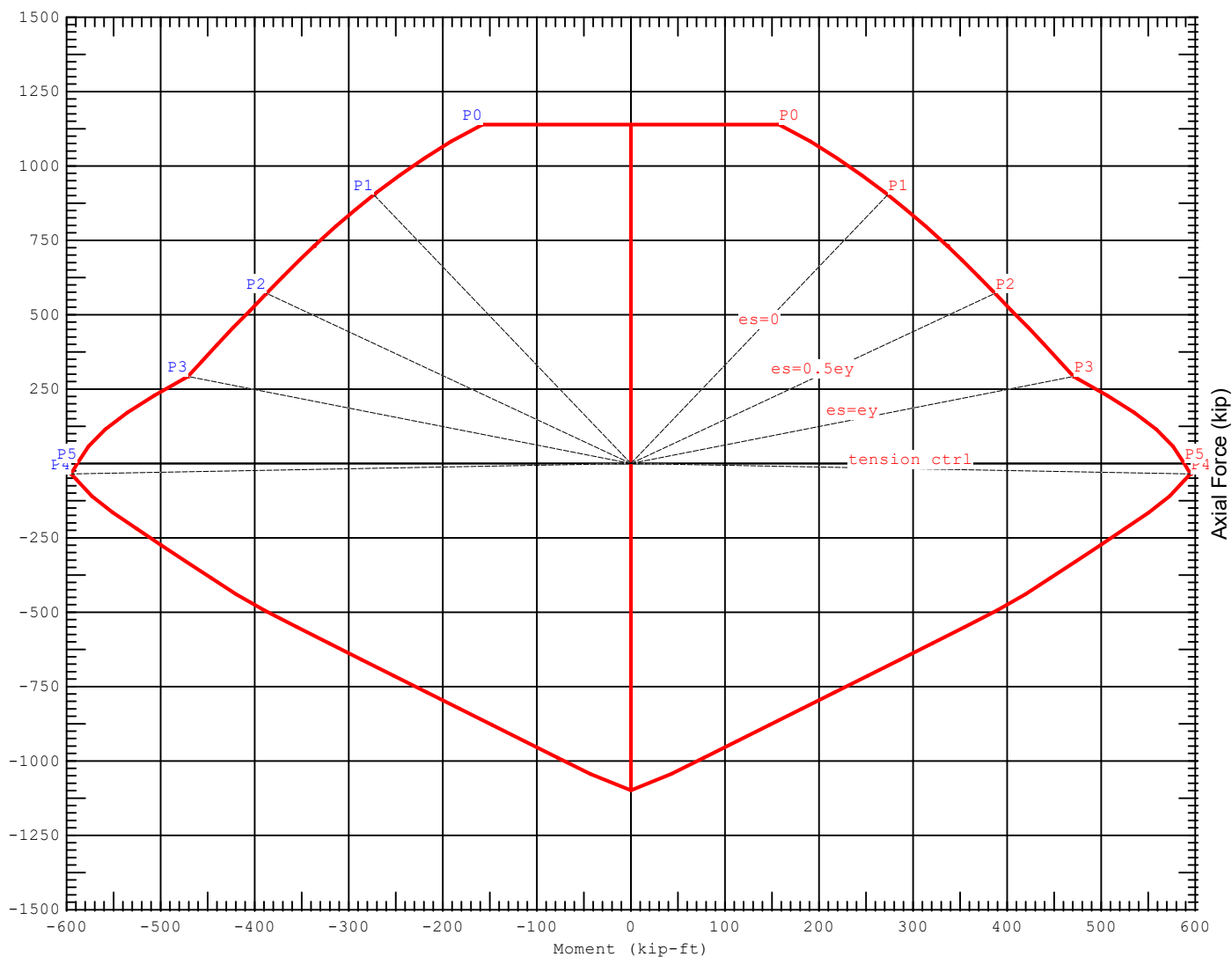
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 16 # 10
Confinement: Tied
Ag: 400.00 in²
As: 20.32 in²
Roh: 5.08%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1137.44	157.13	-0.00061
P1	901.85	272.62	0.00000
P2	570.92	386.38	0.00103
P3	291.56	469.83	0.00207
P4	-35.03	593.64	0.00507
P5	0.02	587.17	0.00477
Pmin	-1097.28	-0.00	0.20000

PT	P	My (-)	max es
P0	1137.44	-157.13	-0.00061
P1	901.85	-272.62	0.00000
P2	570.92	-386.38	0.00103
P3	291.56	-469.83	0.00207
P4	-35.03	-593.64	0.00507
P5	0.02	-587.17	0.00477
Pmin	-1097.28	0.00	0.20000

P-Mx and P-My Interaction Diagram



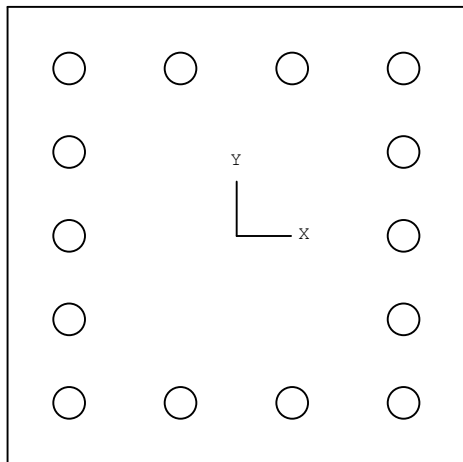
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#11_NX5_NY4_cc2.705



Section 55 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

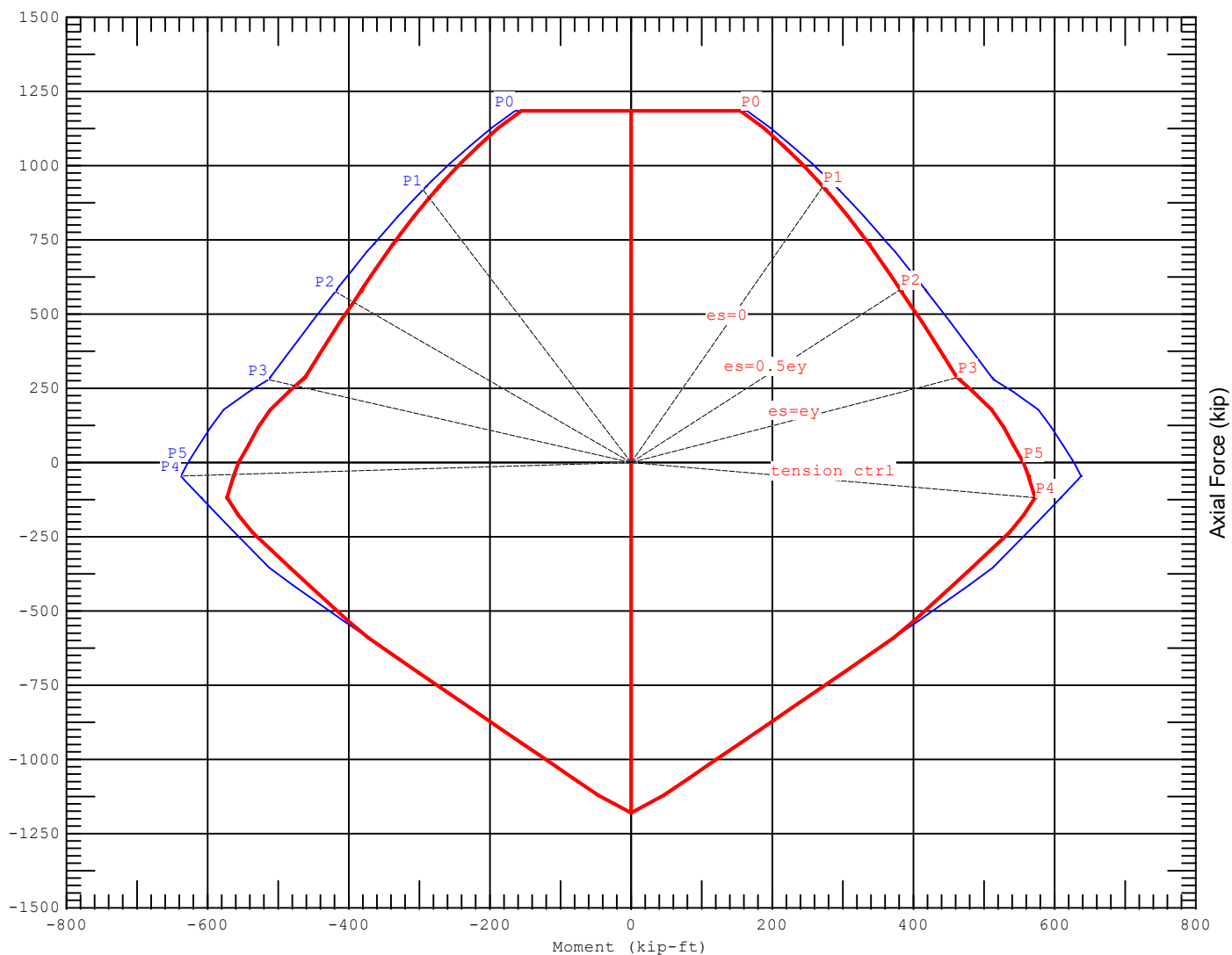
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 14 # 11
Confinement: Tied
Ag: 400.00 in²
As: 21.84 in²
Roh: 5.46%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1182.85	155.01	-0.00063
P1	928.09	271.88	0.00000
P2	581.10	381.40	0.00103
P3	285.10	462.04	0.00207
P4	-118.50	572.25	0.00507
P5	0.00	555.72	0.00421
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1182.85	-164.21	-0.00066
P1	917.10	-294.73	0.00000
P2	574.86	-418.93	0.00103
P3	278.45	-513.73	0.00207
P4	-46.13	-637.57	0.00507
P5	0.01	-627.42	0.00461
Pmin	-1179.36	-0.00	0.20000

P-Mx and P-My Interaction Diagram



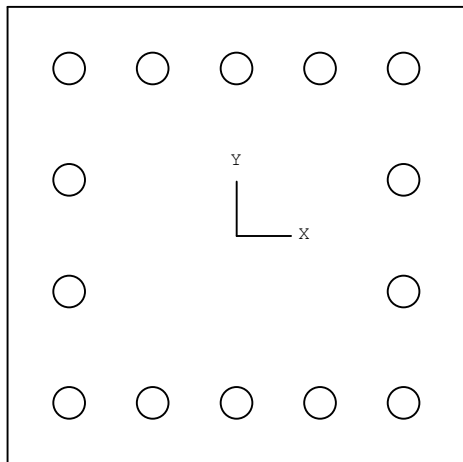
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_14#11_NX4_NY5_cc2.705



Section 56 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

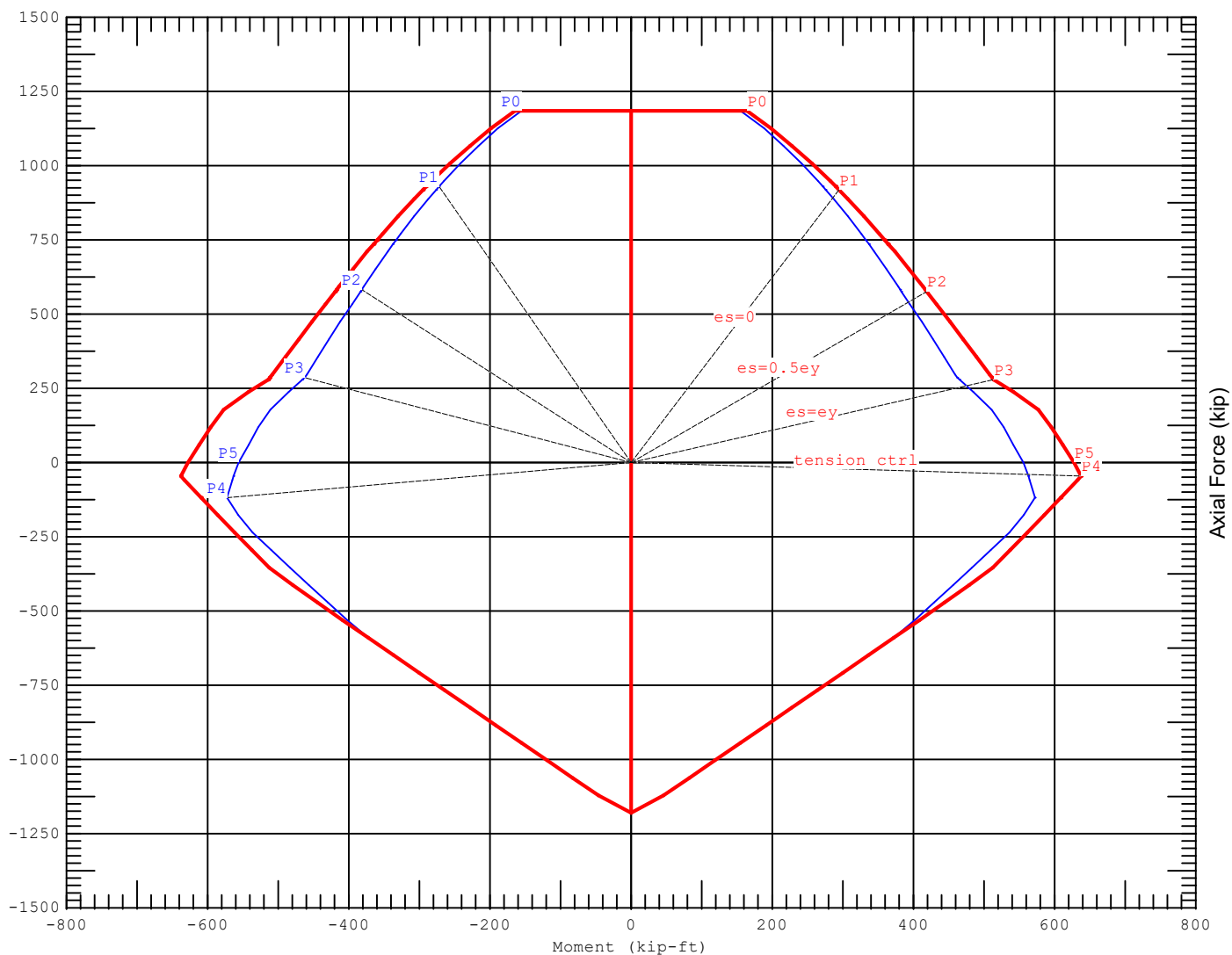
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 14 # 11
Confinement: Tied
Ag: 400.00 in²
As: 21.84 in²
Roh: 5.46%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1182.85	164.21	-0.00066
P1	917.10	294.73	0.00000
P2	574.86	418.93	0.00103
P3	278.45	513.73	0.00207
P4	-46.13	637.57	0.00507
P5	0.01	627.42	0.00461
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1182.85	-155.01	-0.00063
P1	928.09	-271.88	0.00000
P2	581.10	-381.40	0.00103
P3	285.10	-462.04	0.00207
P4	-118.50	-572.25	0.00507
P5	0.00	-555.72	0.00421
Pmin	-1179.36	0.00	0.20000

P-Mx and P-My Interaction Diagram



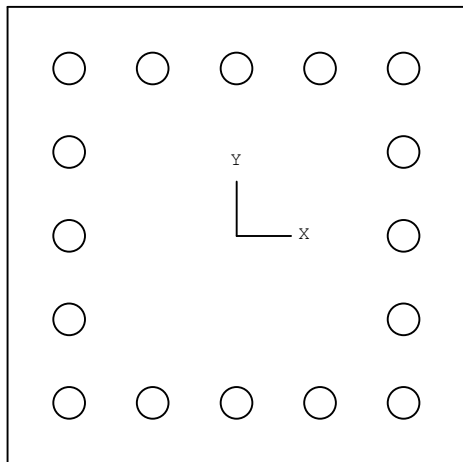
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x20_fc3_fy60_16#11_NX5_NY5_cc2.705



Section 57 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

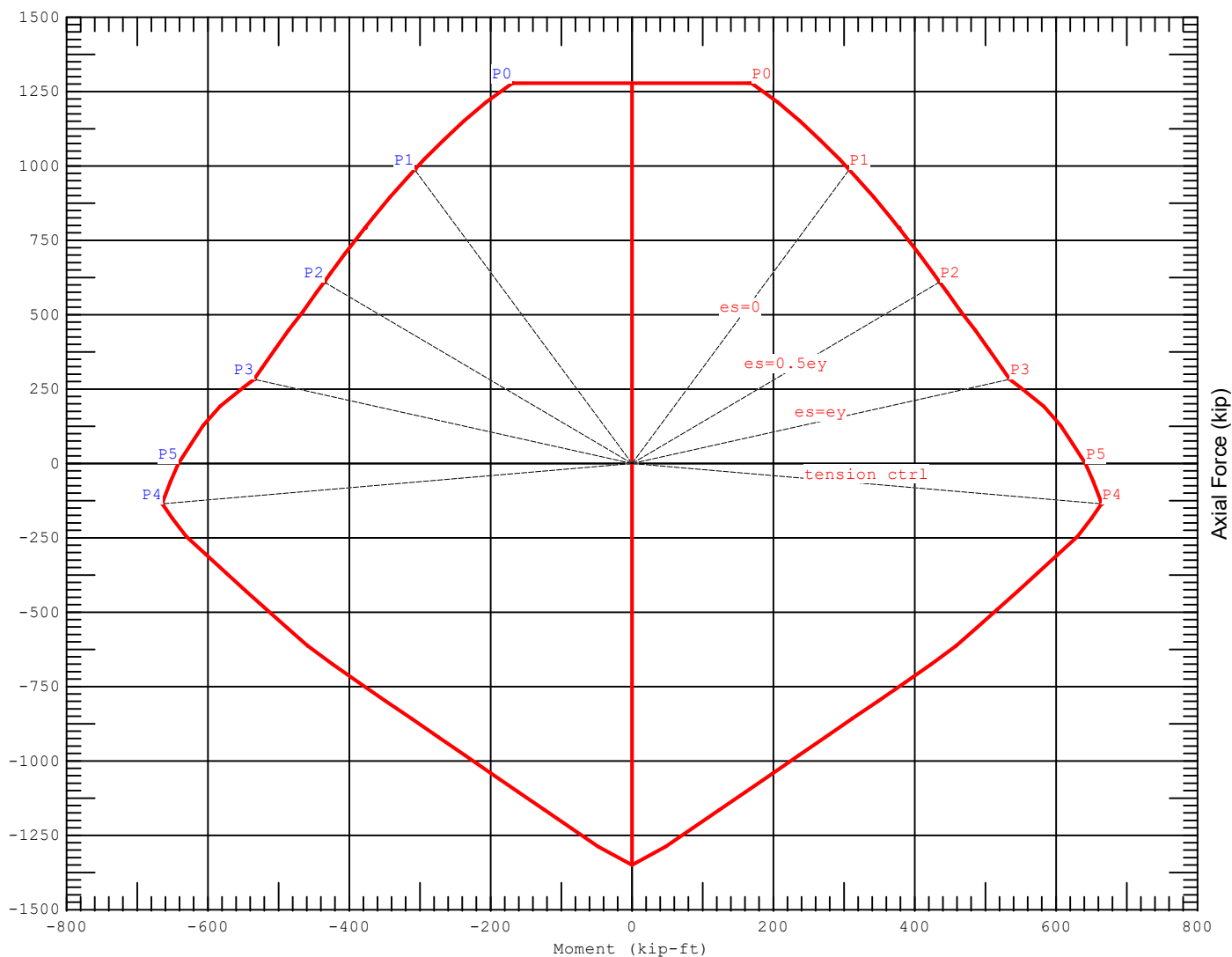
b x h: 20 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 16 # 11
Confinement: Tied
Ag: 400.00 in²
As: 24.96 in²
Roh: 6.24%
Ix: 13333.3 in⁴
Iy: 13333.3 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1276.05	169.26	-0.00067
P1	986.35	307.29	0.00000
P2	608.93	435.31	0.00103
P3	282.51	534.44	0.00207
P4	-135.56	664.30	0.00507
P5	-0.01	641.37	0.00413
Pmin	-1347.84	0.00	0.20000

PT	P	My (-)	max es
P0	1276.05	-169.26	-0.00067
P1	986.35	-307.29	0.00000
P2	608.93	-435.31	0.00103
P3	282.51	-534.44	0.00207
P4	-135.56	-664.30	0.00507
P5	-0.01	-641.37	0.00413
Pmin	-1347.84	0.00	0.20000

P-Mx and P-My Interaction Diagram



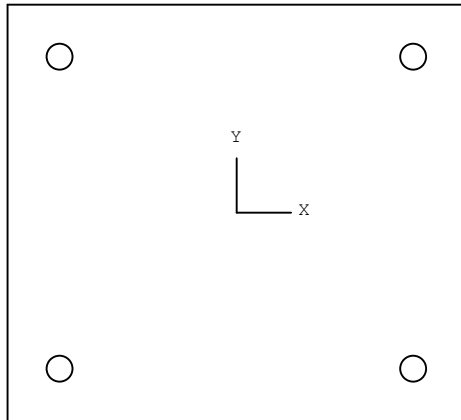
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_4#10_NX2_NY2_cc2.51



Section 58 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

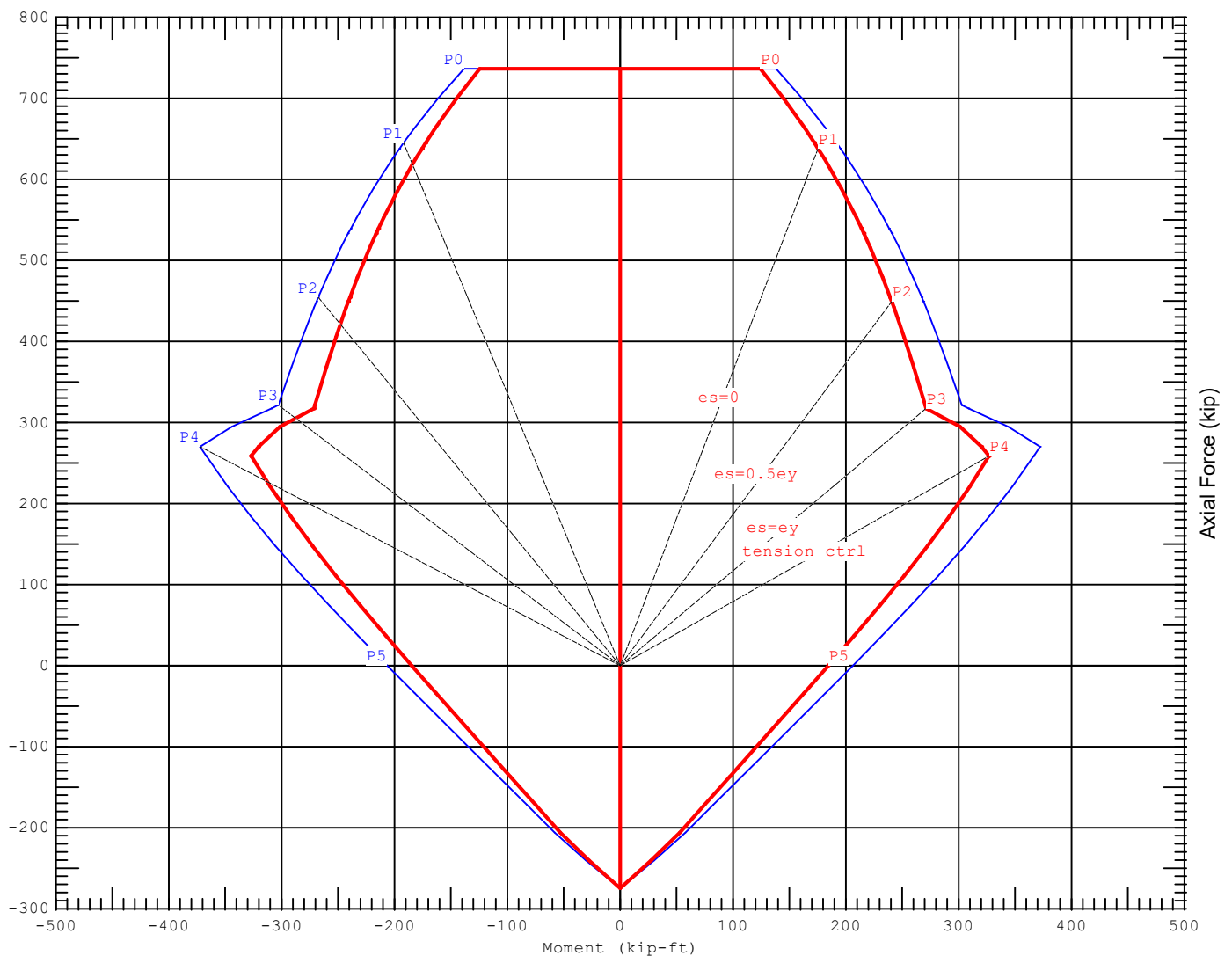
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 4 # 10
Confinement: Tied
Ag: 440.00 in²
As: 5.08 in²
Roh: 1.15%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.71 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	735.20	124.00	-0.00039
P1	636.96	175.16	0.00000
P2	448.43	240.36	0.00103
P3	316.63	270.78	0.00207
P4	258.20	326.48	0.00507
P5	0.00	184.42	0.01597
Pmin	-274.32	0.00	0.20000

PT	P	My (-)	max es
P0	735.20	-138.08	-0.00036
P1	644.03	-191.44	0.00000
P2	453.68	-266.88	0.00103
P3	320.81	-302.35	0.00207
P4	269.72	-371.48	0.00507
P5	0.01	-206.13	0.01736
Pmin	-274.32	0.00	0.20000

P-Mx and P-My Interaction Diagram



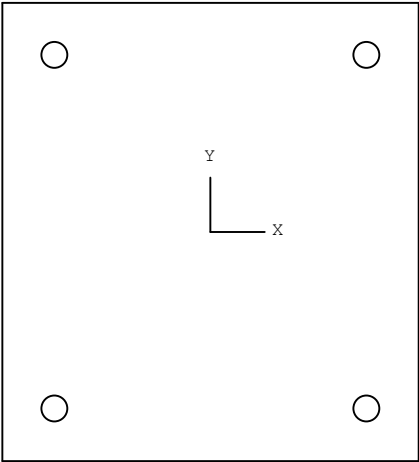
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_4#10_NX2_NY2_cc2.51



Section 59 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

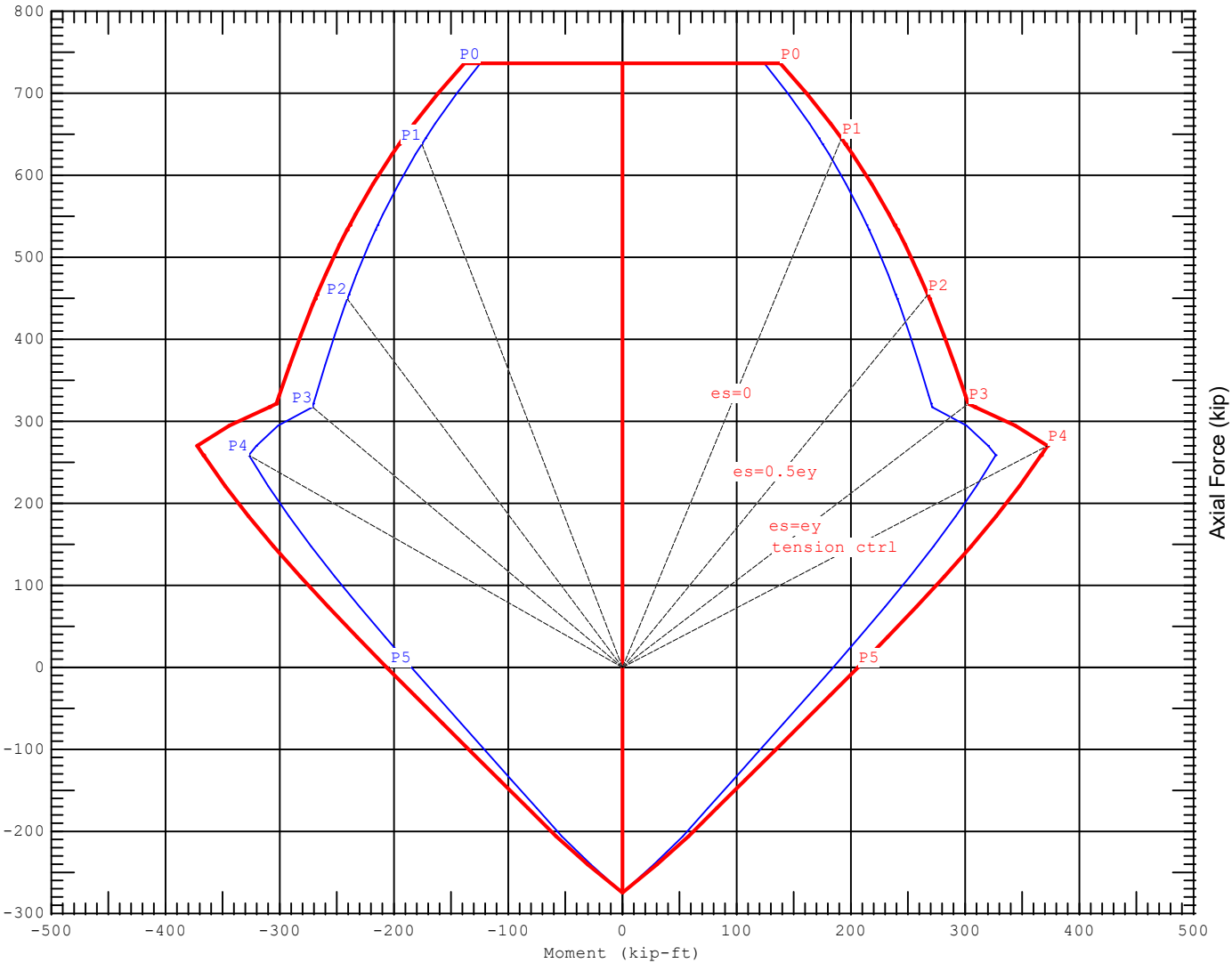
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 4 # 10
Confinement: Tied
Ag: 440.00 in²
As: 5.08 in²
Roh: 1.15%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.71 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	735.20	138.08	-0.00036
P1	644.03	191.44	0.00000
P2	453.68	266.88	0.00103
P3	320.81	302.35	0.00207
P4	269.72	371.48	0.00507
P5	0.01	206.13	0.01736
Pmin	-274.32	0.00	0.20000

PT	P	My (-)	max es
P0	735.20	-124.00	-0.00039
P1	636.96	-175.16	0.00000
P2	448.43	-240.36	0.00103
P3	316.63	-270.78	0.00207
P4	258.20	-326.48	0.00507
P5	0.00	-184.42	0.01597
Pmin	-274.32	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_6#9_NX3_NY2_cc2.439

Y

X

Section 60 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 22 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 6 # 9

Confinement: Tied

Ag: 440.00 in^2

As: 6.00 in^2

Roh: 1.36%

Ix: 17746.7 in^4

Iy: 14666.7 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 7.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	762.68	128.17	-0.00034
P1	672.05	176.68	0.00000
P2	469.79	245.67	0.00103
P3	328.53	274.20	0.00207
P4	194.98	335.04	0.00507
P5	0.00	240.58	0.01147
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	762.68	-129.01	-0.00040
P1	656.34	-185.64	0.00000
P2	458.27	-257.55	0.00103
P3	317.17	-294.18	0.00207
P4	258.47	-359.16	0.00507
P5	0.00	-216.65	0.01477
Pmin	-324.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram

es=0

es=0.5ey

es=ey

tension ctrl

Axial Force (kip)

Moment (kip-ft)

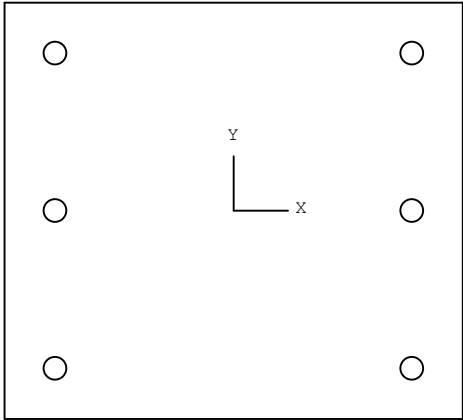
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#9_NX3_NY2_cc2.439



Section 61 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

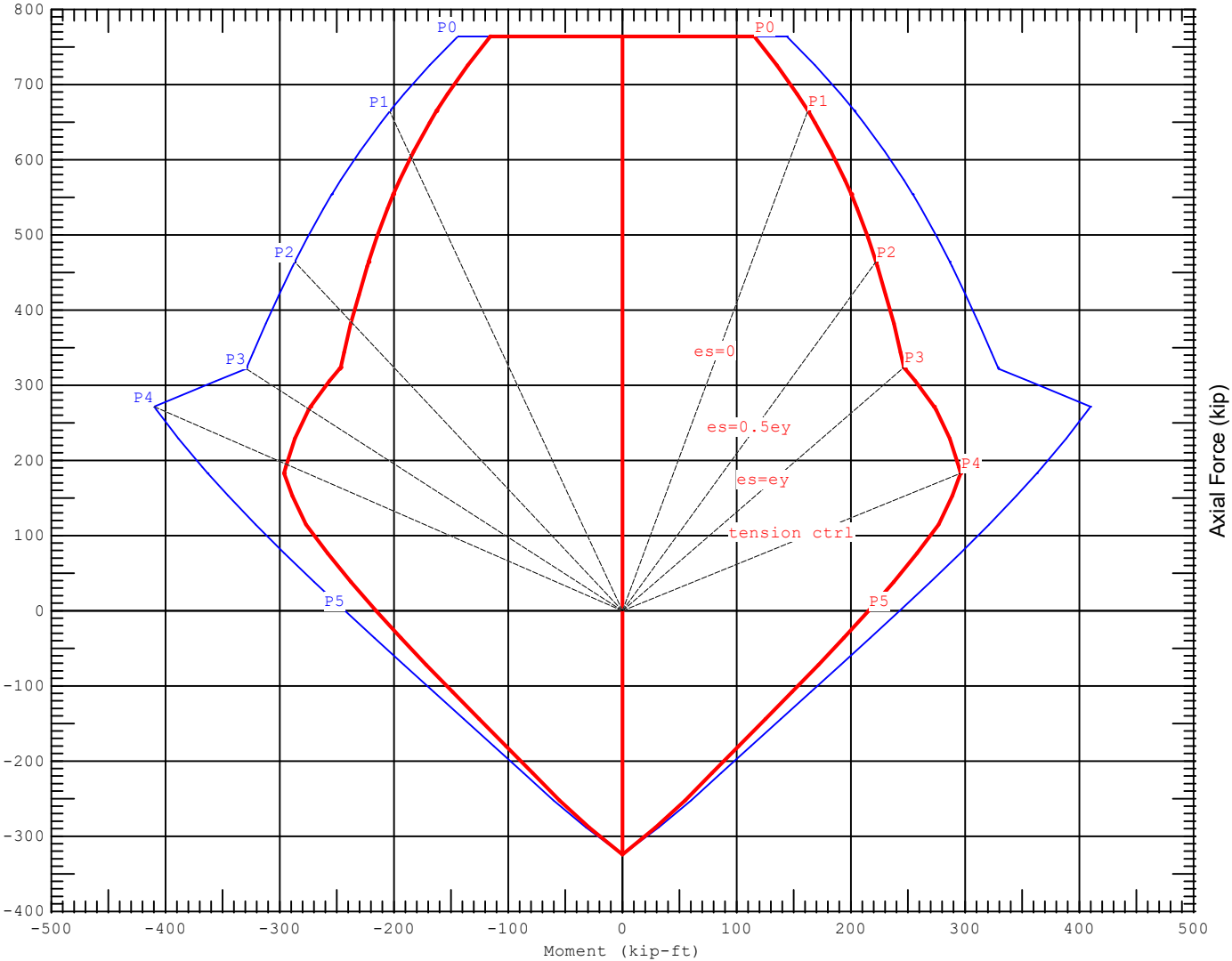
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 440.00 in²
As: 6.00 in²
Roh: 1.36%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	762.67	115.28	-0.00037
P1	664.37	162.11	0.00000
P2	463.60	221.73	0.00103
P3	323.11	246.08	0.00207
P4	182.47	295.68	0.00507
P5	-0.00	215.29	0.01079
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	762.68	-143.80	-0.00037
P1	663.21	-203.32	0.00000
P2	463.38	-286.22	0.00103
P3	321.24	-328.67	0.00207
P4	270.98	-409.06	0.00507
P5	-0.01	-242.46	0.01606
Pmin	-324.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

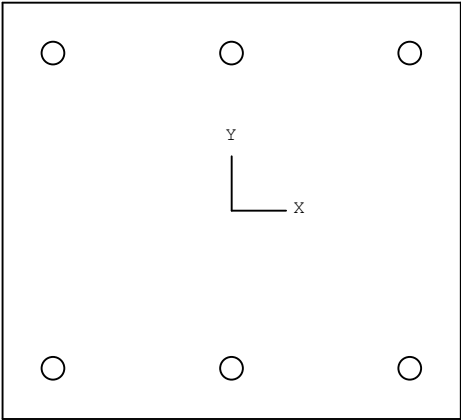
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#9_NX2_NY3_cc2.439



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 6 # 9

Confinement: Tied

Ag: 440.00 in^2

As: 6.00 in^2

Roh: 1.36%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

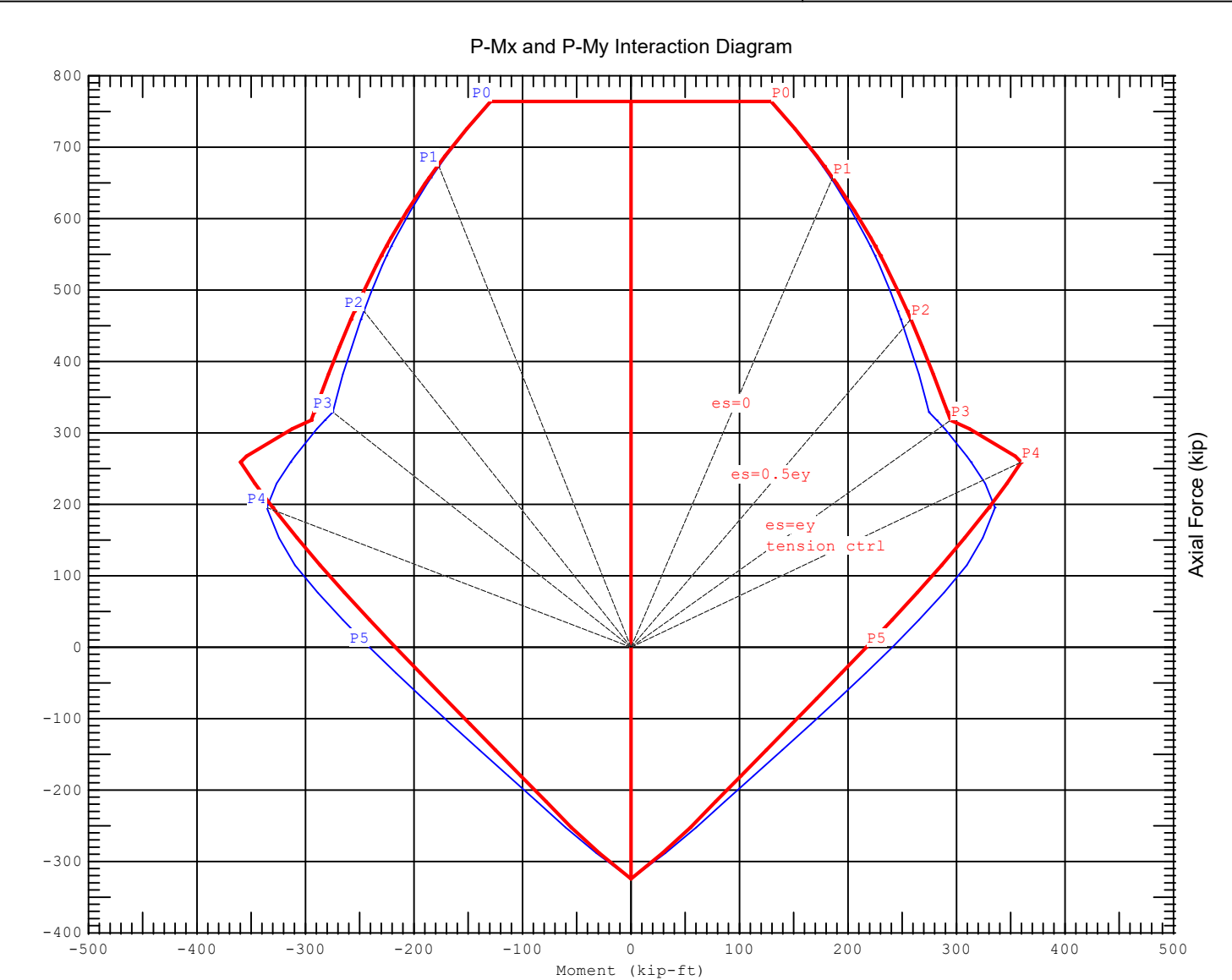
Y0: 0.00 in

Clear spacing: 7.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	762.68	129.01	-0.00040
P1	656.34	185.64	0.00000
P2	458.27	257.55	0.00103
P3	317.17	294.18	0.00207
P4	258.47	359.16	0.00507
P5	0.00	216.65	0.01477
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	762.68	-128.17	-0.00034
P1	672.05	-176.68	0.00000
P2	469.79	-245.67	0.00103
P3	328.53	-274.20	0.00207
P4	194.98	-335.04	0.00507
P5	0.00	-240.58	0.01147
Pmin	-324.00	0.00	0.20000



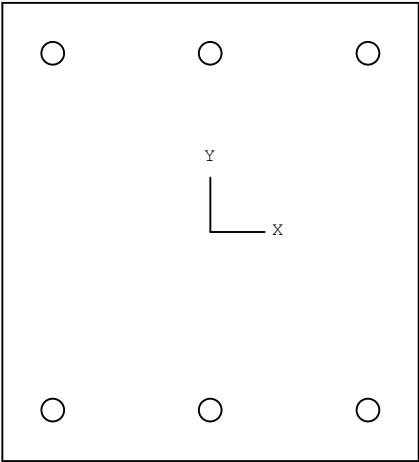
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_6#9_NX2_NY3_cc2.439



Section 63 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

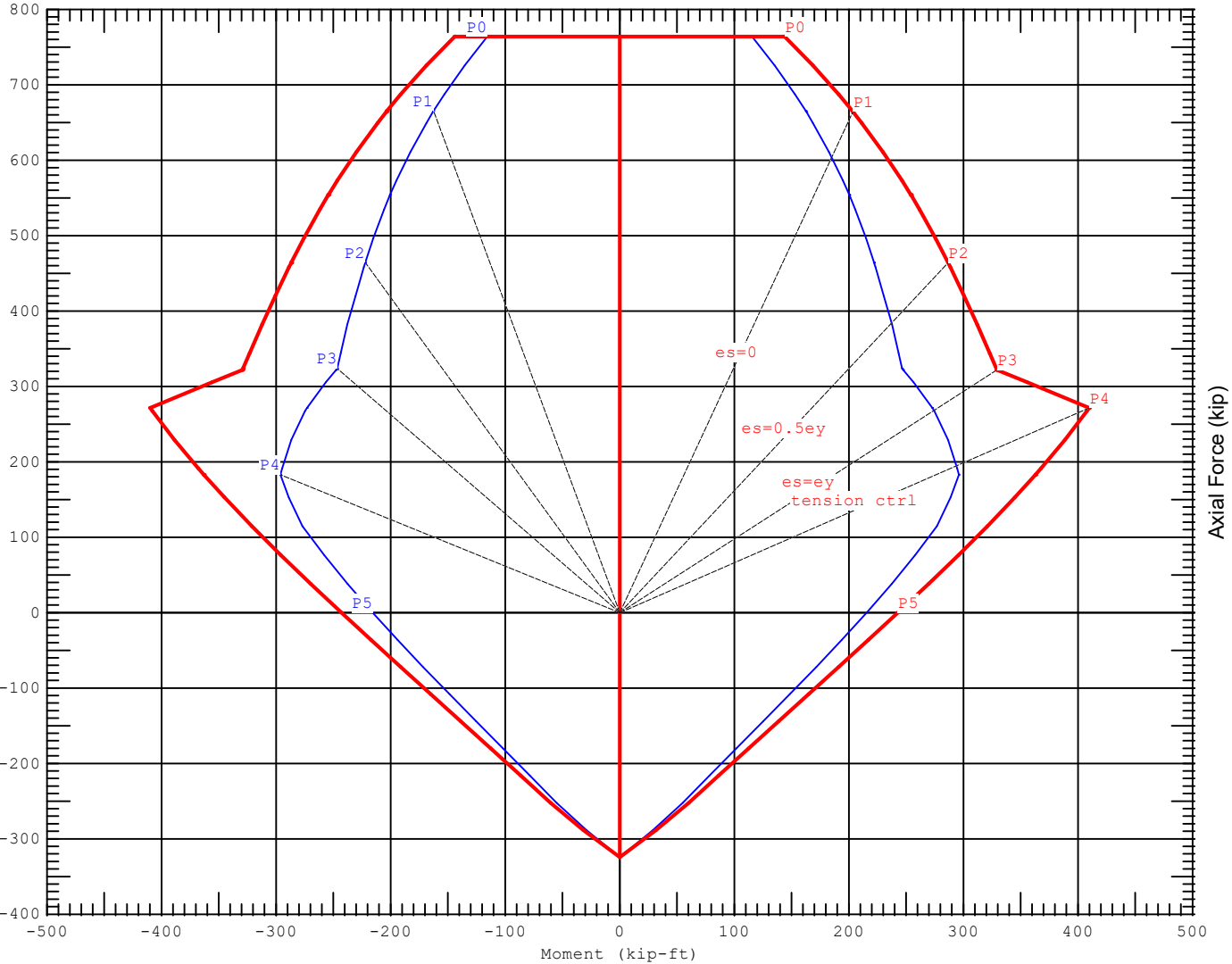
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 440.00 in²
As: 6.00 in²
Roh: 1.36%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	762.68	143.80	-0.00037
P1	663.21	203.32	0.00000
P2	463.38	286.22	0.00103
P3	321.24	328.67	0.00207
P4	270.98	409.06	0.00507
P5	-0.01	242.46	0.01606
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	762.67	-115.28	-0.00037
P1	664.37	-162.11	0.00000
P2	463.60	-221.73	0.00103
P3	323.11	-246.08	0.00207
P4	182.47	-295.68	0.00507
P5	-0.00	-215.29	0.01079
Pmin	-324.00	0.00	0.20000

P-Mx and P-My Interaction Diagram

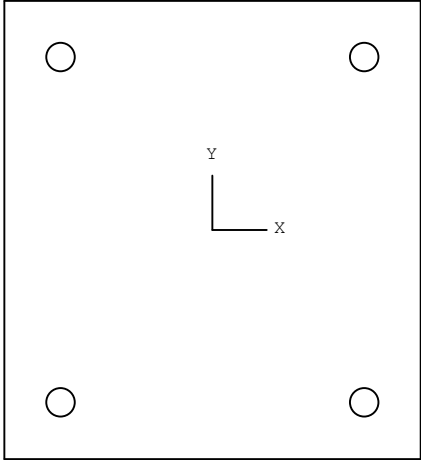


Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

Rect20x22_fc3_fy60_4#11_NX2_NY2_cc2.705



Section 64 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 22 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 4 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 6.24 in^2

Roh: 1.42%

Ix: 17746.7 in^4

Iy: 14666.7 in^4

X0: 0.00 in

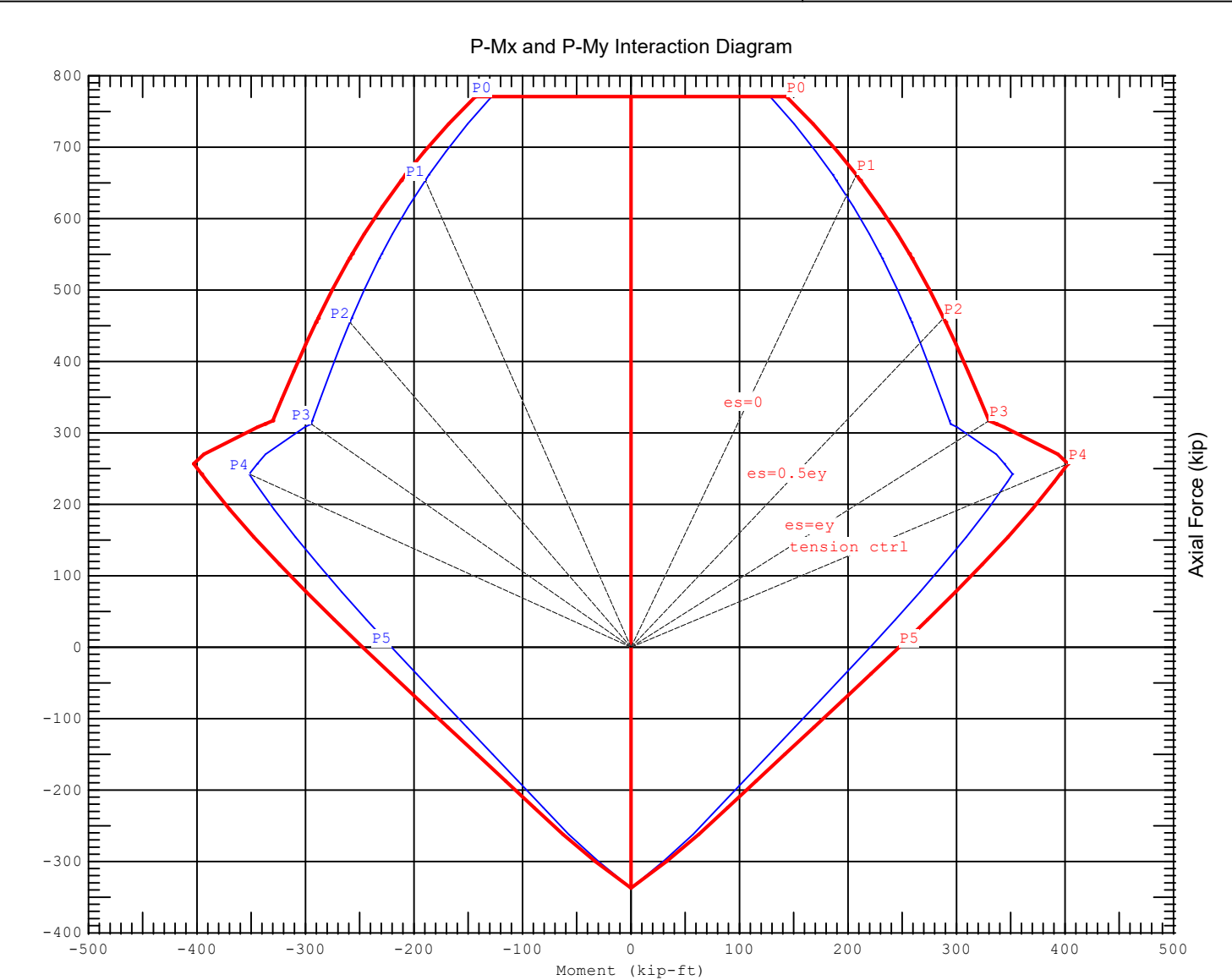
Y0: 0.00 in

Clear spacing: 13.18 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	769.85	143.01	-0.00041
P1	660.19	207.38	0.00000
P2	459.95	287.75	0.00103
P3	316.60	329.47	0.00207
P4	256.42	402.16	0.00507
P5	-0.00	246.89	0.01439
Pmin	-336.96	0.00	0.20000

PT	P	My (-)	max es
P0	769.85	-128.11	-0.00044
P1	652.57	-189.19	0.00000
P2	454.28	-258.43	0.00103
P3	312.09	-294.17	0.00207
P4	241.85	-351.23	0.00507
P5	-0.01	-220.23	0.01353
Pmin	-336.96	0.00	0.20000



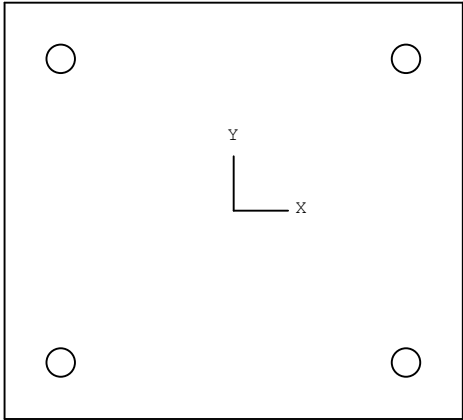
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_4#11_NX2_NY2_cc2.705



Section 65 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

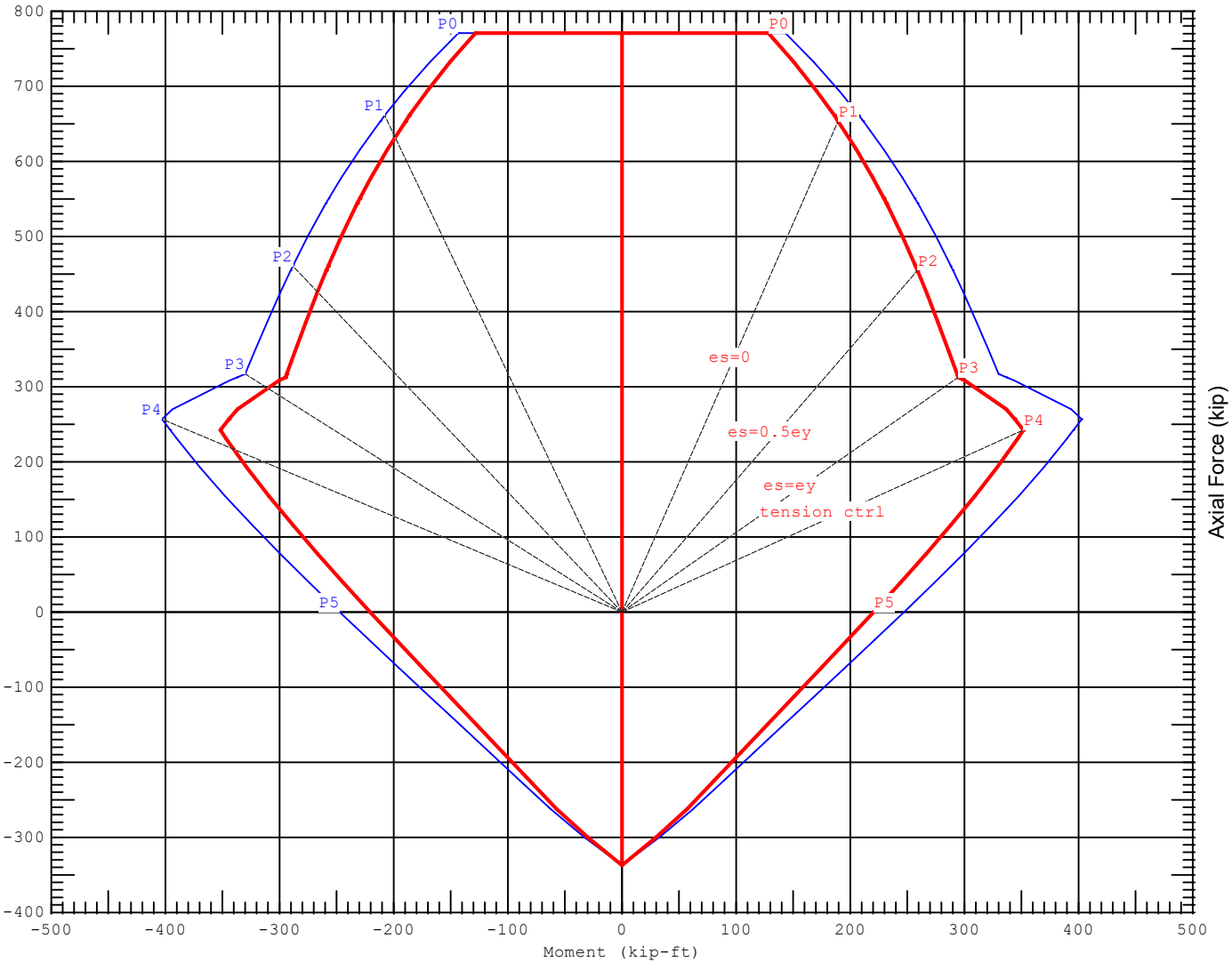
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 4 # 11
Confinement: Tied
Ag: 440.00 in²
As: 6.24 in²
Roh: 1.42%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.18 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	769.85	128.11	-0.00044
P1	652.57	189.19	0.00000
P2	454.28	258.43	0.00103
P3	312.09	294.17	0.00207
P4	241.85	351.23	0.00507
P5	-0.01	220.23	0.01353
Pmin	-336.96	0.00	0.20000

PT	P	My (-)	max es
P0	769.85	-143.01	-0.00041
P1	660.19	-207.38	0.00000
P2	459.95	-287.75	0.00103
P3	316.60	-329.47	0.00207
P4	256.42	-402.16	0.00507
P5	-0.00	-246.89	0.01439
Pmin	-336.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



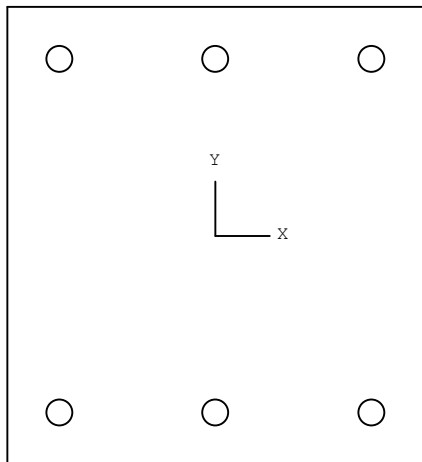
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_6#10_NX2_NY3_cc2.51



Section 66 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

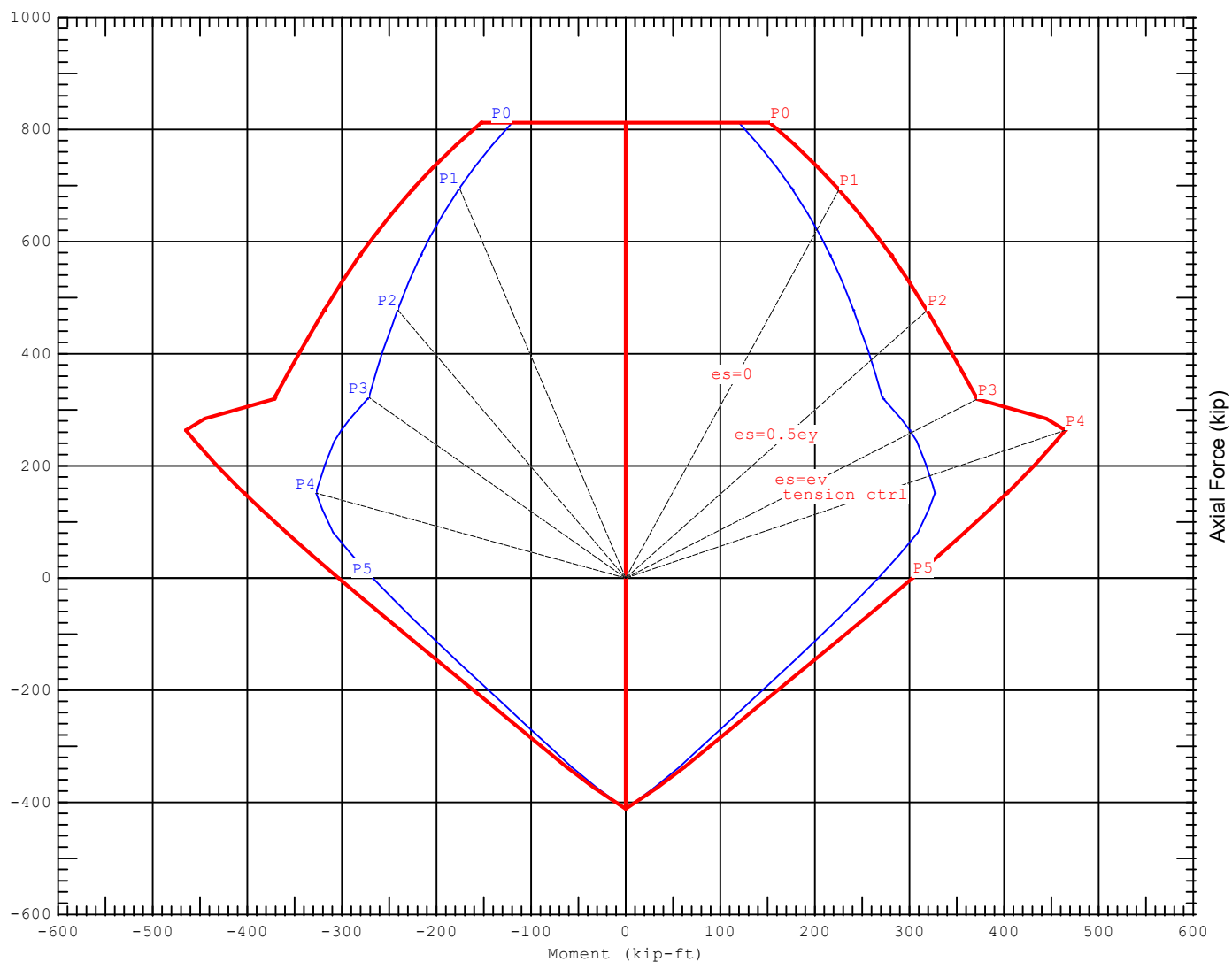
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 440.00 in²
As: 7.62 in²
Roh: 1.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	811.08	152.09	-0.00042
P1	691.45	224.99	0.00000
P2	476.34	317.95	0.00103
P3	318.71	370.94	0.00207
P4	263.22	463.93	0.00507
P5	0.01	302.86	0.01401
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	811.07	-119.61	-0.00041
P1	694.26	-175.16	0.00000
P2	477.41	-240.36	0.00103
P3	321.50	-270.78	0.00207
P4	151.23	-326.48	0.00507
P5	-0.01	-266.51	0.00870
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram



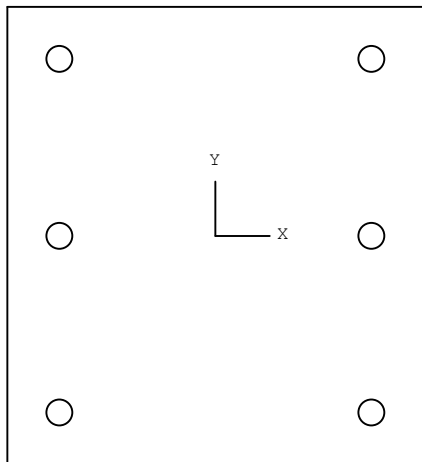
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_6#10_NX3_NY2_cc2.51



Section 67 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

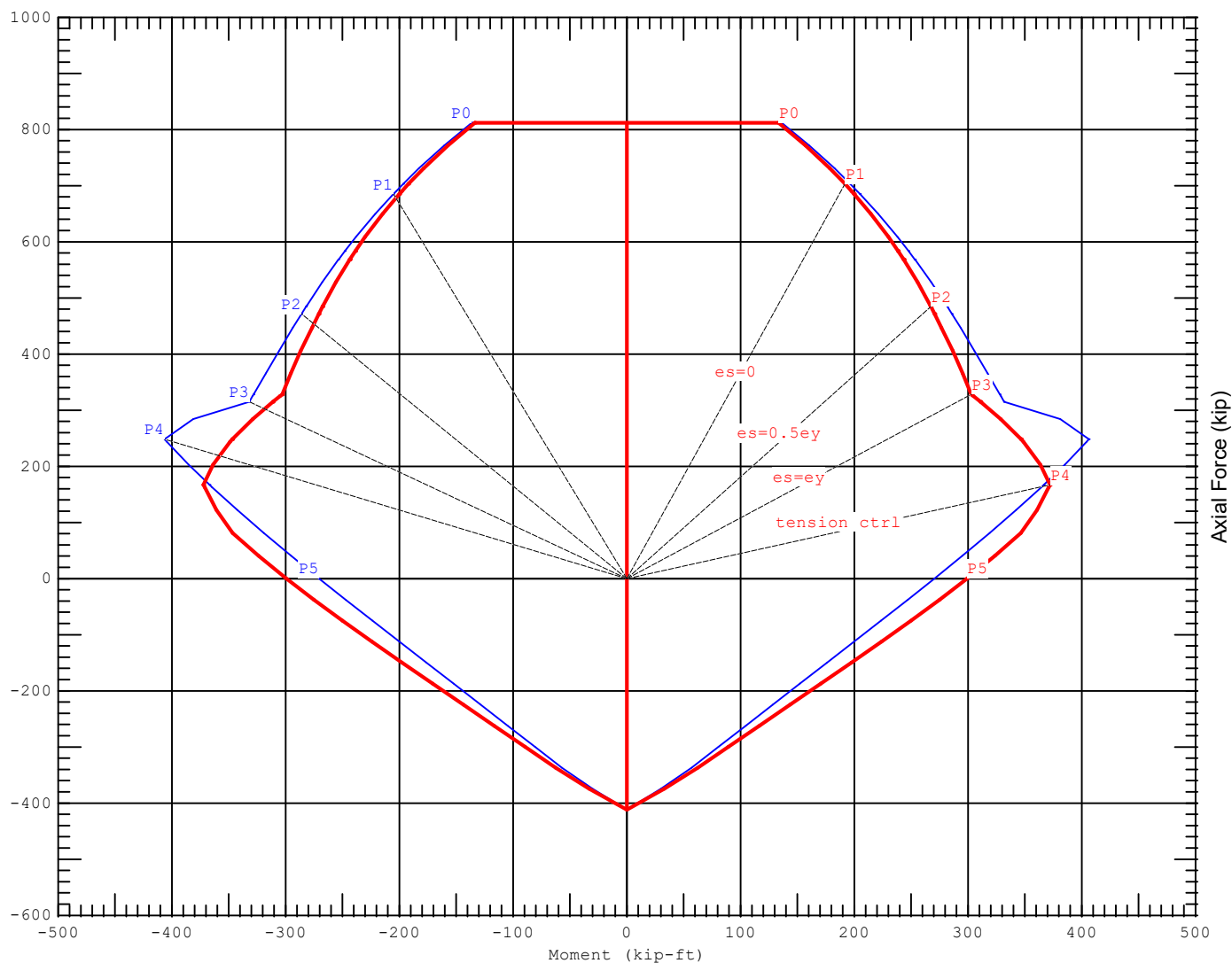
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 440.00 in²
As: 7.62 in²
Roh: 1.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 7.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	811.08	133.29	-0.00038
P1	702.39	191.44	0.00000
P2	484.09	266.88	0.00103
P3	327.48	302.35	0.00207
P4	166.69	371.48	0.00507
P5	0.01	298.63	0.00926
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	811.08	-136.11	-0.00047
P1	684.38	-204.76	0.00000
P2	471.09	-285.42	0.00103
P3	314.52	-331.29	0.00207
P4	247.76	-405.58	0.00507
P5	0.00	-269.89	0.01284
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram



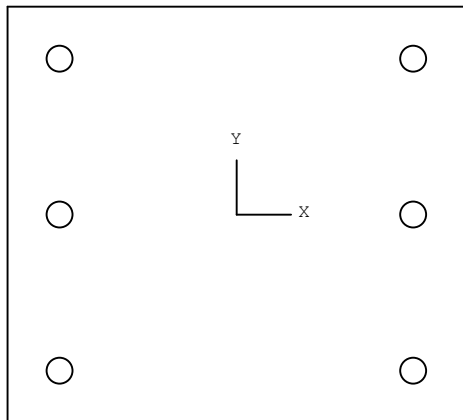
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#10_NX3_NY2_cc2.51



Section 68 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

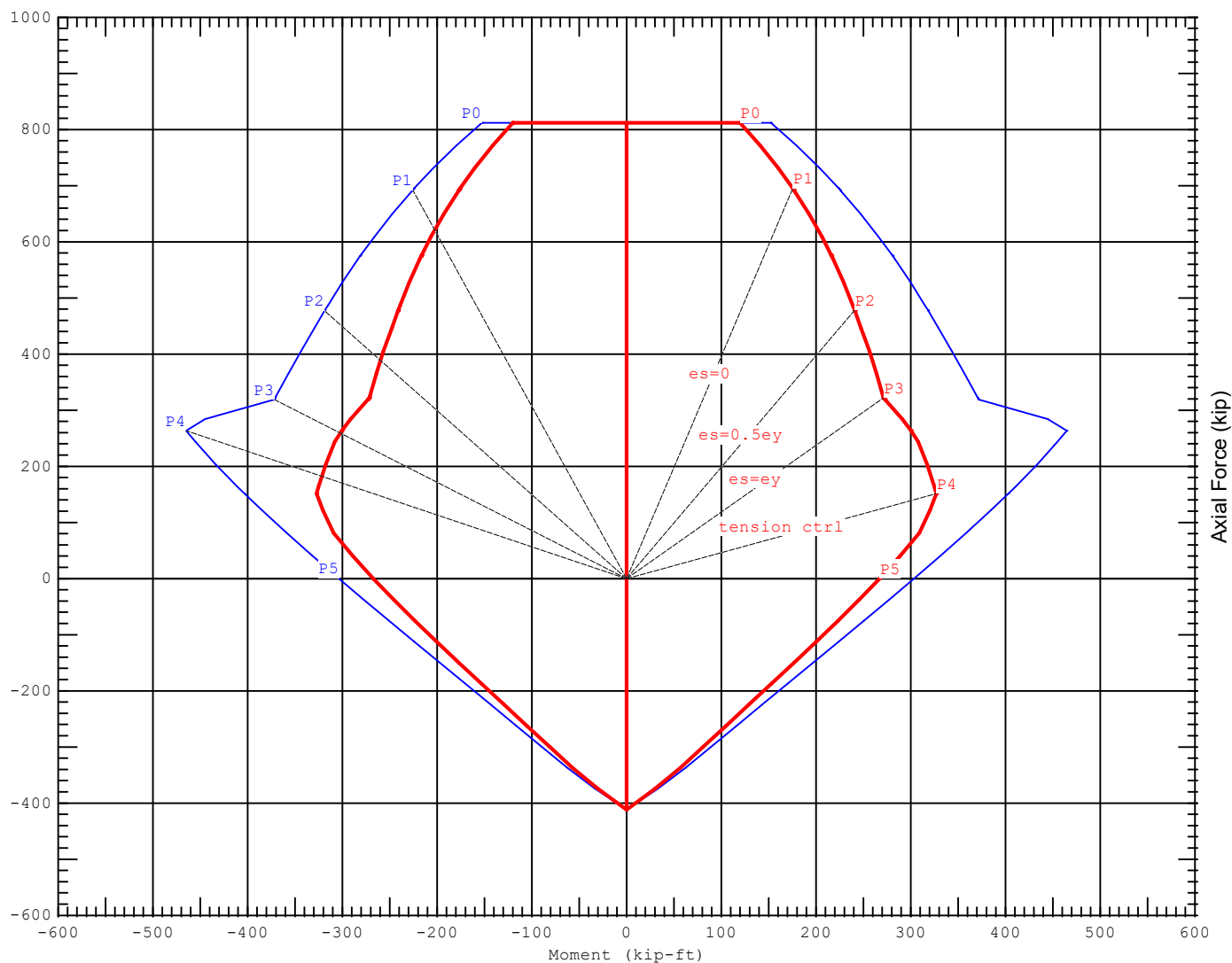
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 440.00 in²
As: 7.62 in²
Roh: 1.73%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	811.07	119.61	-0.00041
P1	694.26	175.16	0.00000
P2	477.41	240.36	0.00103
P3	321.50	270.78	0.00207
P4	151.23	326.48	0.00507
P5	-0.01	266.51	0.00870
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	811.08	-152.09	-0.00042
P1	691.45	-224.99	0.00000
P2	476.34	-317.95	0.00103
P3	318.71	-370.94	0.00207
P4	263.22	-463.93	0.00507
P5	0.01	-302.86	0.01401
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#10_NX2_NY3_cc2.51

Y

X

Section 69 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 6 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 7.62 in^2

Roh: 1.73%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 7.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	811.08	136.11	-0.00047
P1	684.38	204.76	0.00000
P2	471.09	285.42	0.00103
P3	314.52	331.29	0.00207
P4	247.76	405.58	0.00507
P5	0.00	269.89	0.01284
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	811.08	-133.29	-0.00038
P1	702.39	-191.44	0.00000
P2	484.09	-266.88	0.00103
P3	327.48	-302.35	0.00207
P4	166.69	-371.48	0.00507
P5	0.01	-298.63	0.00926
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram

es=0

es=0.5ey

es=ey

tension ctrl

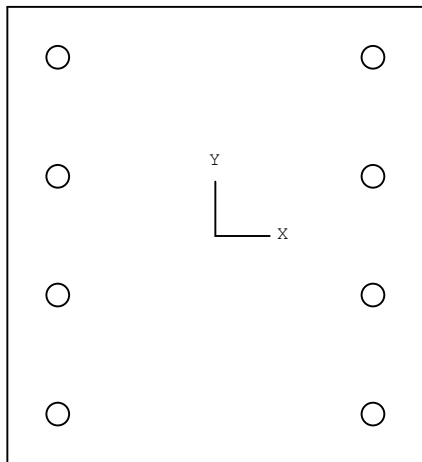
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#9_NX4_NY2_cc2.439



Section 70 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

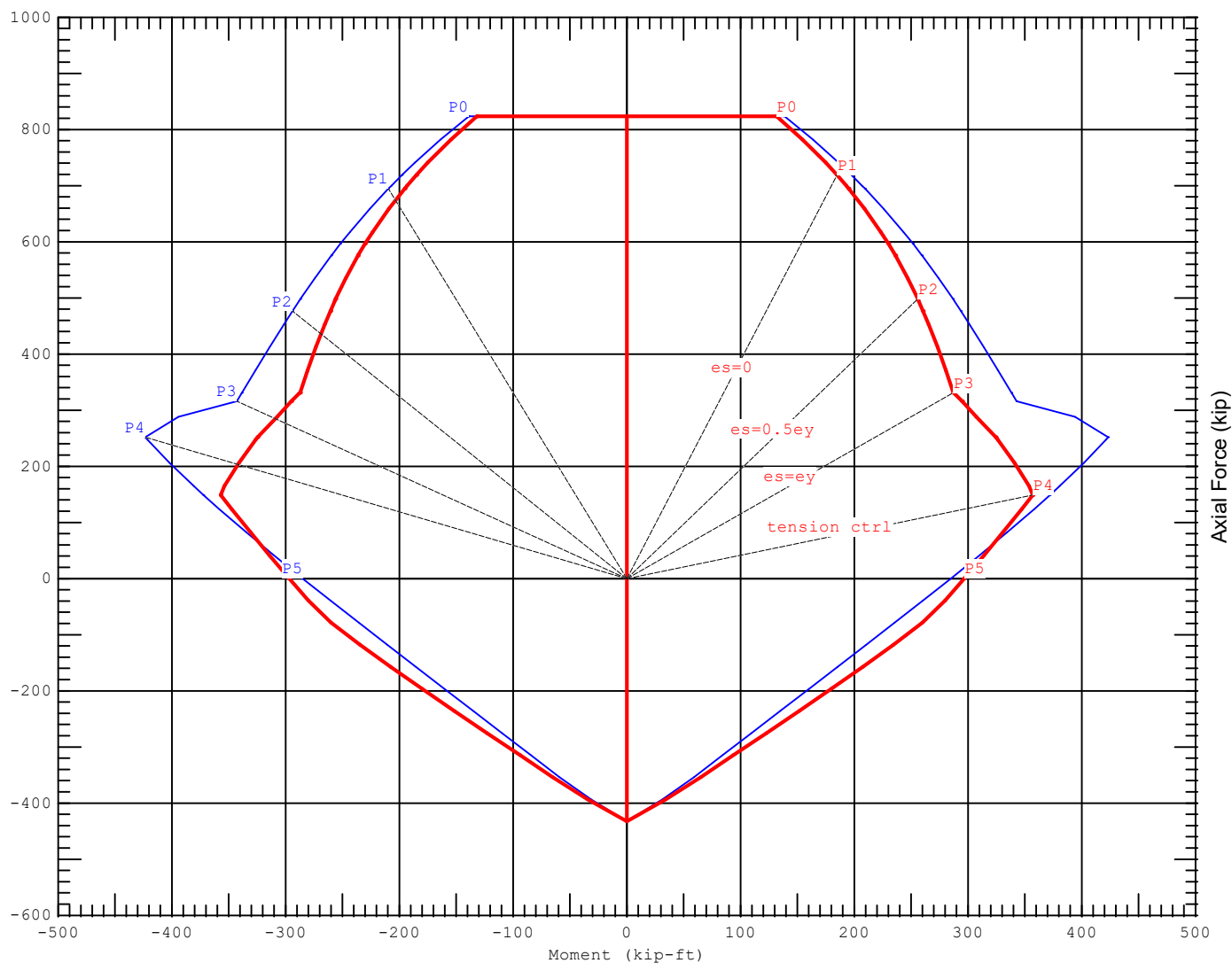
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.58 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	131.44	-0.00036
P1	718.23	184.53	0.00000
P2	497.36	255.43	0.00103
P3	330.85	286.67	0.00207
P4	148.42	356.25	0.00507
P5	0.00	296.17	0.00779
Pmin	-432.00	-0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-138.59	-0.00045
P1	693.68	-209.17	0.00000
P2	476.11	-293.36	0.00103
P3	315.51	-342.28	0.00207
P4	251.23	-422.65	0.00507
P5	0.01	-284.41	0.01289
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



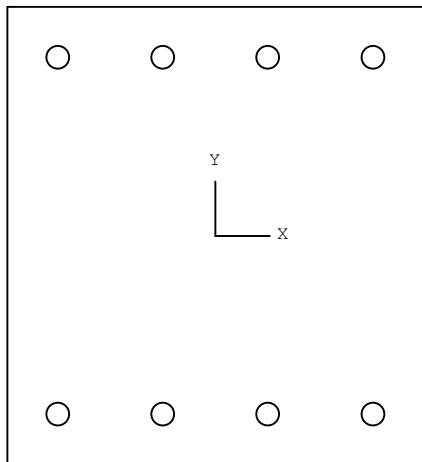
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#9_NX2_NY4_cc2.439



Section 71 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

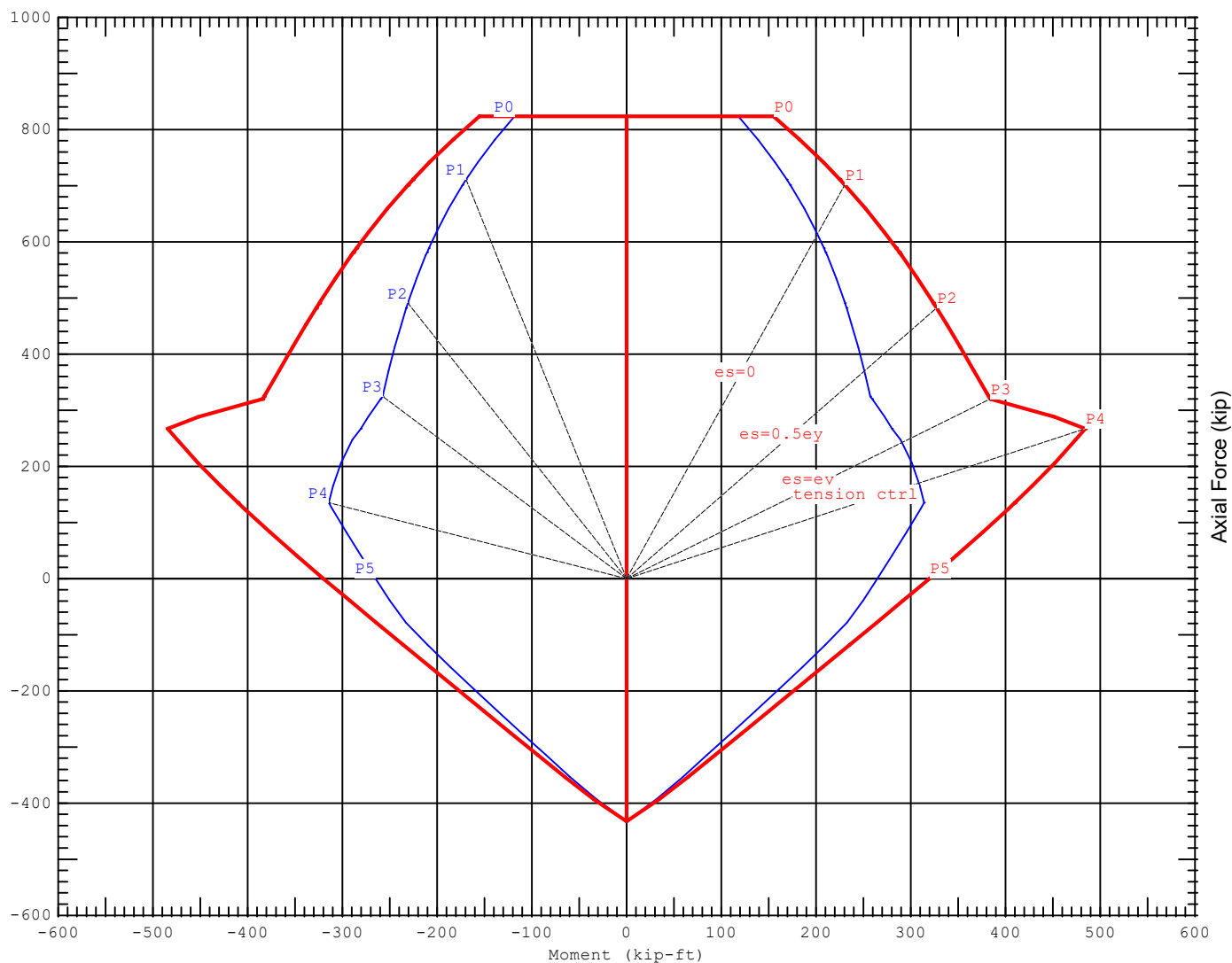
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	154.84	-0.00042
P1	700.55	229.96	0.00000
P2	481.22	326.77	0.00103
P3	319.58	383.13	0.00207
P4	266.73	483.07	0.00507
P5	0.01	319.13	0.01407
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-117.89	-0.00039
P1	709.75	-168.93	0.00000
P2	490.09	-230.21	0.00103
P3	324.07	-256.90	0.00207
P4	134.92	-313.57	0.00507
P5	0.01	-264.21	0.00747
Pmin	-432.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



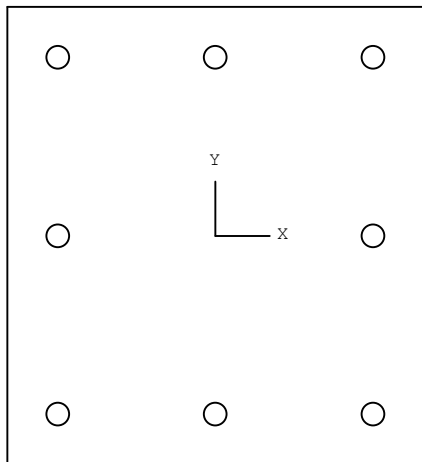
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#9_NX3_NY3_cc2.439



Section 72 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

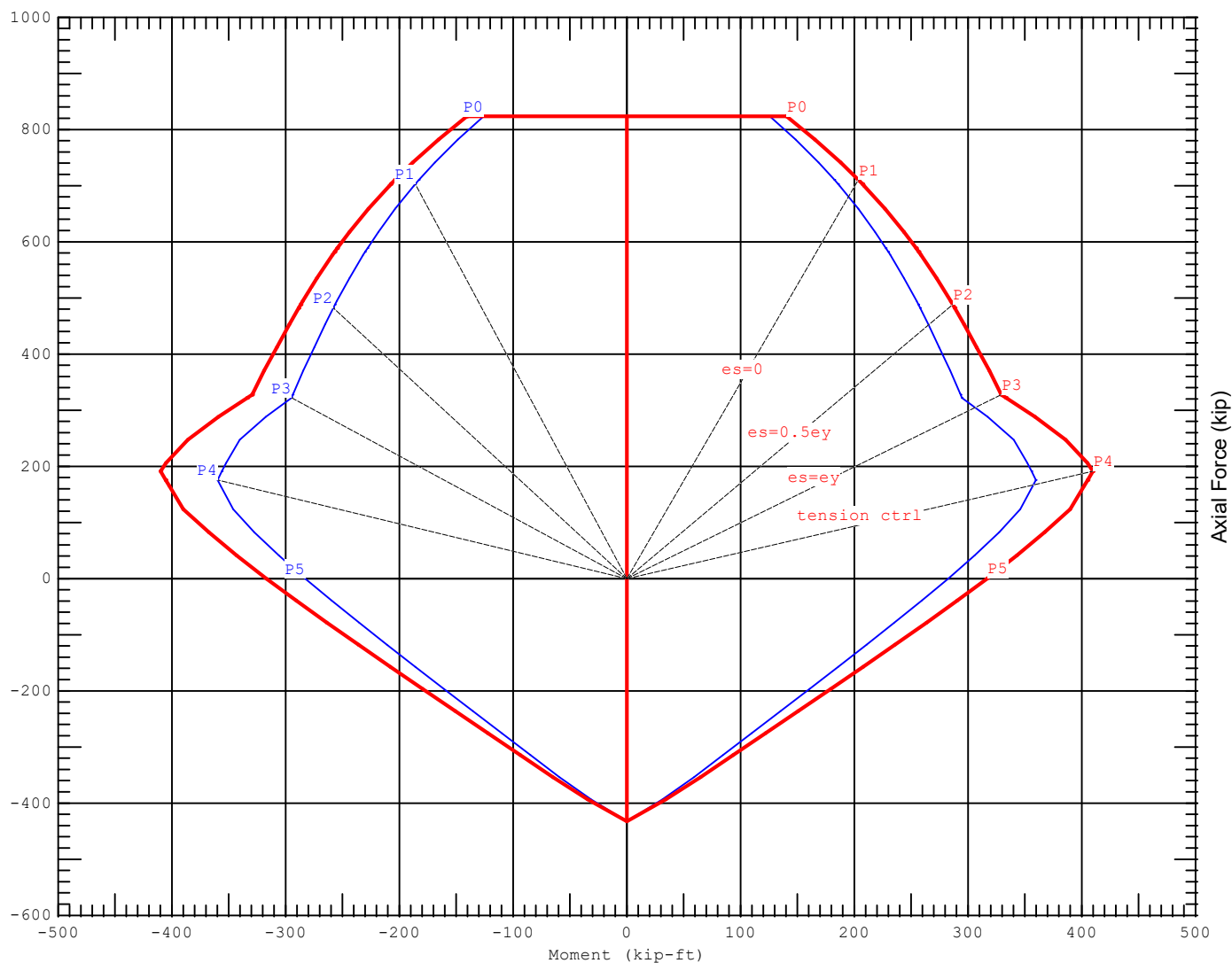
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	140.22	-0.00039
P1	709.39	203.32	0.00000
P2	487.63	286.22	0.00103
P3	326.87	328.67	0.00207
P4	190.72	409.06	0.00507
P5	0.01	316.31	0.01031
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-125.71	-0.00042
P1	701.72	-185.64	0.00000
P2	481.44	-257.55	0.00103
P3	321.45	-294.18	0.00207
P4	175.22	-359.16	0.00507
P5	-0.01	-282.11	0.00962
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



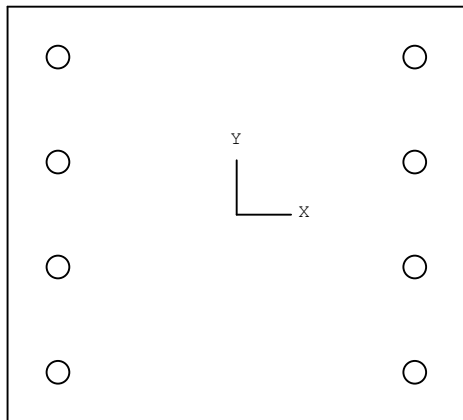
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#9_NX4_NY2_cc2.439



Section 73 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

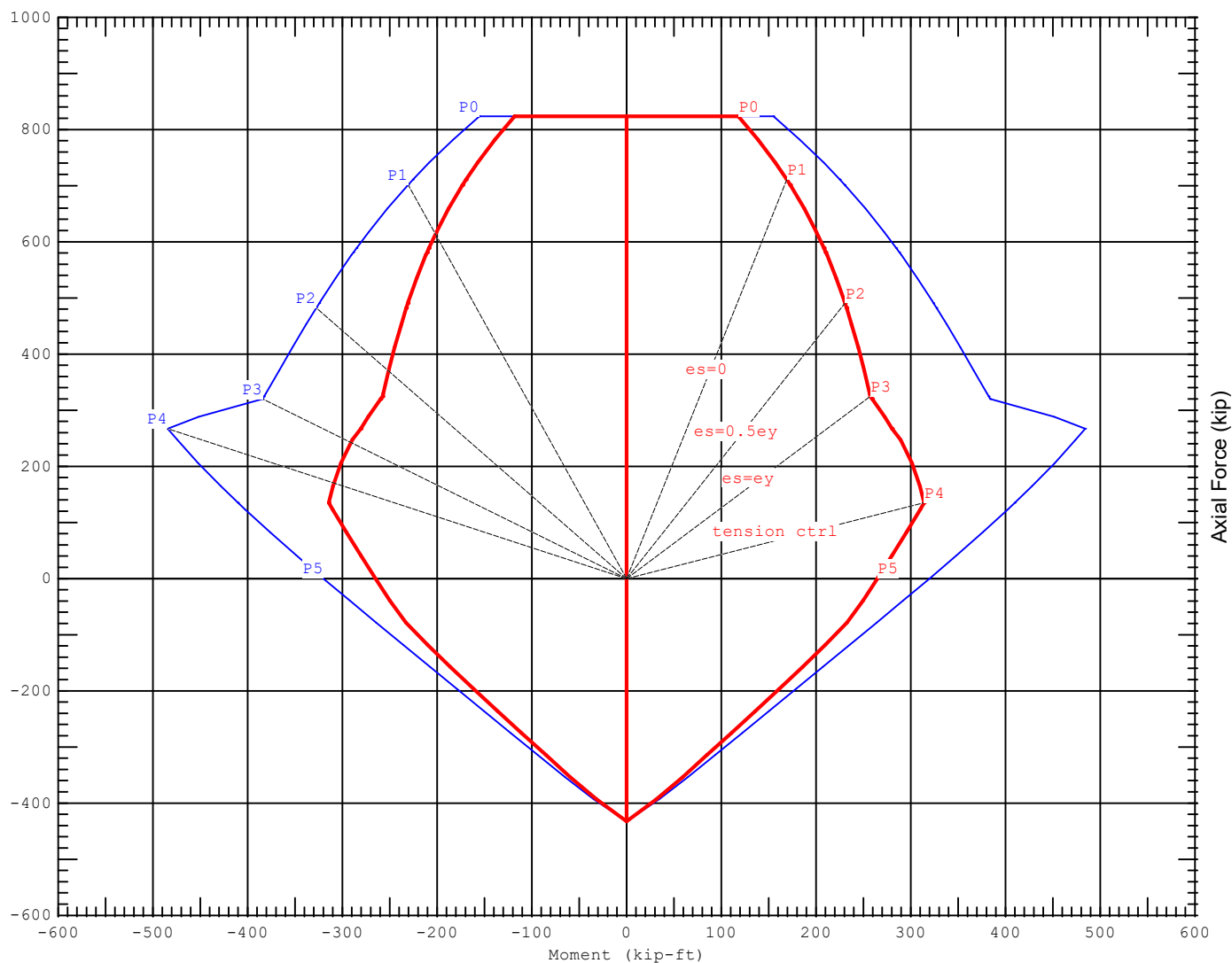
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	117.89	-0.00039
P1	709.75	168.93	0.00000
P2	490.09	230.21	0.00103
P3	324.07	256.90	0.00207
P4	134.92	313.57	0.00507
P5	0.01	264.21	0.00747
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-154.84	-0.00042
P1	700.55	-229.96	0.00000
P2	481.22	-326.77	0.00103
P3	319.58	-383.13	0.00207
P4	266.73	-483.07	0.00507
P5	0.01	-319.13	0.01407
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



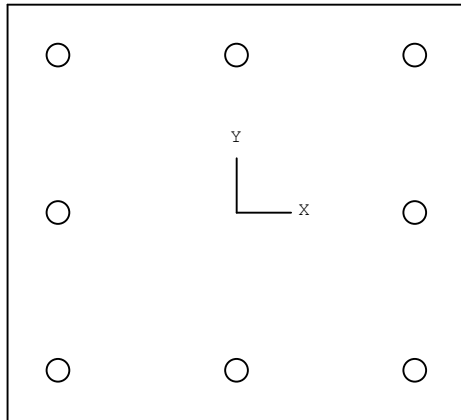
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#9_NX3_NY3_cc2.439



Section 74 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

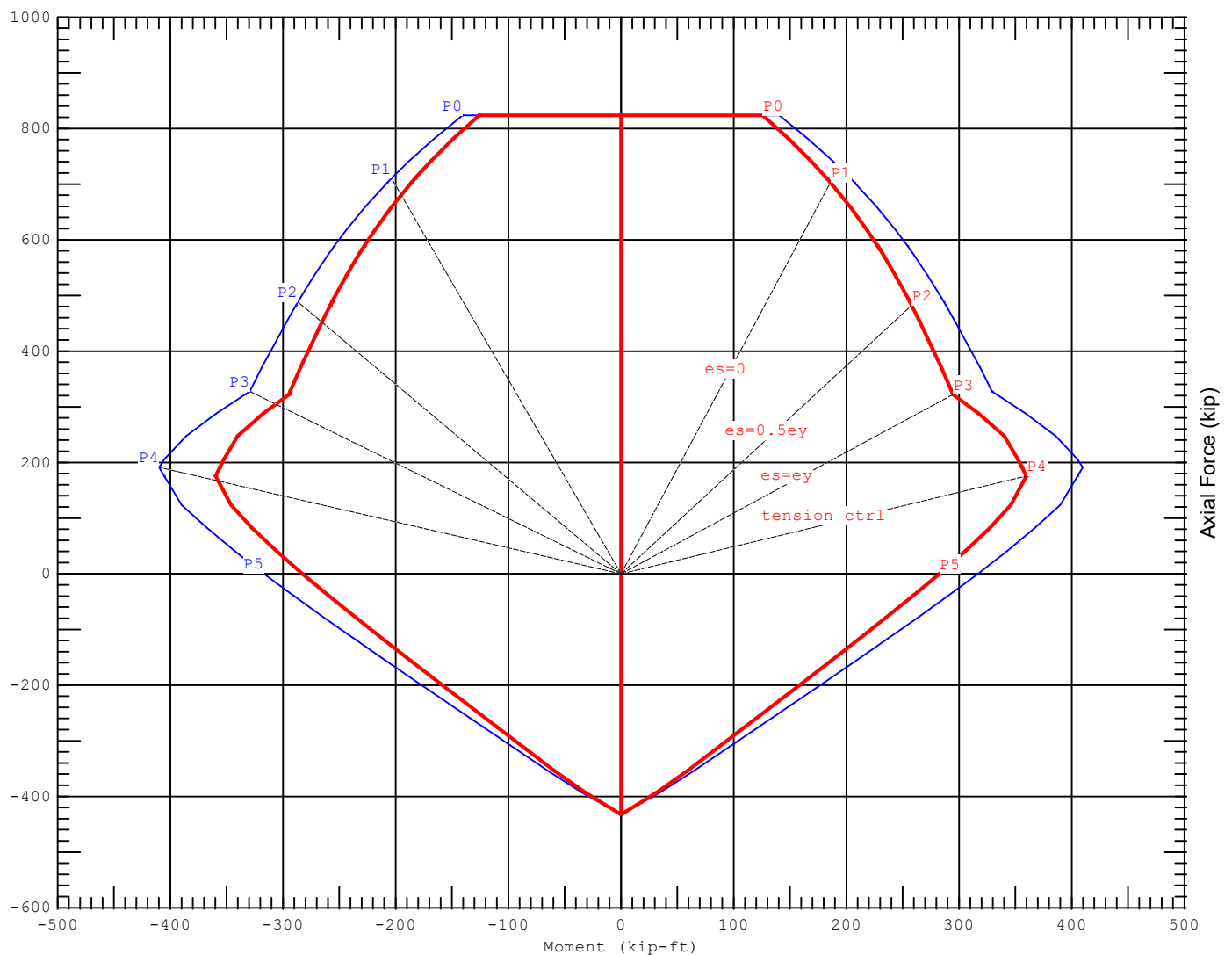
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	125.71	-0.00042
P1	701.72	185.64	0.00000
P2	481.44	257.55	0.00103
P3	321.45	294.18	0.00207
P4	175.22	359.16	0.00507
P5	-0.01	282.11	0.00962
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-140.22	-0.00039
P1	709.39	-203.32	0.00000
P2	487.63	-286.22	0.00103
P3	326.87	-328.67	0.00207
P4	190.72	-409.06	0.00507
P5	0.01	-316.31	0.01031
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



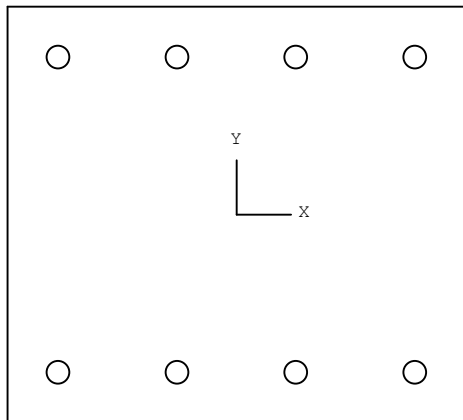
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#9_NX2_NY4_cc2.439



Section 75 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

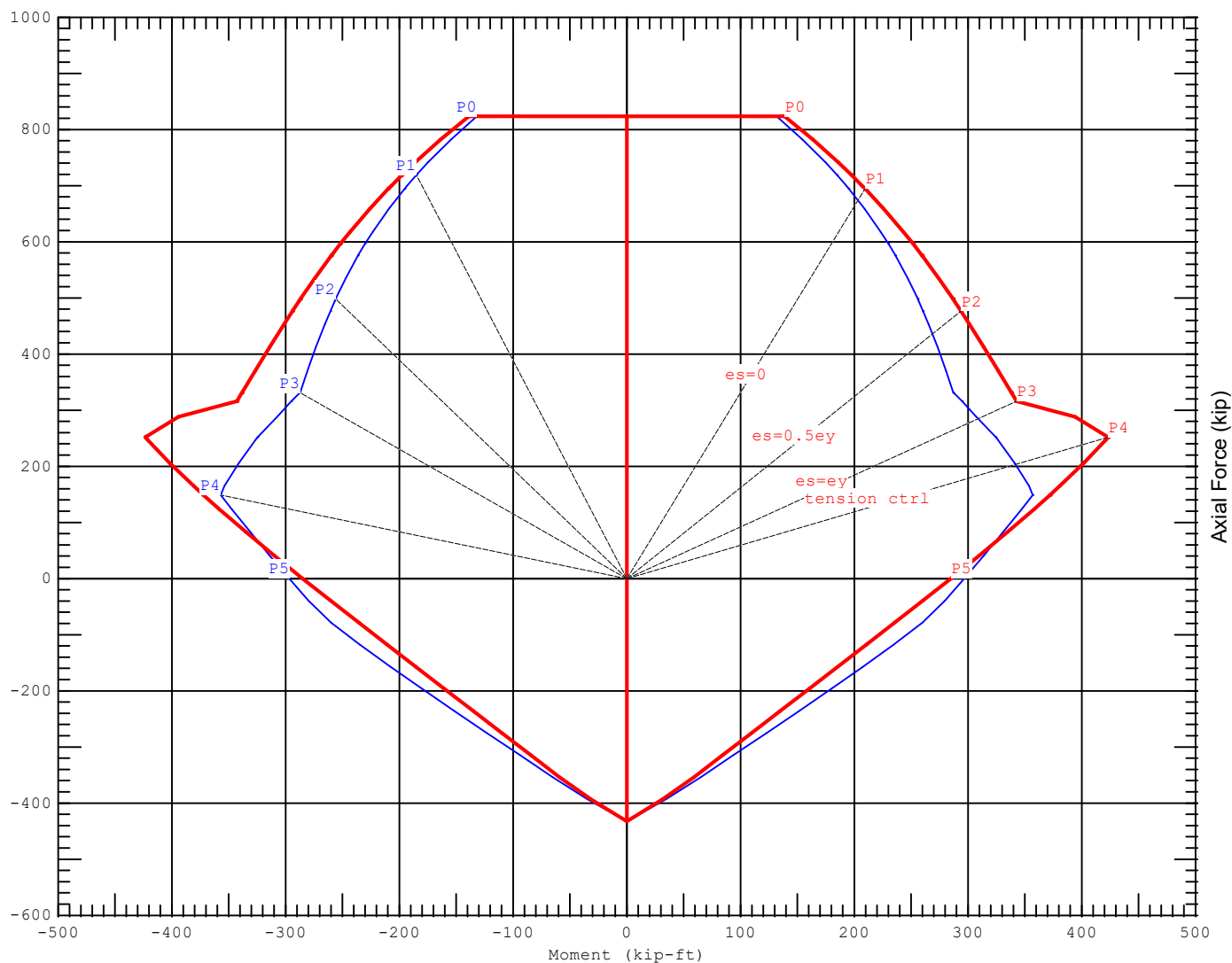
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 440.00 in²
As: 8.00 in²
Roh: 1.82%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.58 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.43	138.59	-0.00045
P1	693.68	209.17	0.00000
P2	476.11	293.36	0.00103
P3	315.51	342.28	0.00207
P4	251.23	422.65	0.00507
P5	0.01	284.41	0.01289
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	822.43	-131.44	-0.00036
P1	718.23	-184.53	0.00000
P2	497.36	-255.43	0.00103
P3	330.85	-286.67	0.00207
P4	148.42	-356.25	0.00507
P5	0.00	-296.17	0.00779
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

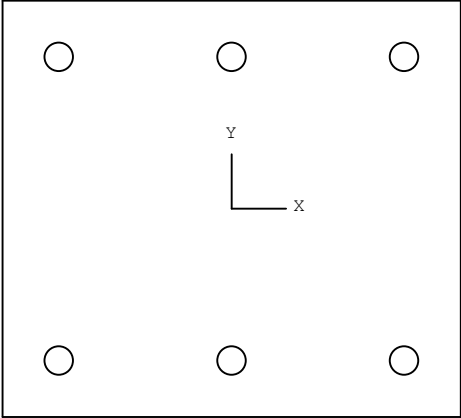
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#11_NX2_NY3_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 9.36 in^2

Roh: 2.13%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

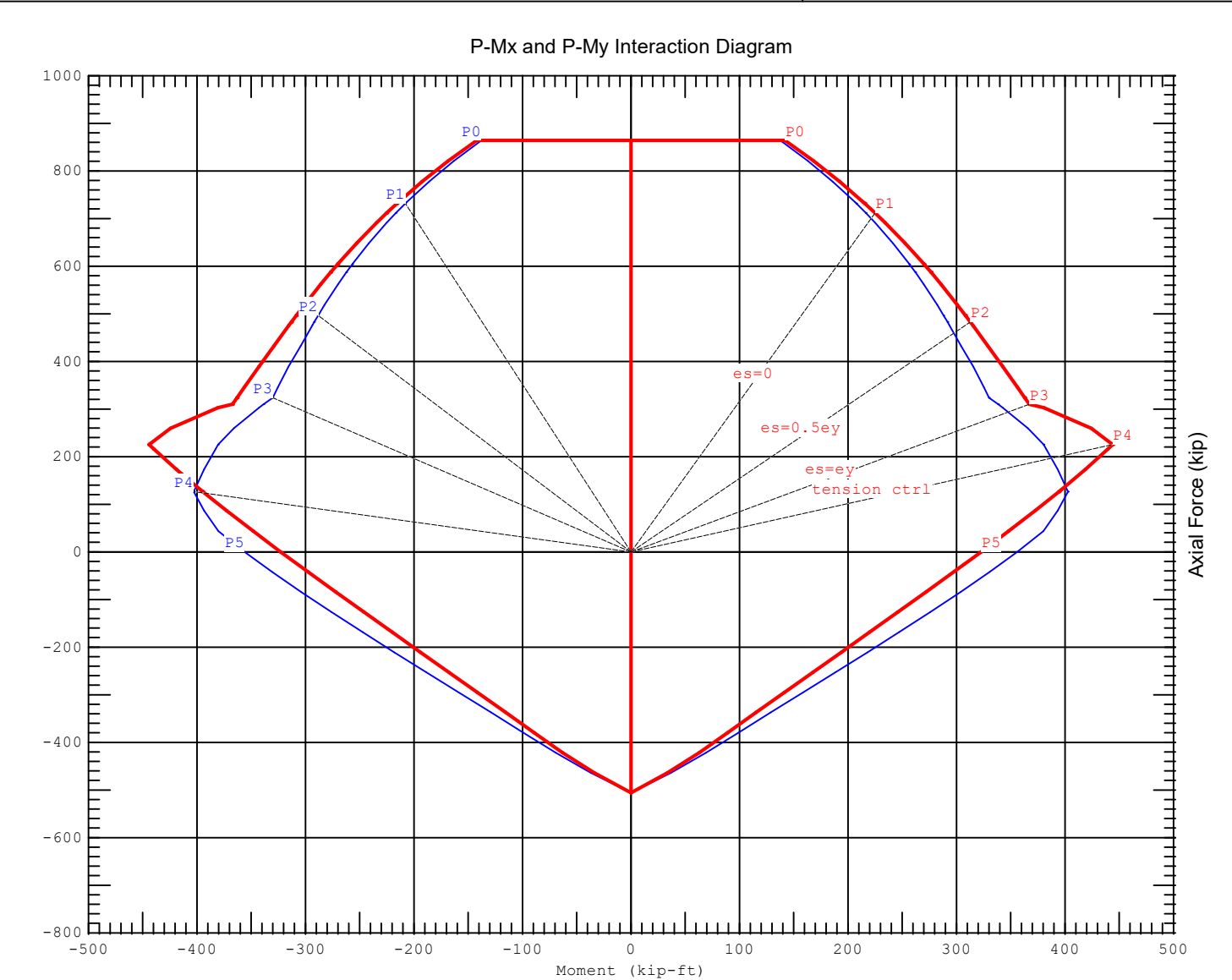
Y0: 0.00 in

Clear spacing: 6.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	863.06	141.86	-0.00052
P1	710.83	224.61	0.00000
P2	482.11	312.34	0.00103
P3	309.50	366.57	0.00207
P4	224.79	443.28	0.00507
P5	0.01	322.17	0.01082
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	863.06	-137.63	-0.00043
P1	730.87	-207.38	0.00000
P2	495.94	-287.75	0.00103
P3	323.08	-329.47	0.00207
P4	126.13	-402.16	0.00507
P5	0.00	-355.38	0.00736
Pmin	-505.44	0.00	0.20000



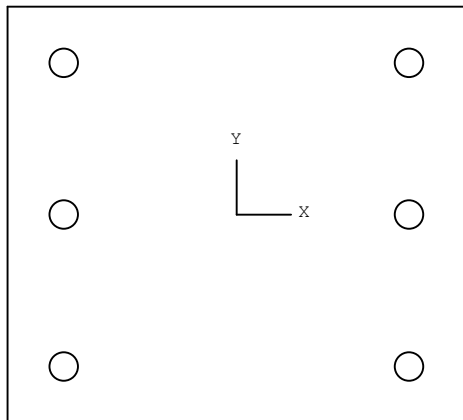
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_6#11_NX3_NY2_cc2.705



Section 77 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

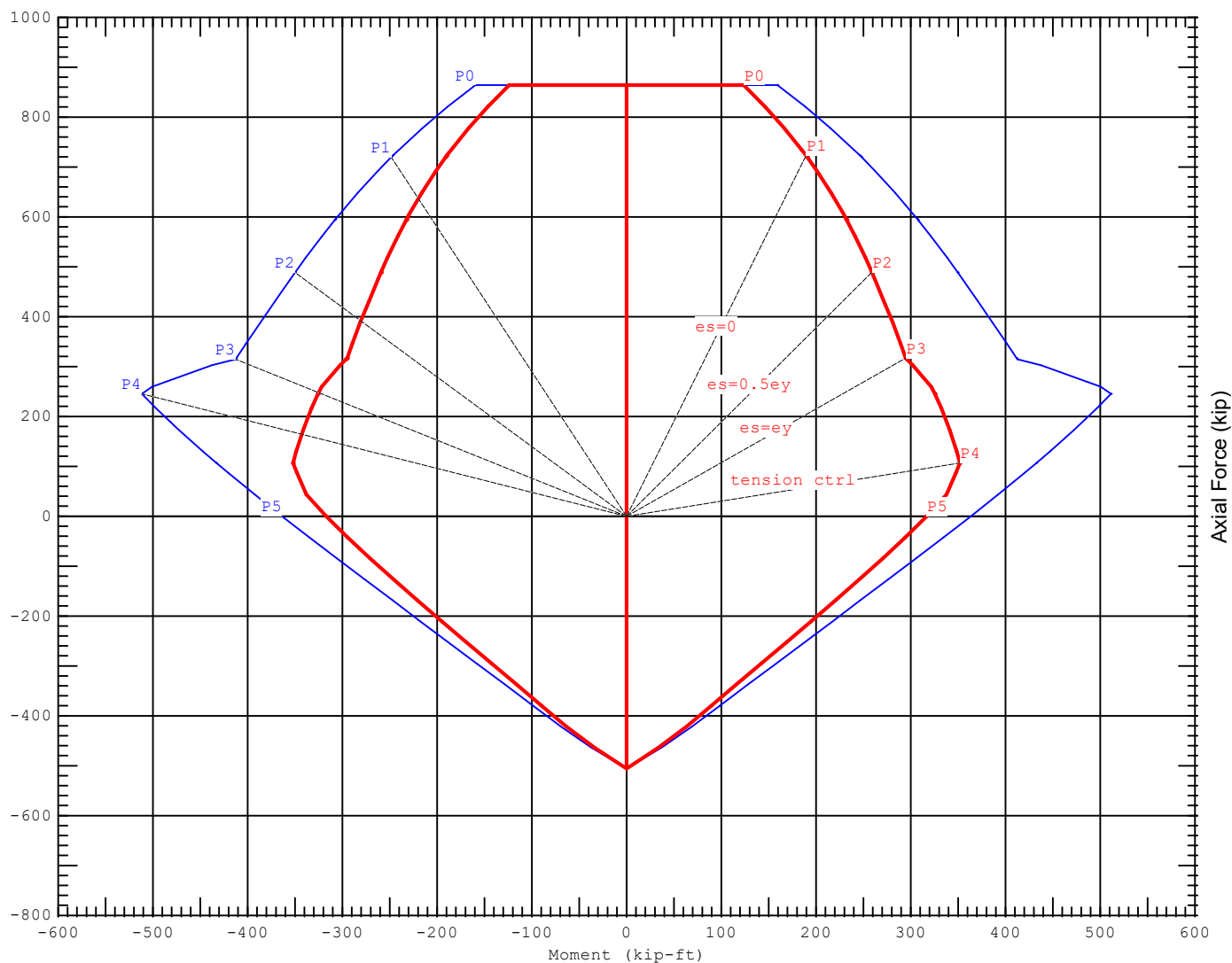
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 6 # 11
Confinement: Tied
Ag: 440.00 in²
As: 9.36 in²
Roh: 2.13%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	863.05	123.41	-0.00048
P1	721.82	189.19	0.00000
P2	488.35	258.43	0.00103
P3	316.16	294.17	0.00207
P4	106.22	351.23	0.00507
P5	0.01	316.13	0.00687
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	863.06	-159.06	-0.00050
P1	718.45	-247.65	0.00000
P2	487.78	-349.05	0.00103
P3	314.02	-411.79	0.00207
P4	244.69	-510.51	0.00507
P5	0.01	-362.69	0.01188
Pmin	-505.44	-0.00	0.20000

P-Mx and P-My Interaction Diagram

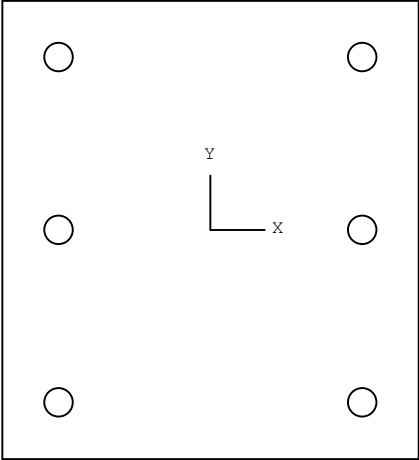


Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

Rect20x22_fc3_fy60_6#11_NX3_NY2_cc2.705



Section 78 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 22 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 9.36 in^2

Roh: 2.13%

Ix: 17746.7 in^4

Iy: 14666.7 in^4

X0: 0.00 in

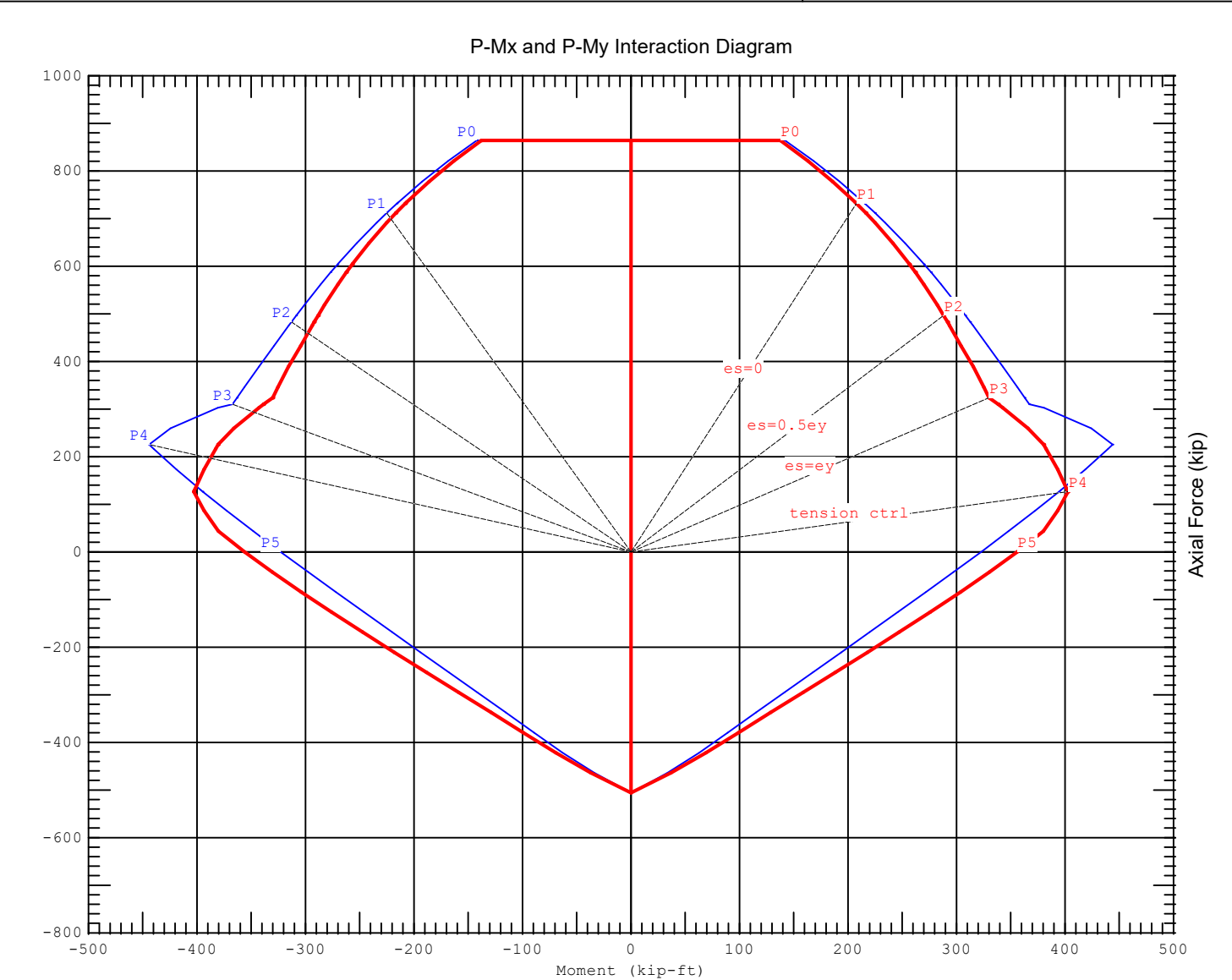
Y0: 0.00 in

Clear spacing: 6.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	863.06	137.63	-0.00043
P1	730.87	207.38	0.00000
P2	495.94	287.75	0.00103
P3	323.08	329.47	0.00207
P4	126.13	402.16	0.00507
P5	0.00	355.38	0.00736
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	863.06	-141.86	-0.00052
P1	710.83	-224.61	0.00000
P2	482.11	-312.34	0.00103
P3	309.50	-366.57	0.00207
P4	224.79	-443.28	0.00507
P5	0.01	-322.17	0.01082
Pmin	-505.44	-0.00	0.20000



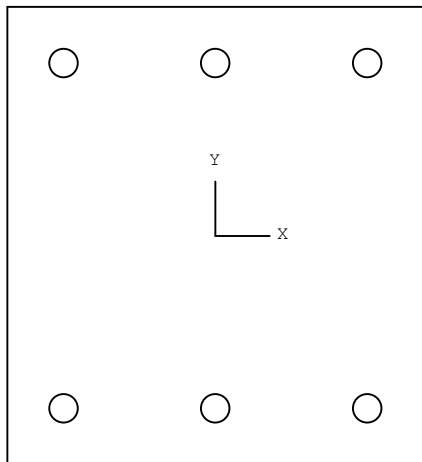
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_6#11_NX2_NY3_cc2.705



Section 79 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

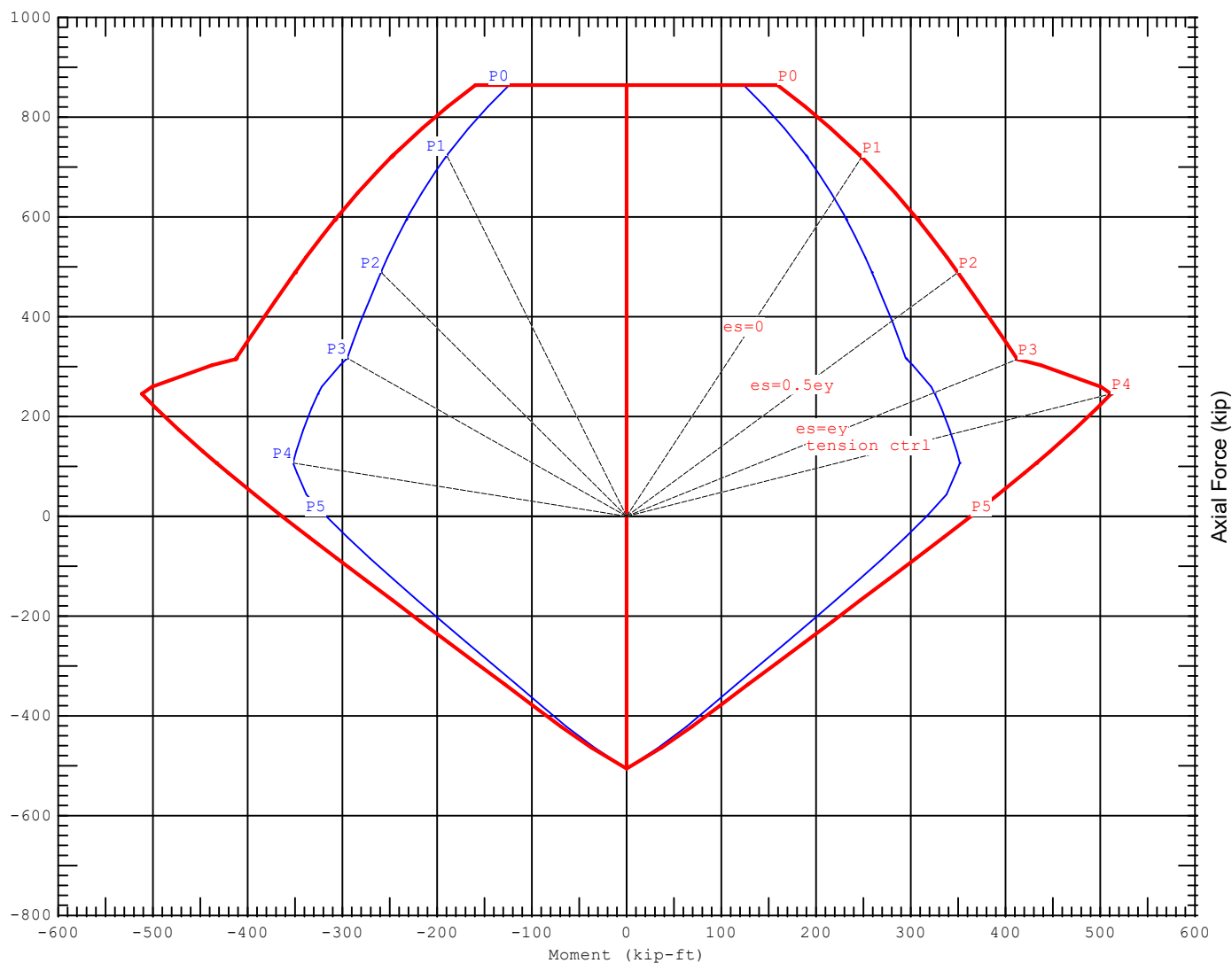
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 6 # 11
Confinement: Tied
Ag: 440.00 in²
As: 9.36 in²
Roh: 2.13%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	863.06	159.06	-0.00050
P1	718.45	247.65	0.00000
P2	487.78	349.05	0.00103
P3	314.02	411.79	0.00207
P4	244.69	510.51	0.00507
P5	0.01	362.69	0.01188
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	863.05	-123.41	-0.00048
P1	721.82	-189.19	0.00000
P2	488.35	-258.43	0.00103
P3	316.16	-294.17	0.00207
P4	106.22	-351.23	0.00507
P5	0.01	-316.13	0.00687
Pmin	-505.44	0.00	0.20000

P-Mx and P-My Interaction Diagram



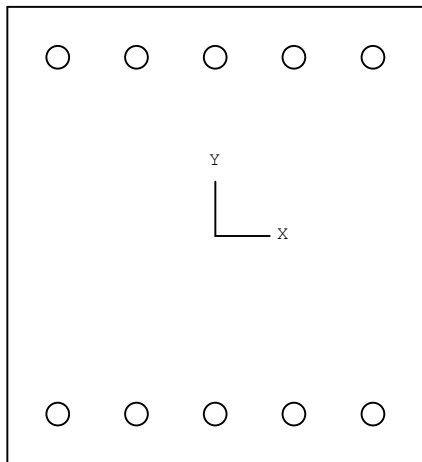
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#9_NX2_NY5_cc2.439



Section 80 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

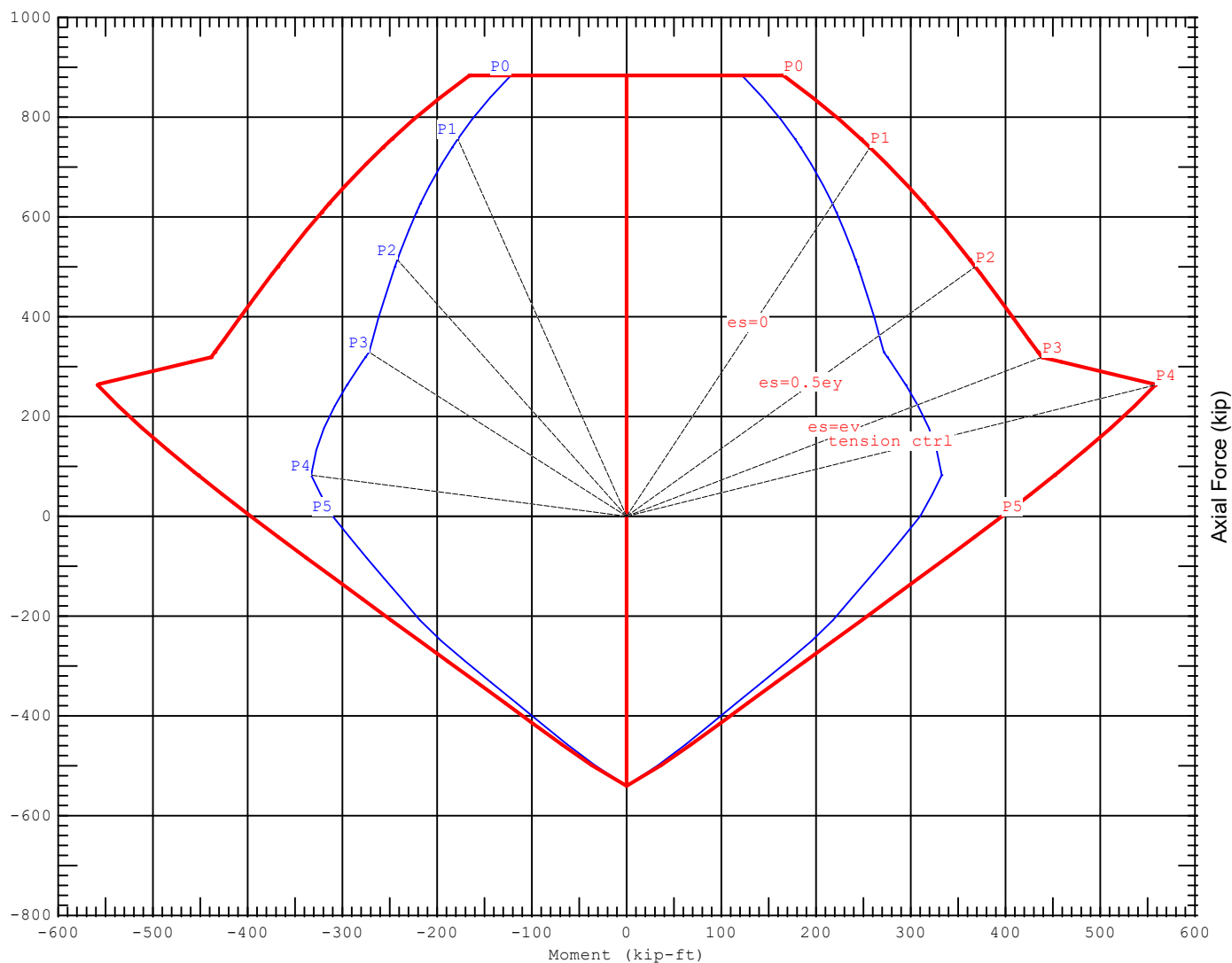
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.18	165.44	-0.00049
P1	737.89	256.60	0.00000
P2	499.06	367.33	0.00103
P3	317.92	437.59	0.00207
P4	262.47	557.08	0.00507
P5	0.00	395.59	0.01272
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-121.85	-0.00041
P1	755.14	-177.46	0.00000
P2	513.26	-241.32	0.00103
P3	328.35	-270.95	0.00207
P4	81.89	-332.04	0.00507
P5	0.01	-309.20	0.00608
Pmin	-540.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



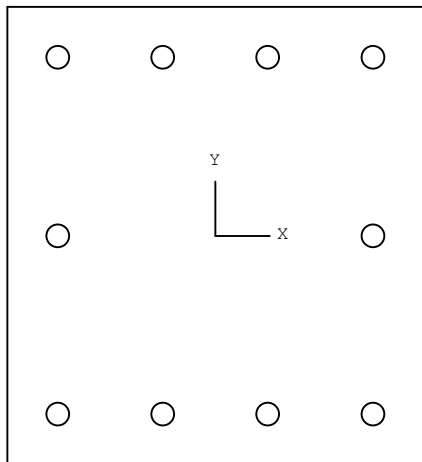
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#9_NX3_NY4_cc2.439



Section 81 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

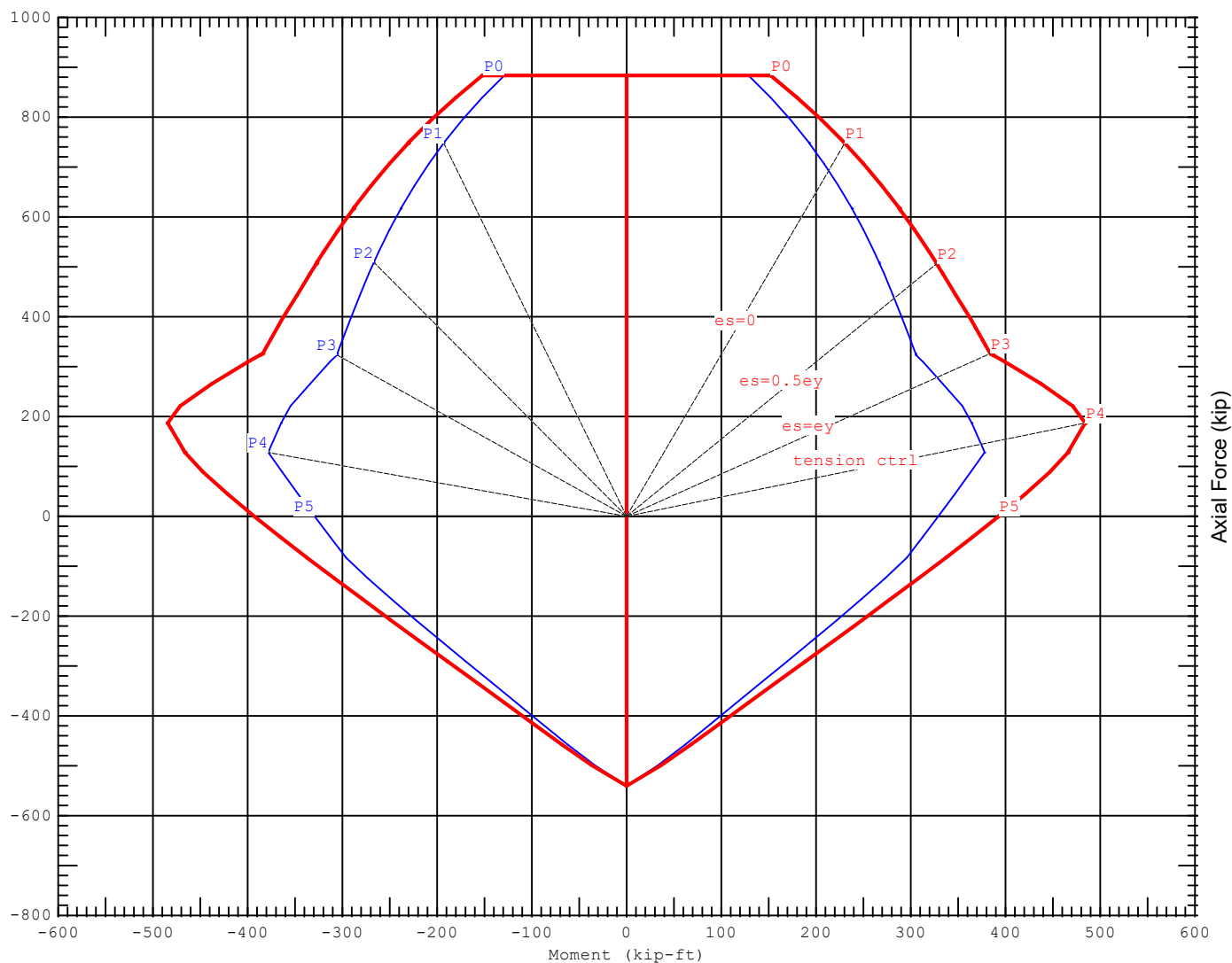
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

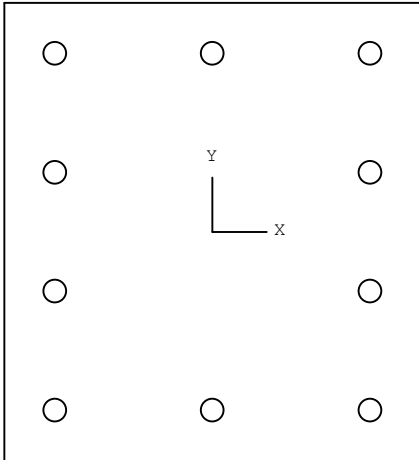
Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.18	151.78	-0.00043
P1	746.73	229.96	0.00000
P2	505.47	326.77	0.00103
P3	325.21	383.13	0.00207
P4	186.47	483.07	0.00507
P5	0.01	392.06	0.00952
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-128.61	-0.00043
P1	747.10	-192.46	0.00000
P2	507.93	-266.02	0.00103
P3	322.41	-305.00	0.00207
P4	127.67	-377.06	0.00507
P5	-0.01	-328.52	0.00717
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram

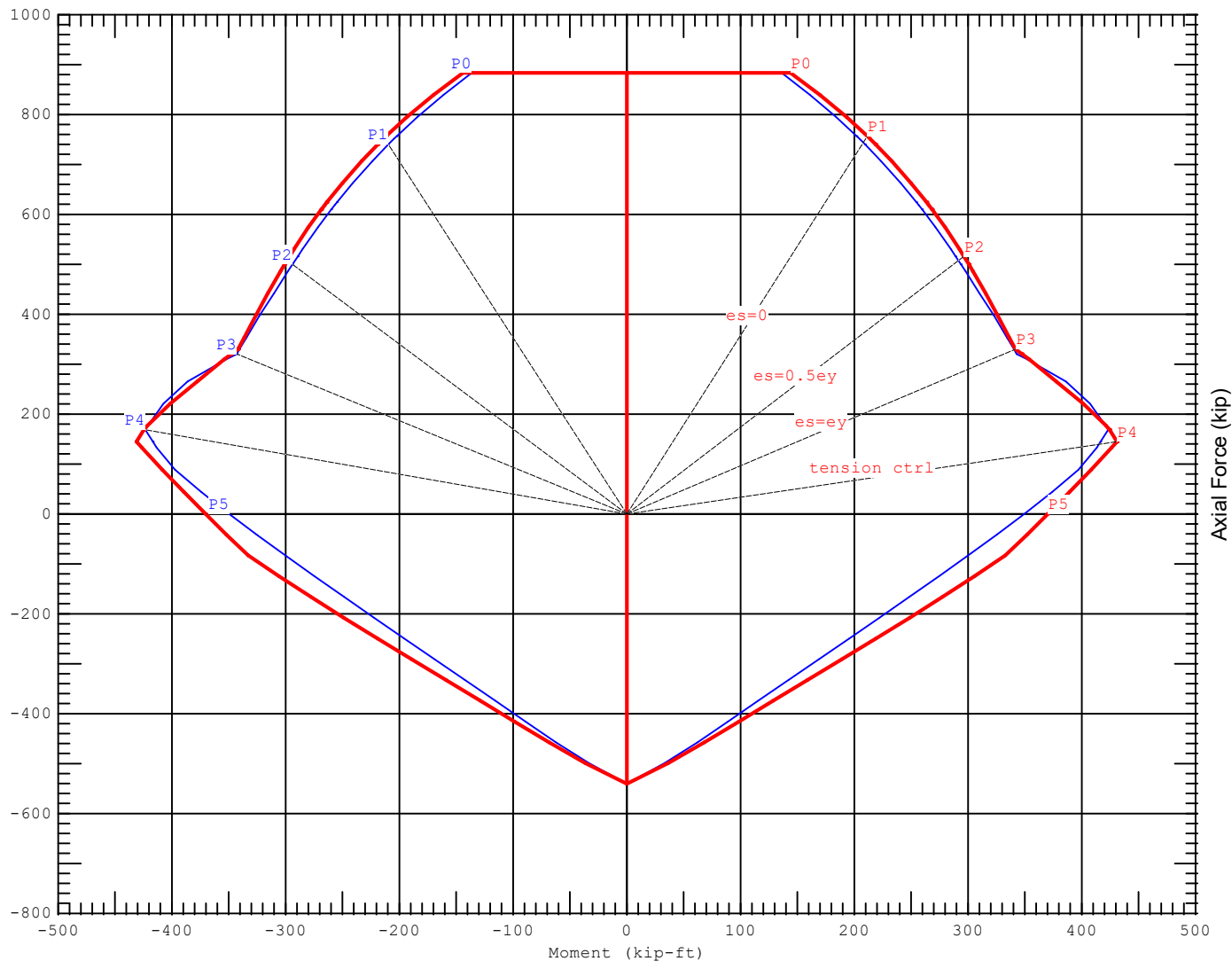


Project/Job:		cColumn v10 (C) Computations & Graphics, Inc.	
Engineer:		Date & Time: 06/19/2023 10:27	
Rect20x22_fc3_fy60_10#9_NX4_NY3_cc2.439		Control Points (kip, kip-ft)	
		Code: ACI 318-19	
		Strength reduction: Auto	
		Neutral axis steps: 250	
		Bi-axial angle steps: 16	
		Axial capacity steps: 20	
		Excl. displ'd concrete: Yes	
		b x h: 20 x 22 in	
		fc: 3.00 kip/in^2	
		fy: 60.00 kip/in^2	
		Cover (t.c): 2.439 in	
		Bars: 10 # 9	
		Confinement: Tied	
		Ag: 440.00 in^2	
		As: 10.00 in^2	
		Roh: 2.27%	
		Ix: 17746.7 in^4	
Iy: 14666.7 in^4			
X0: 0.00 in			
Y0: 0.00 in			
Clear spacing: 4.58 in			
Section 82 of 238		PT P Mx (+) max es	

		P0 882.18 143.82 -0.00041	
		P1 755.58 211.17 0.00000	
		P2 515.20 295.99 0.00103	
		P3 329.19 341.14 0.00207	
		P4 144.17 430.26 0.00507	
		P5 -0.01 369.63 0.00754	
		Pmin -540.00 -0.00 0.20000	
		PT P My (-) max es	

		P0 882.18 -135.95 -0.00048	
		P1 739.06 -209.17 0.00000	
		P2 499.28 -293.36 0.00103	
		P3 319.79 -342.28 0.00207	
		P4 167.98 -422.65 0.00507	
		P5 0.01 -348.93 0.00882	
		Pmin -540.00 -0.00 0.20000	

P-Mx and P-My Interaction Diagram



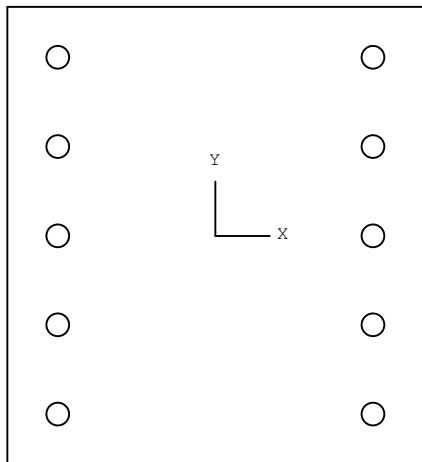
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#9_NX5_NY2_cc2.439



Section 83 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

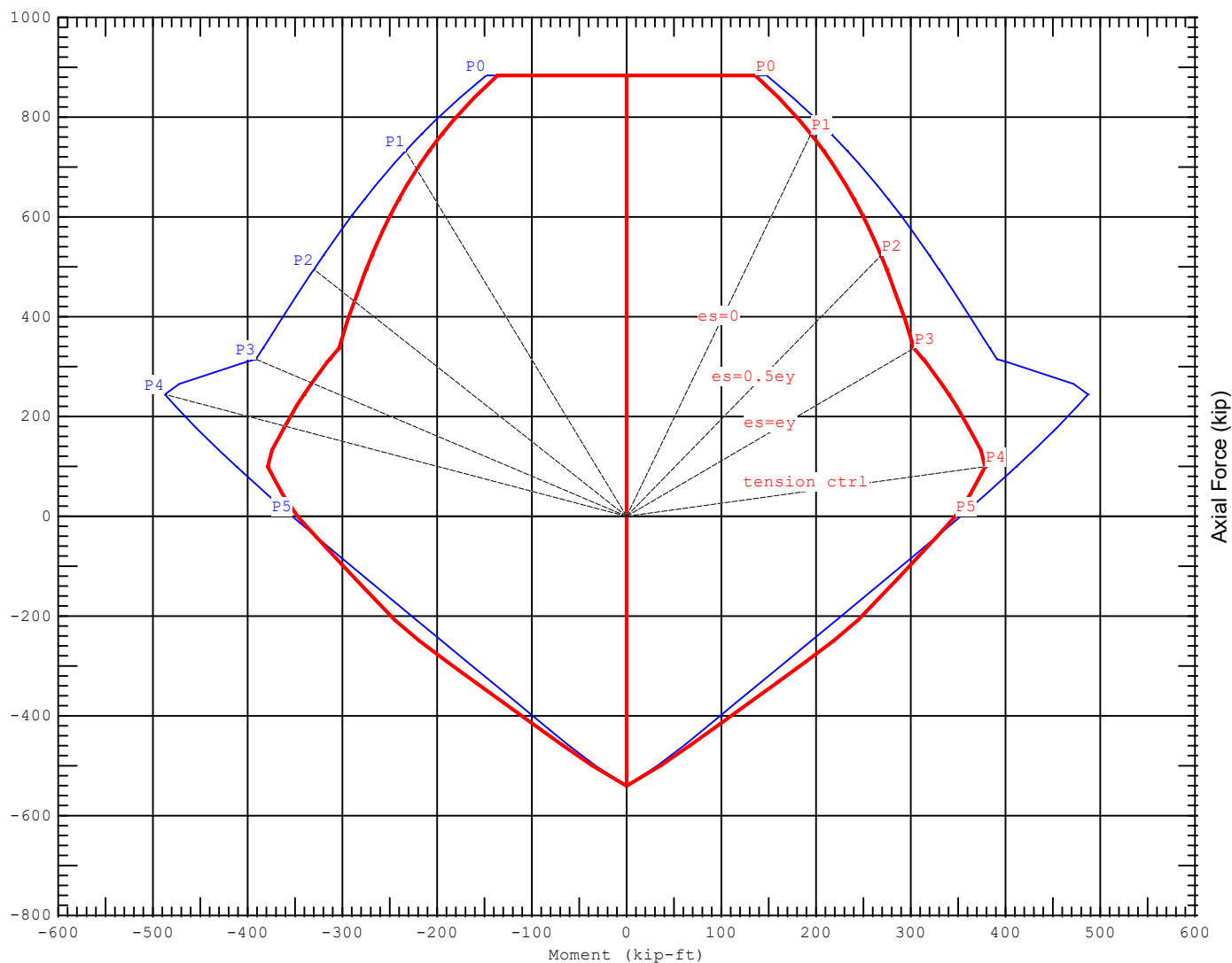
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.18	135.64	-0.00038
P1	764.42	194.34	0.00000
P2	521.61	268.23	0.00103
P3	336.49	302.85	0.00207
P4	98.89	377.81	0.00507
P5	-0.00	346.24	0.00637
Pmin	-540.00	-0.00	0.20000

PT	P	My (-)	max es
P0	882.17	-147.74	-0.00051
P1	731.02	-232.70	0.00000
P2	493.95	-329.18	0.00103
P3	313.85	-390.38	0.00207
P4	243.98	-486.13	0.00507
P5	0.01	-351.94	0.01161
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



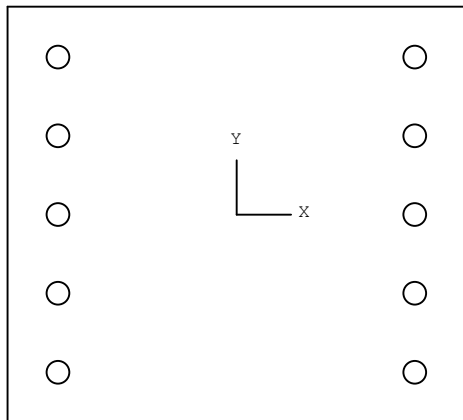
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#9_NX5_NY2_cc2.439



Section 84 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

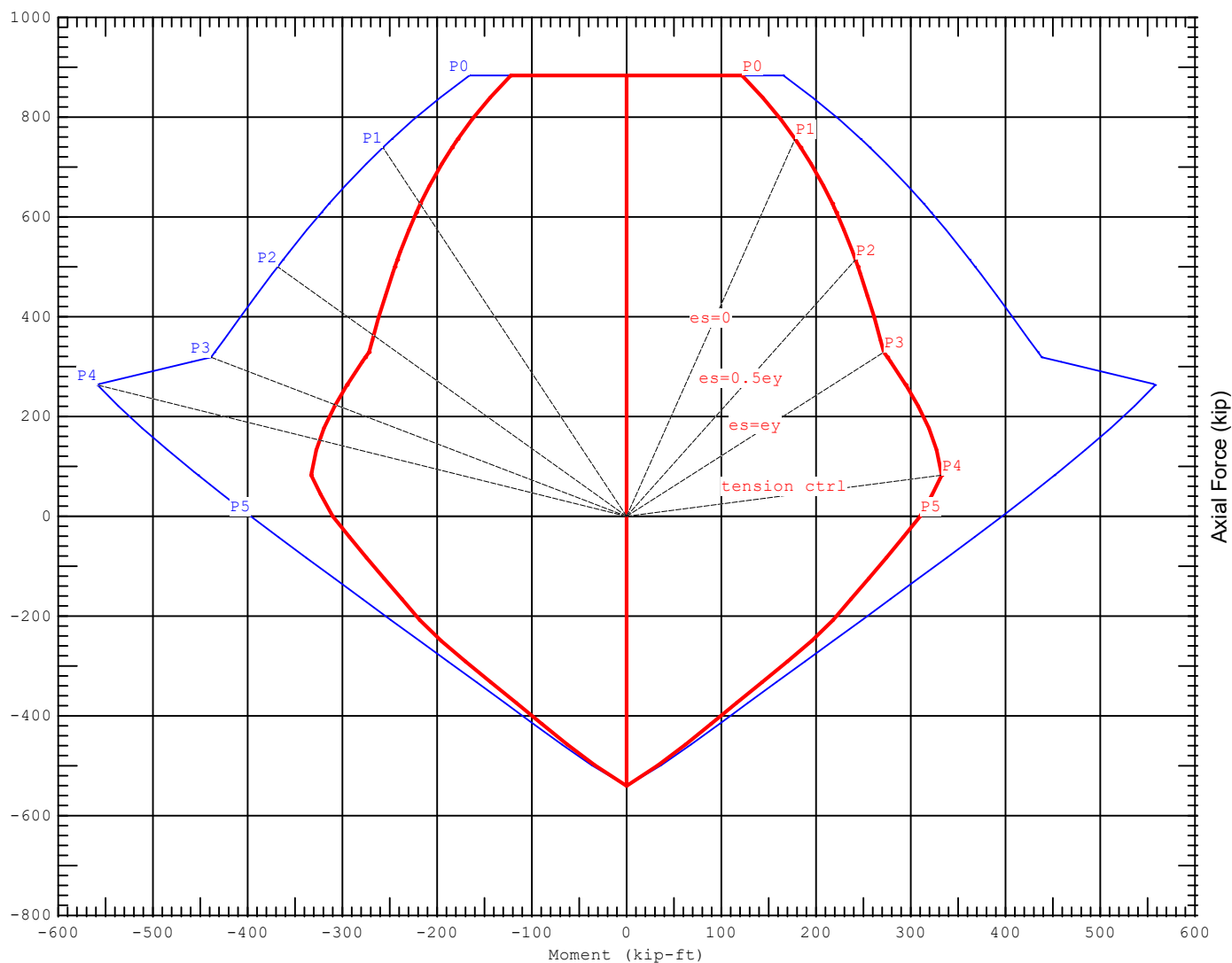
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.18	121.85	-0.00041
P1	755.14	177.46	0.00000
P2	513.26	241.32	0.00103
P3	328.35	270.95	0.00207
P4	81.89	332.04	0.00507
P5	0.01	309.20	0.00608
Pmin	-540.00	-0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-165.44	-0.00049
P1	737.89	-256.60	0.00000
P2	499.06	-367.33	0.00103
P3	317.92	-437.59	0.00207
P4	262.47	-557.08	0.00507
P5	0.00	-395.59	0.01272
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

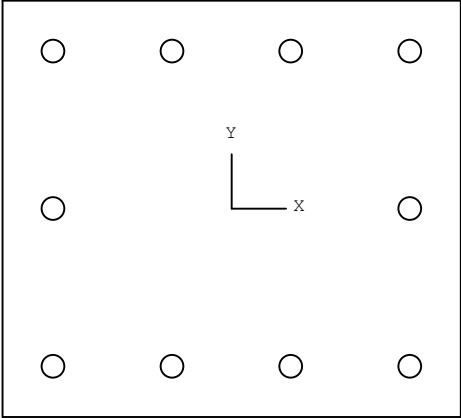
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#9_NX3_NY4_cc2.439



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 10 # 9

Confinement: Tied

Ag: 440.00 in^2

As: 10.00 in^2

Roh: 2.27%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

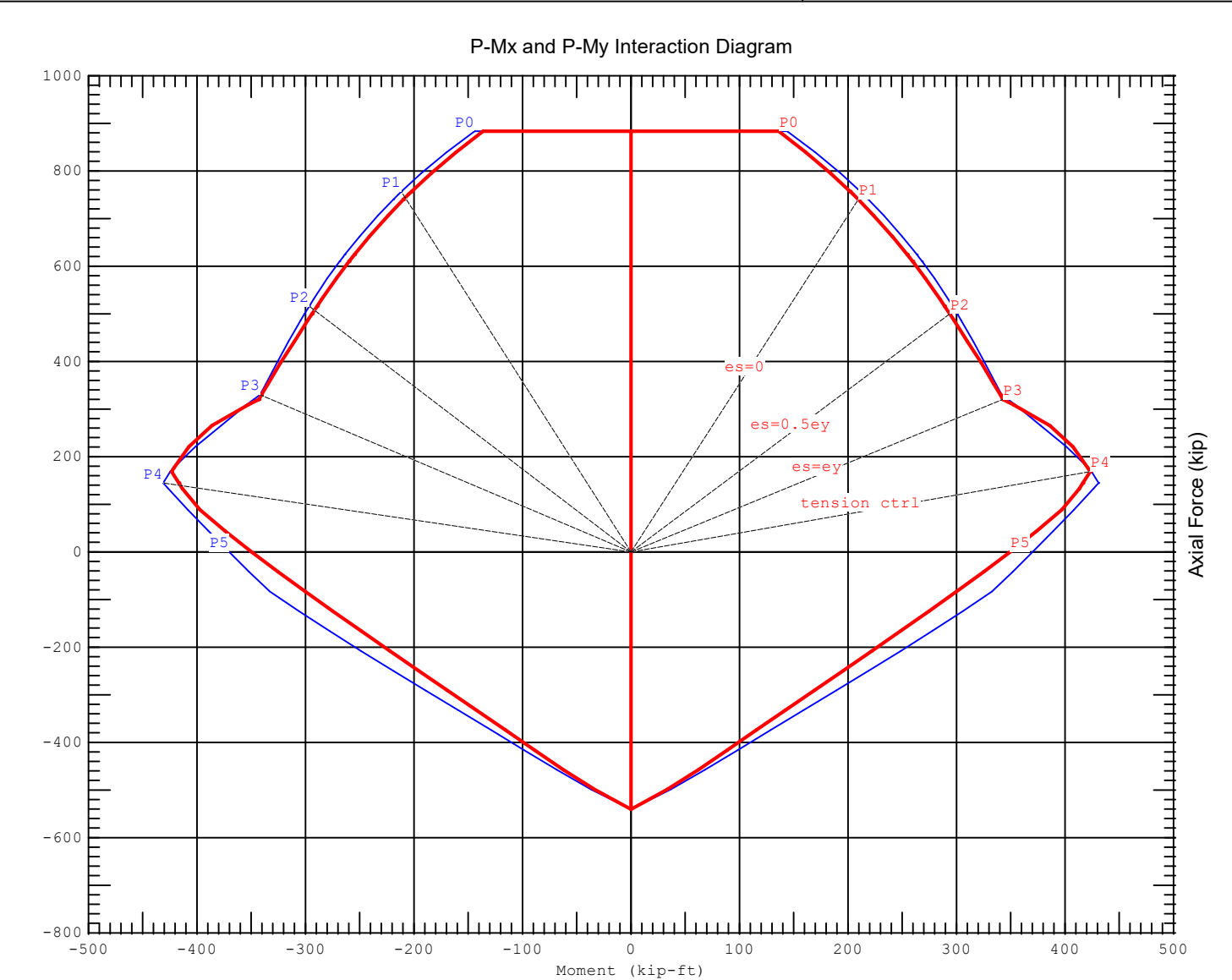
Y0: 0.00 in

Clear spacing: 4.58 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.18	135.95	-0.00048
P1	739.06	209.17	0.00000
P2	499.28	293.36	0.00103
P3	319.79	342.28	0.00207
P4	167.98	422.65	0.00507
P5	0.01	348.93	0.00882
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-143.82	-0.00041
P1	755.58	-211.17	0.00000
P2	515.20	-295.99	0.00103
P3	329.19	-341.14	0.00207
P4	144.17	-430.26	0.00507
P5	-0.01	-369.63	0.00754
Pmin	-540.00	-0.00	0.20000



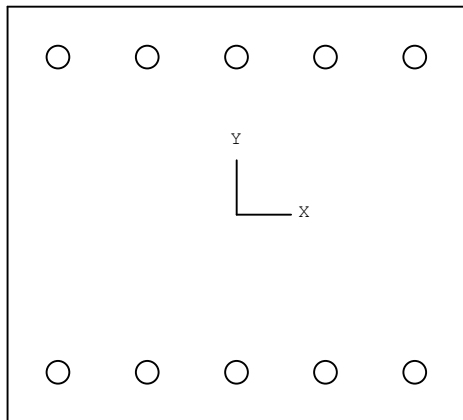
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#9_NX2_NY5_cc2.439



Section 86 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

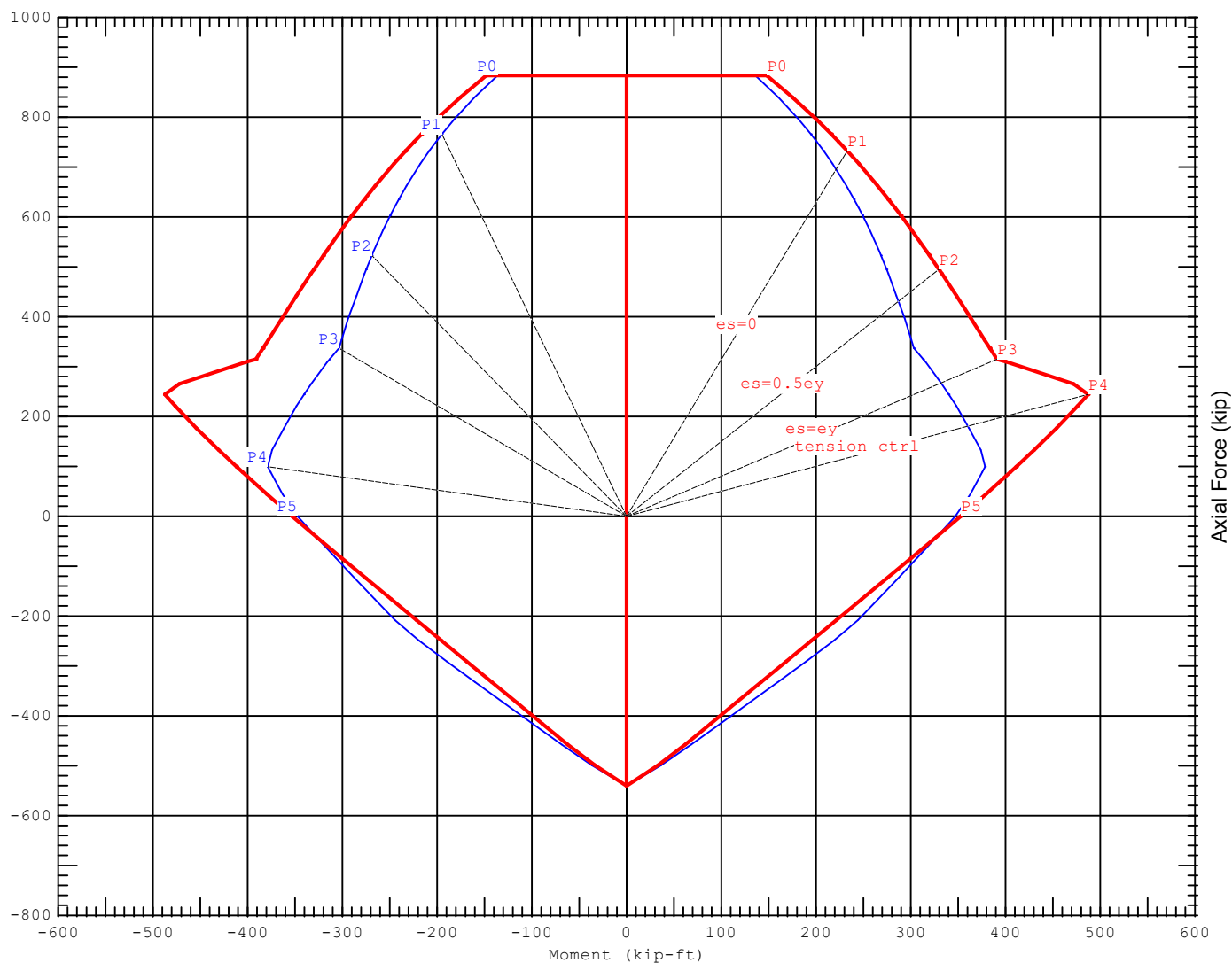
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	882.17	147.74	-0.00051
P1	731.02	232.70	0.00000
P2	493.95	329.18	0.00103
P3	313.85	390.38	0.00207
P4	243.98	486.13	0.00507
P5	0.01	351.94	0.01161
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-135.64	-0.00038
P1	764.42	-194.34	0.00000
P2	521.61	-268.23	0.00103
P3	336.49	-302.85	0.00207
P4	98.89	-377.81	0.00507
P5	-0.00	-346.24	0.00637
Pmin	-540.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



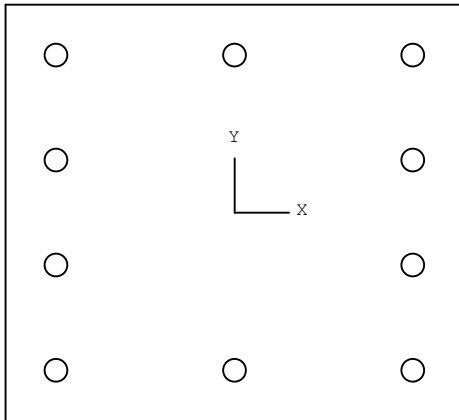
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#9_NX4_NY3_cc2.439



Section 87 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

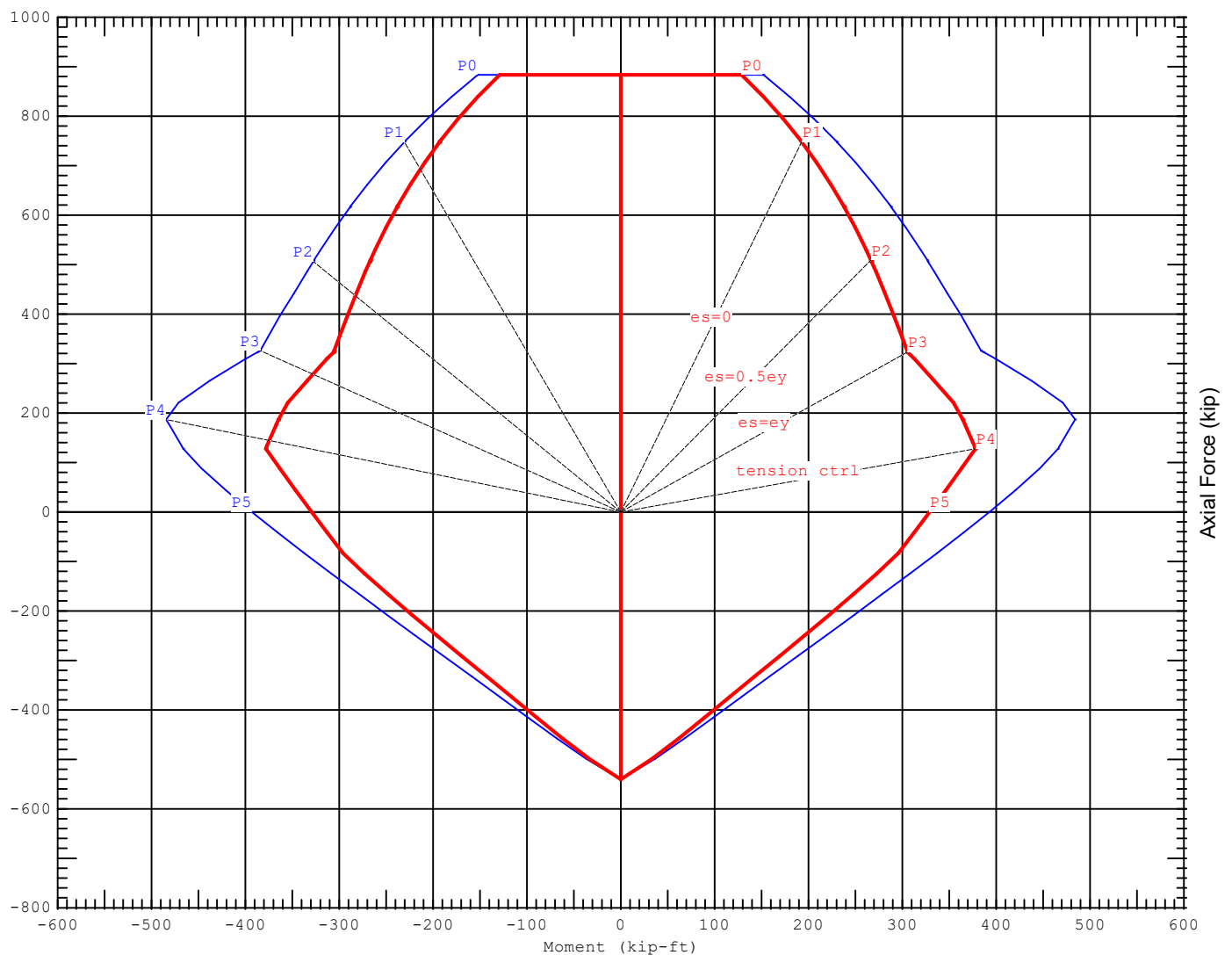
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 440.00 in²
As: 10.00 in²
Roh: 2.27%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

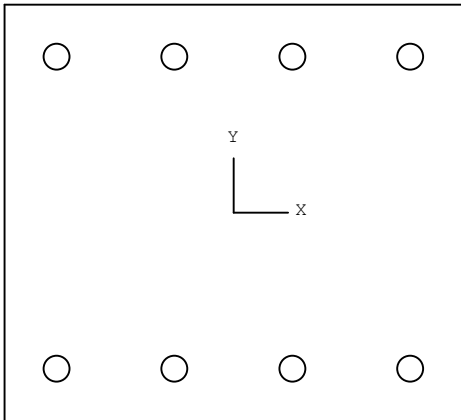
Control Points (kip, kip-ft)

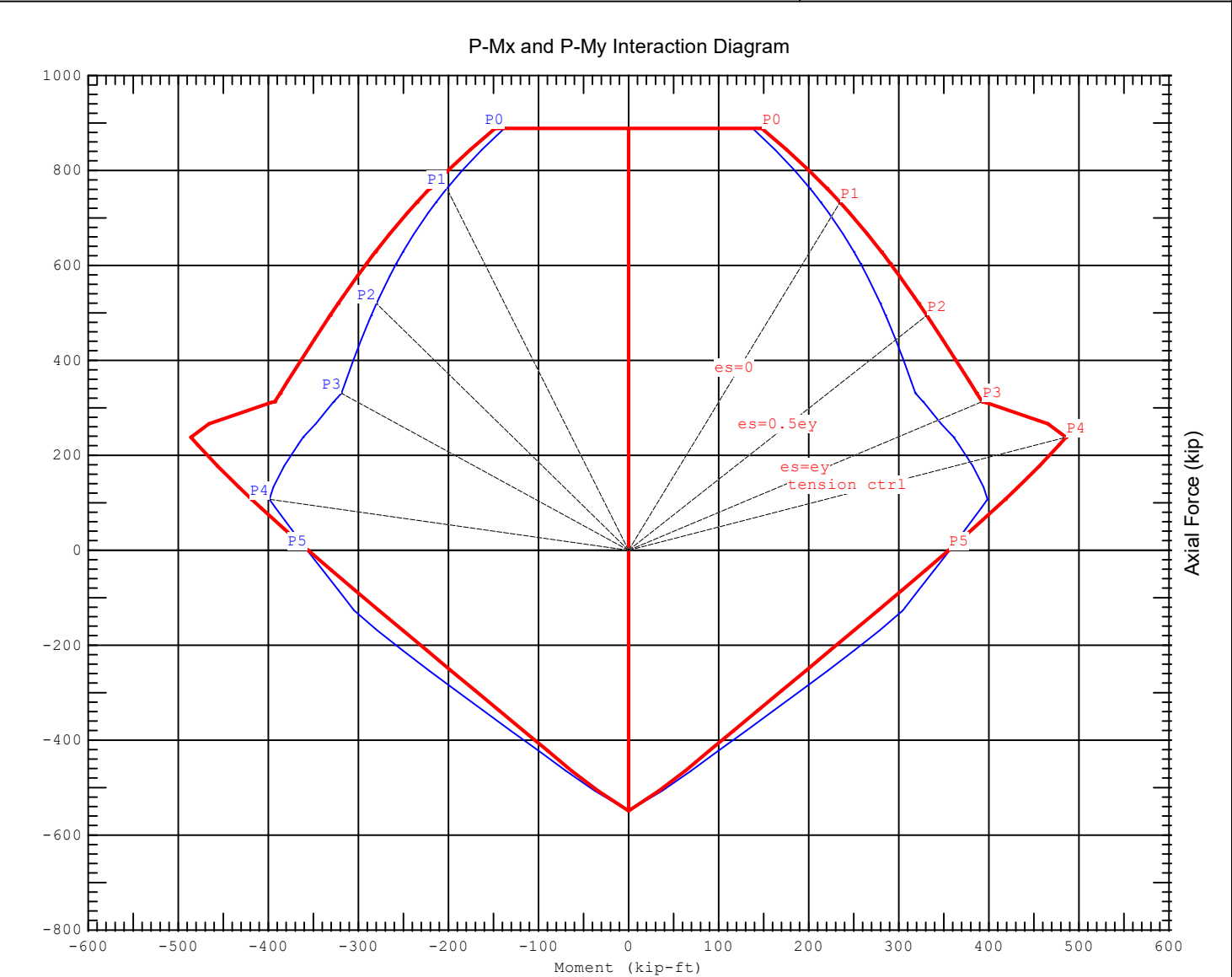
PT	P	Mx (+)	max es
P0	882.18	128.61	-0.00043
P1	747.10	192.46	0.00000
P2	507.93	266.02	0.00103
P3	322.41	305.00	0.00207
P4	127.67	377.06	0.00507
P5	-0.01	328.52	0.00717
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	882.18	-151.78	-0.00043
P1	746.73	-229.96	0.00000
P2	505.47	-326.77	0.00103
P3	325.21	-383.13	0.00207
P4	186.47	-483.07	0.00507
P5	0.01	-392.06	0.00952
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:		cColumn v10 (C) Computations & Graphics, Inc.																																																																
Engineer:	Date & Time: 06/19/2023 10:27																																																																	
Rect22x20_fc3_fy60_8#10_NX2_NY4_cc2.51  Section 88 of 238		Code: ACI 318-19 Strength reduction: Auto Neutral axis steps: 250 Biaxial angle steps: 16 Axial capacity steps: 20 Excl. displ'd concrete: Yes b x h: 22 x 20 in fc: 3.00 kip/in^2 fy: 60.00 kip/in^2 Cover (t.c): 2.51 in Bars: 8 # 10 Confinement: Tied Ag: 440.00 in^2 As: 10.16 in^2 Roh: 2.31% Ix: 14666.7 in^4 Iy: 17746.7 in^4 X0: 0.00 in Y0: 0.00 in Clear spacing: 4.39 in Control Points (kip, kip-ft) <table><tr><th>PT</th><th>P</th><th>Mx (+)</th><th>max es</th></tr><tr><td>P0</td><td>886.95</td><td>147.61</td><td>-0.00052</td></tr><tr><td>P1</td><td>731.81</td><td>234.36</td><td>0.00000</td></tr><tr><td>P2</td><td>493.75</td><td>330.48</td><td>0.00103</td></tr><tr><td>P3</td><td>312.42</td><td>391.81</td><td>0.00207</td></tr><tr><td>P4</td><td>237.32</td><td>484.67</td><td>0.00507</td></tr><tr><td>P5</td><td>0.01</td><td>354.87</td><td>0.01121</td></tr><tr><td>Pmin</td><td>-548.64</td><td>0.00</td><td>0.20000</td></tr></table> <table><tr><th>PT</th><th>P</th><th>My (-)</th><th>max es</th></tr><tr><td>P0</td><td>886.96</td><td>-137.69</td><td>-0.00040</td></tr><tr><td>P1</td><td>760.75</td><td>-201.28</td><td>0.00000</td></tr><tr><td>P2</td><td>518.70</td><td>-279.11</td><td>0.00103</td></tr><tr><td>P3</td><td>329.93</td><td>-317.98</td><td>0.00207</td></tr><tr><td>P4</td><td>107.20</td><td>-397.85</td><td>0.00507</td></tr><tr><td>P5</td><td>-0.00</td><td>-355.92</td><td>0.00671</td></tr><tr><td>Pmin</td><td>-548.64</td><td>0.00</td><td>0.20000</td></tr></table>	PT	P	Mx (+)	max es	P0	886.95	147.61	-0.00052	P1	731.81	234.36	0.00000	P2	493.75	330.48	0.00103	P3	312.42	391.81	0.00207	P4	237.32	484.67	0.00507	P5	0.01	354.87	0.01121	Pmin	-548.64	0.00	0.20000	PT	P	My (-)	max es	P0	886.96	-137.69	-0.00040	P1	760.75	-201.28	0.00000	P2	518.70	-279.11	0.00103	P3	329.93	-317.98	0.00207	P4	107.20	-397.85	0.00507	P5	-0.00	-355.92	0.00671	Pmin	-548.64	0.00	0.20000
PT	P	Mx (+)	max es																																																															
P0	886.95	147.61	-0.00052																																																															
P1	731.81	234.36	0.00000																																																															
P2	493.75	330.48	0.00103																																																															
P3	312.42	391.81	0.00207																																																															
P4	237.32	484.67	0.00507																																																															
P5	0.01	354.87	0.01121																																																															
Pmin	-548.64	0.00	0.20000																																																															
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P3	329.93	-317.98	0.00207																																																															
P4	107.20	-397.85	0.00507																																																															
P5	-0.00	-355.92	0.00671																																																															
Pmin	-548.64	0.00	0.20000																																																															



Project/Job:

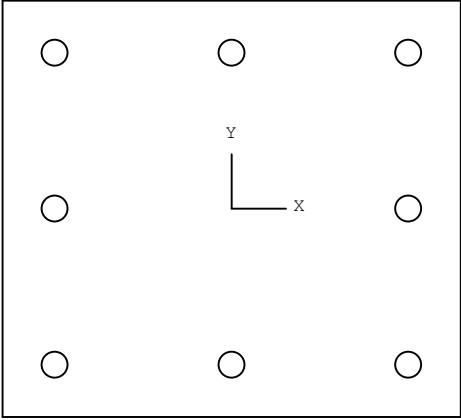
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#10_NX3_NY3_cc2.51



Section 89 of 238

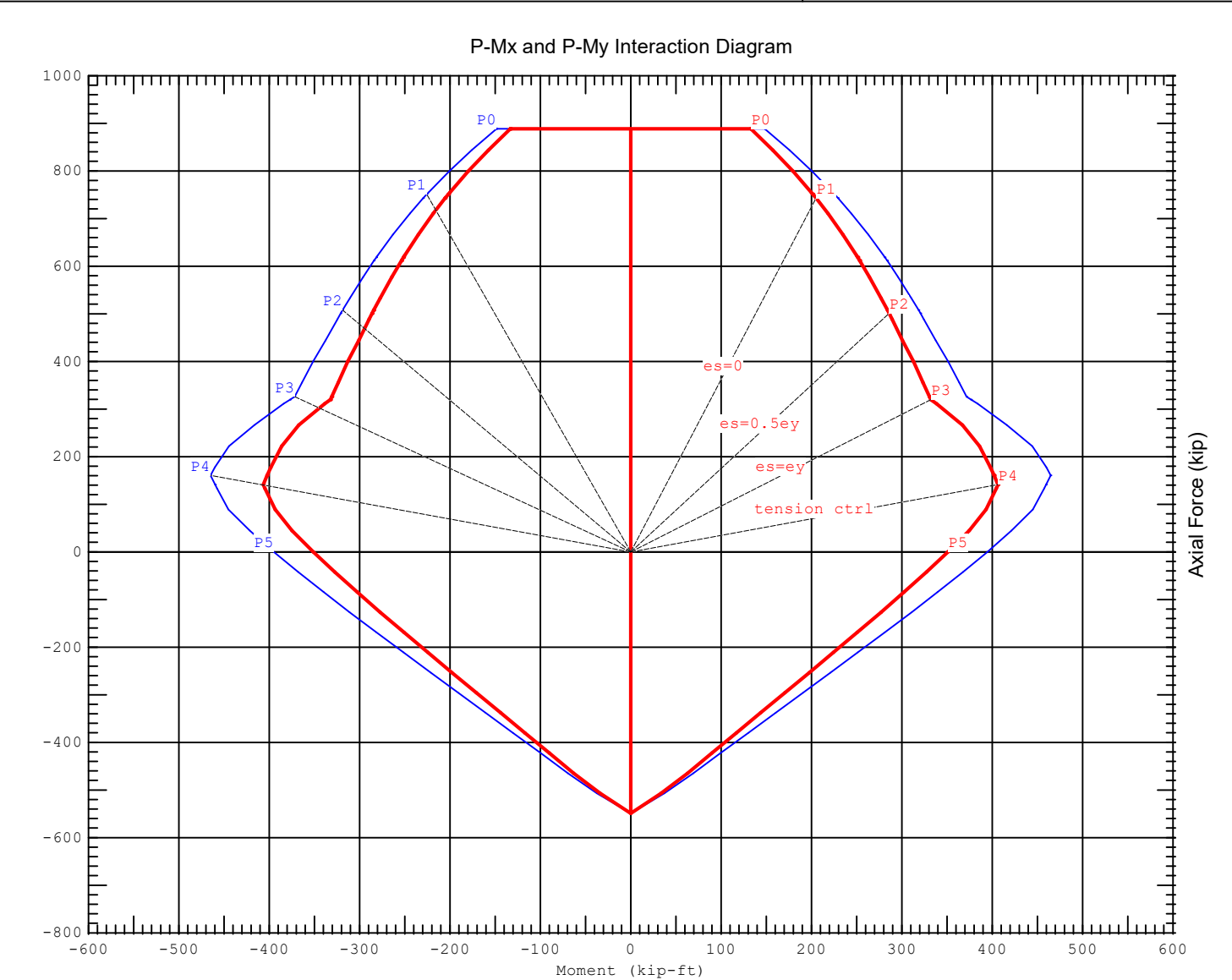
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

b x h: 22 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 440.00 in^2
As: 10.16 in^2
Roh: 2.31%
Ix: 14666.7 in^4
Iy: 17746.7 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	886.95	132.71	-0.00048
P1	741.68	204.76	0.00000
P2	500.07	285.42	0.00103
P3	319.40	331.29	0.00207
P4	140.80	405.58	0.00507
P5	0.01	350.27	0.00783
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	886.96	-148.13	-0.00044
P1	749.81	-224.99	0.00000
P2	506.75	-317.95	0.00103
P3	325.37	-370.94	0.00207
P4	160.19	-463.93	0.00507
P5	-0.00	-393.74	0.00843
Pmin	-548.64	0.00	0.20000



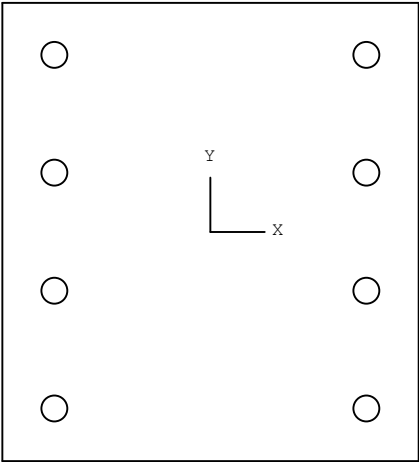
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#10_NX4_NY2_cc2.51



Section 90 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

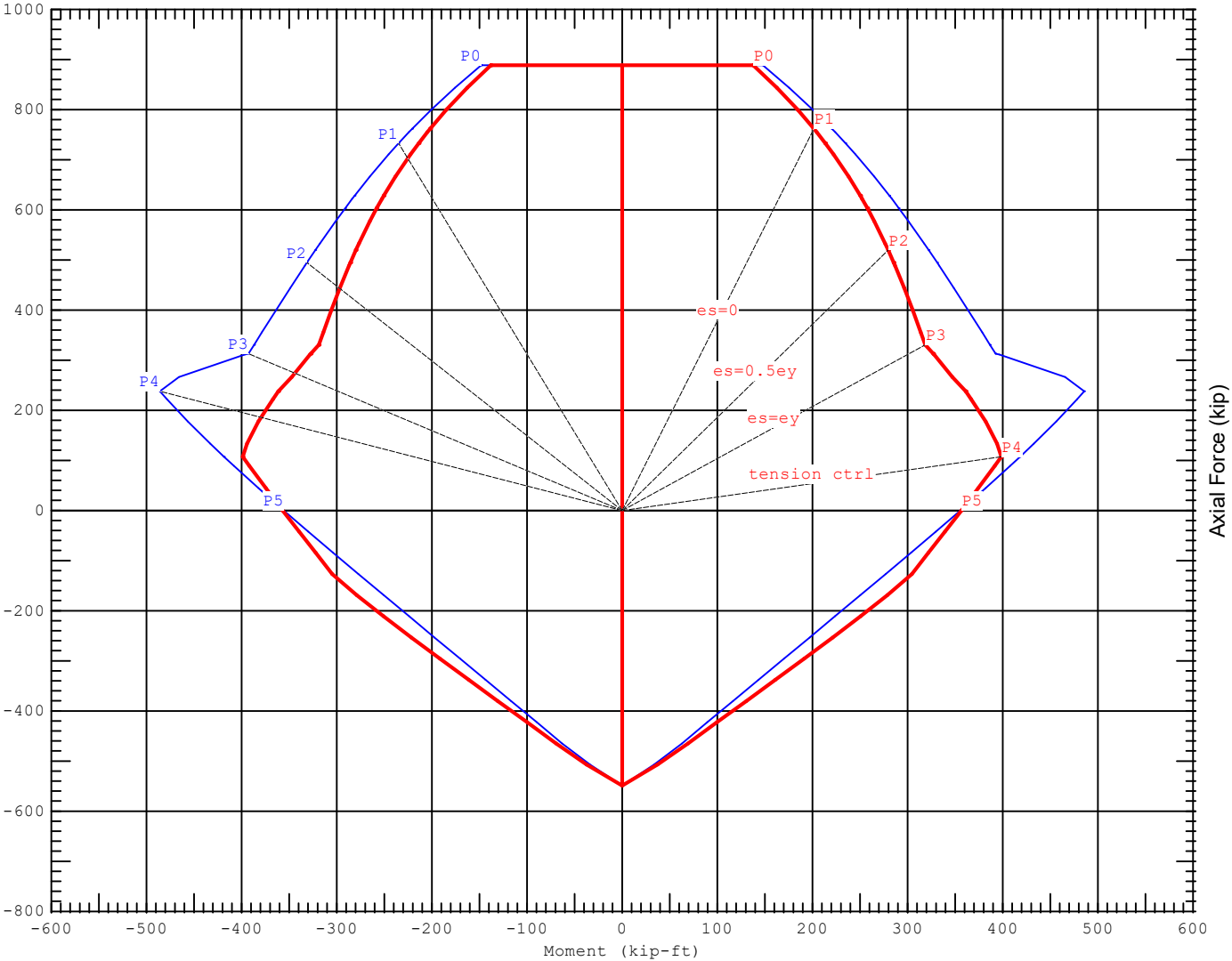
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 440.00 in²
As: 10.16 in²
Roh: 2.31%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.39 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	886.96	137.69	-0.00040
P1	760.75	201.28	0.00000
P2	518.70	279.11	0.00103
P3	329.93	317.98	0.00207
P4	107.20	397.85	0.00507
P5	-0.00	355.92	0.00671
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	886.95	-147.61	-0.00052
P1	731.81	-234.36	0.00000
P2	493.75	-330.48	0.00103
P3	312.42	-391.81	0.00207
P4	237.32	-484.67	0.00507
P5	0.01	-354.87	0.01121
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

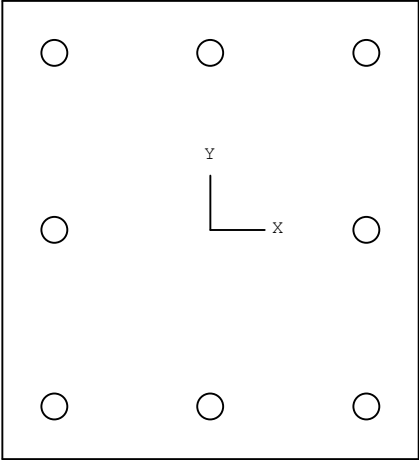
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#10_NX3_NY3_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 22 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 8 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 10.16 in^2

Roh: 2.31%

Ix: 17746.7 in^4

Iy: 14666.7 in^4

X0: 0.00 in

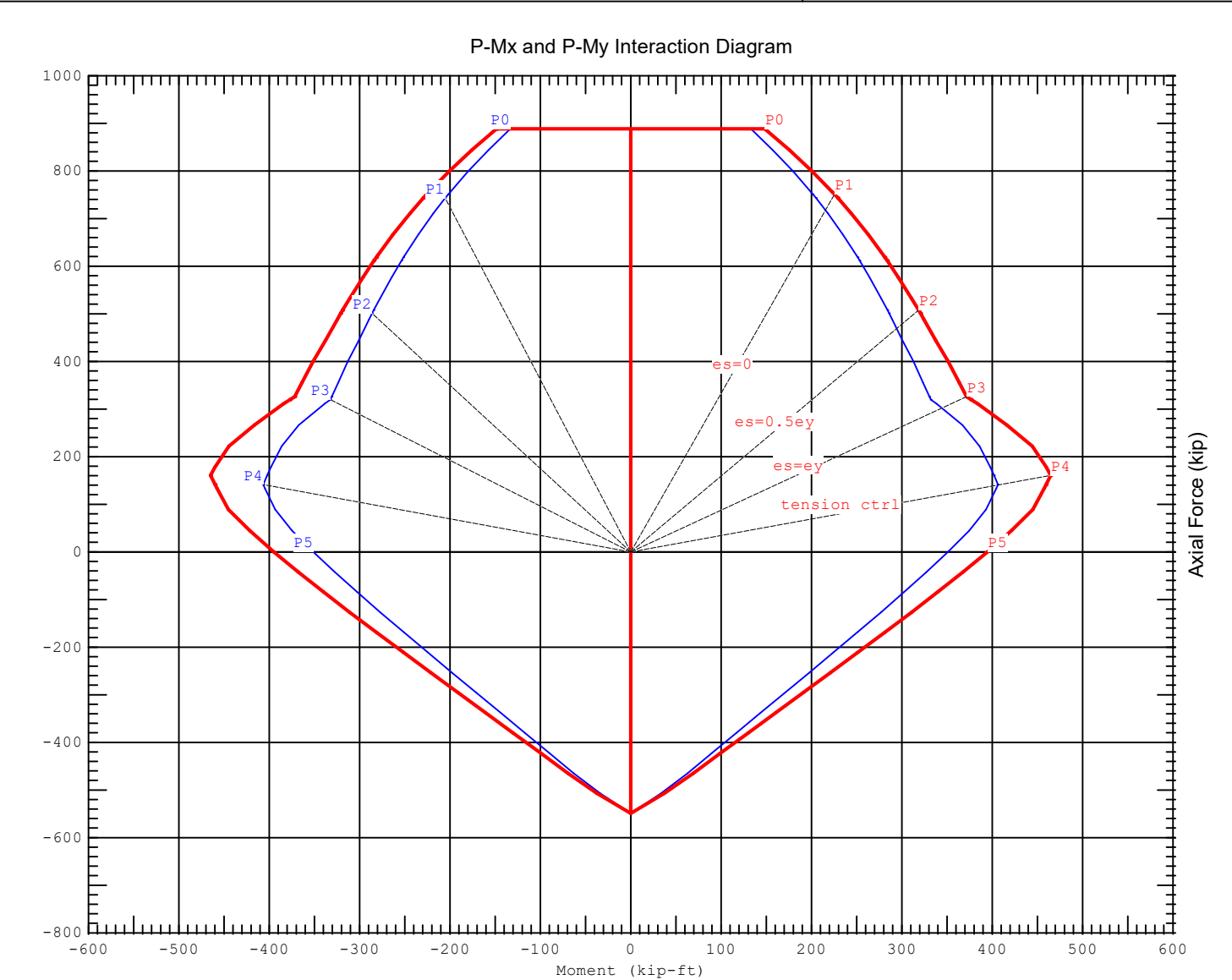
Y0: 0.00 in

Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	886.96	148.13	-0.00044
P1	749.81	224.99	0.00000
P2	506.75	317.95	0.00103
P3	325.37	370.94	0.00207
P4	160.19	463.93	0.00507
P5	-0.00	393.74	0.00843
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	886.95	-132.71	-0.00048
P1	741.68	-204.76	0.00000
P2	500.07	-285.42	0.00103
P3	319.40	-331.29	0.00207
P4	140.80	-405.58	0.00507
P5	0.01	-350.27	0.00783
Pmin	-548.64	0.00	0.20000



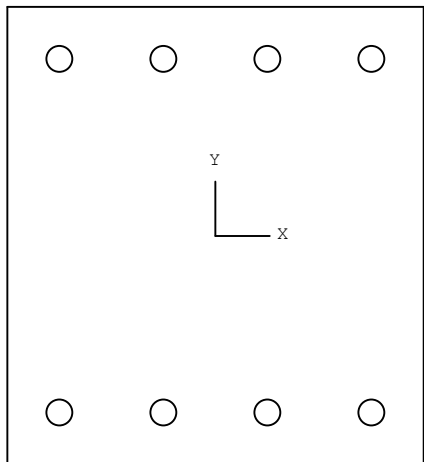
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#10_NX2_NY4_cc2.51



Section 92 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

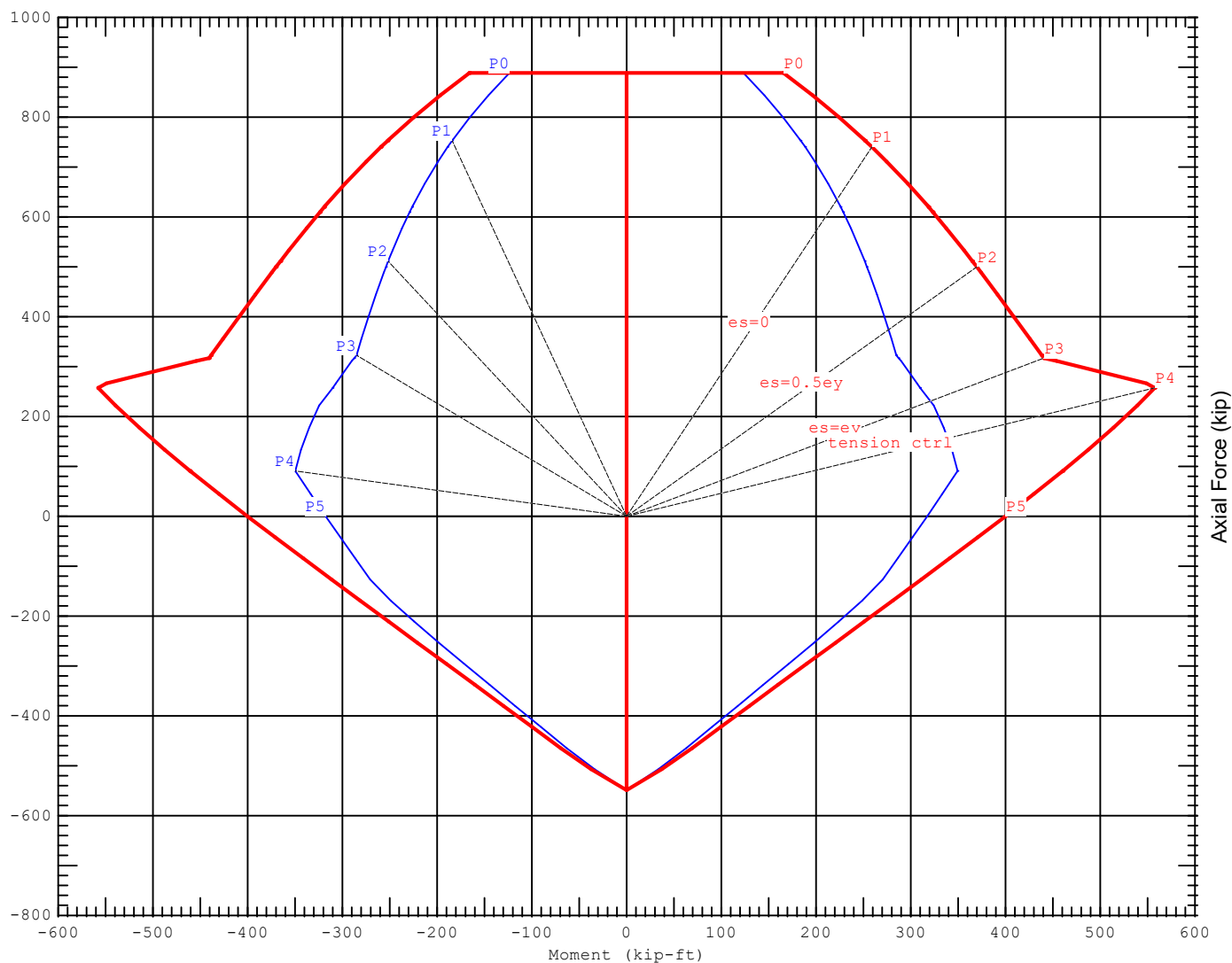
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 440.00 in²
As: 10.16 in²
Roh: 2.31%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	886.95	165.41	-0.00050
P1	738.88	258.54	0.00000
P2	499.00	369.03	0.00103
P3	316.60	439.54	0.00207
P4	256.72	556.37	0.00507
P5	-0.00	399.16	0.01229
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	886.96	-123.13	-0.00043
P1	751.56	-183.69	0.00000
P2	510.60	-250.96	0.00103
P3	322.17	-284.32	0.00207
P4	90.43	-348.65	0.00507
P5	0.00	-316.71	0.00641
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

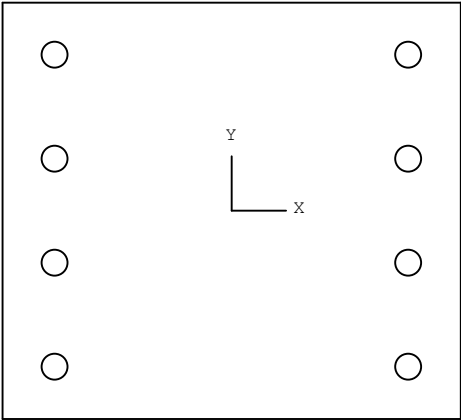
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#10_NX4_NY2_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 8 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 10.16 in^2

Roh: 2.31%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

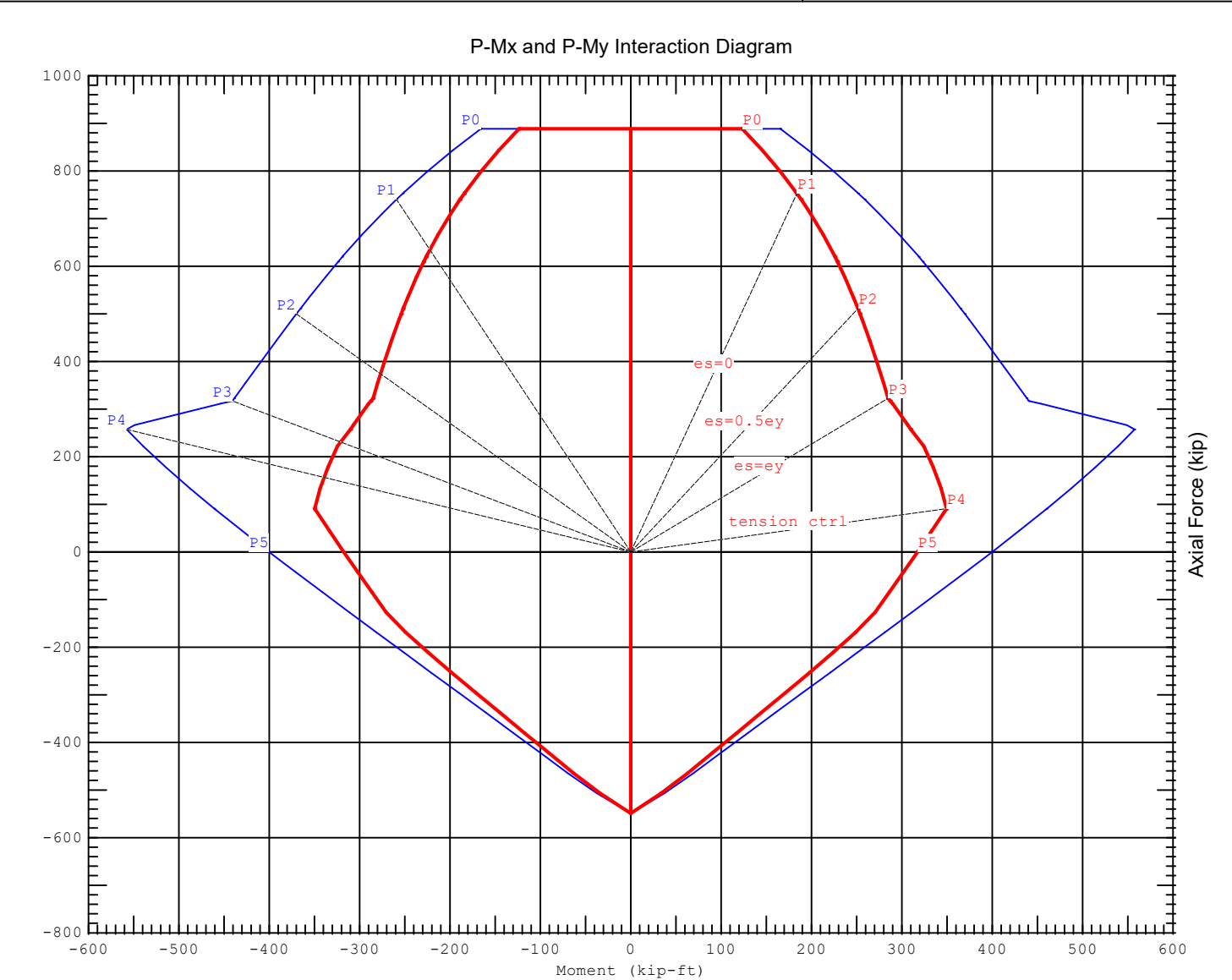
Y0: 0.00 in

Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	886.96	123.13	-0.00043
P1	751.56	183.69	0.00000
P2	510.60	250.96	0.00103
P3	322.17	284.32	0.00207
P4	90.43	348.65	0.00507
P5	0.00	316.71	0.00641
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	886.95	-165.41	-0.00050
P1	738.88	-258.54	0.00000
P2	499.00	-369.03	0.00103
P3	316.60	-439.54	0.00207
P4	256.72	-556.37	0.00507
P5	-0.00	-399.16	0.01229
Pmin	-548.64	0.00	0.20000



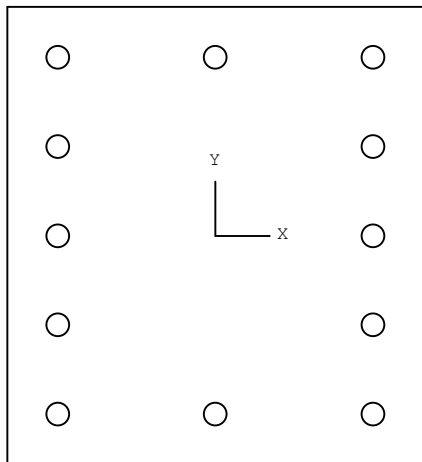
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#9_NX5_NY3_cc2.439



Section 94 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

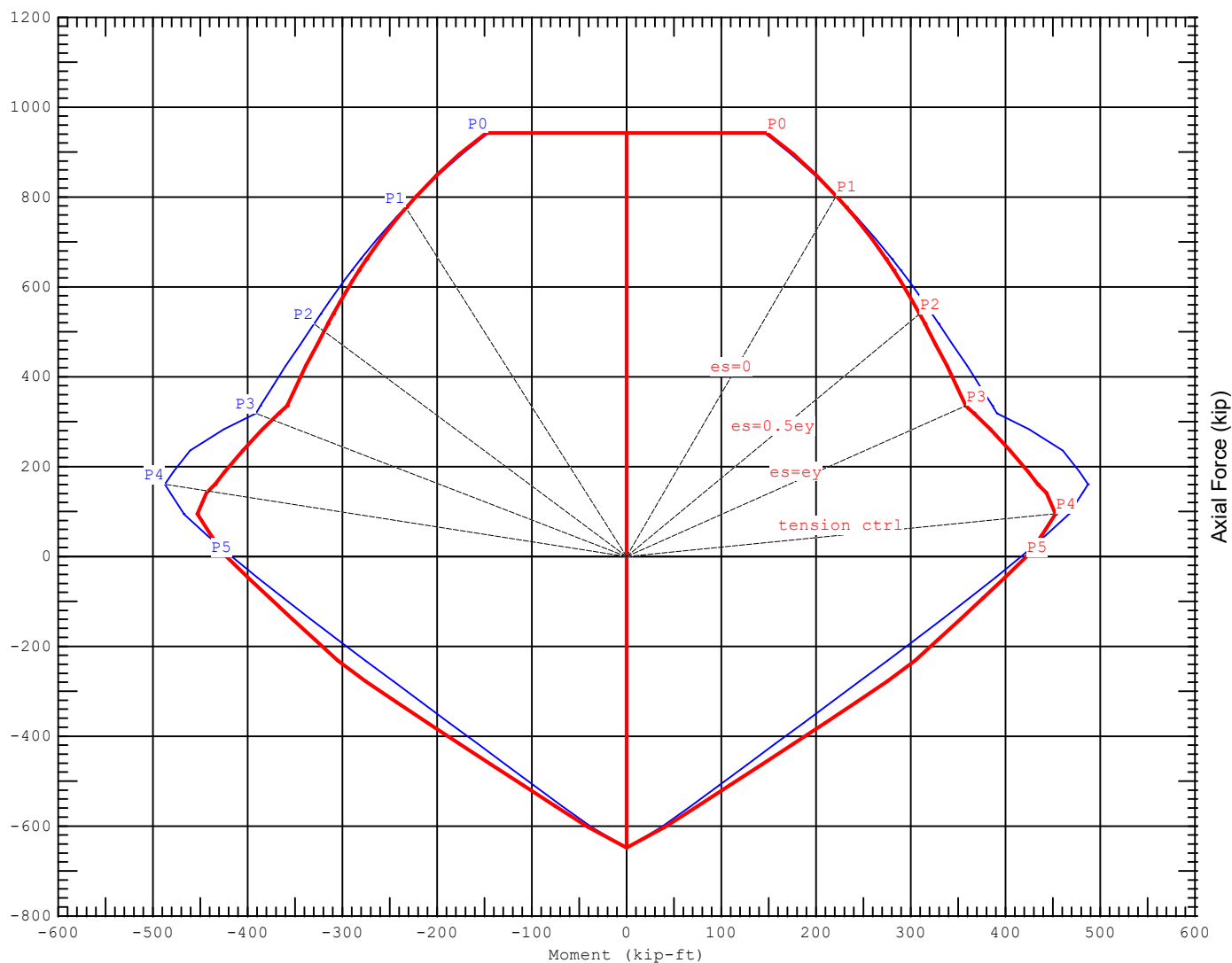
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	147.72	-0.00042
P1	801.76	220.98	0.00000
P2	539.45	308.78	0.00103
P3	334.83	357.32	0.00207
P4	94.63	451.83	0.00507
P5	-0.01	421.28	0.00621
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-145.60	-0.00052
P1	776.40	-232.70	0.00000
P2	517.13	-329.18	0.00103
P3	318.13	-390.38	0.00207
P4	160.73	-486.13	0.00507
P5	-0.01	-415.75	0.00823
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



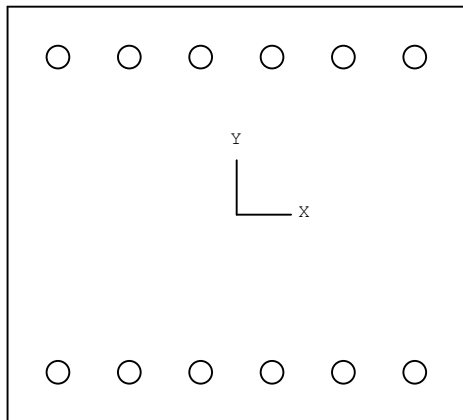
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#9_NX2_NY6_cc2.439



Section 95 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

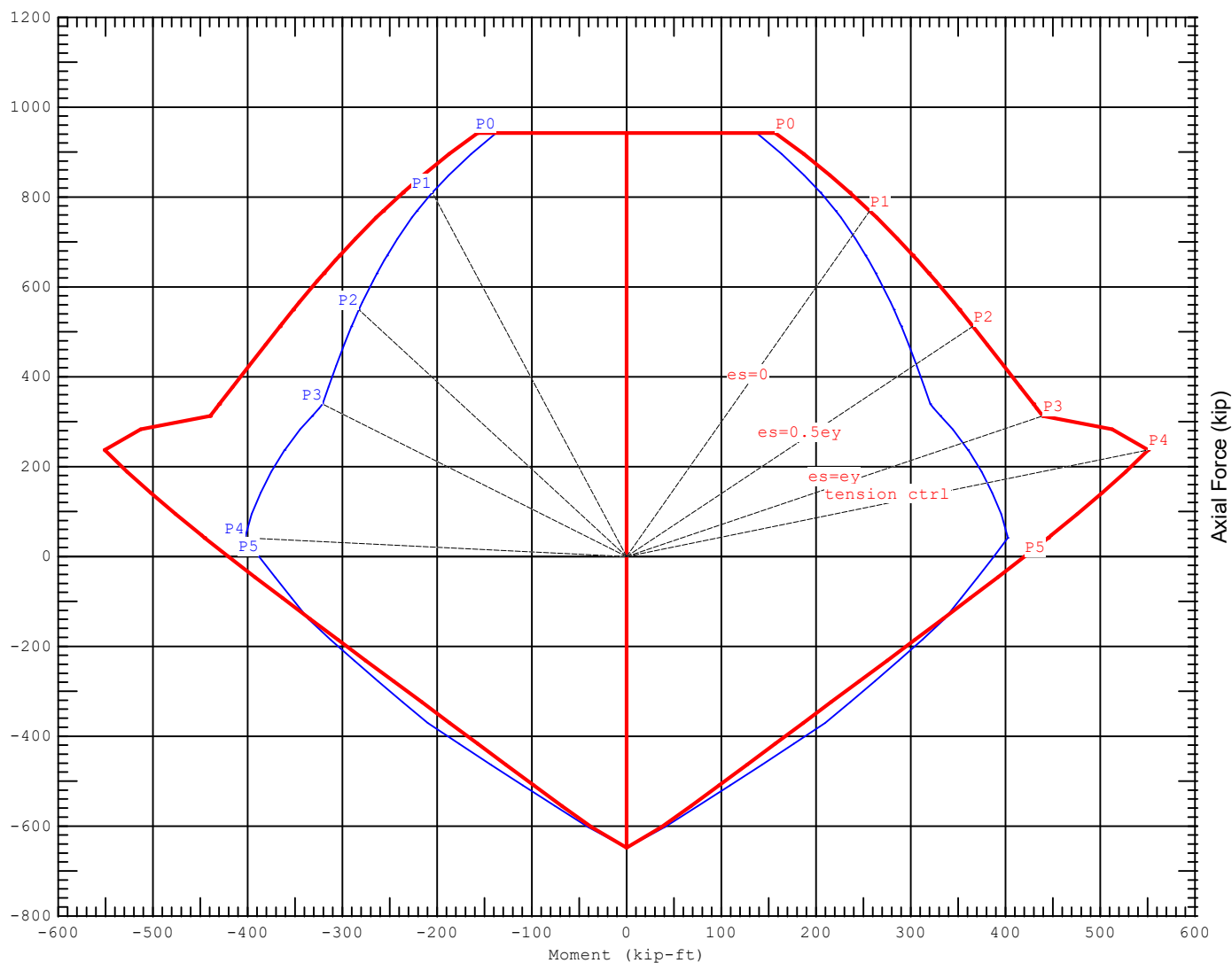
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	156.66	-0.00055
P1	768.36	256.23	0.00000
P2	511.80	364.99	0.00103
P3	312.20	438.49	0.00207
P4	236.74	549.62	0.00507
P5	-0.01	419.33	0.01067
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-137.25	-0.00041
P1	809.40	-204.42	0.00000
P2	549.18	-281.77	0.00103
P3	338.81	-320.04	0.00207
P4	41.60	-401.51	0.00507
P5	0.01	-386.91	0.00565
Pmin	-648.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



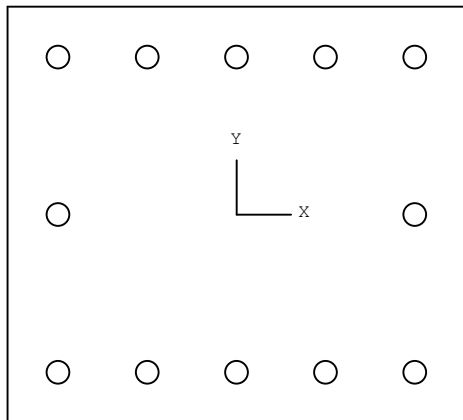
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#9_NX3_NY5_cc2.439



Section 96 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

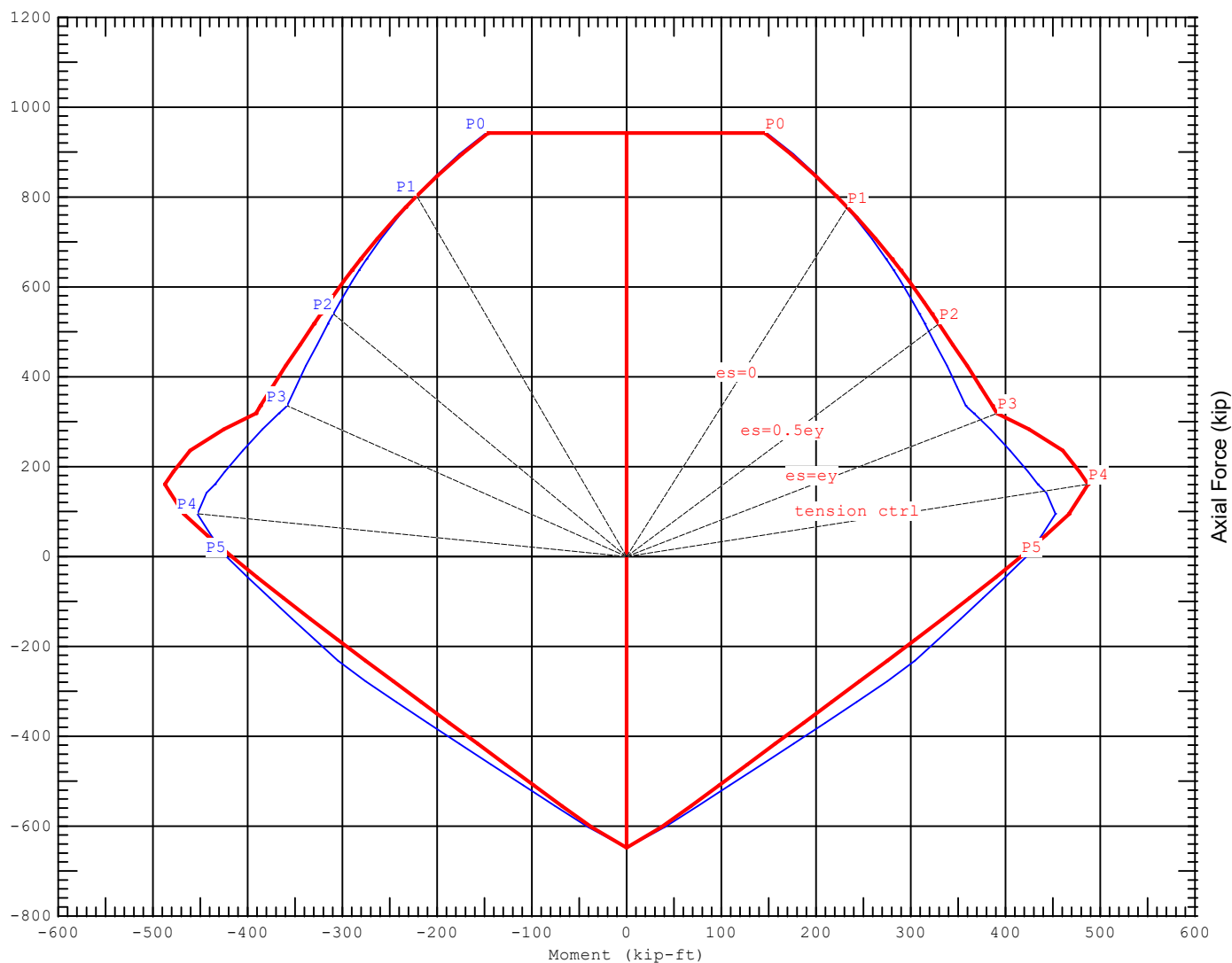
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	145.60	-0.00052
P1	776.40	232.70	0.00000
P2	517.13	329.18	0.00103
P3	318.13	390.38	0.00207
P4	160.73	486.13	0.00507
P5	-0.01	415.75	0.00823
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-147.72	-0.00042
P1	801.76	-220.98	0.00000
P2	539.45	-308.78	0.00103
P3	334.83	-357.32	0.00207
P4	94.63	-451.83	0.00507
P5	-0.01	-421.28	0.00621
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



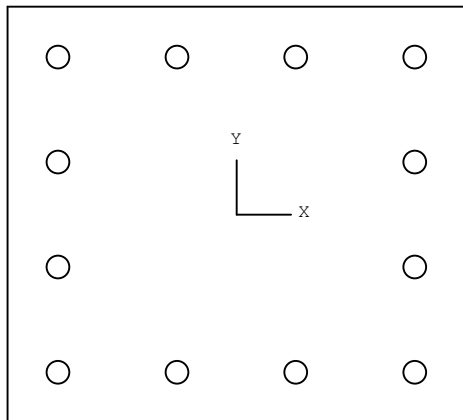
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#9_NX4_NY4_cc2.439



Section 97 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

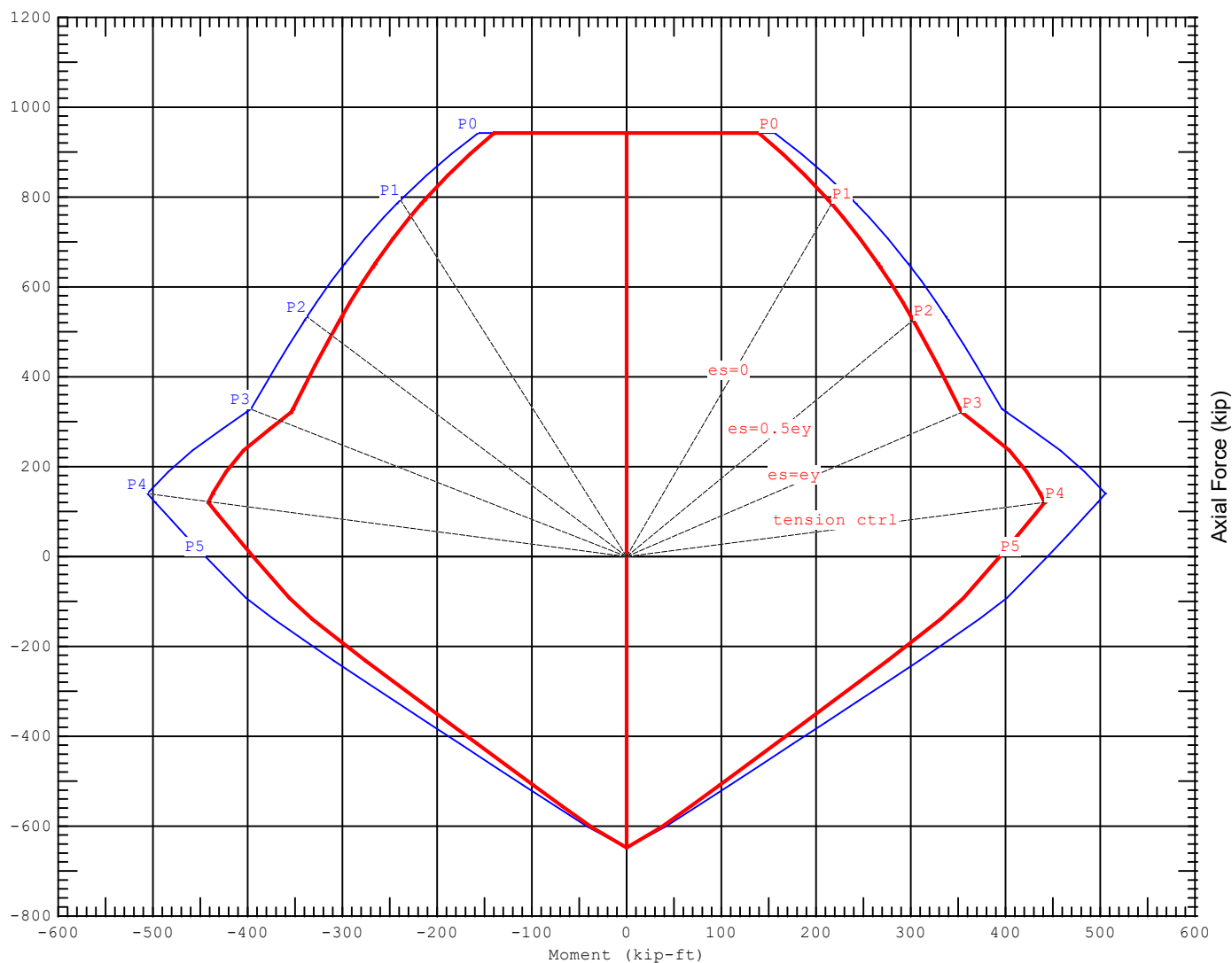
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	139.31	-0.00049
P1	784.44	215.99	0.00000
P2	525.77	301.84	0.00103
P3	320.75	353.11	0.00207
P4	120.43	440.54	0.00507
P5	0.00	393.28	0.00692
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-156.21	-0.00046
P1	792.92	-237.81	0.00000
P2	533.04	-336.54	0.00103
P3	327.54	-395.60	0.00207
P4	139.92	-504.28	0.00507
P5	0.02	-443.51	0.00732
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



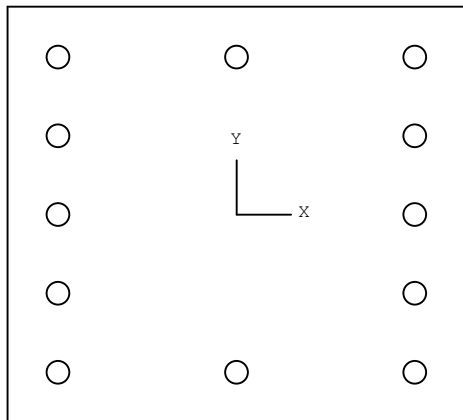
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#9_NX5_NY3_cc2.439



Section 98 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

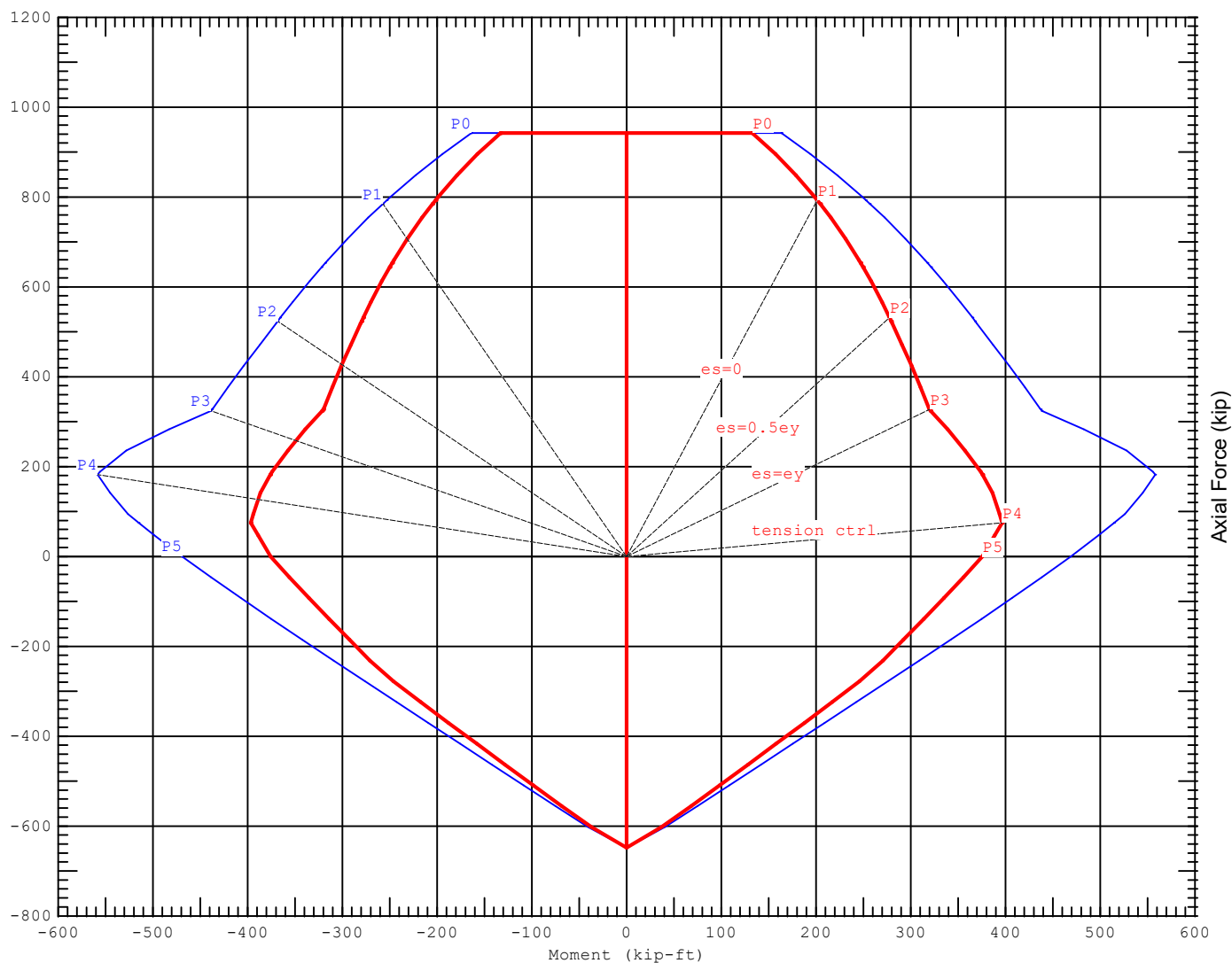
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.92	132.63	-0.00046
P1	792.48	200.98	0.00000
P2	531.10	277.13	0.00103
P3	326.69	319.06	0.00207
P4	74.65	395.53	0.00507
P5	-0.00	374.90	0.00589
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-163.19	-0.00050
P1	784.08	-256.60	0.00000
P2	523.32	-367.33	0.00103
P3	323.56	-437.59	0.00207
P4	182.21	-557.08	0.00507
P5	0.00	-467.86	0.00892
Pmin	-648.00	-0.00	0.20000

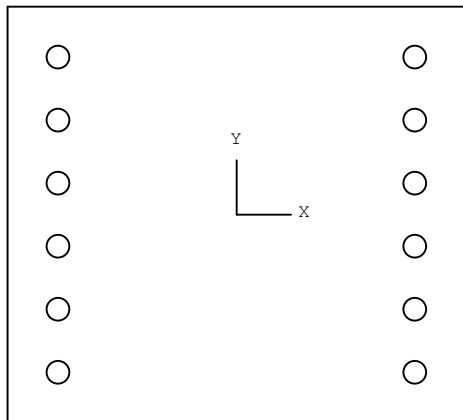
P-Mx and P-My Interaction Diagram



Engineer:

cColumn v10
(C) Computations & Graphics, Inc.

```
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes
```



Section 99 of 238

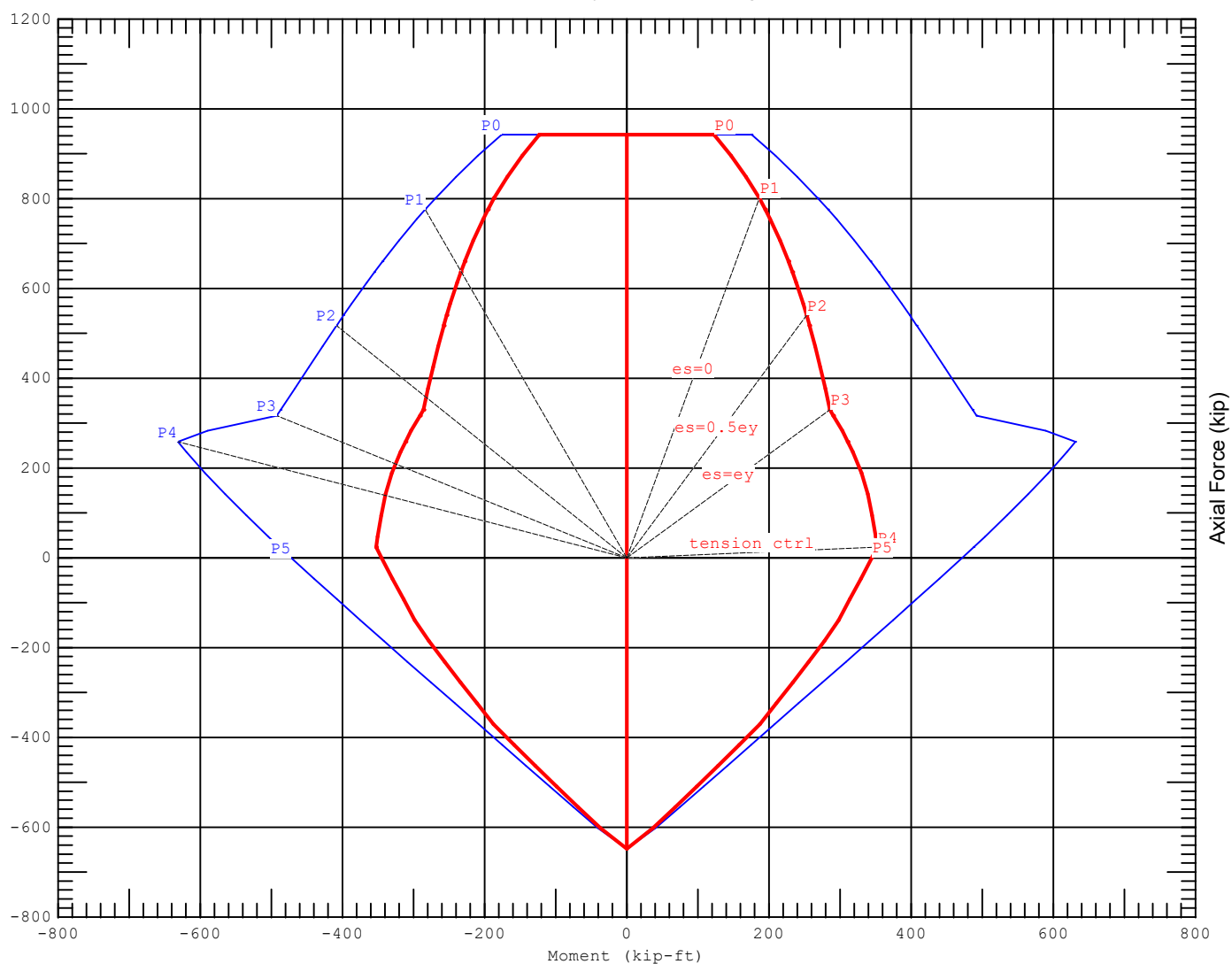
```
b x h: 22 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c.): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in^2
As: 12.00 in^2
Roh: 2.73%
Ix: 14666.7 in^4
Iy: 17746.7 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in
```

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	123.04	-0.00044
P1	800.52	186.66	0.00000
P2	539.75	253.07	0.00103
P3	329.31	285.88	0.00207
P4	23.71	352.13	0.00507
P5	0.00	344.70	0.00541
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-175.72	-0.00053
P1	775.24	-283.24	0.00000
P2	516.91	-407.88	0.00103
P3	316.26	-492.06	0.00207
P4	258.22	-631.10	0.00507
P5	-0.00	-471.95	0.01172
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



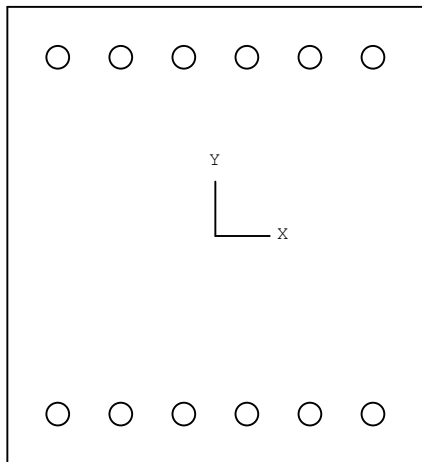
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#9_NX2_NY6_cc2.439



Section 100 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

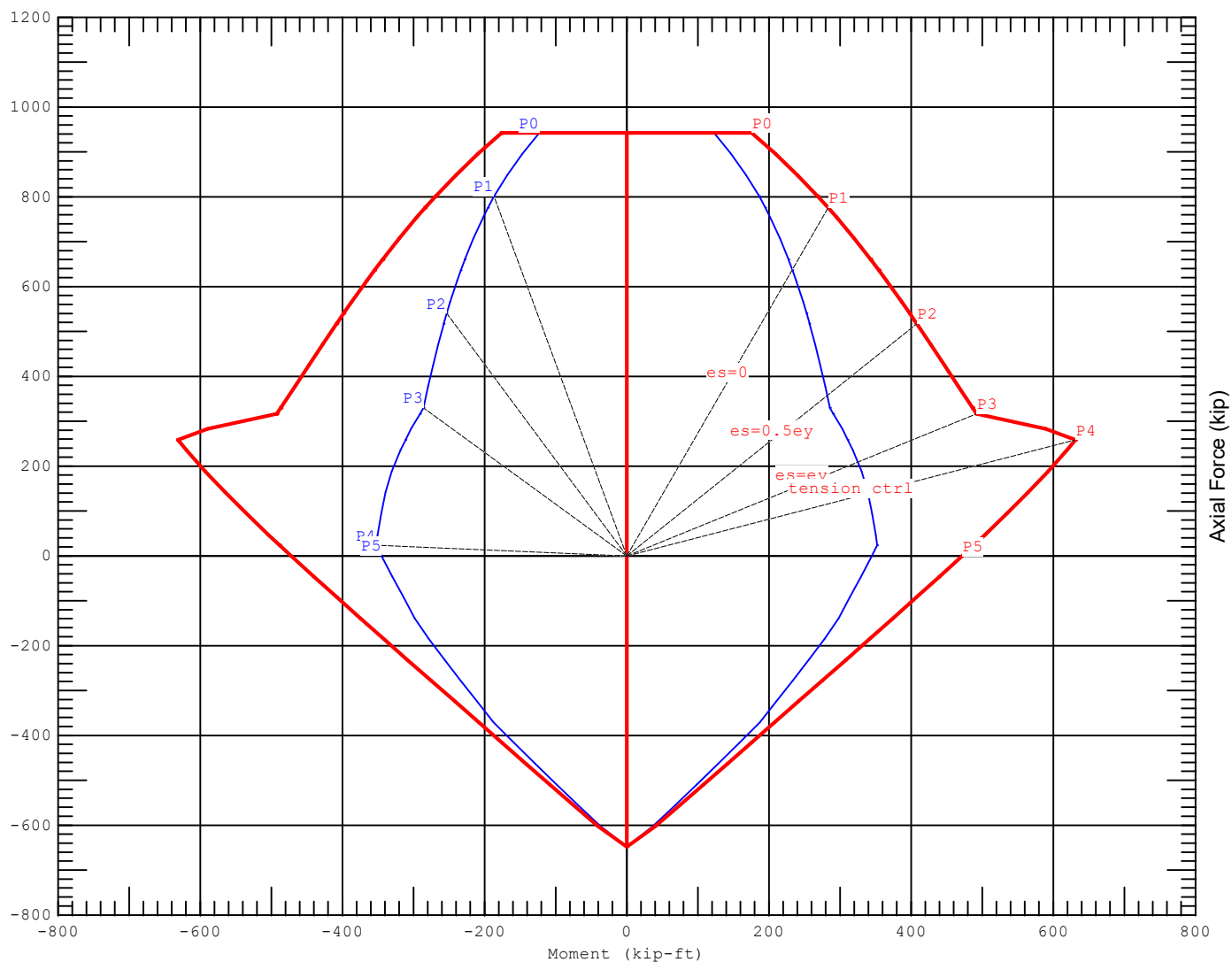
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	175.72	-0.00053
P1	775.24	283.24	0.00000
P2	516.91	407.88	0.00103
P3	316.26	492.06	0.00207
P4	258.22	631.10	0.00507
P5	-0.00	471.95	0.01172
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-123.04	-0.00044
P1	800.52	-186.66	0.00000
P2	539.75	-253.07	0.00103
P3	329.31	-285.88	0.00207
P4	23.71	-352.13	0.00507
P5	0.00	-344.70	0.00541
Pmin	-648.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



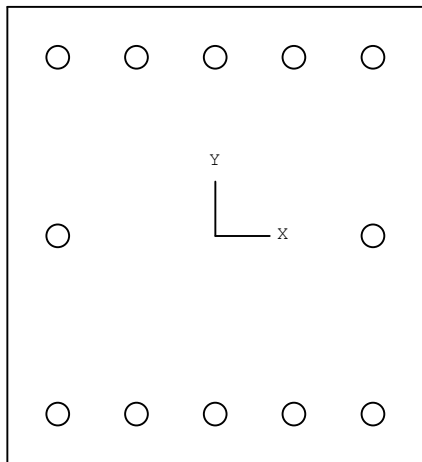
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#9_NX3_NY5_cc2.439



Section 101 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

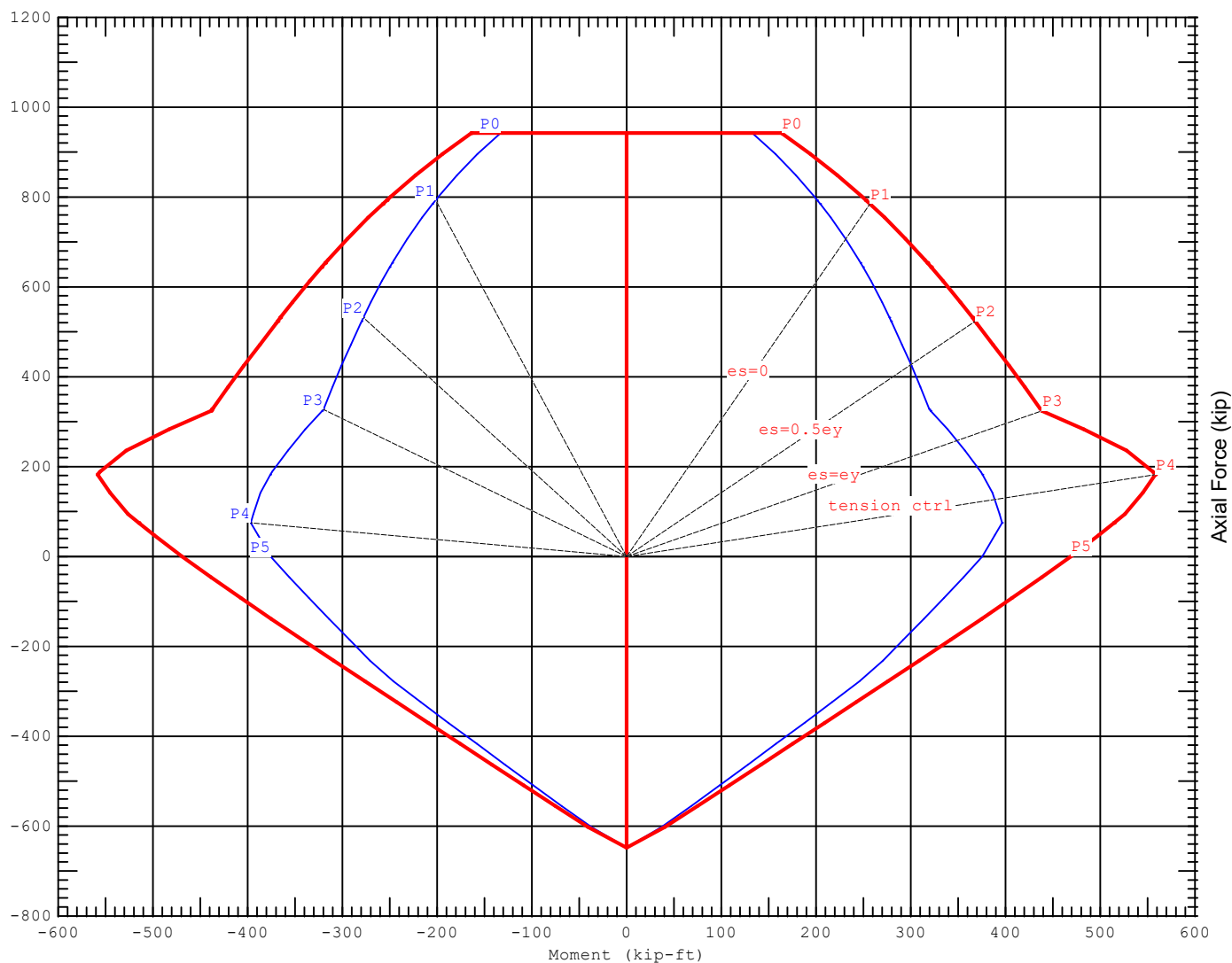
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	163.19	-0.00050
P1	784.08	256.60	0.00000
P2	523.32	367.33	0.00103
P3	323.56	437.59	0.00207
P4	182.21	557.08	0.00507
P5	0.00	467.86	0.00892
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.92	-132.63	-0.00046
P1	792.48	-200.98	0.00000
P2	531.10	-277.13	0.00103
P3	326.69	-319.06	0.00207
P4	74.65	-395.53	0.00507
P5	-0.00	-374.90	0.00589
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



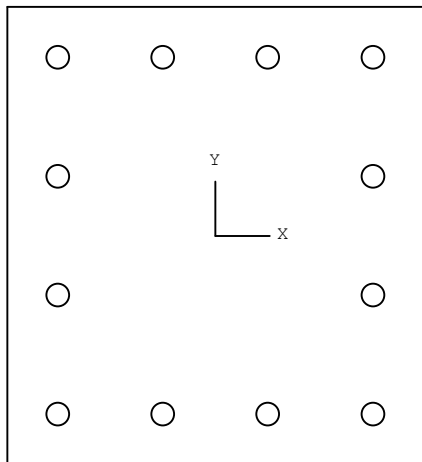
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#9_NX4_NY4_cc2.439



Section 102 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

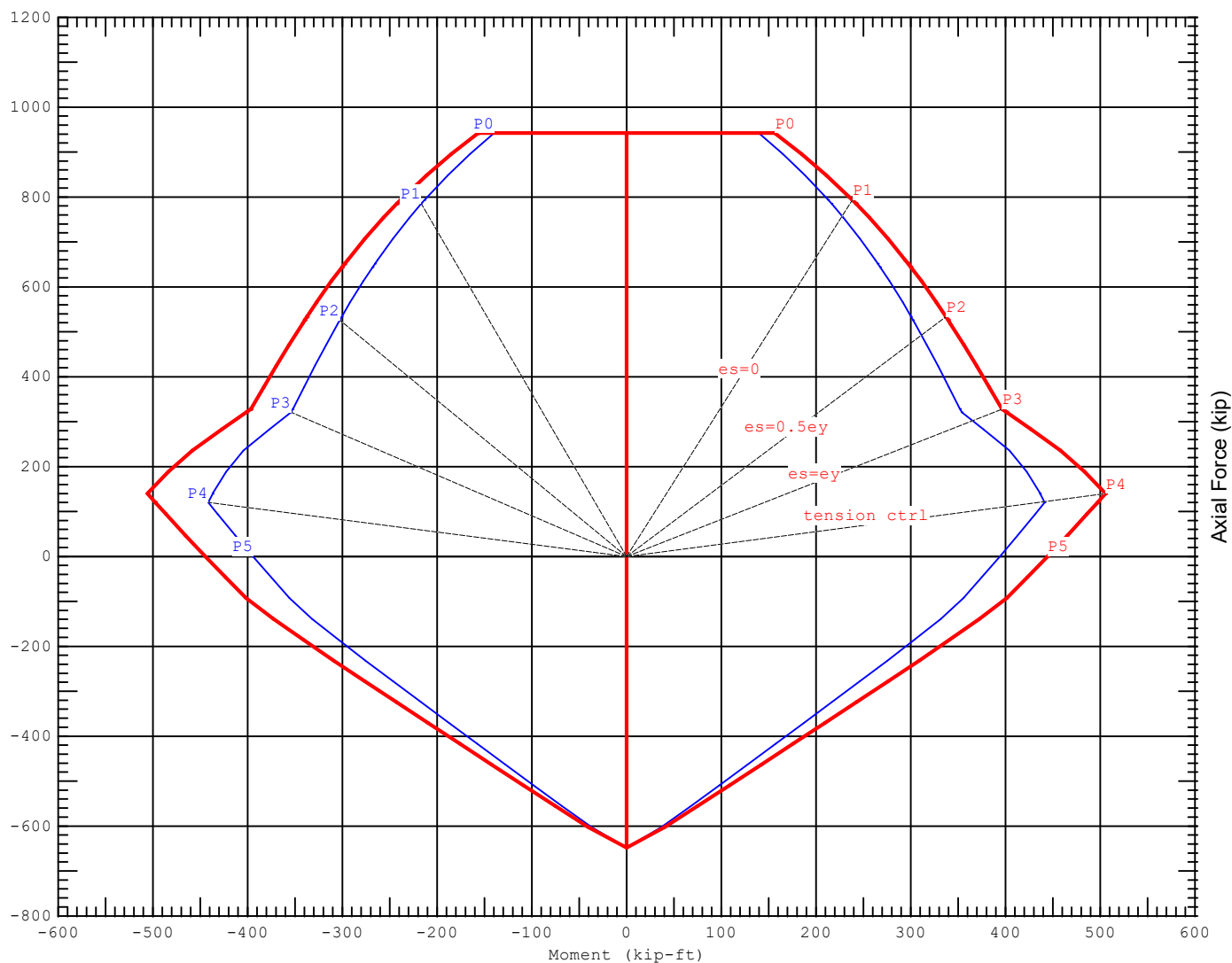
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	156.21	-0.00046
P1	792.92	237.81	0.00000
P2	533.04	336.54	0.00103
P3	327.54	395.60	0.00207
P4	139.92	504.28	0.00507
P5	0.02	443.51	0.00732
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-139.31	-0.00049
P1	784.44	-215.99	0.00000
P2	525.77	-301.84	0.00103
P3	320.75	-353.11	0.00207
P4	120.43	-440.54	0.00507
P5	0.00	-393.28	0.00692
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



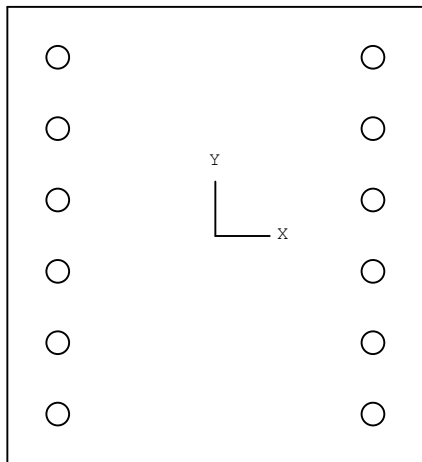
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#9_NX6_NY2_cc2.439



Section 103 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

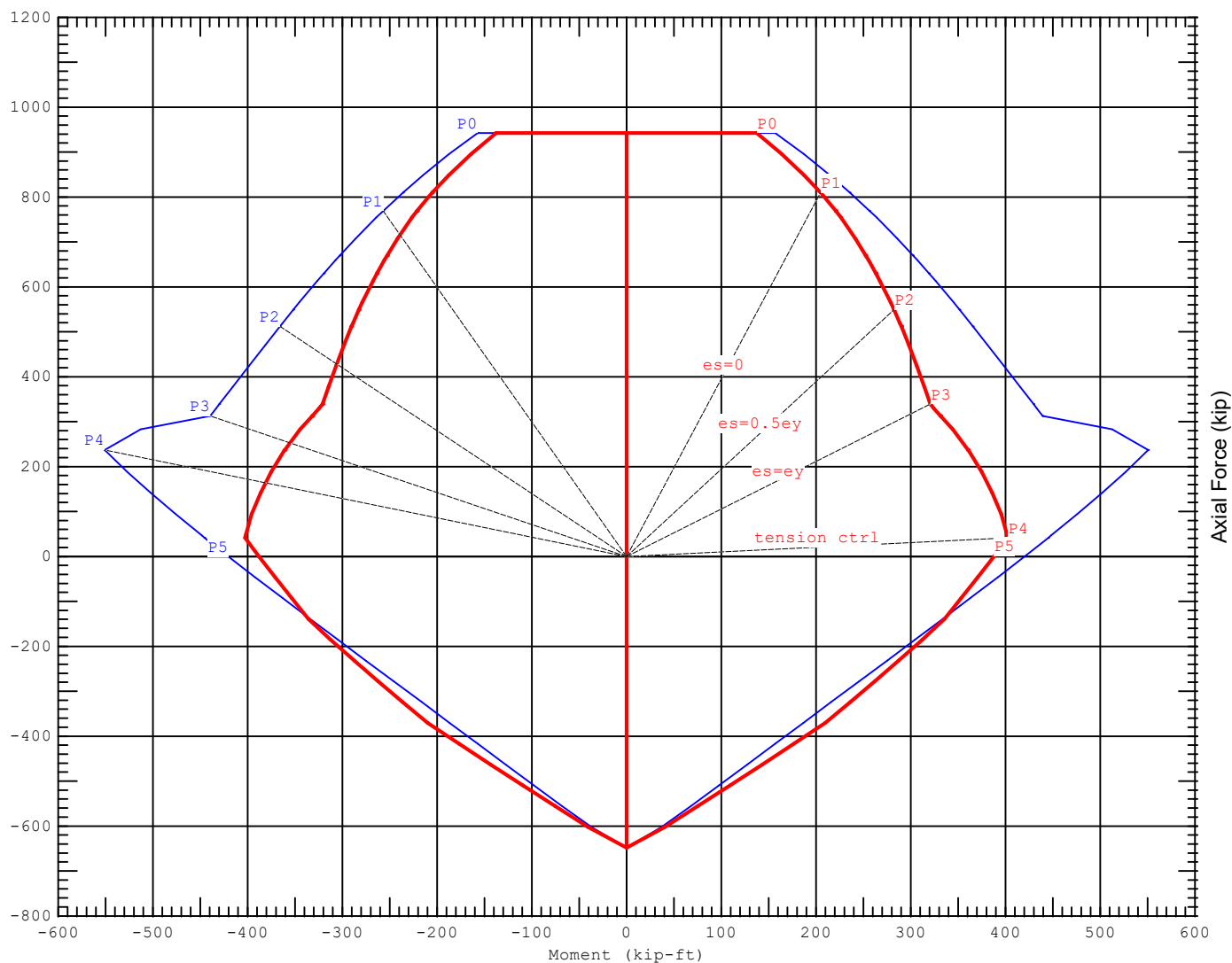
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 440.00 in²
As: 12.00 in²
Roh: 2.73%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	941.93	137.25	-0.00041
P1	809.40	204.42	0.00000
P2	549.18	281.77	0.00103
P3	338.81	320.04	0.00207
P4	41.60	401.51	0.00507
P5	0.01	386.91	0.00565
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	941.93	-156.66	-0.00055
P1	768.36	-256.23	0.00000
P2	511.80	-364.99	0.00103
P3	312.20	-438.49	0.00207
P4	236.74	-549.62	0.00507
P5	-0.01	-419.33	0.01067
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



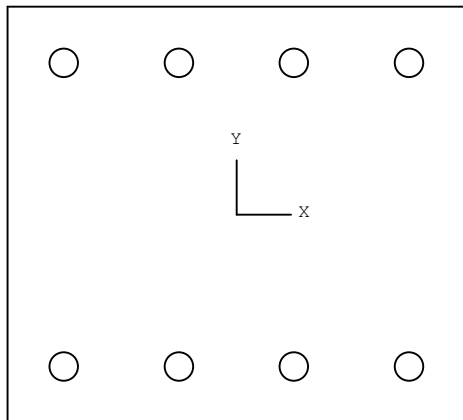
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#11_NX2_NY4_cc2.705



Section 104 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

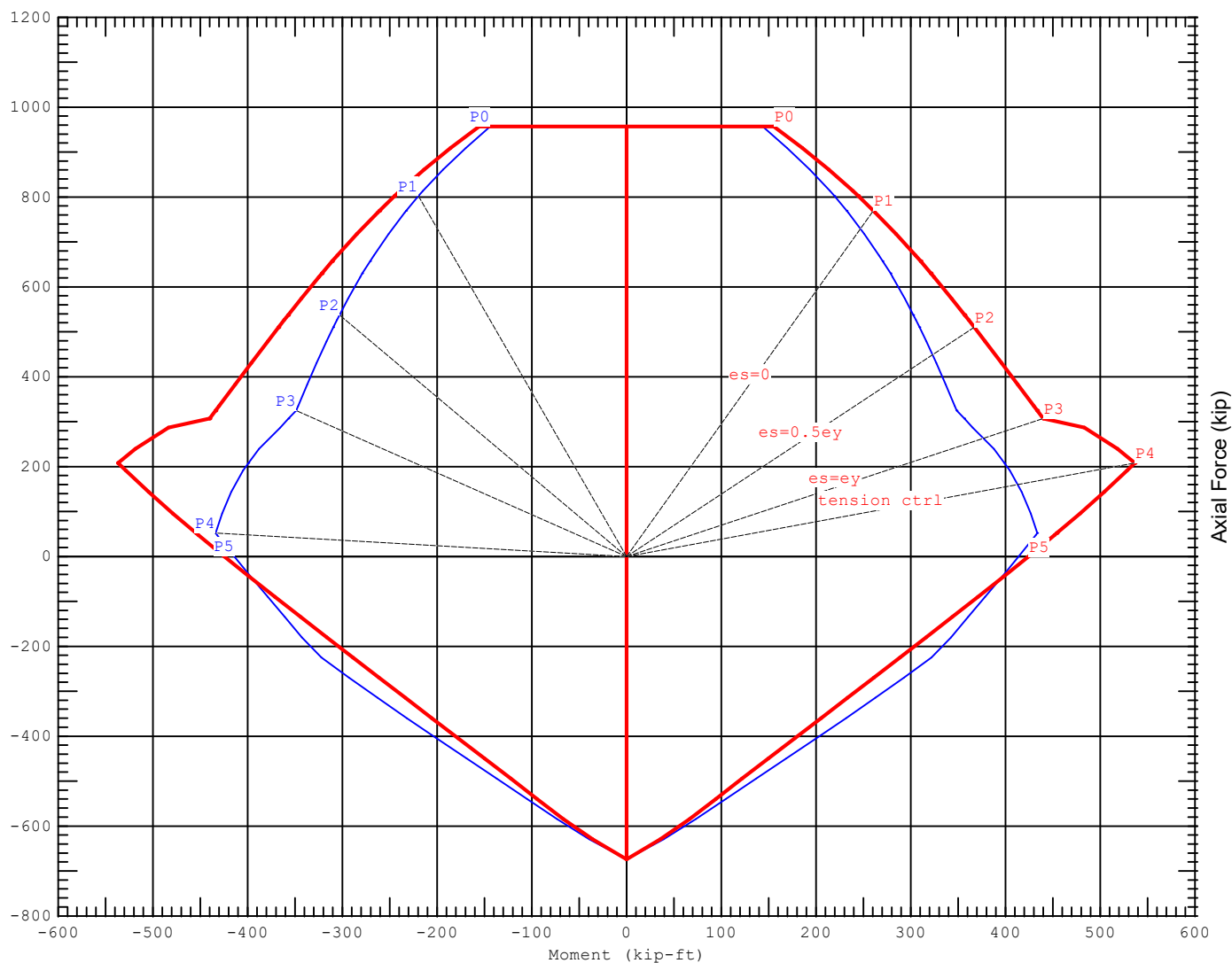
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 440.00 in²
As: 12.48 in²
Roh: 2.84%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.12 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.27	155.09	-0.00058
P1	769.08	260.02	0.00000
P2	509.95	366.25	0.00103
P3	306.92	438.97	0.00207
P4	207.74	535.33	0.00507
P5	-0.00	423.58	0.00943
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	956.27	-143.55	-0.00047
P1	801.55	-219.03	0.00000
P2	537.11	-302.23	0.00103
P3	324.39	-347.96	0.00207
P4	51.81	-432.65	0.00507
P5	0.01	-413.04	0.00573
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



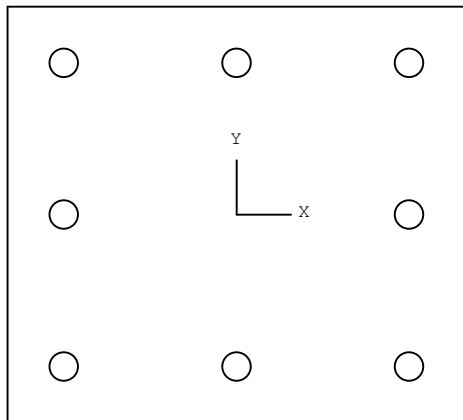
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_8#11_NX3_NY3_cc2.705



Section 105 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

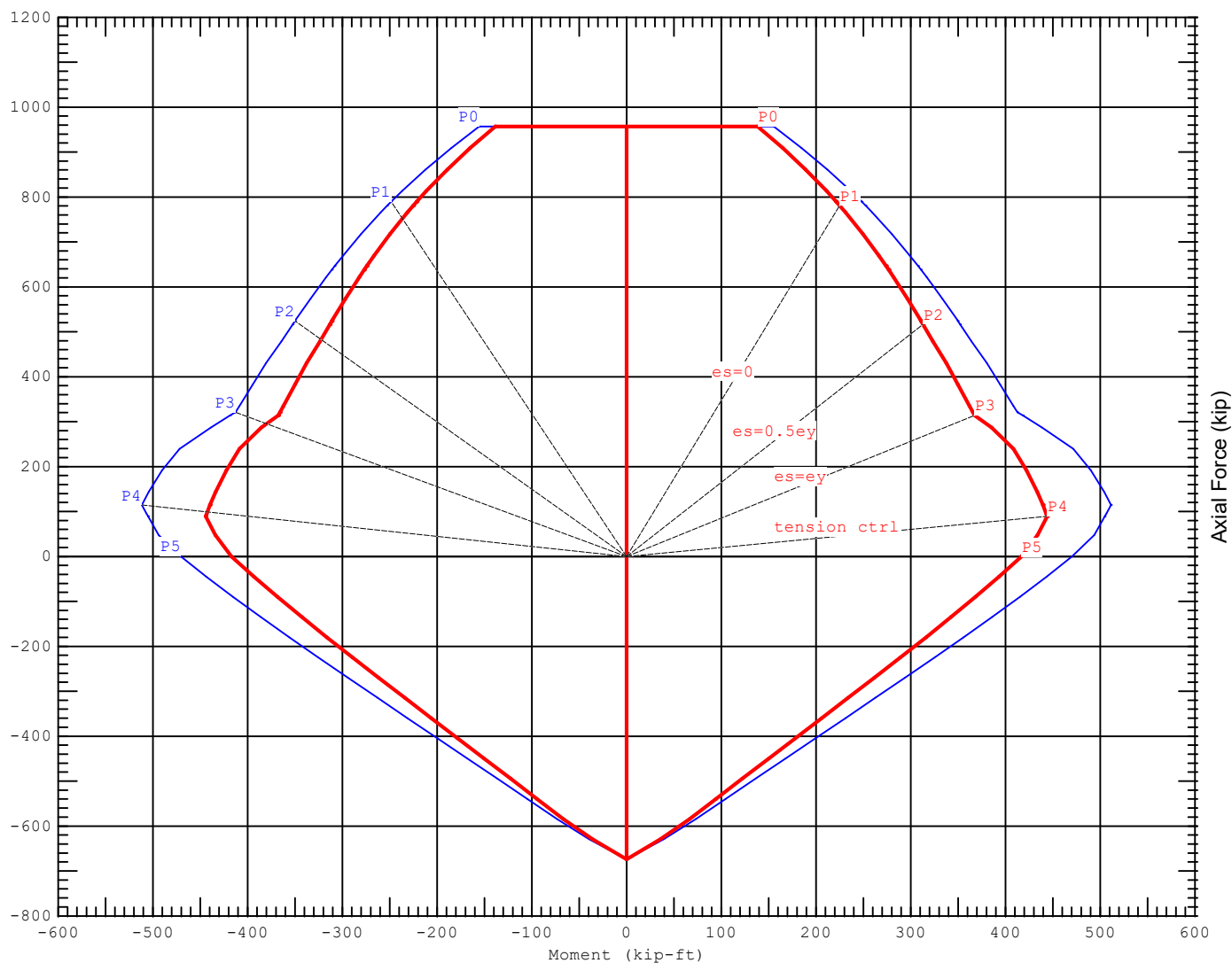
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 440.00 in²
As: 12.48 in²
Roh: 2.84%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.27	138.28	-0.00054
P1	780.07	224.61	0.00000
P2	516.18	312.34	0.00103
P3	313.57	366.57	0.00207
P4	89.17	443.28	0.00507
P5	-0.02	415.97	0.00622
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	956.26	-155.26	-0.00051
P1	789.13	-247.65	0.00000
P2	523.78	-349.05	0.00103
P3	320.50	-411.79	0.00207
P4	114.40	-510.51	0.00507
P5	0.00	-469.26	0.00673
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram

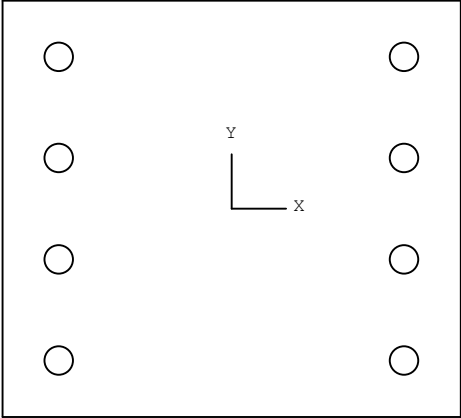


Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

Rect22x20_fc3_fy60_8#11_NX4_NY2_cc2.705



Section 106 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 8 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 12.48 in^2

Roh: 2.84%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

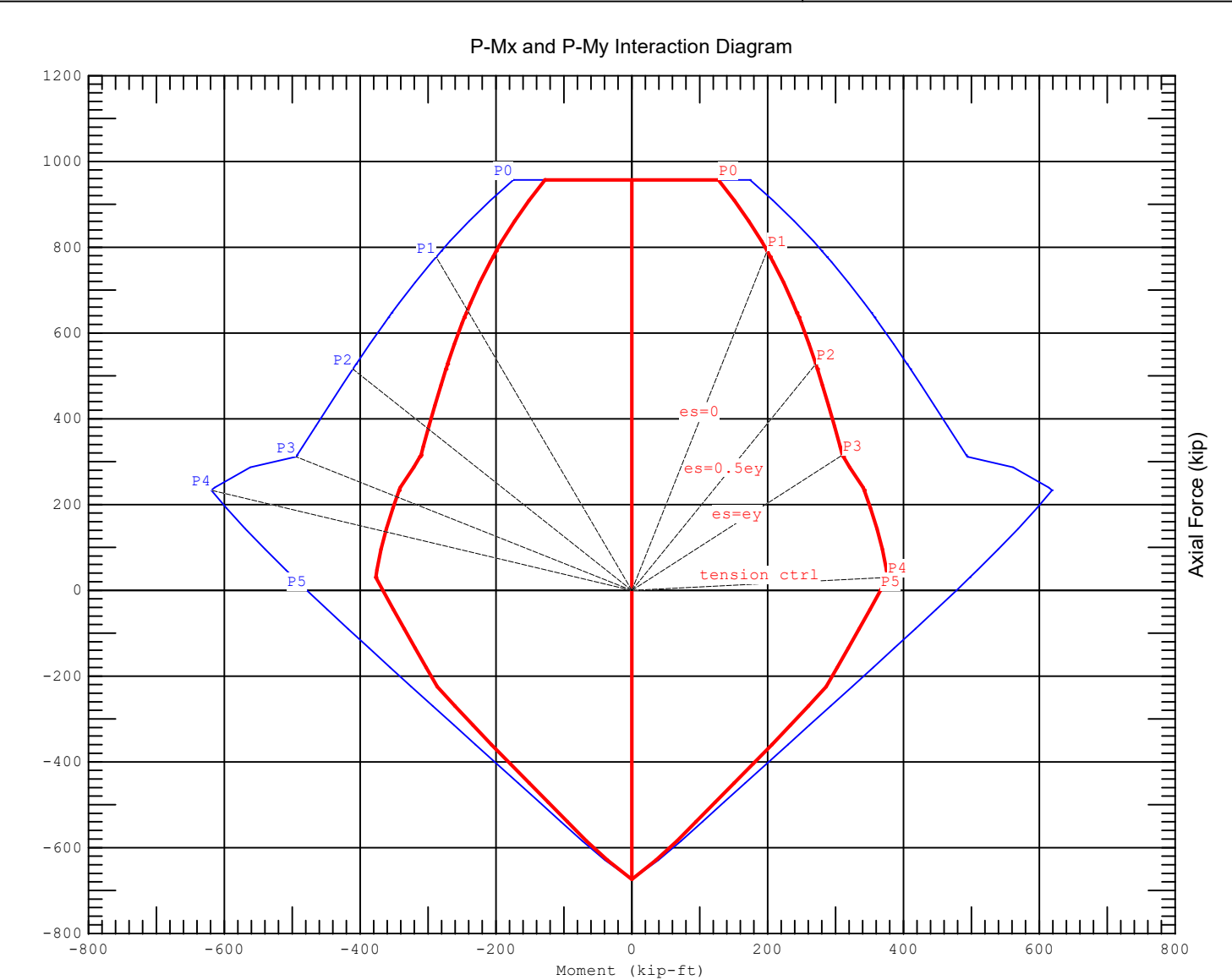
Y0: 0.00 in

Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.27	127.83	-0.00050
P1	791.07	199.24	0.00000
P2	527.59	270.91	0.00103
P3	315.05	310.11	0.00207
P4	30.13	376.61	0.00507
P5	-0.00	366.33	0.00544
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	956.26	-174.36	-0.00056
P1	776.70	-287.92	0.00000
P2	515.62	-410.34	0.00103
P3	311.43	-494.12	0.00207
P4	232.96	-618.86	0.00507
P5	-0.01	-478.04	0.01040
Pmin	-673.92	-0.00	0.20000



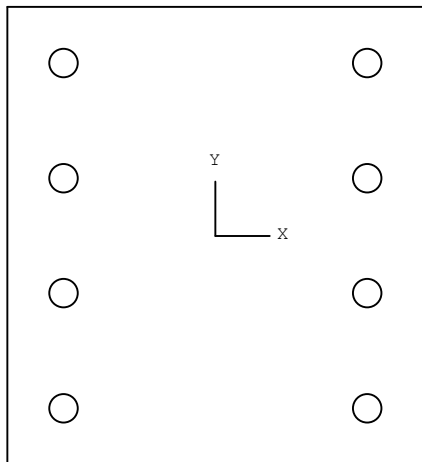
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#11_NX4_NY2_cc2.705



Section 107 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

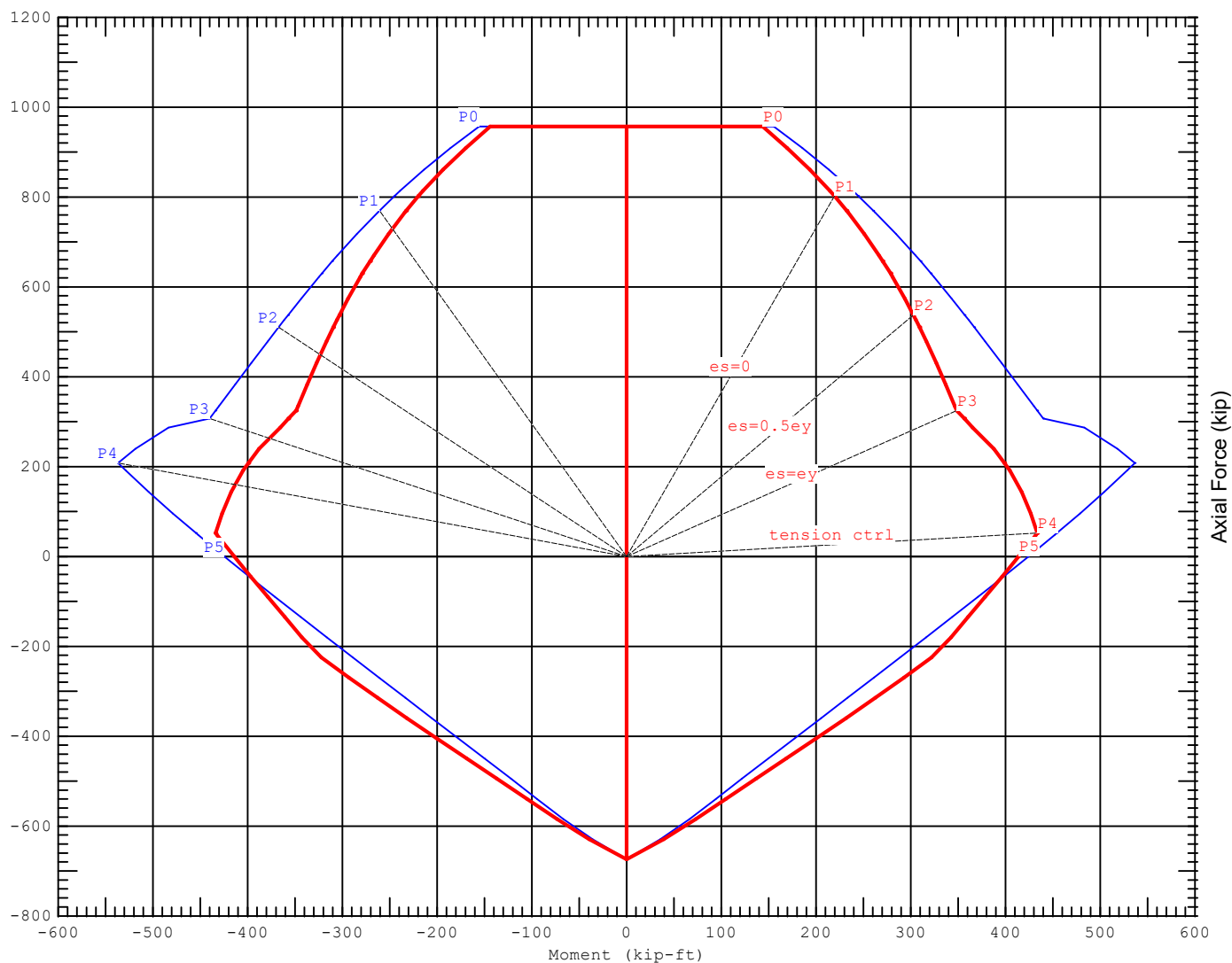
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 440.00 in²
As: 12.48 in²
Roh: 2.84%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.12 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.27	143.55	-0.00047
P1	801.55	219.03	0.00000
P2	537.11	302.23	0.00103
P3	324.39	347.96	0.00207
P4	51.81	432.65	0.00507
P5	0.01	413.04	0.00573
Pmin	-673.92	-0.00	0.20000

PT	P	My (-)	max es
P0	956.27	-155.09	-0.00058
P1	769.08	-260.02	0.00000
P2	509.95	-366.25	0.00103
P3	306.92	-438.97	0.00207
P4	207.74	-535.33	0.00507
P5	-0.00	-423.58	0.00943
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



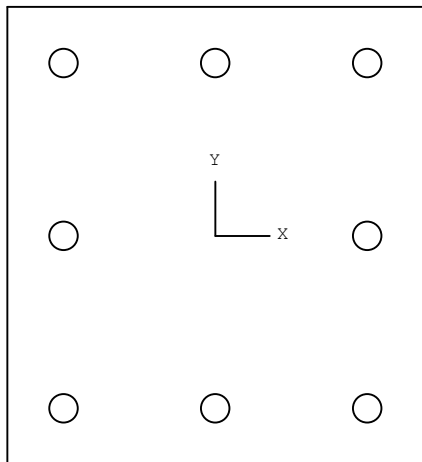
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#11_NX3_NY3_cc2.705



Section 108 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

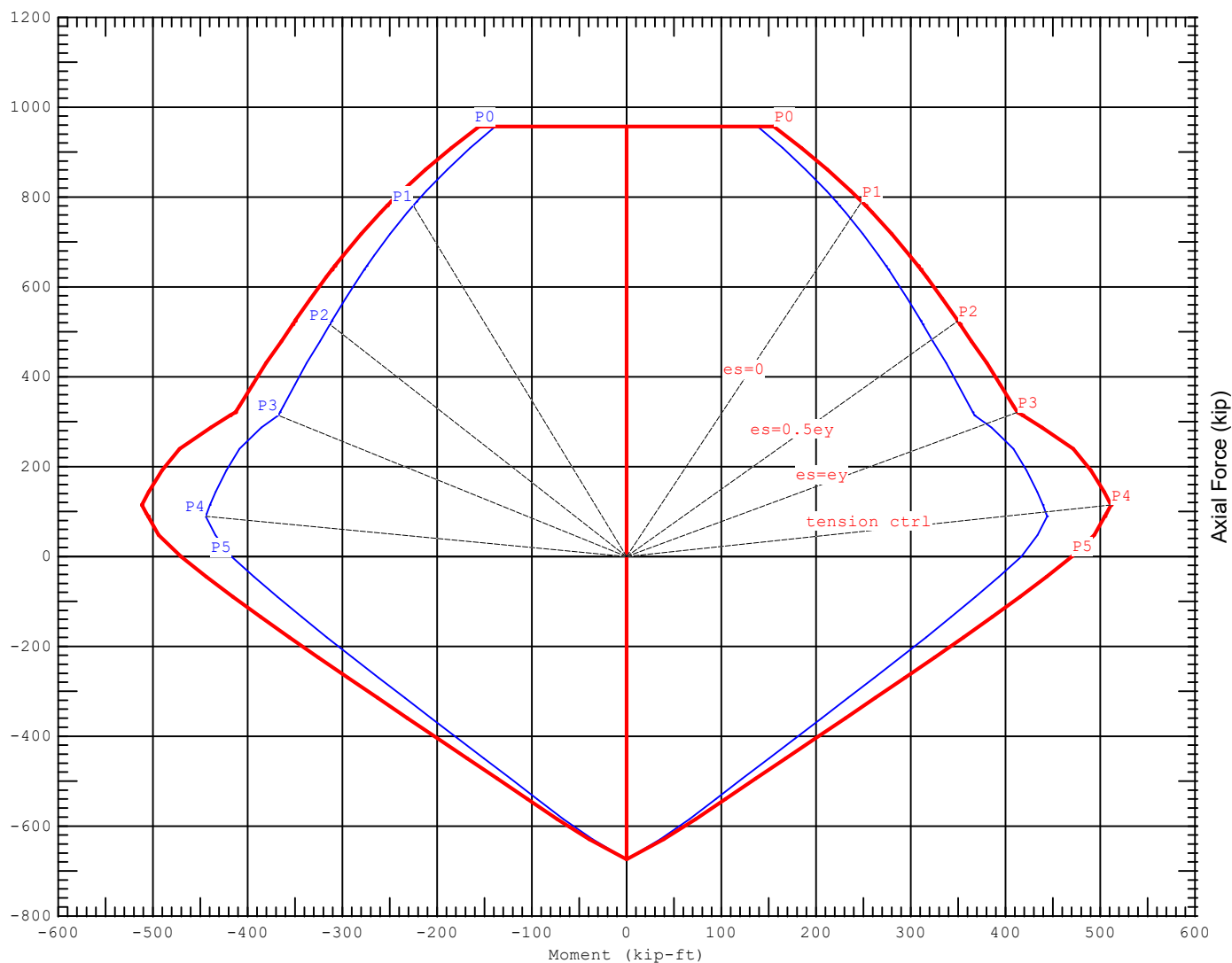
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 440.00 in²
As: 12.48 in²
Roh: 2.84%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.26	155.26	-0.00051
P1	789.13	247.65	0.00000
P2	523.78	349.05	0.00103
P3	320.50	411.79	0.00207
P4	114.40	510.51	0.00507
P5	0.00	469.26	0.00673
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	956.27	-138.28	-0.00054
P1	780.07	-224.61	0.00000
P2	516.18	-312.34	0.00103
P3	313.57	-366.57	0.00207
P4	89.17	-443.28	0.00507
P5	-0.02	-415.97	0.00622
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



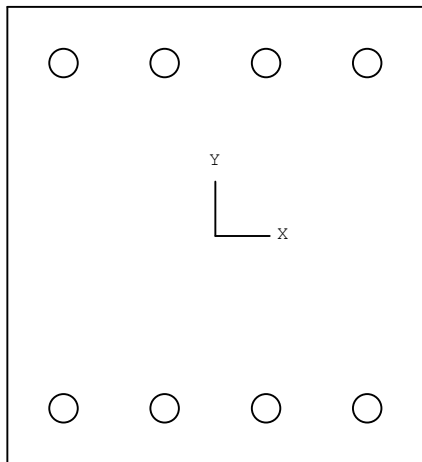
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_8#11_NX2_NY4_cc2.705



Section 109 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

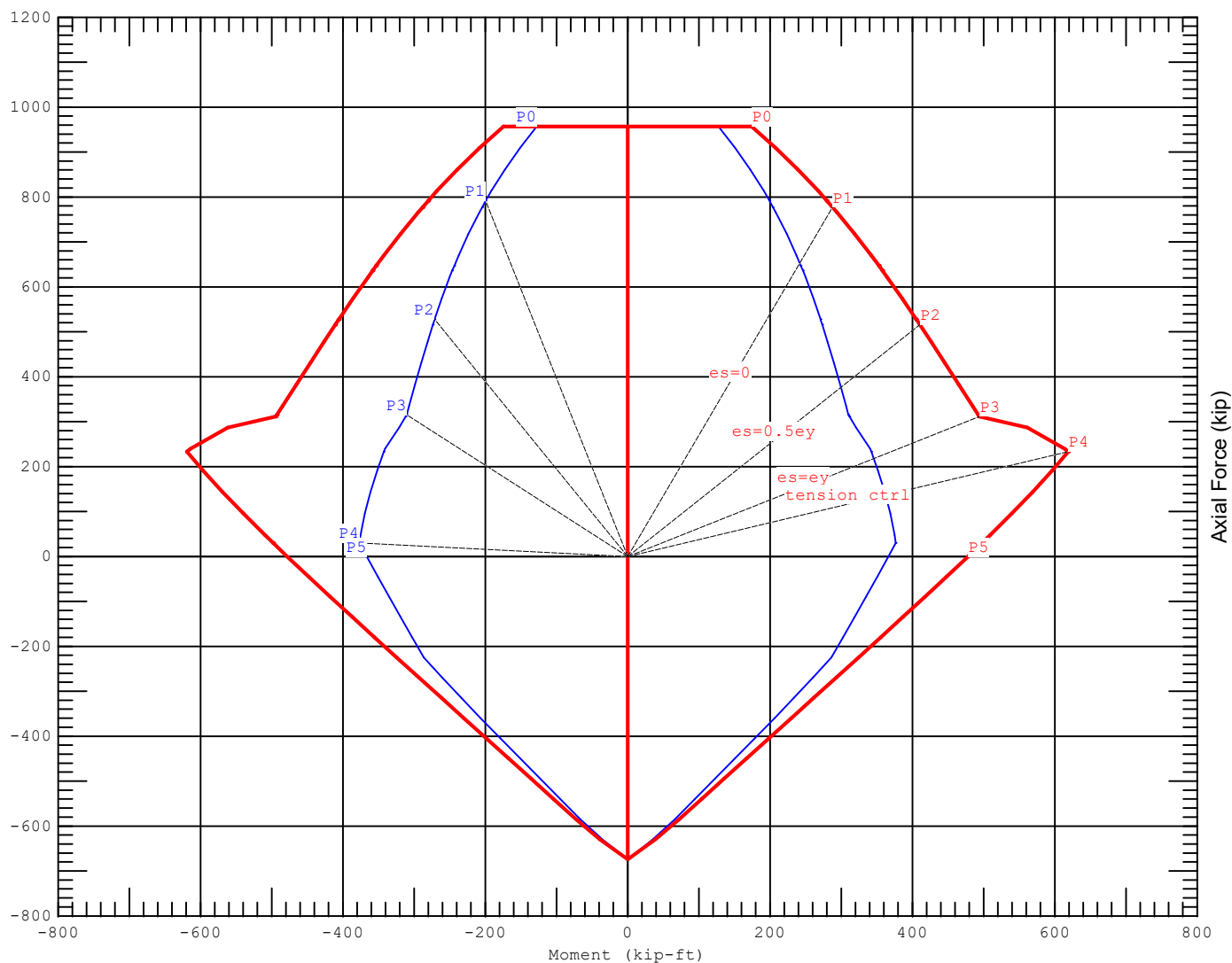
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 440.00 in²
As: 12.48 in²
Roh: 2.84%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	956.26	174.36	-0.00056
P1	776.70	287.92	0.00000
P2	515.62	410.34	0.00103
P3	311.43	494.12	0.00207
P4	232.96	618.86	0.00507
P5	-0.01	478.04	0.01040
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	956.27	-127.83	-0.00050
P1	791.07	-199.24	0.00000
P2	527.59	-270.91	0.00103
P3	315.05	-310.11	0.00207
P4	30.13	-376.61	0.00507
P5	-0.00	-366.33	0.00544
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



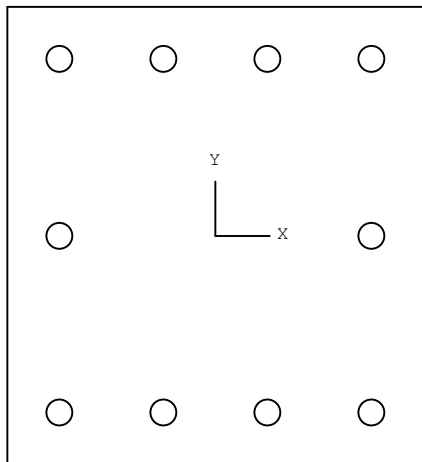
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#10_NX3_NY4_cc2.51



Section 110 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

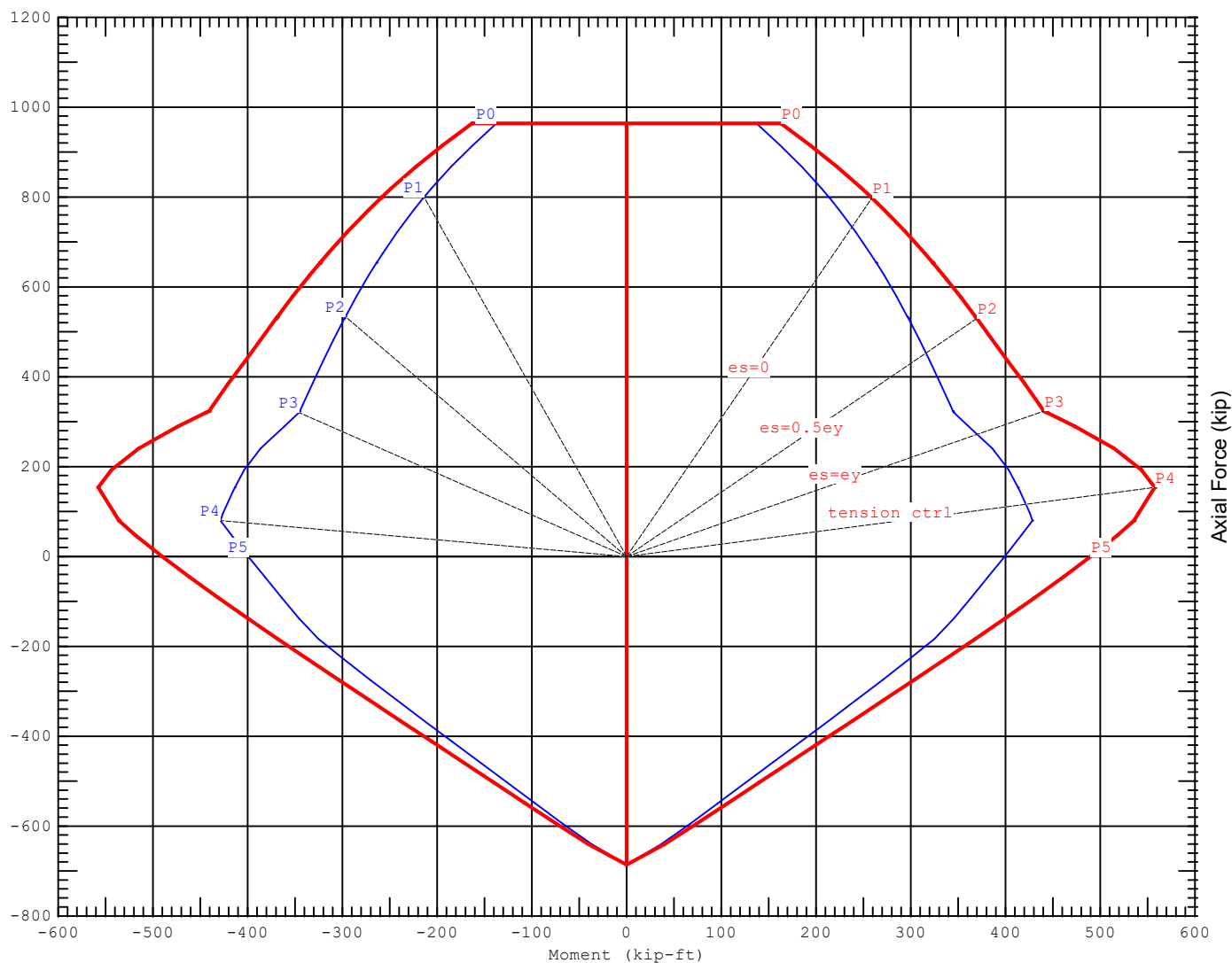
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.83	162.61	-0.00051
P1	797.24	258.54	0.00000
P2	529.41	369.03	0.00103
P3	323.27	439.54	0.00207
P4	153.69	556.37	0.00507
P5	-0.01	489.01	0.00784
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.84	-136.85	-0.00050
P1	798.99	-213.29	0.00000
P2	533.26	-296.02	0.00103
P3	320.06	-344.83	0.00207
P4	80.00	-427.75	0.00507
P5	-0.01	-398.21	0.00616
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



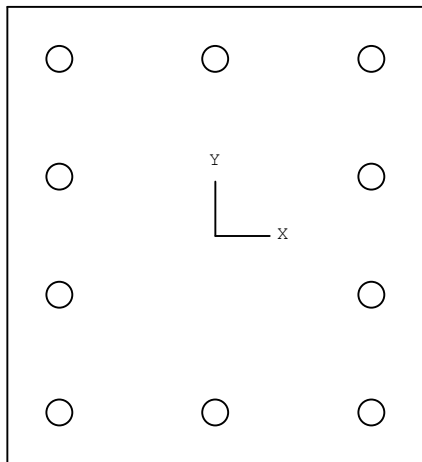
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#10_NX4_NY3_cc2.51



Section 111 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

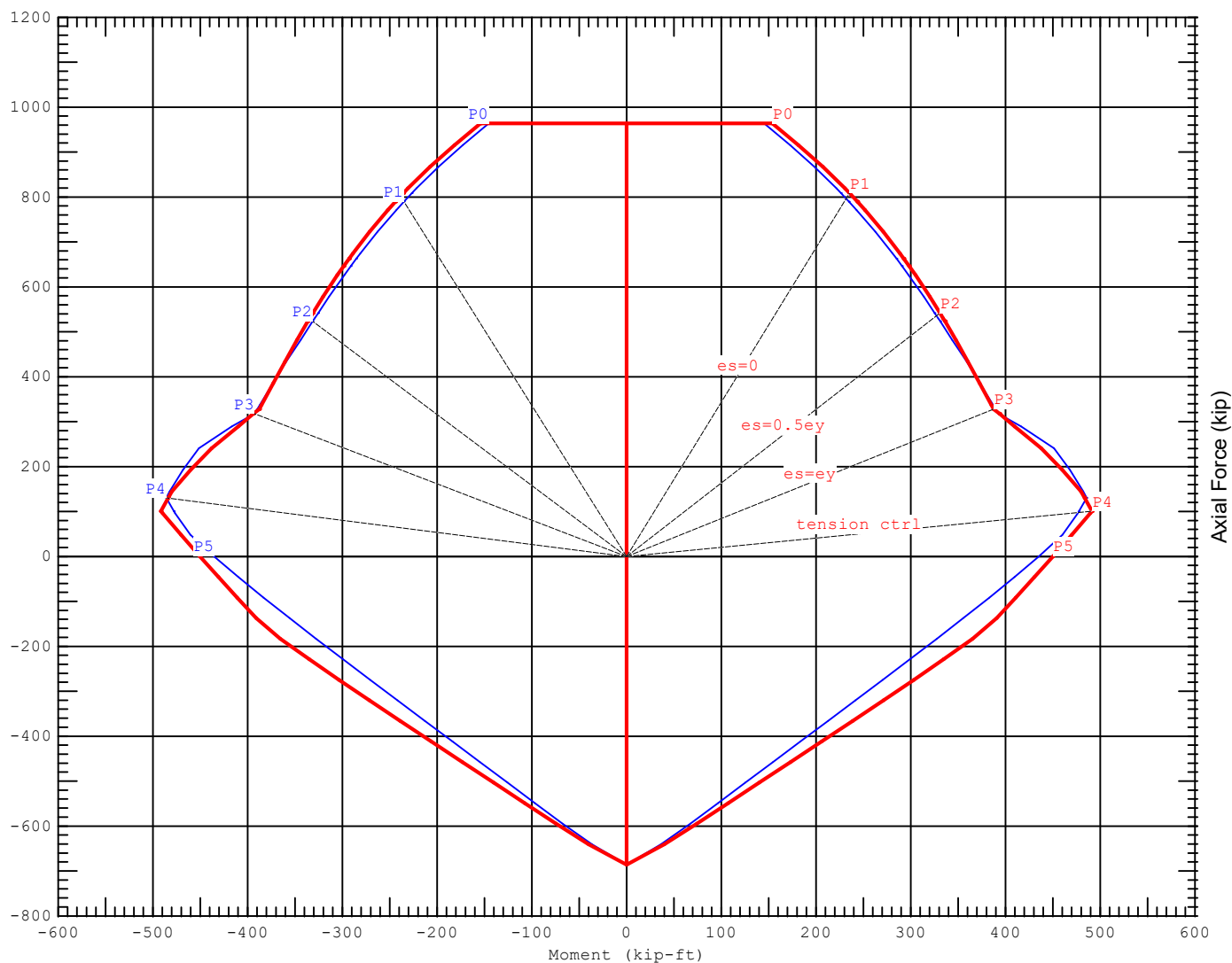
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.39 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.83	153.60	-0.00047
P1	808.17	234.83	0.00000
P2	541.36	330.19	0.00103
P3	327.82	386.57	0.00207
P4	100.71	490.30	0.00507
P5	0.01	449.12	0.00650
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.84	-144.95	-0.00053
P1	789.11	-234.36	0.00000
P2	522.73	-330.48	0.00103
P3	317.29	-391.81	0.00207
P4	130.36	-484.67	0.00507
P5	0.00	-434.12	0.00723
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



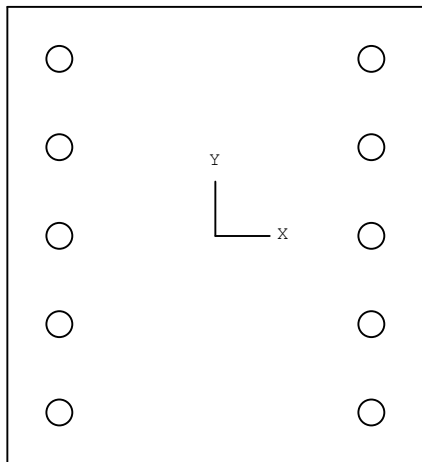
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#10_NX5_NY2_cc2.51



Section 112 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

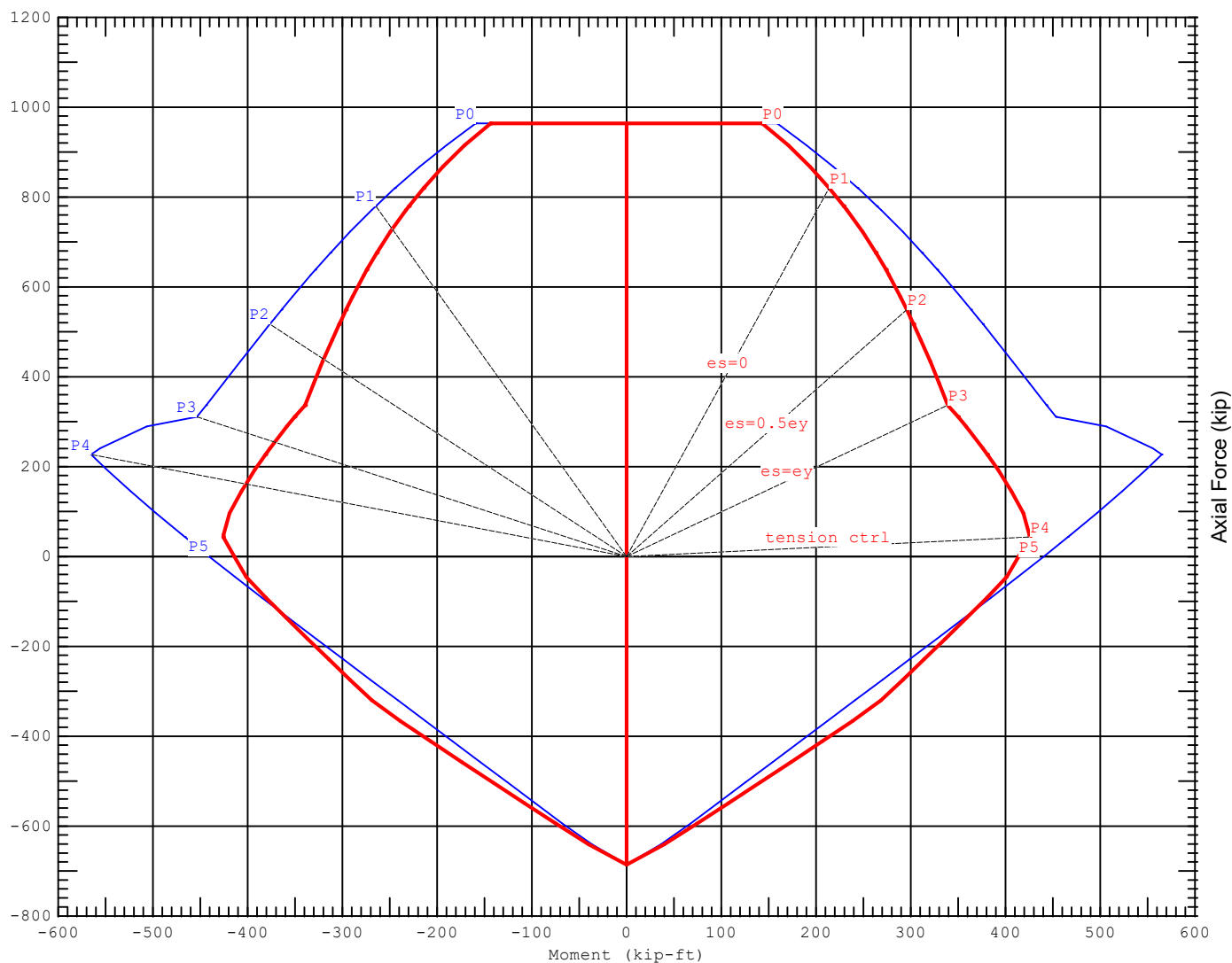
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.83	142.94	-0.00043
P1	819.11	213.57	0.00000
P2	549.11	295.16	0.00103
P3	336.59	338.26	0.00207
P4	43.02	424.78	0.00507
P5	-0.00	412.98	0.00549
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.83	-158.75	-0.00057
P1	779.23	-263.96	0.00000
P2	516.41	-375.54	0.00103
P3	310.31	-452.32	0.00207
P4	226.89	-563.77	0.00507
P5	0.00	-439.63	0.01010
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



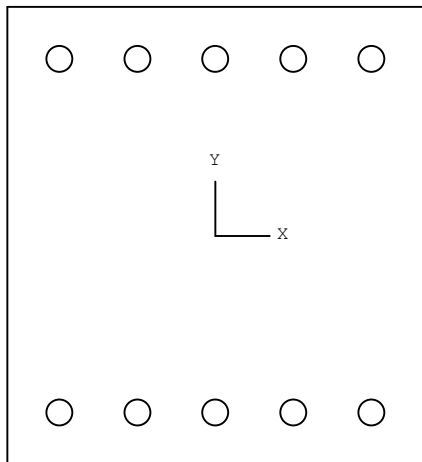
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#10_NX2_NY5_cc2.51



Section 113 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

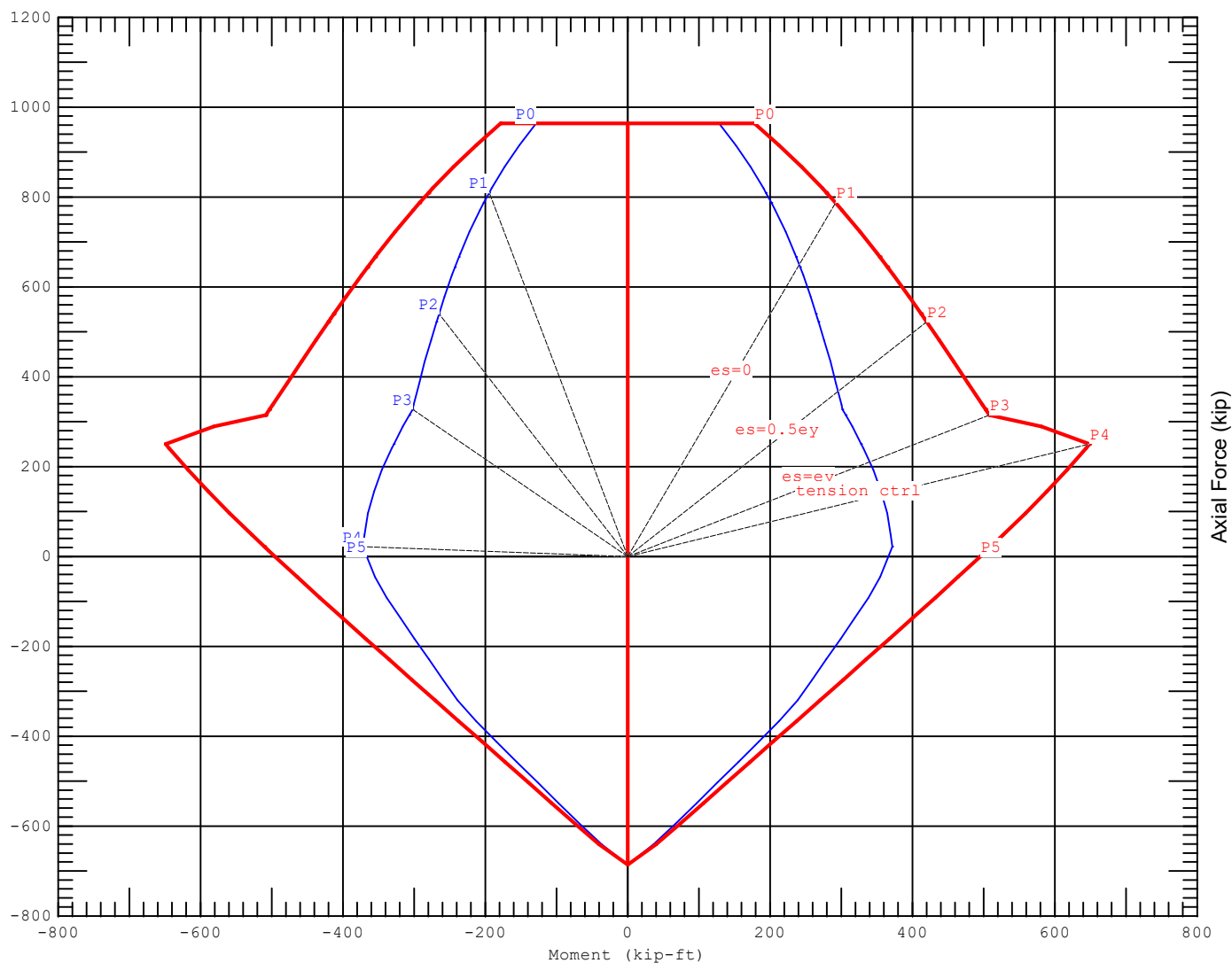
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.84	178.22	-0.00054
P1	786.30	292.10	0.00000
P2	521.66	420.10	0.00103
P3	314.50	508.14	0.00207
P4	250.22	648.81	0.00507
P5	-0.00	495.30	0.01112
Pmin	-685.80	-0.00	0.20000

PT	P	My (-)	max es
P0	962.84	-128.41	-0.00046
P1	808.86	-194.35	0.00000
P2	539.58	-264.87	0.00103
P3	327.04	-301.90	0.00207
P4	21.65	-371.65	0.00507
P5	-0.01	-366.26	0.00528
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



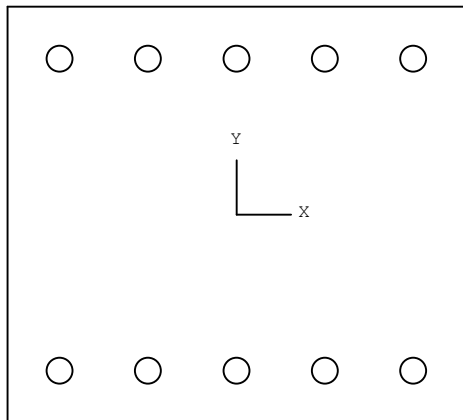
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#10_NX2_NY5_cc2.51



Section 114 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

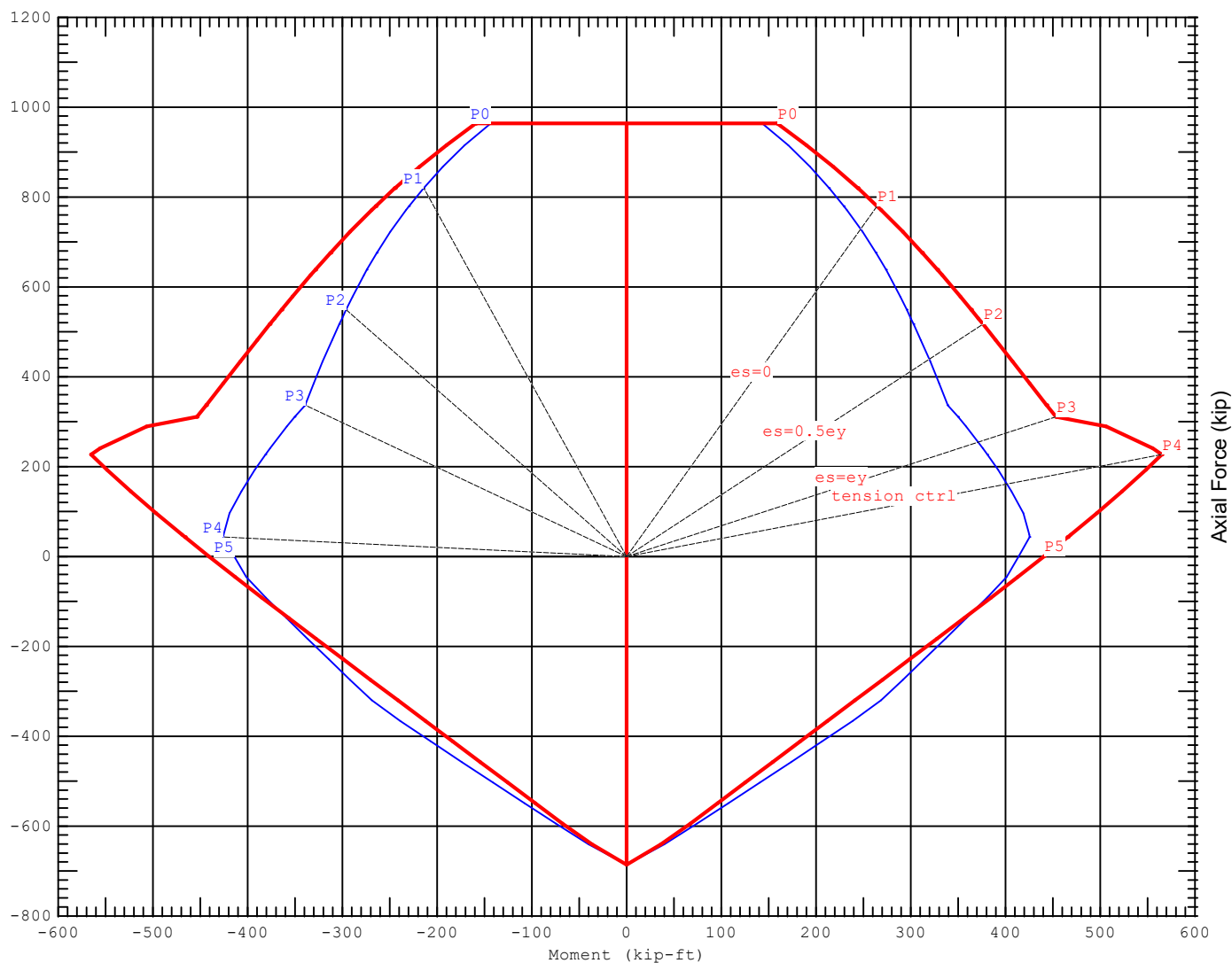
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.83	158.75	-0.00057
P1	779.23	263.96	0.00000
P2	516.41	375.54	0.00103
P3	310.31	452.32	0.00207
P4	226.89	563.77	0.00507
P5	0.00	439.63	0.01010
Pmin	-685.80	-0.00	0.20000

PT	P	My (-)	max es
P0	962.83	-142.94	-0.00043
P1	819.11	-213.57	0.00000
P2	549.11	-295.16	0.00103
P3	336.59	-338.26	0.00207
P4	43.02	-424.78	0.00507
P5	-0.00	-412.98	0.00549
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



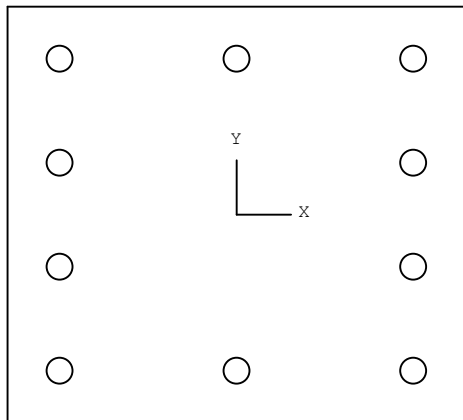
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#10_NX4_NY3_cc2.51



Section 115 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

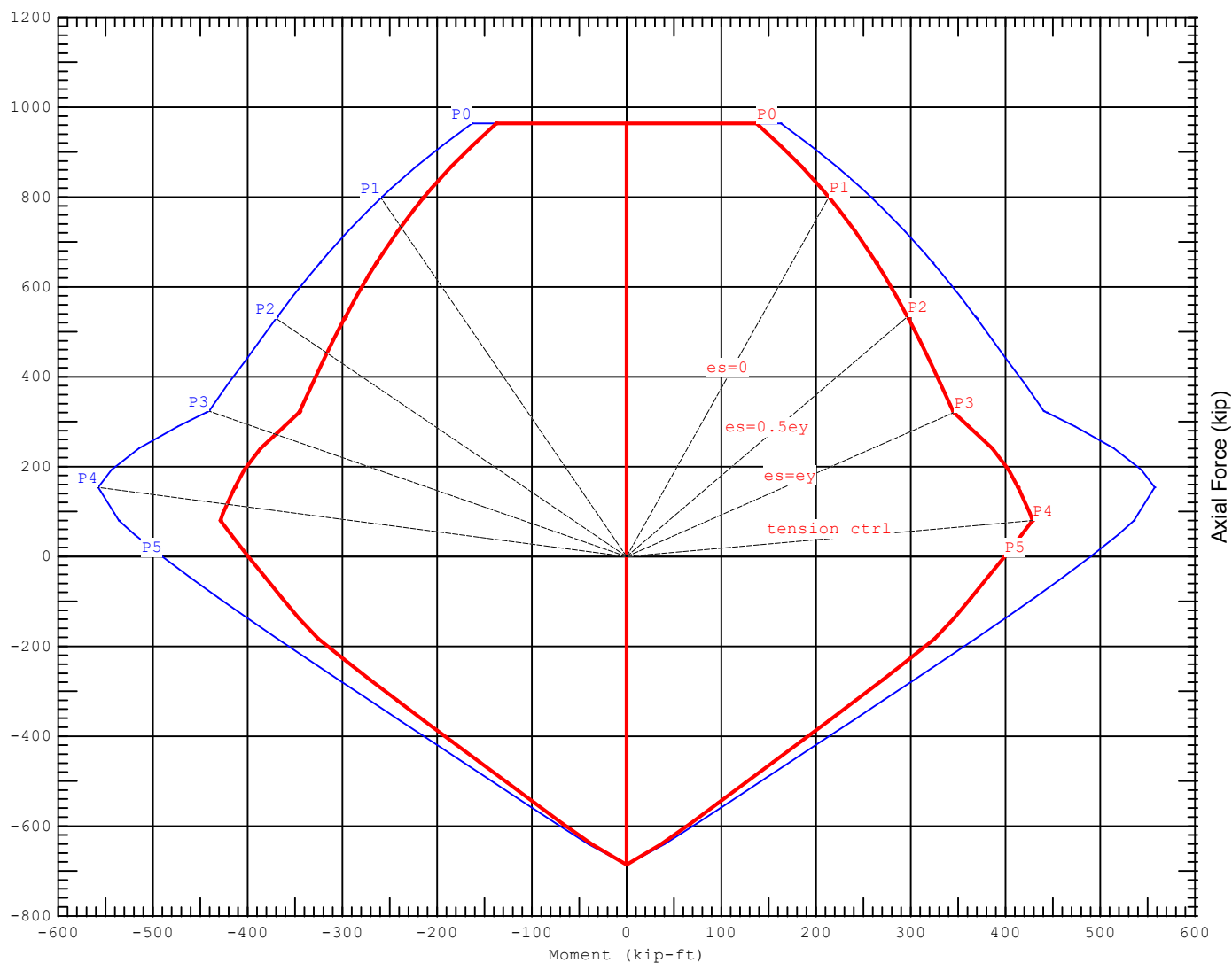
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.84	136.85	-0.00050
P1	798.99	213.29	0.00000
P2	533.26	296.02	0.00103
P3	320.06	344.83	0.00207
P4	80.00	427.75	0.00507
P5	-0.01	398.21	0.00616
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.83	-162.61	-0.00051
P1	797.24	-258.54	0.00000
P2	529.41	-369.03	0.00103
P3	323.27	-439.54	0.00207
P4	153.69	-556.37	0.00507
P5	-0.01	-489.01	0.00784
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

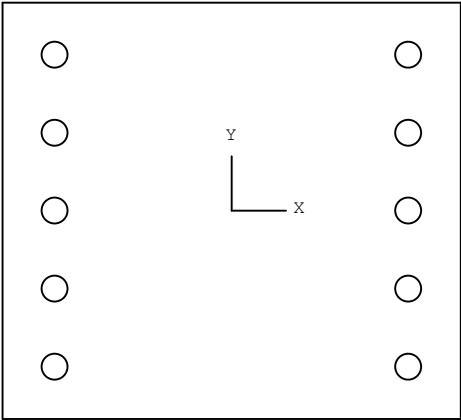
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#10_NX5_NY2_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 10 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 12.70 in^2

Roh: 2.89%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

Y0: 0.00 in

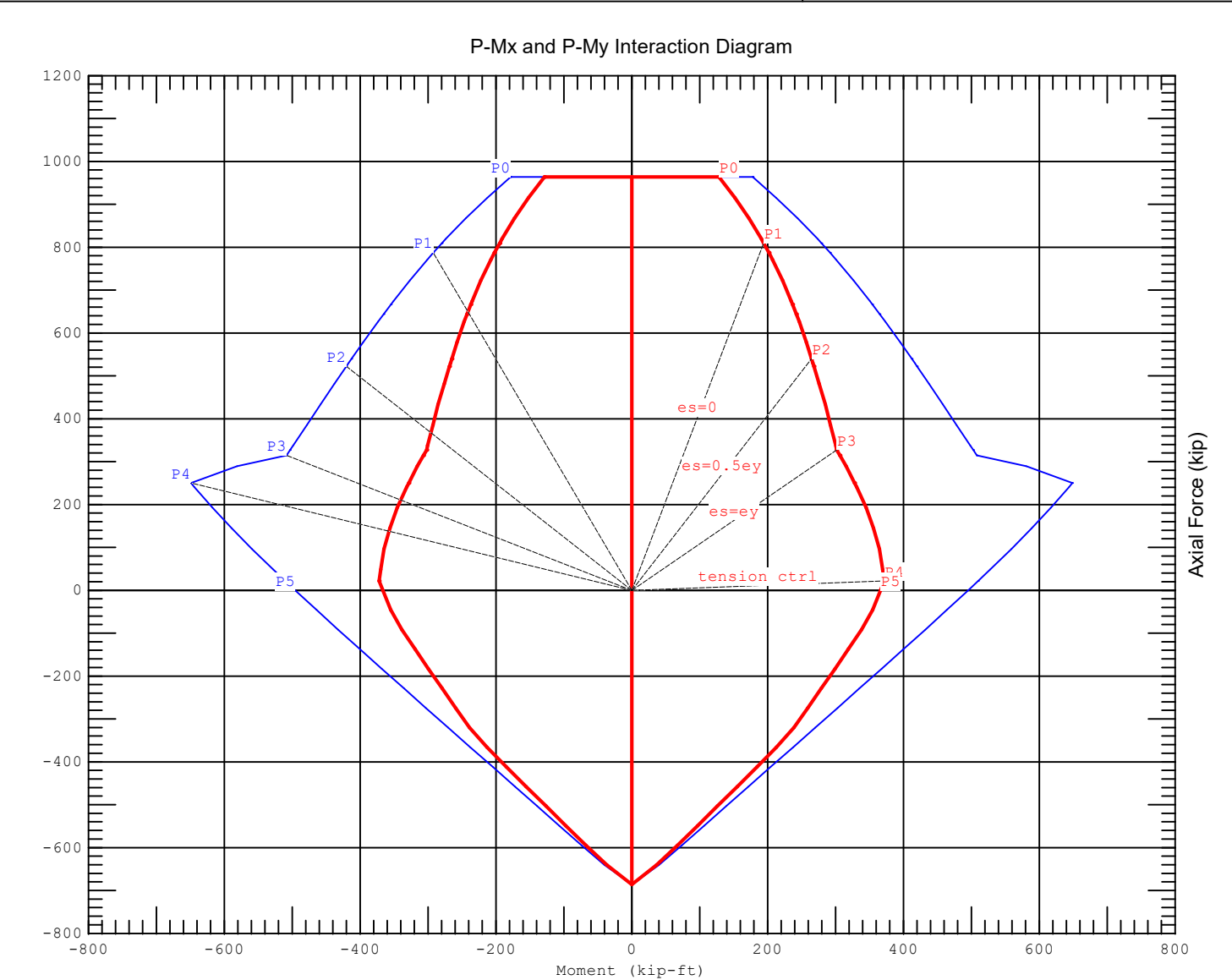
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.84	128.41	-0.00046
P1	808.86	194.35	0.00000
P2	539.58	264.87	0.00103
P3	327.04	301.90	0.00207
P4	21.65	371.65	0.00507
P5	-0.01	366.26	0.00528
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.84	-178.22	-0.00054
P1	786.30	-292.10	0.00000
P2	521.66	-420.10	0.00103
P3	314.50	-508.14	0.00207
P4	250.22	-648.81	0.00507
P5	-0.00	-495.30	0.01112
Pmin	-685.80	0.00	0.20000

Section 116 of 238



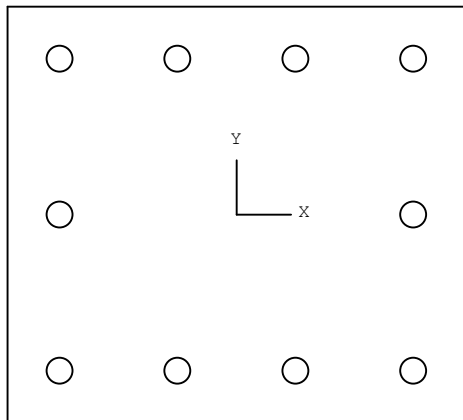
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#10_NX3_NY4_cc2.51



Section 117 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

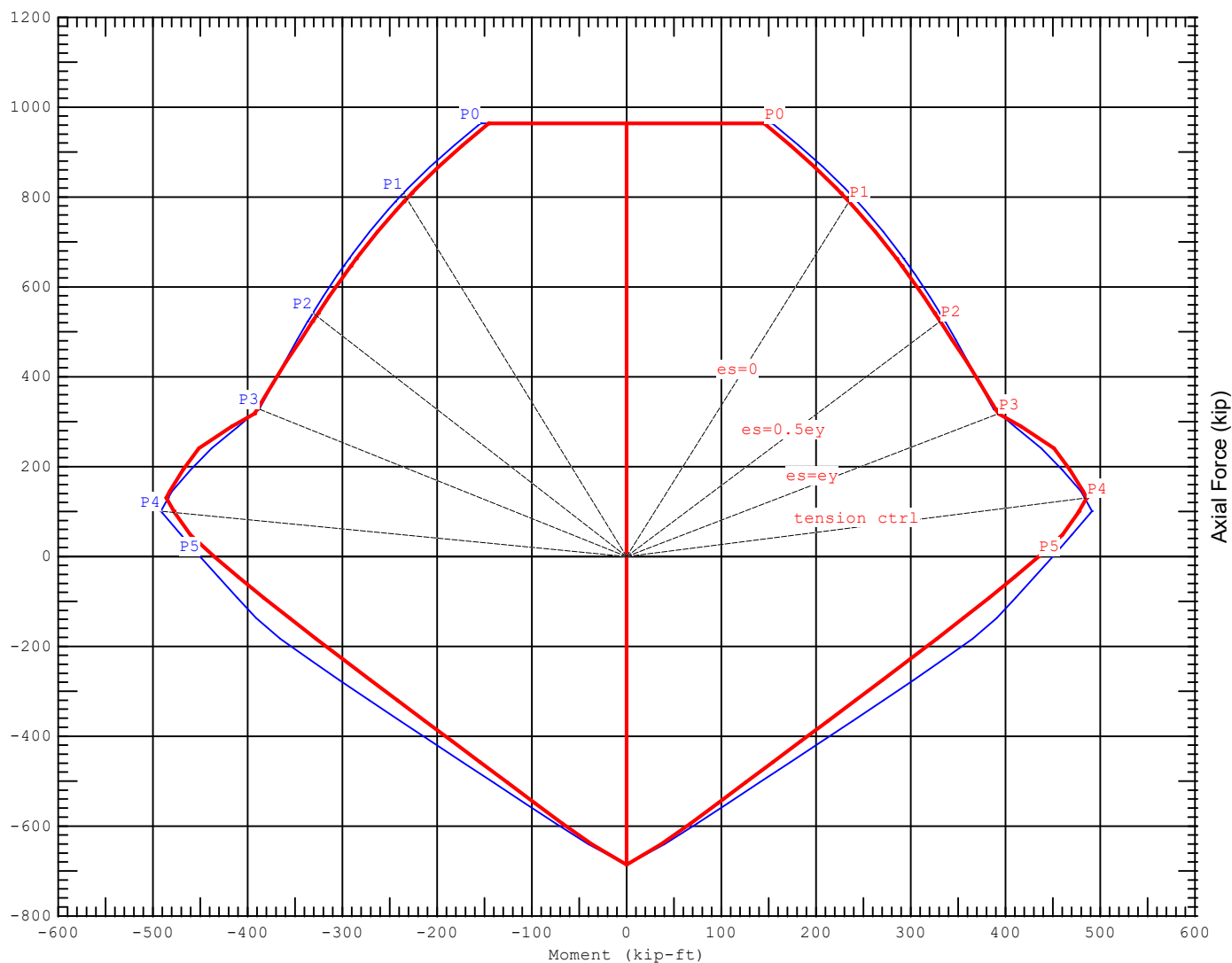
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 440.00 in²
As: 12.70 in²
Roh: 2.89%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.39 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	962.84	144.95	-0.00053
P1	789.11	234.36	0.00000
P2	522.73	330.48	0.00103
P3	317.29	391.81	0.00207
P4	130.36	484.67	0.00507
P5	0.00	434.12	0.00723
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	962.83	-153.60	-0.00047
P1	808.17	-234.83	0.00000
P2	541.36	-330.19	0.00103
P3	327.82	-386.57	0.00207
P4	100.71	-490.30	0.00507
P5	0.01	-449.12	0.00650
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



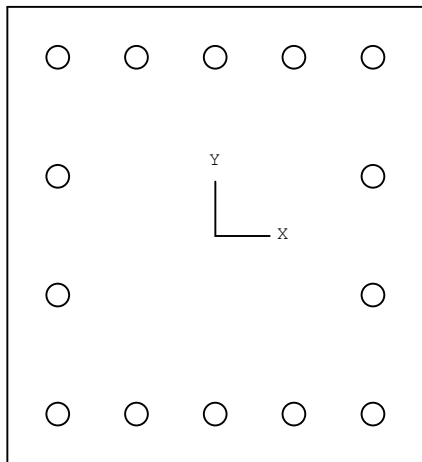
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#9_NX4_NY5_cc2.439



Section 118 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

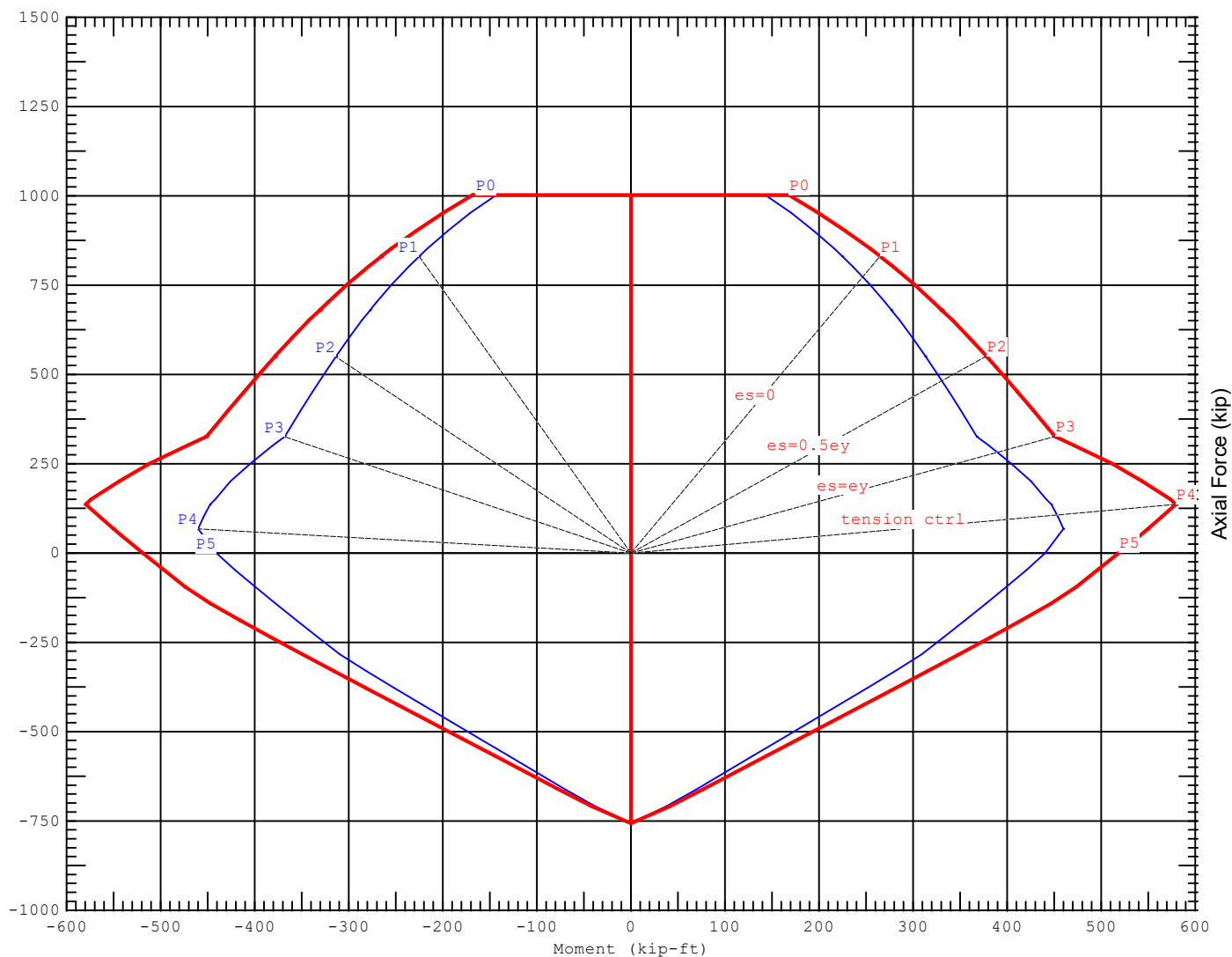
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.68	167.70	-0.00050
P1	830.26	264.45	0.00000
P2	550.88	377.09	0.00103
P3	325.88	450.07	0.00207
P4	135.66	578.29	0.00507
P5	0.01	517.70	0.00712
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.67	-142.75	-0.00050
P1	829.82	-224.51	0.00000
P2	548.94	-312.95	0.00103
P3	325.03	-367.16	0.00207
P4	67.40	-459.01	0.00507
P5	-0.01	-439.49	0.00578
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



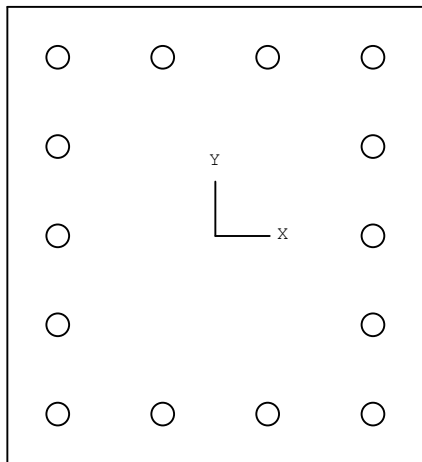
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#9_NX5_NY4_cc2.439



Section 119 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

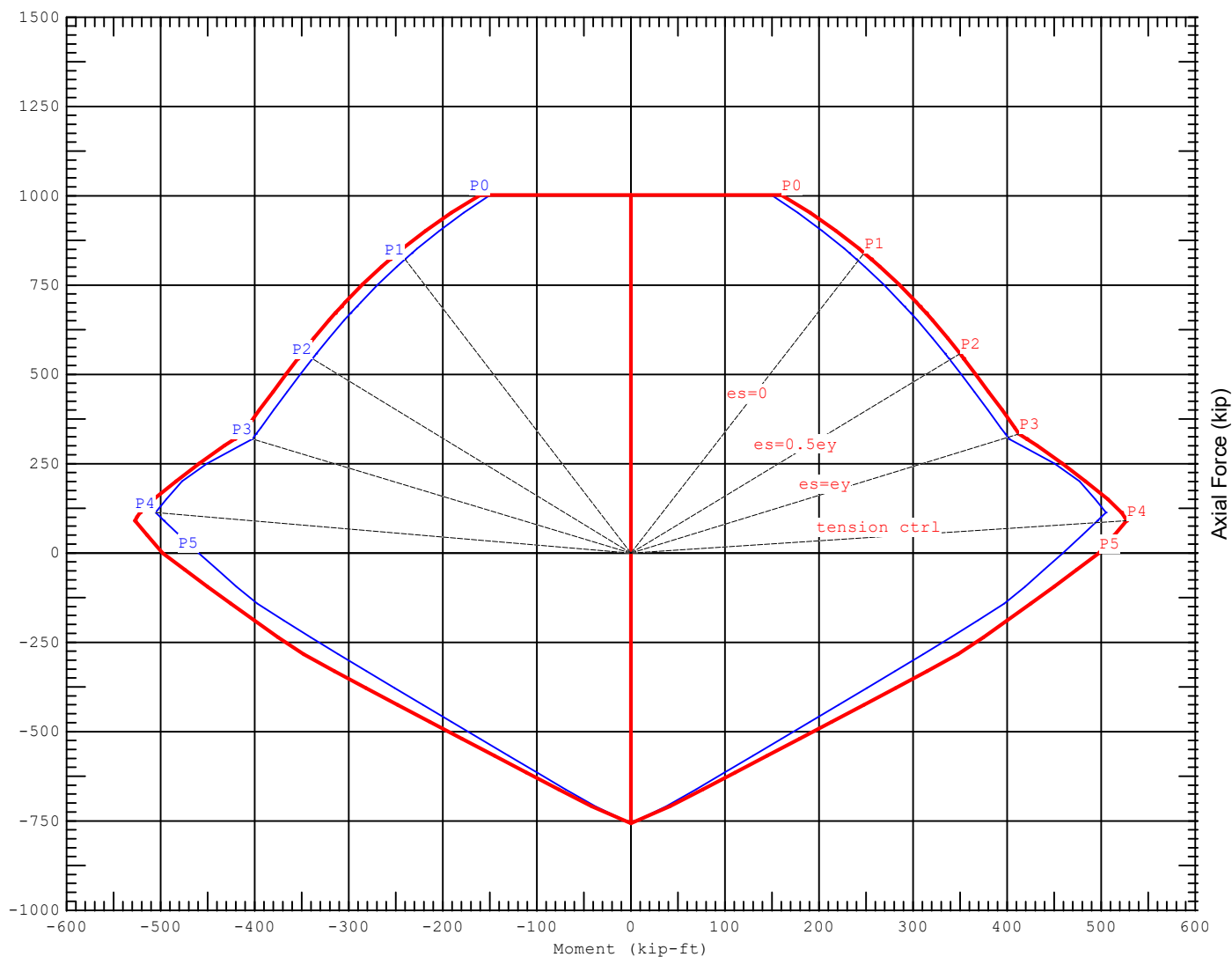
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.68	159.76	-0.00048
P1	839.10	247.62	0.00000
P2	557.29	349.34	0.00103
P3	333.17	411.78	0.00207
P4	90.38	525.84	0.00507
P5	-0.00	496.51	0.00608
Pmin	-756.00	-0.00	0.20000

PT	P	My (-)	max es
P0	1001.68	-149.31	-0.00053
P1	821.78	-239.52	0.00000
P2	543.61	-337.65	0.00103
P3	319.10	-401.21	0.00207
P4	113.18	-504.03	0.00507
P5	0.00	-458.38	0.00670
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



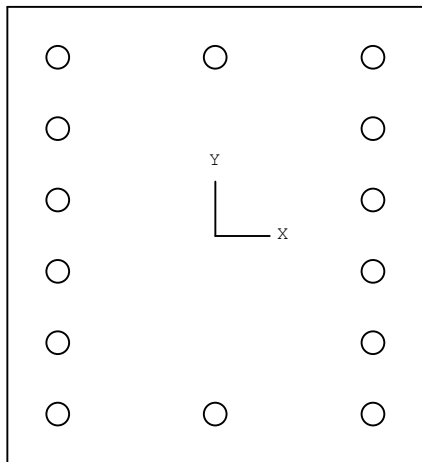
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#9_NX6_NY3_cc2.439



Section 120 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

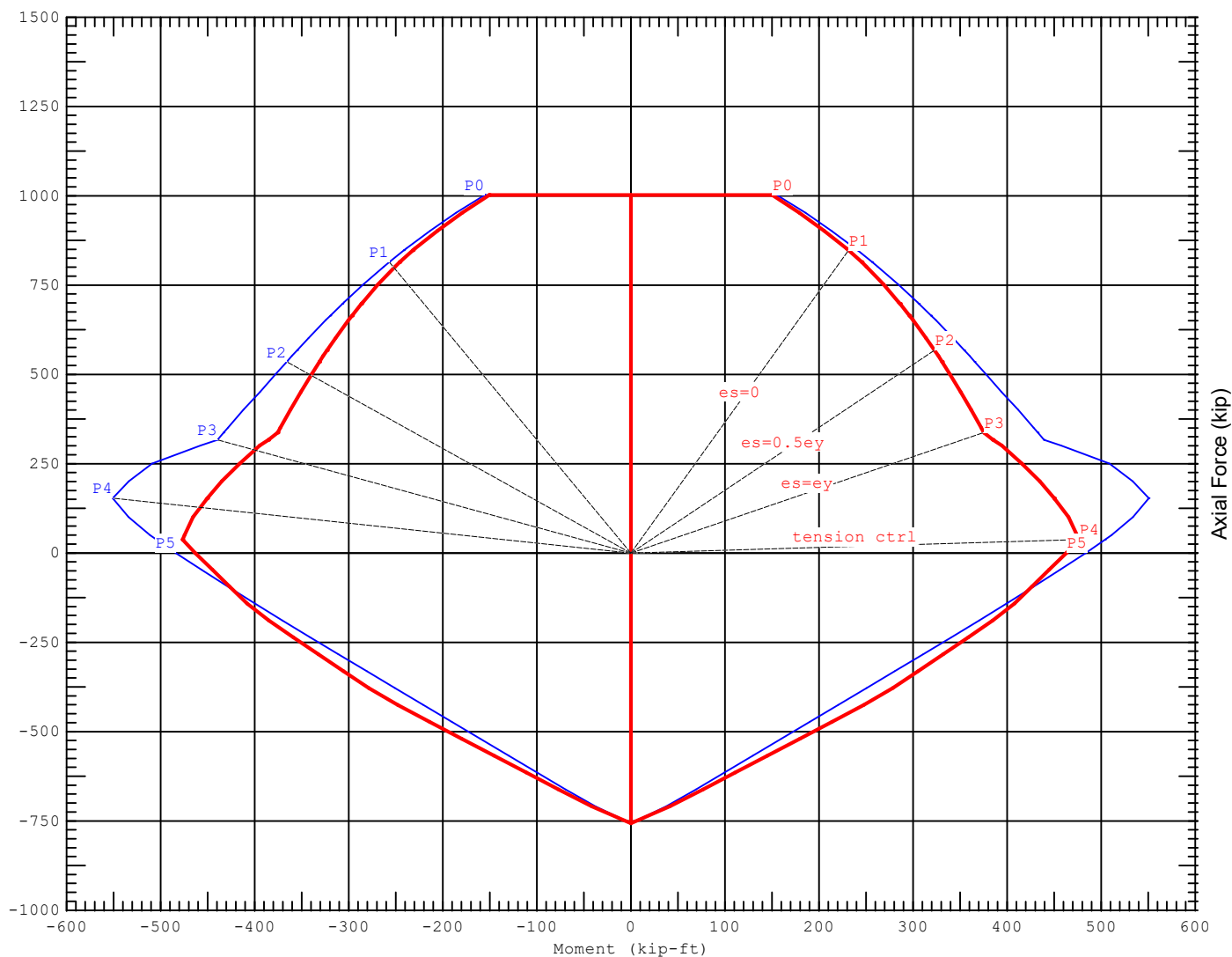
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.67	150.00	-0.00046
P1	846.75	231.06	0.00000
P2	567.02	322.32	0.00103
P3	337.15	374.51	0.00207
P4	37.35	475.53	0.00507
P5	0.02	461.90	0.00557
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.67	-155.01	-0.00055
P1	813.74	-256.23	0.00000
P2	534.97	-364.99	0.00103
P3	316.48	-438.49	0.00207
P4	153.49	-549.62	0.00507
P5	0.01	-482.63	0.00776
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



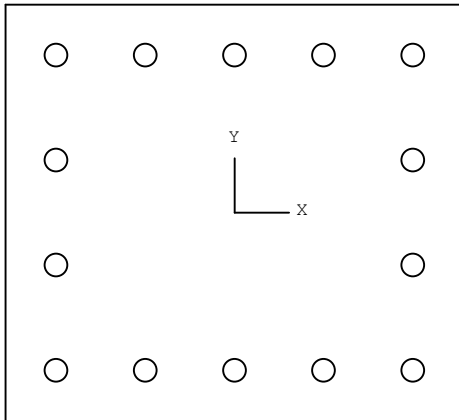
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#9_NX4_NY5_cc2.439



Section 121 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

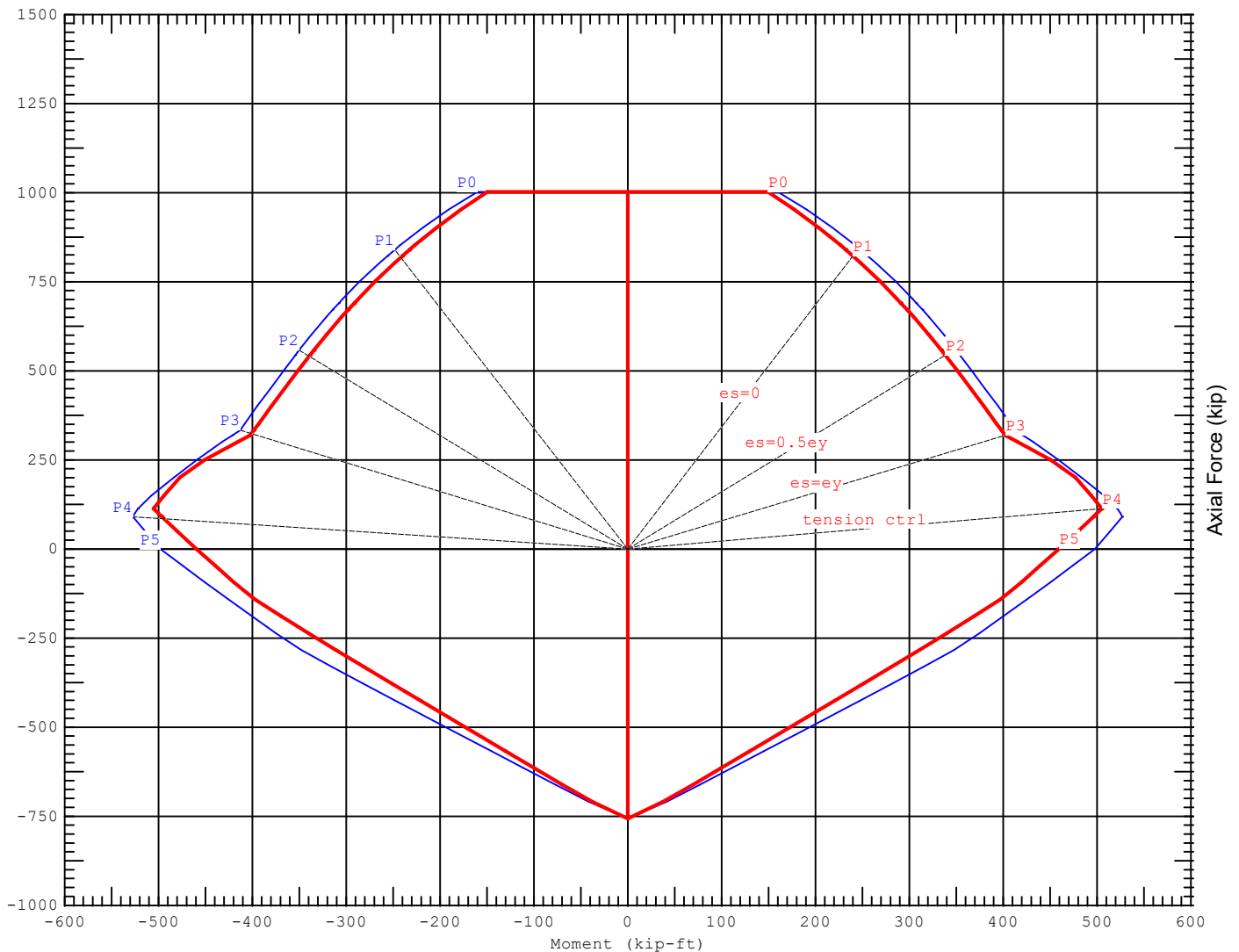
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.15 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.68	149.31	-0.00053
P1	821.78	239.52	0.00000
P2	543.61	337.65	0.00103
P3	319.10	401.21	0.00207
P4	113.18	504.03	0.00507
P5	0.00	458.38	0.00670
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.68	-159.76	-0.00048
P1	839.10	-247.62	0.00000
P2	557.29	-349.34	0.00103
P3	333.17	-411.78	0.00207
P4	90.38	-525.84	0.00507
P5	-0.00	-496.51	0.00608
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



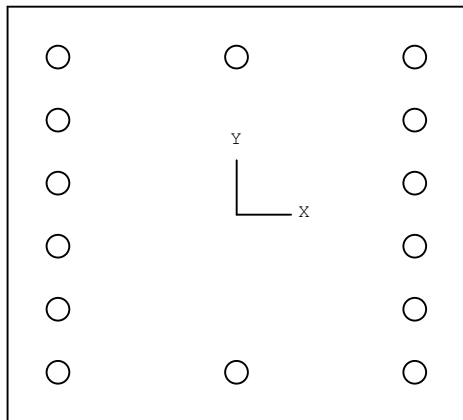
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#9_NX6_NY3_cc2.439



Section 122 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

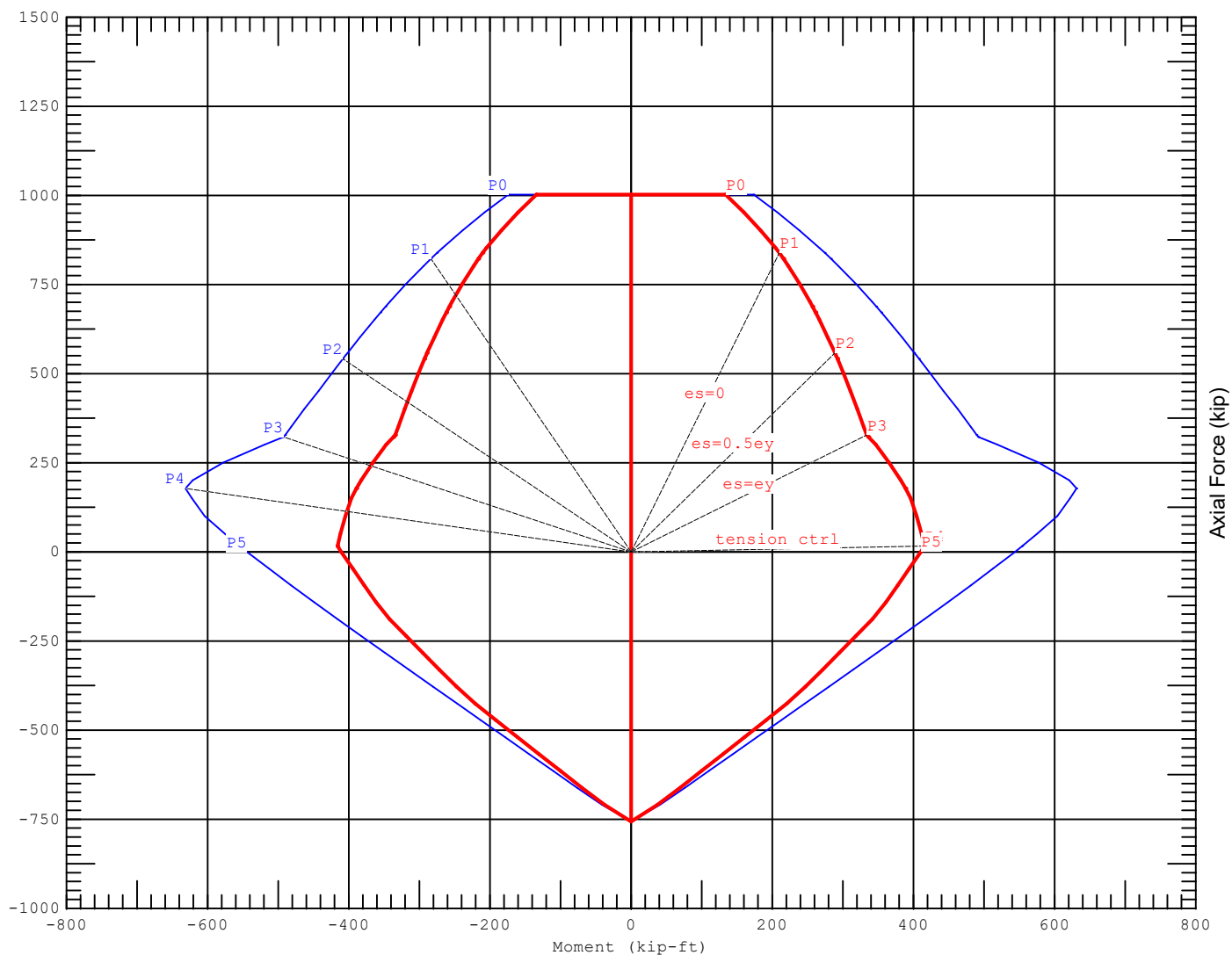
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.67	134.08	-0.00049
P1	837.86	210.19	0.00000
P2	557.59	288.89	0.00103
P3	327.66	333.98	0.00207
P4	16.46	415.61	0.00507
P5	0.02	410.28	0.00531
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.68	-173.99	-0.00053
P1	821.42	-283.24	0.00000
P2	541.16	-407.88	0.00103
P3	321.90	-492.06	0.00207
P4	177.96	-631.10	0.00507
P5	-0.01	-543.71	0.00846
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



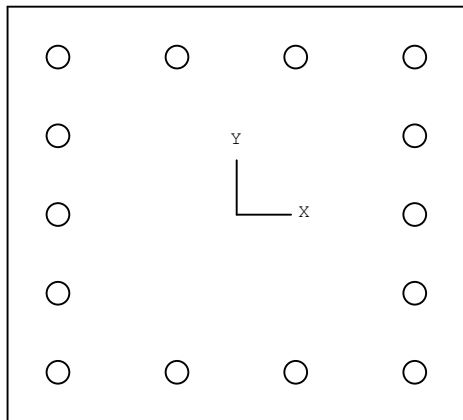
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#9_NX5_NY4_cc2.439



Section 123 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

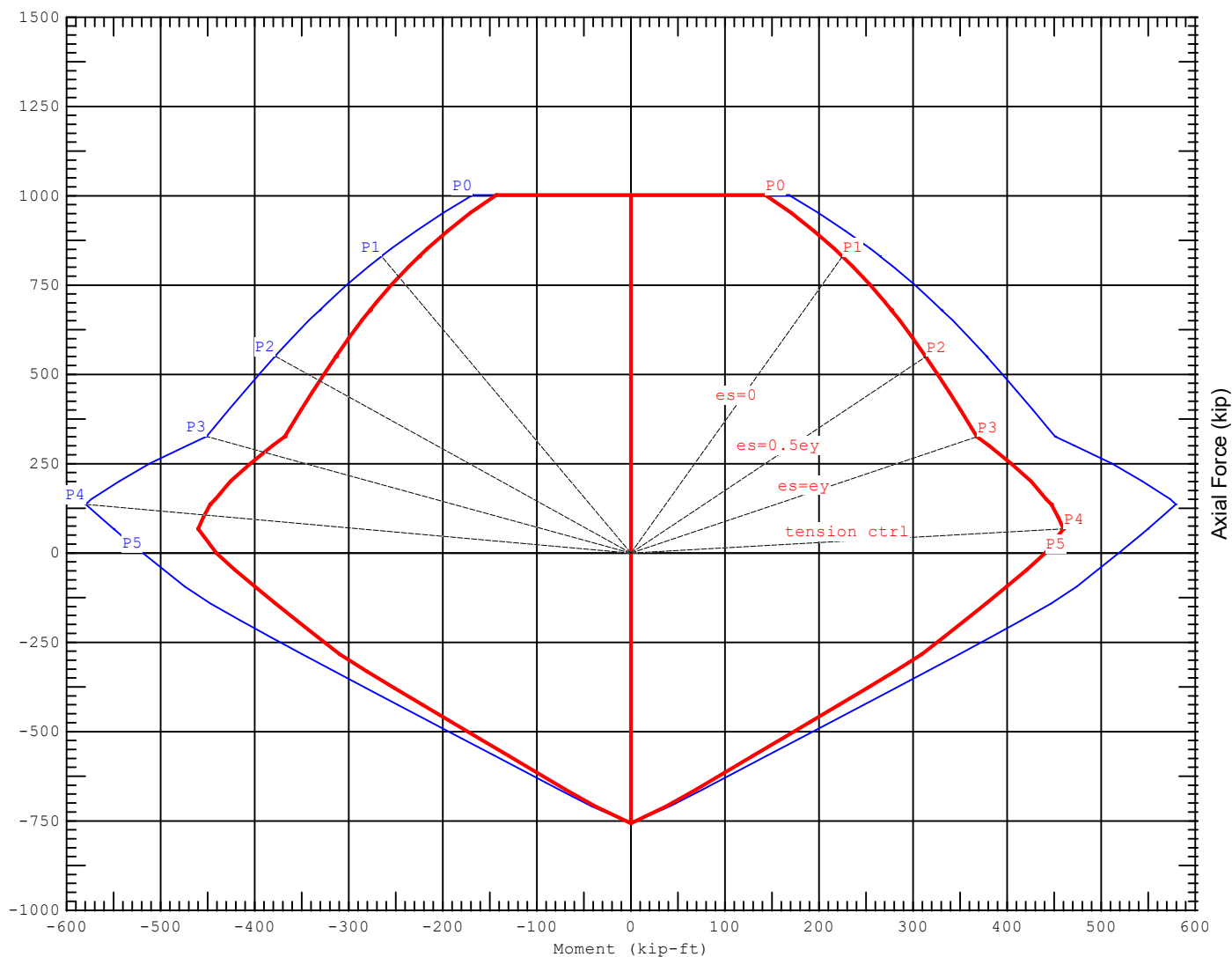
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.67	142.75	-0.00050
P1	829.82	224.51	0.00000
P2	548.94	312.95	0.00103
P3	325.03	367.16	0.00207
P4	67.40	459.01	0.00507
P5	-0.01	439.49	0.00578
Pmin	-756.00	-0.00	0.20000

PT	P	My (-)	max es
P0	1001.68	-167.70	-0.00050
P1	830.26	-264.45	0.00000
P2	550.88	-377.09	0.00103
P3	325.88	-450.07	0.00207
P4	135.66	-578.29	0.00507
P5	0.01	-517.70	0.00712
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



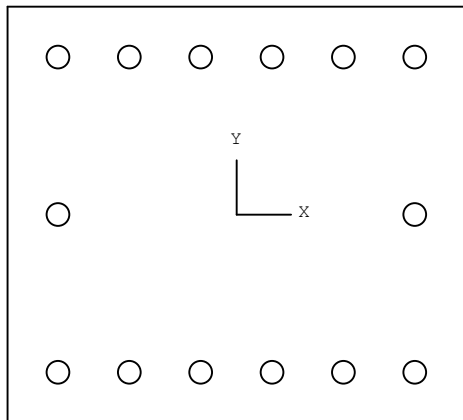
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#9_NX3_NY6_cc2.439



Section 124 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

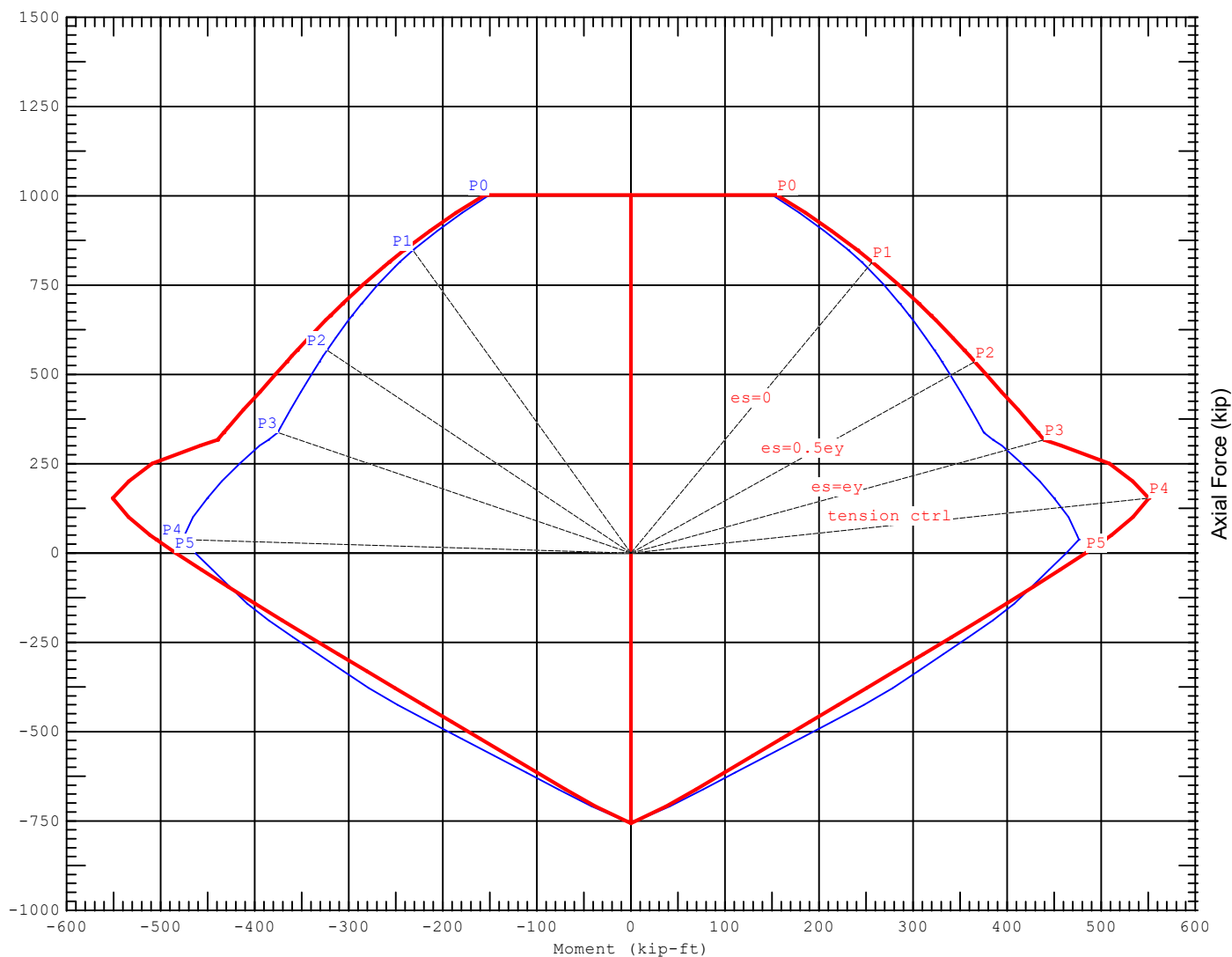
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.67	155.01	-0.00055
P1	813.74	256.23	0.00000
P2	534.97	364.99	0.00103
P3	316.48	438.49	0.00207
P4	153.49	549.62	0.00507
P5	0.01	482.63	0.00776
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.67	-150.00	-0.00046
P1	846.75	-231.06	0.00000
P2	567.02	-322.32	0.00103
P3	337.15	-374.51	0.00207
P4	37.35	-475.53	0.00507
P5	0.02	-461.90	0.00557
Pmin	-756.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



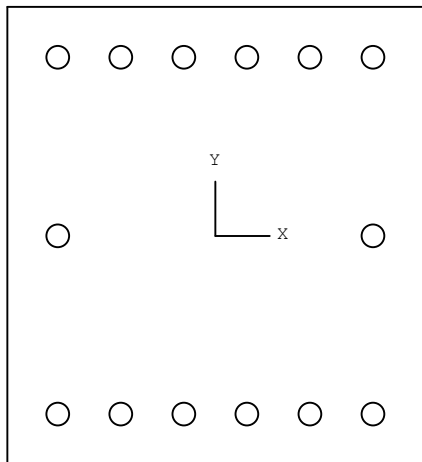
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#9_NX3_NY6_cc2.439



Section 125 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

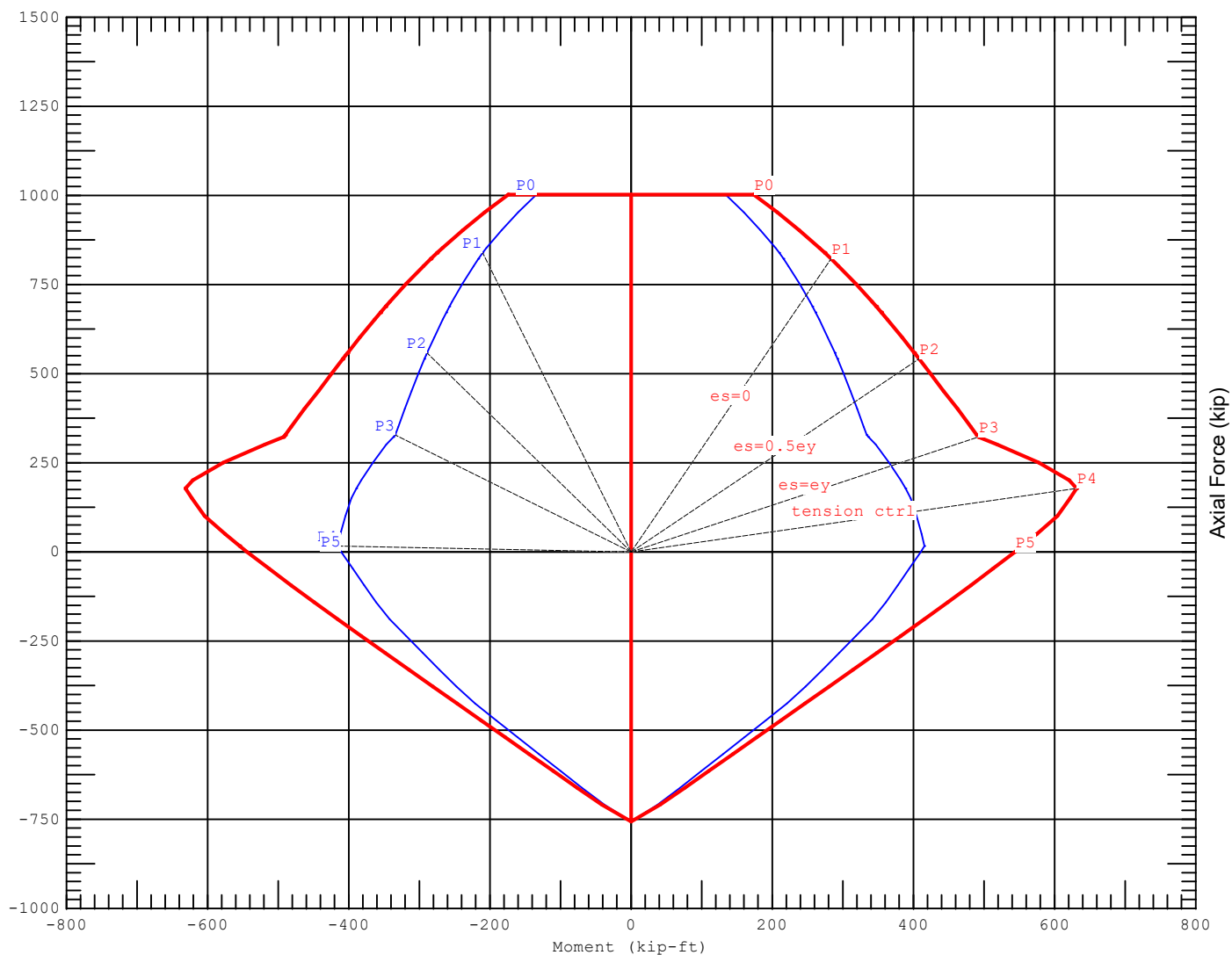
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 440.00 in²
As: 14.00 in²
Roh: 3.18%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1001.68	173.99	-0.00053
P1	821.42	283.24	0.00000
P2	541.16	407.88	0.00103
P3	321.90	492.06	0.00207
P4	177.96	631.10	0.00507
P5	-0.01	543.71	0.00846
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1001.67	-134.08	-0.00049
P1	837.86	-210.19	0.00000
P2	557.59	-288.89	0.00103
P3	327.66	-333.98	0.00207
P4	16.46	-415.61	0.00507
P5	0.02	-410.28	0.00531
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



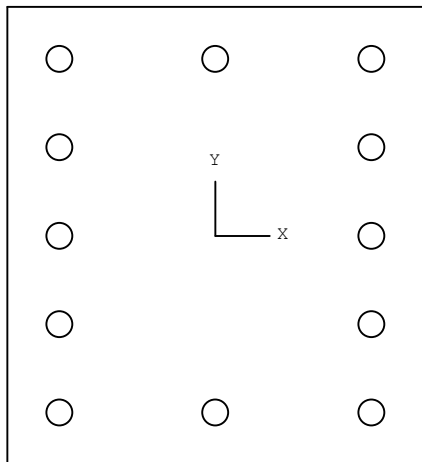
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#10_NX5_NY3_cc2.51



Section 126 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

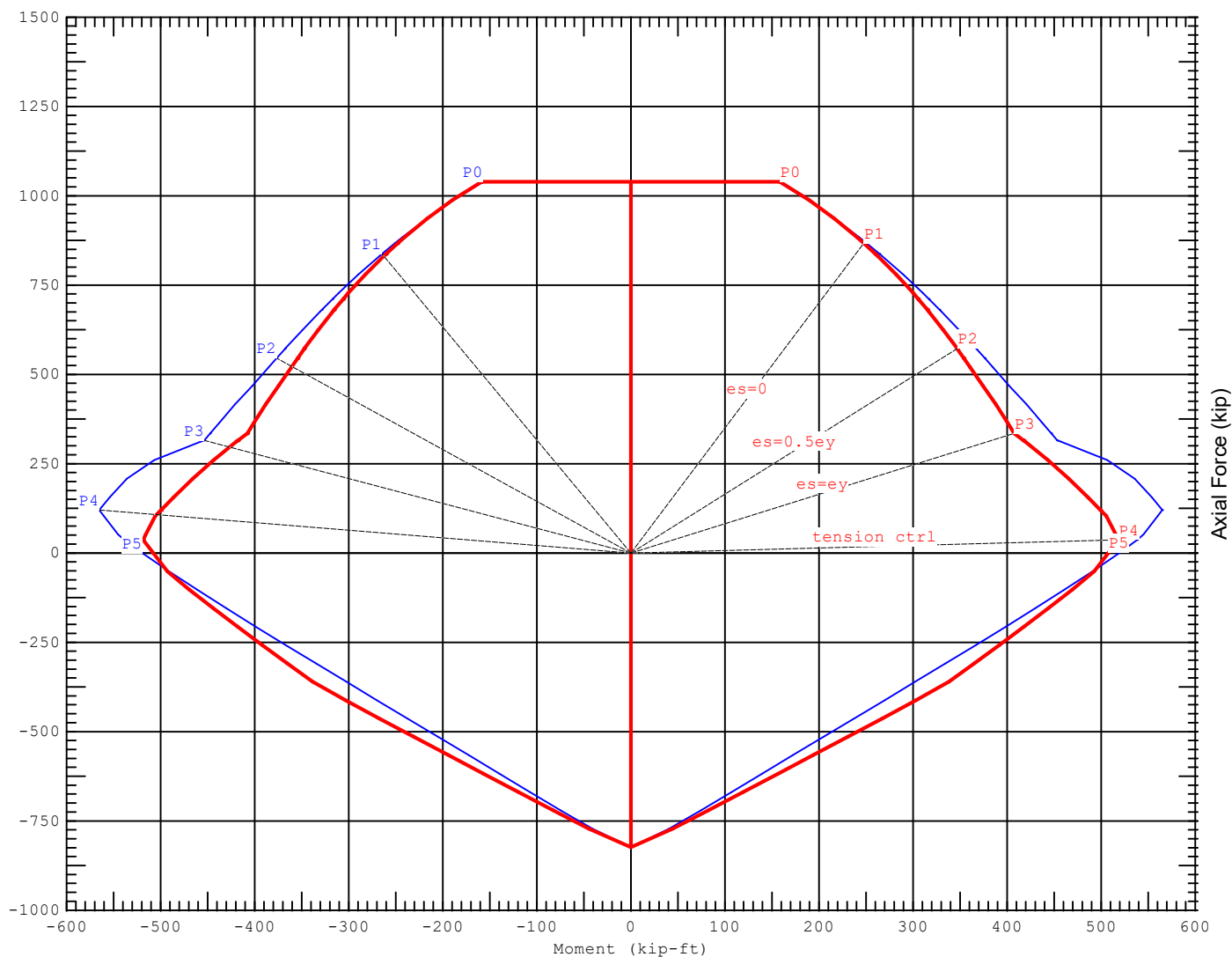
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	158.32	-0.00049
P1	866.53	247.13	0.00000
P2	571.77	346.23	0.00103
P3	334.48	406.85	0.00207
P4	36.52	517.22	0.00507
P5	0.00	506.59	0.00541
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-156.81	-0.00057
P1	836.53	-263.96	0.00000
P2	545.39	-375.54	0.00103
P3	315.19	-452.32	0.00207
P4	119.92	-563.77	0.00507
P5	-0.00	-518.09	0.00678
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



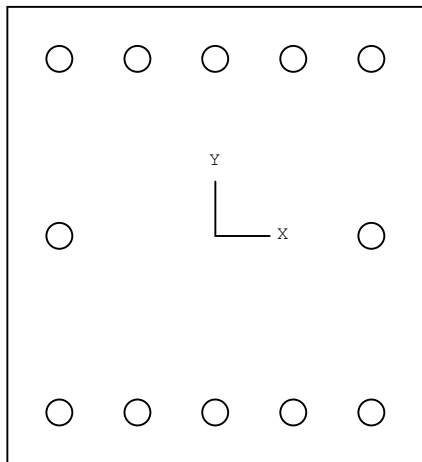
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#10_NX3_NY5_cc2.51



Section 127 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

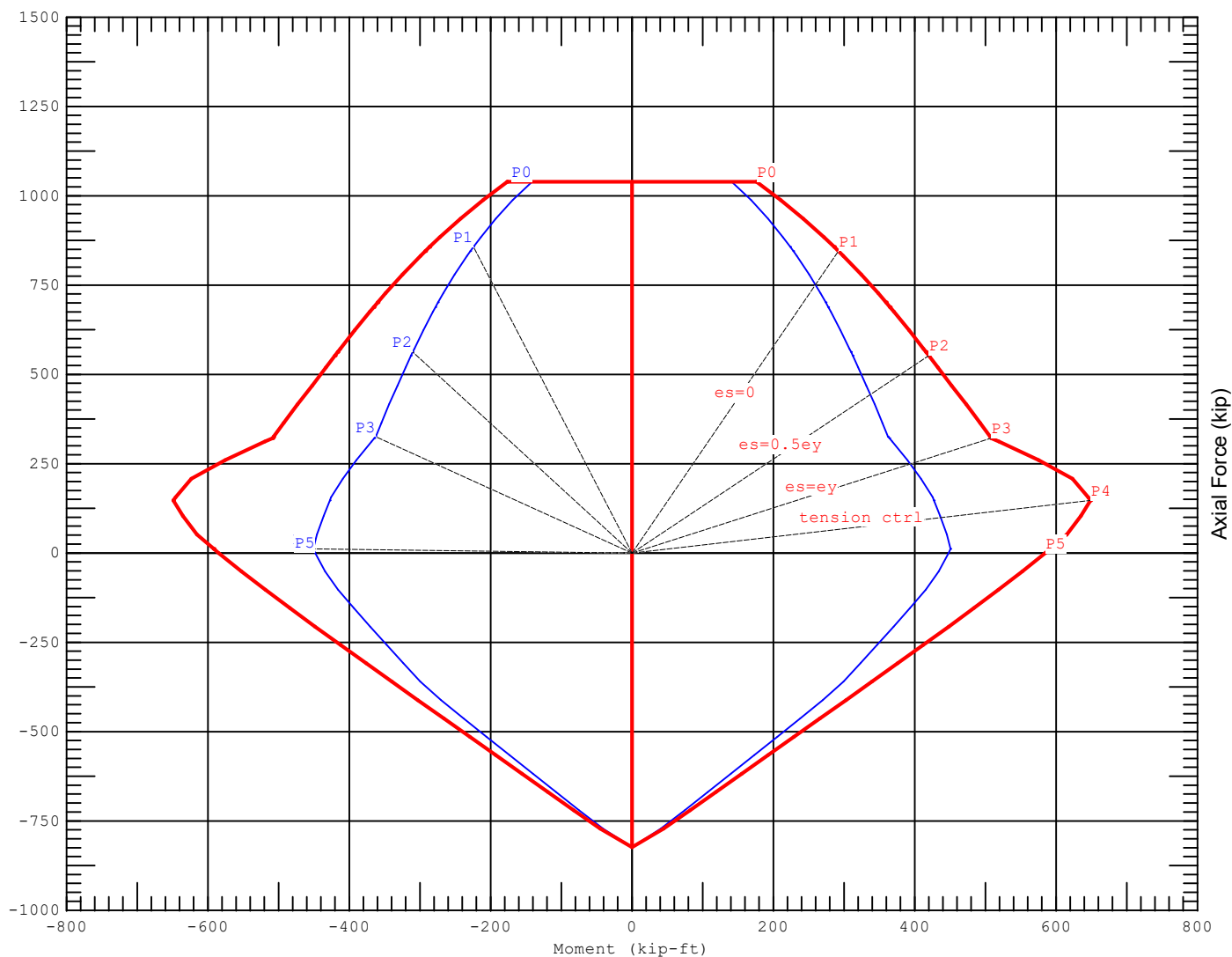
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.71	176.25	-0.00055
P1	844.66	292.10	0.00000
P2	552.07	420.10	0.00103
P3	321.16	508.14	0.00207
P4	147.20	648.81	0.00507
P5	-0.00	584.44	0.00740
Pmin	-822.96	-0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-141.39	-0.00051
P1	856.29	-223.95	0.00000
P2	562.24	-309.93	0.00103
P3	324.93	-362.41	0.00207
P4	11.21	-450.75	0.00507
P5	0.00	-447.78	0.00517
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



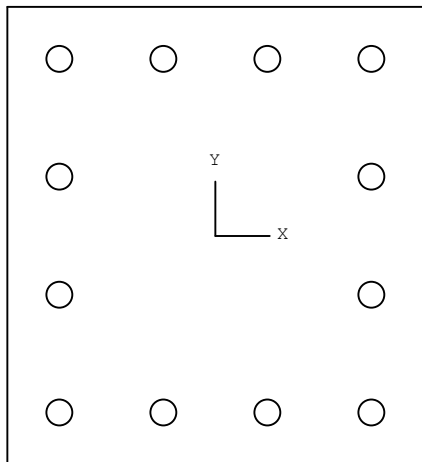
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#10_NX4_NY4_cc2.51



Section 128 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

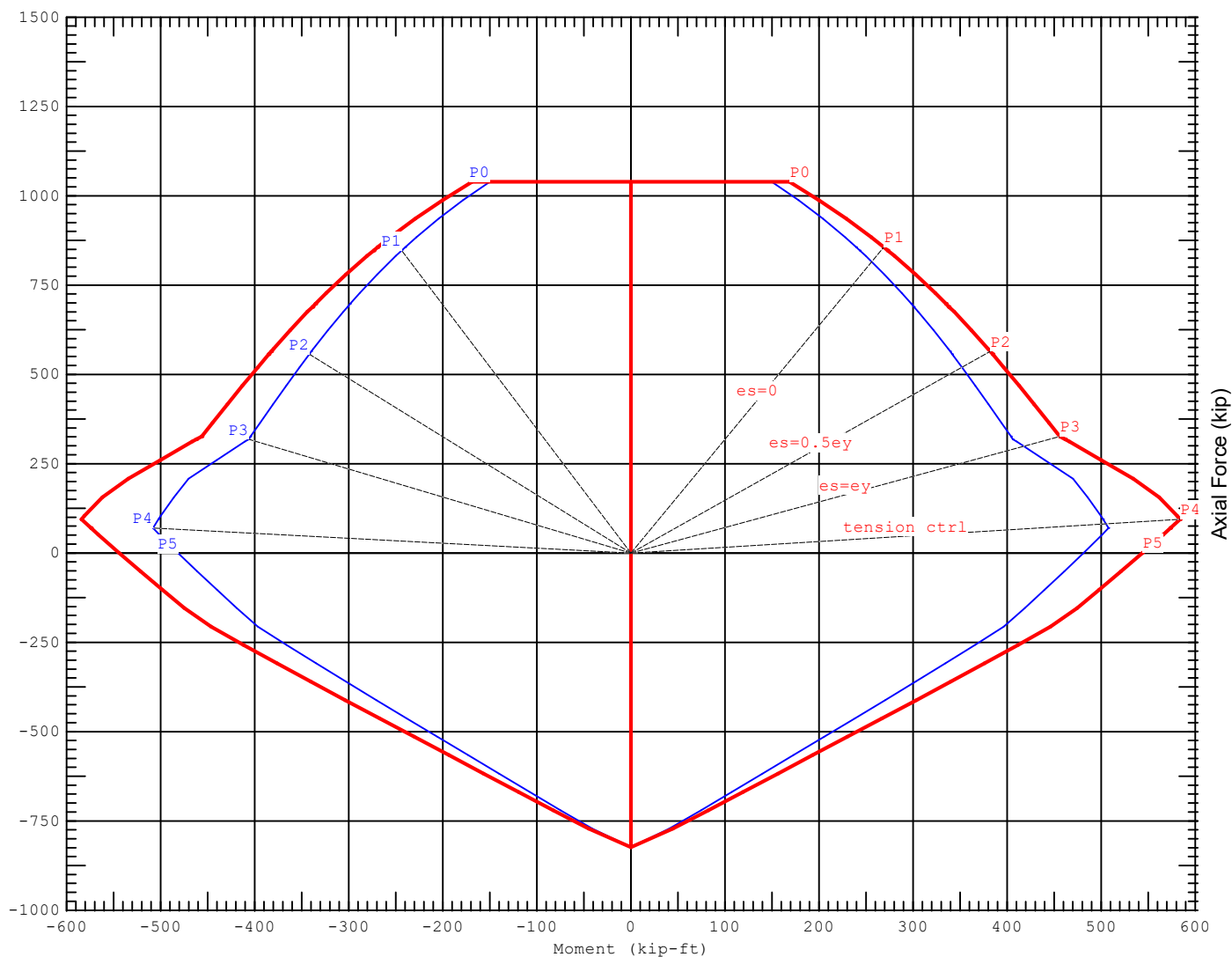
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	168.30	-0.00052
P1	855.60	268.38	0.00000
P2	564.02	381.26	0.00103
P3	325.72	455.17	0.00207
P4	94.21	582.74	0.00507
P5	0.00	542.75	0.00632
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-149.63	-0.00054
P1	846.41	-242.89	0.00000
P2	555.92	-341.08	0.00103
P3	317.96	-405.35	0.00207
P4	69.56	-506.84	0.00507
P5	-0.01	-480.19	0.00595
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



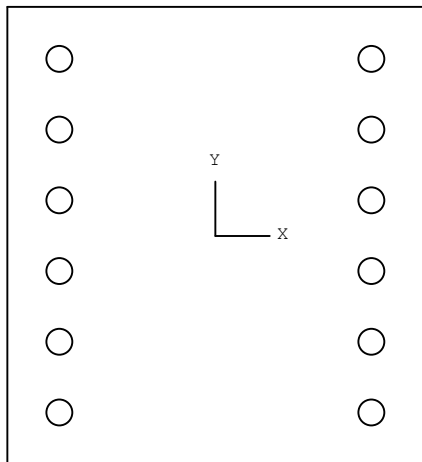
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#10_NX6_NY2_cc2.51



Section 129 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

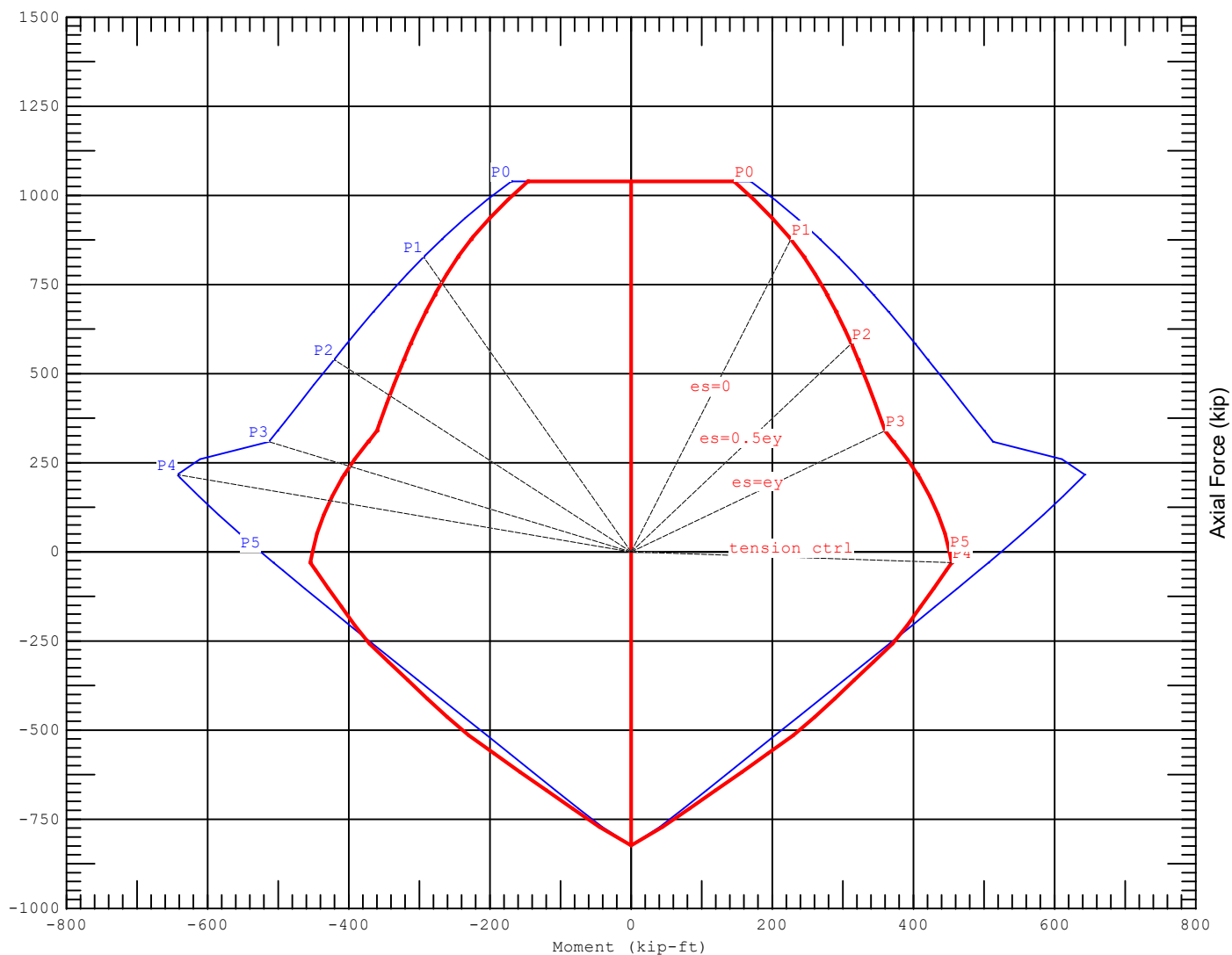
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	145.80	-0.00046
P1	876.42	226.41	0.00000
P2	583.72	312.12	0.00103
P3	339.04	359.80	0.00207
P4	-30.07	454.27	0.00507
P5	0.01	451.25	0.00476
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	1038.71	-169.66	-0.00061
P1	826.66	-293.56	0.00000
P2	539.06	-420.60	0.00103
P3	308.21	-512.84	0.00207
P4	216.45	-642.87	0.00507
P5	-0.01	-524.28	0.00929
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



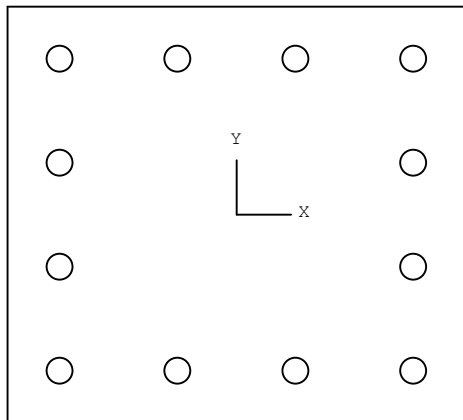
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#10_NX4_NY4_cc2.51



Section 130 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

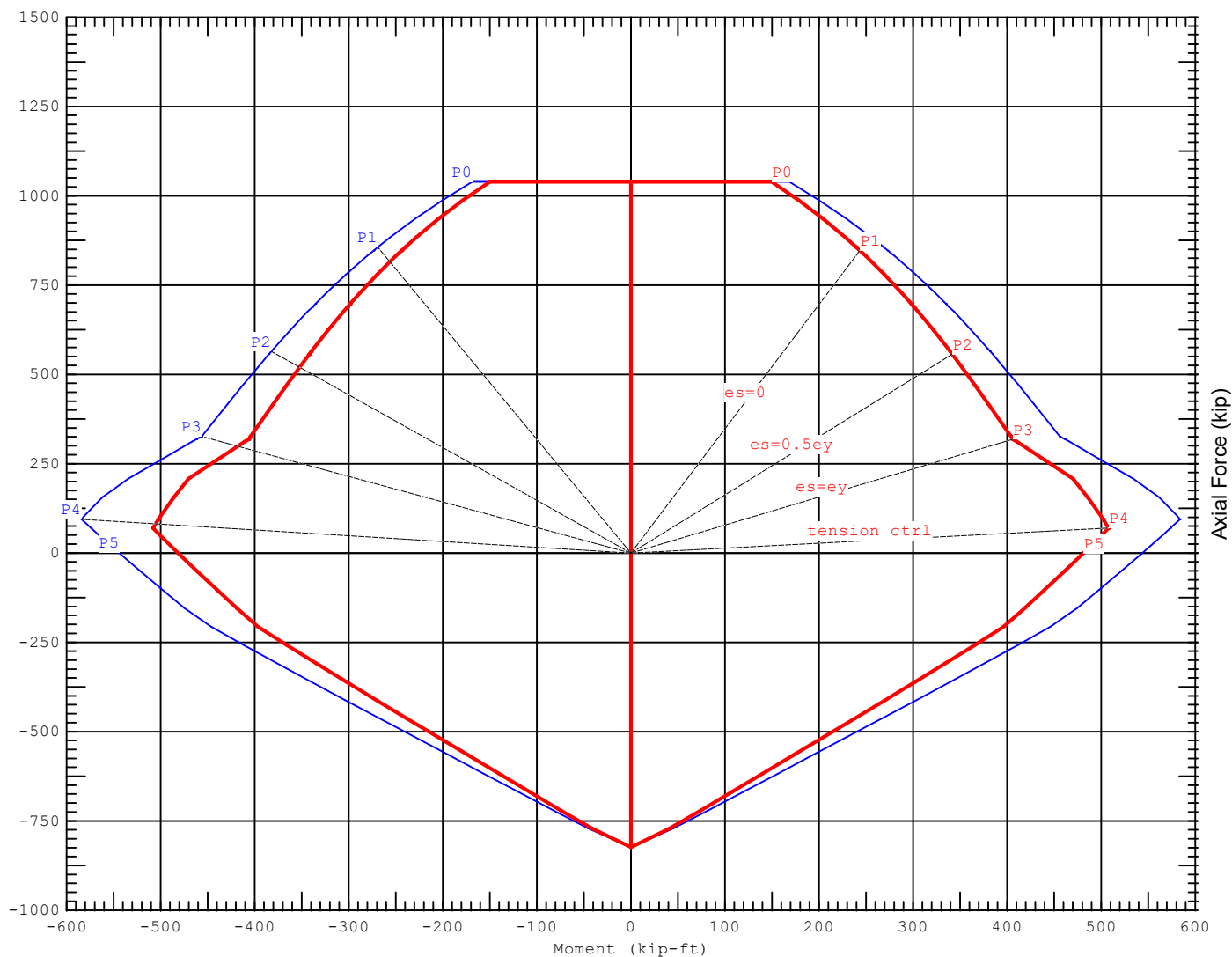
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	149.63	-0.00054
P1	846.41	242.89	0.00000
P2	555.92	341.08	0.00103
P3	317.96	405.35	0.00207
P4	69.56	506.84	0.00507
P5	-0.01	480.19	0.00595
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-168.30	-0.00052
P1	855.60	-268.38	0.00000
P2	564.02	-381.26	0.00103
P3	325.72	-455.17	0.00207
P4	94.21	-582.74	0.00507
P5	0.00	-542.75	0.00632
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

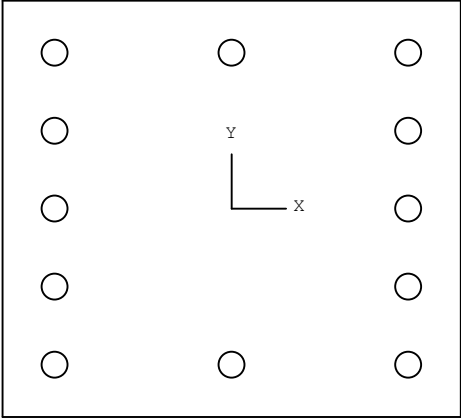
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#10_NX5_NY3_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 12 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 15.24 in^2

Roh: 3.46%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	141.39	-0.00051
P1	856.29	223.95	0.00000
P2	562.24	309.93	0.00103
P3	324.93	362.41	0.00207
P4	11.21	450.75	0.00507
P5	0.00	447.78	0.00517
Pmin	-822.96	0.00	0.20000

PT	P	My (-)	max es
P0	1038.71	-176.25	-0.00055
P1	844.66	-292.10	0.00000
P2	552.07	-420.10	0.00103
P3	321.16	-508.14	0.00207
P4	147.20	-648.81	0.00507
P5	-0.00	-584.44	0.00740
Pmin	-822.96	0.00	0.20000

Section 131 of 238

P-Mx and P-My Interaction Diagram

The diagram illustrates the interaction between axial force and bending moment for a column. The vertical axis represents Axial Force (kip) from -1000 to 1500, and the horizontal axis represents Moment (kip-ft) from -800 to 800. The blue curve represents the full capacity, while the red curve shows a more conservative design. Key points P0 to P5 are marked on both curves. Dashed lines from the origin indicate different strain distributions: es=0 (pure compression), es=0.5ey (balanced), and es=ey (balanced with tension control). A horizontal dashed line at zero moment is labeled 'tension ctrl'.

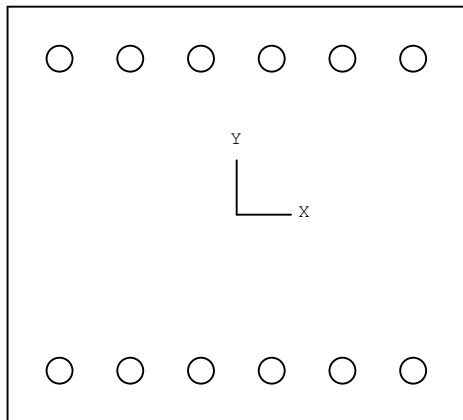
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#10_NX2_NY6_cc2.51



Section 132 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

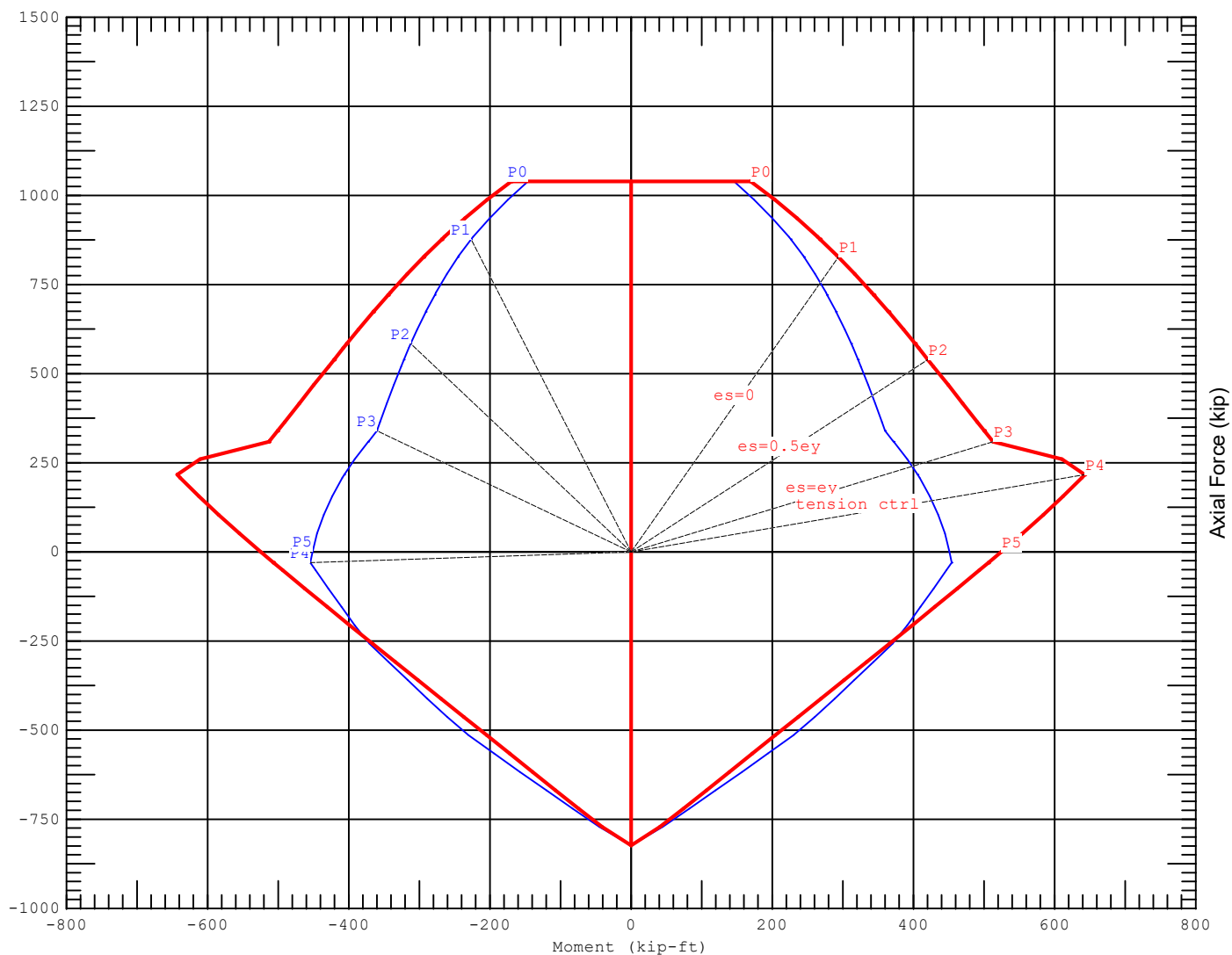
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.71	169.66	-0.00061
P1	826.66	293.56	0.00000
P2	539.06	420.60	0.00103
P3	308.21	512.84	0.00207
P4	216.45	642.87	0.00507
P5	-0.01	524.28	0.00929
Pmin	-822.96	-0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-145.80	-0.00046
P1	876.42	-226.41	0.00000
P2	583.72	-312.12	0.00103
P3	339.04	-359.80	0.00207
P4	-30.07	-454.27	0.00507
P5	0.01	-451.25	0.00476
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



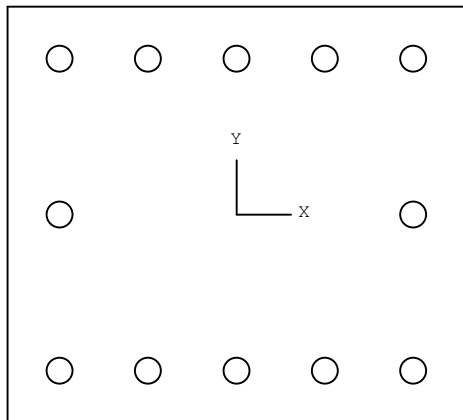
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#10_NX3_NY5_cc2.51



Section 133 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

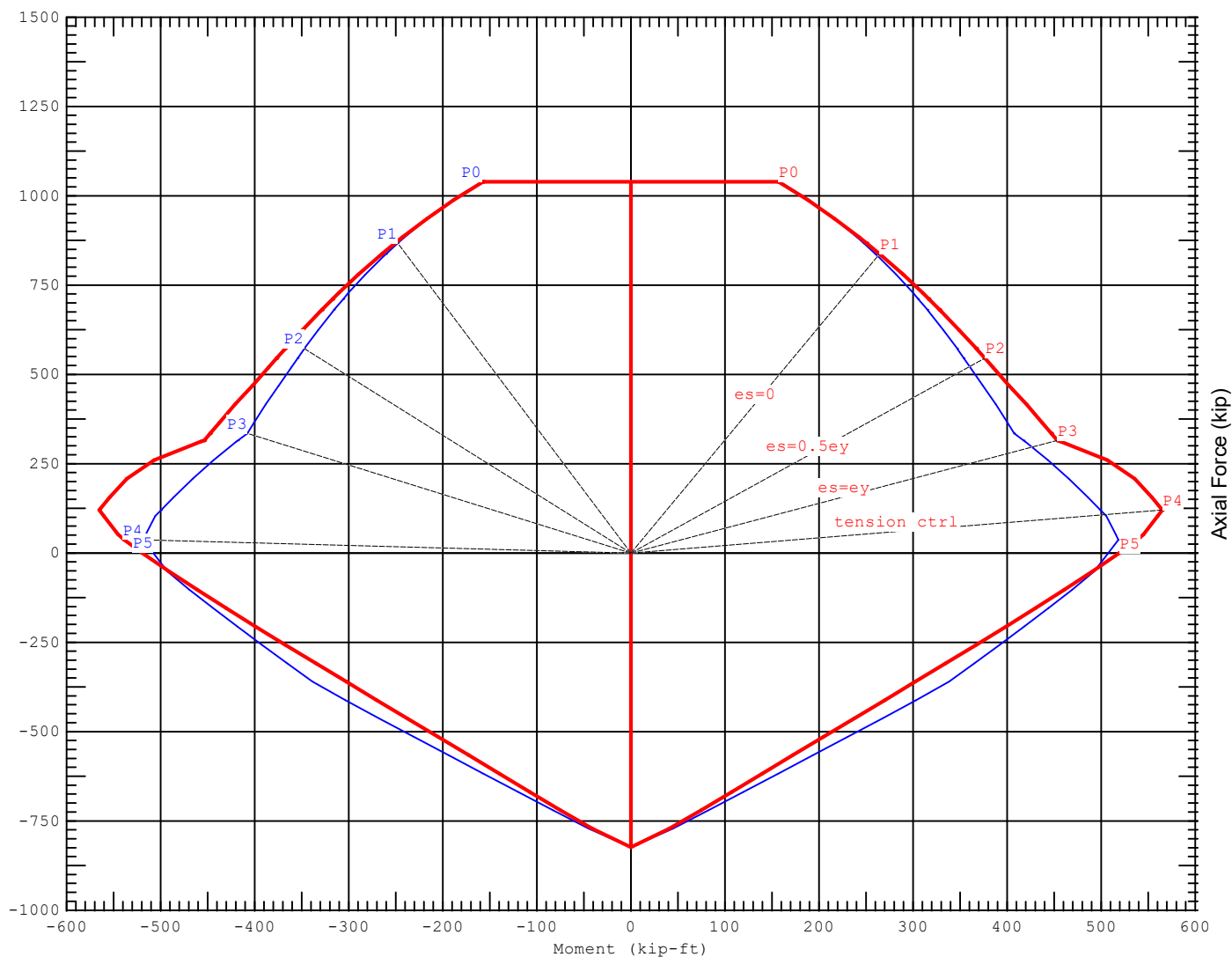
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 12 # 10
Confinement: Tied
Ag: 440.00 in²
As: 15.24 in²
Roh: 3.46%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1038.72	156.81	-0.00057
P1	836.53	263.96	0.00000
P2	545.39	375.54	0.00103
P3	315.19	452.32	0.00207
P4	119.92	563.77	0.00507
P5	-0.00	518.09	0.00678
Pmin	-822.96	-0.00	0.20000

PT	P	My (-)	max es
P0	1038.72	-158.32	-0.00049
P1	866.53	-247.13	0.00000
P2	571.77	-346.23	0.00103
P3	334.48	-406.85	0.00207
P4	36.52	-517.22	0.00507
P5	0.00	-506.59	0.00541
Pmin	-822.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



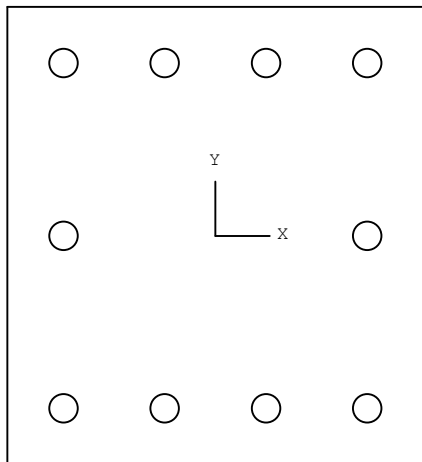
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#11_NX3_NY4_cc2.705



Section 134 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

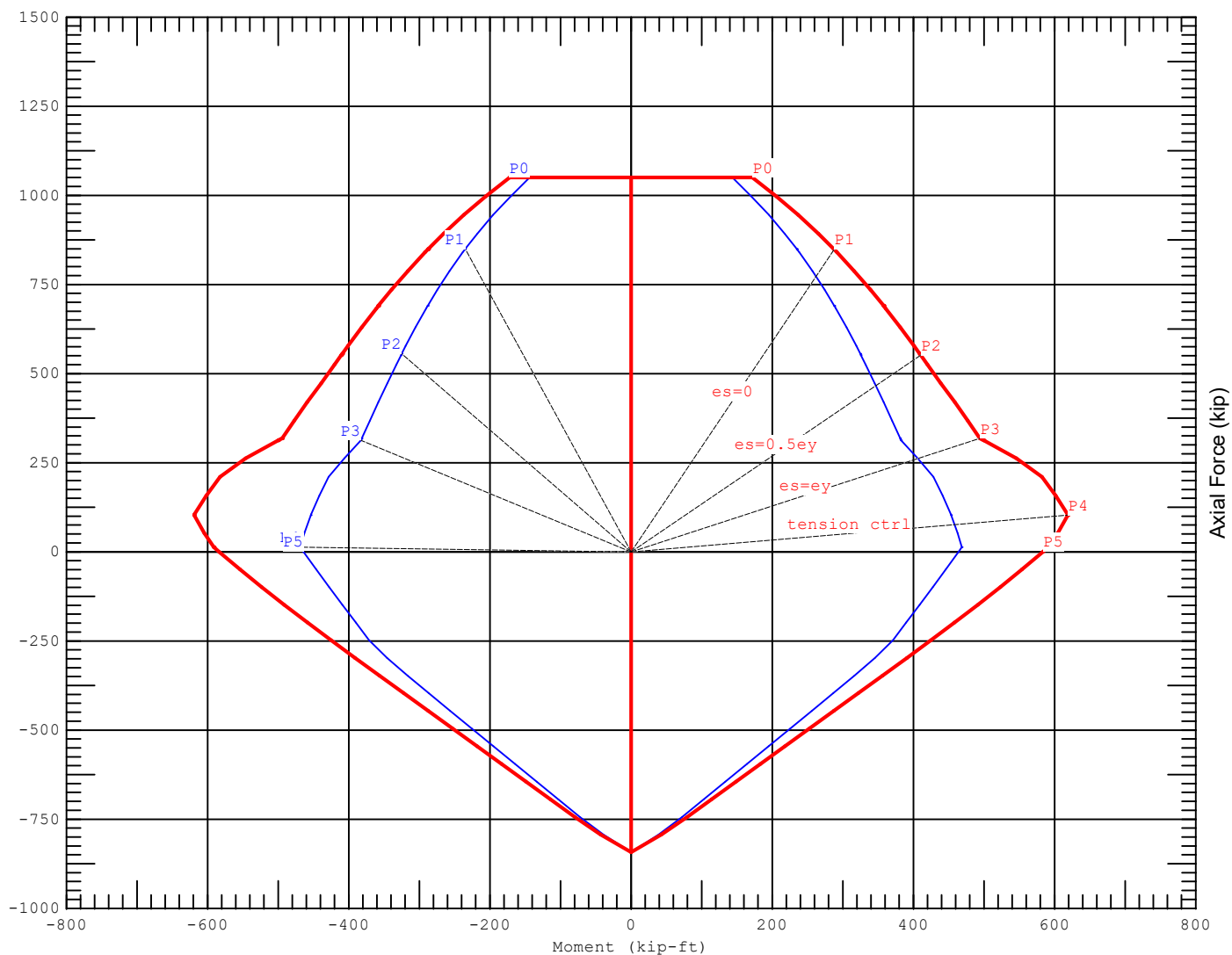
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	171.74	-0.00057
P1	847.38	287.92	0.00000
P2	551.61	410.34	0.00103
P3	317.91	494.12	0.00207
P4	102.67	618.86	0.00507
P5	0.01	583.44	0.00629
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-143.44	-0.00055
P1	849.32	-234.66	0.00000
P2	555.43	-324.81	0.00103
P3	312.46	-382.51	0.00207
P4	13.07	-468.66	0.00507
P5	0.00	-463.97	0.00522
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

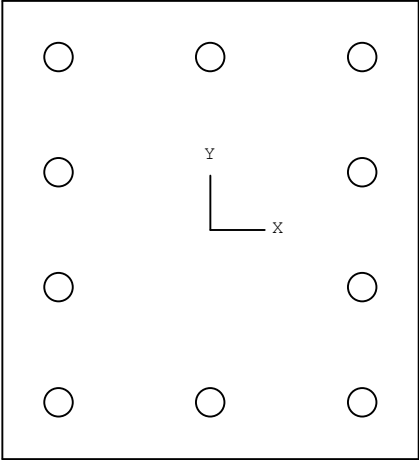
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#11_NX4_NY3_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 22 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 10 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 15.60 in^2

Roh: 3.55%

Ix: 17746.7 in^4

Iy: 14666.7 in^4

X0: 0.00 in

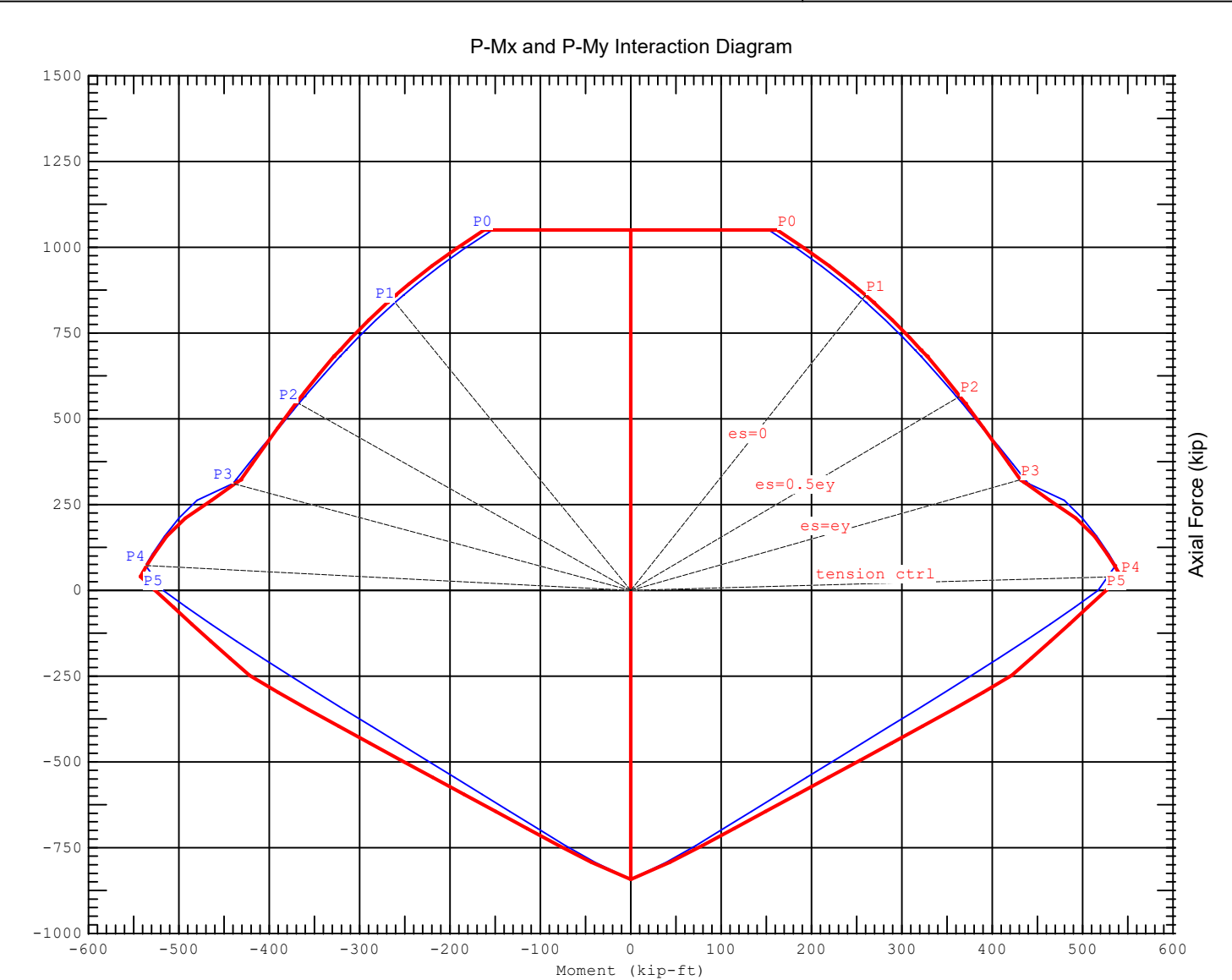
Y0: 0.00 in

Clear spacing: 4.12 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	161.63	-0.00053
P1	859.81	259.30	0.00000
P2	564.94	363.52	0.00103
P3	321.81	430.29	0.00207
P4	40.08	541.00	0.00507
P5	0.00	525.05	0.00554
Pmin	-842.40	-0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-152.54	-0.00059
P1	838.33	-260.02	0.00000
P2	544.02	-366.25	0.00103
P3	310.98	-438.97	0.00207
P4	72.11	-535.33	0.00507
P5	0.00	-515.96	0.00576
Pmin	-842.40	-0.00	0.20000



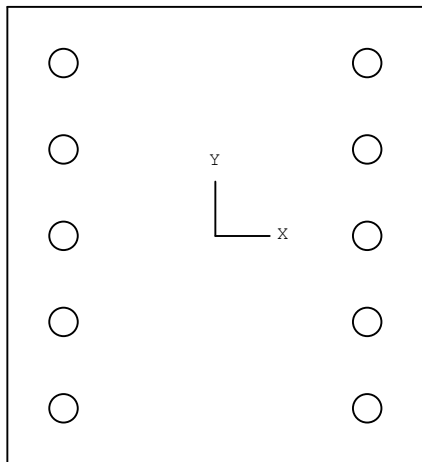
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#11_NX5_NY2_cc2.705



Section 136 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

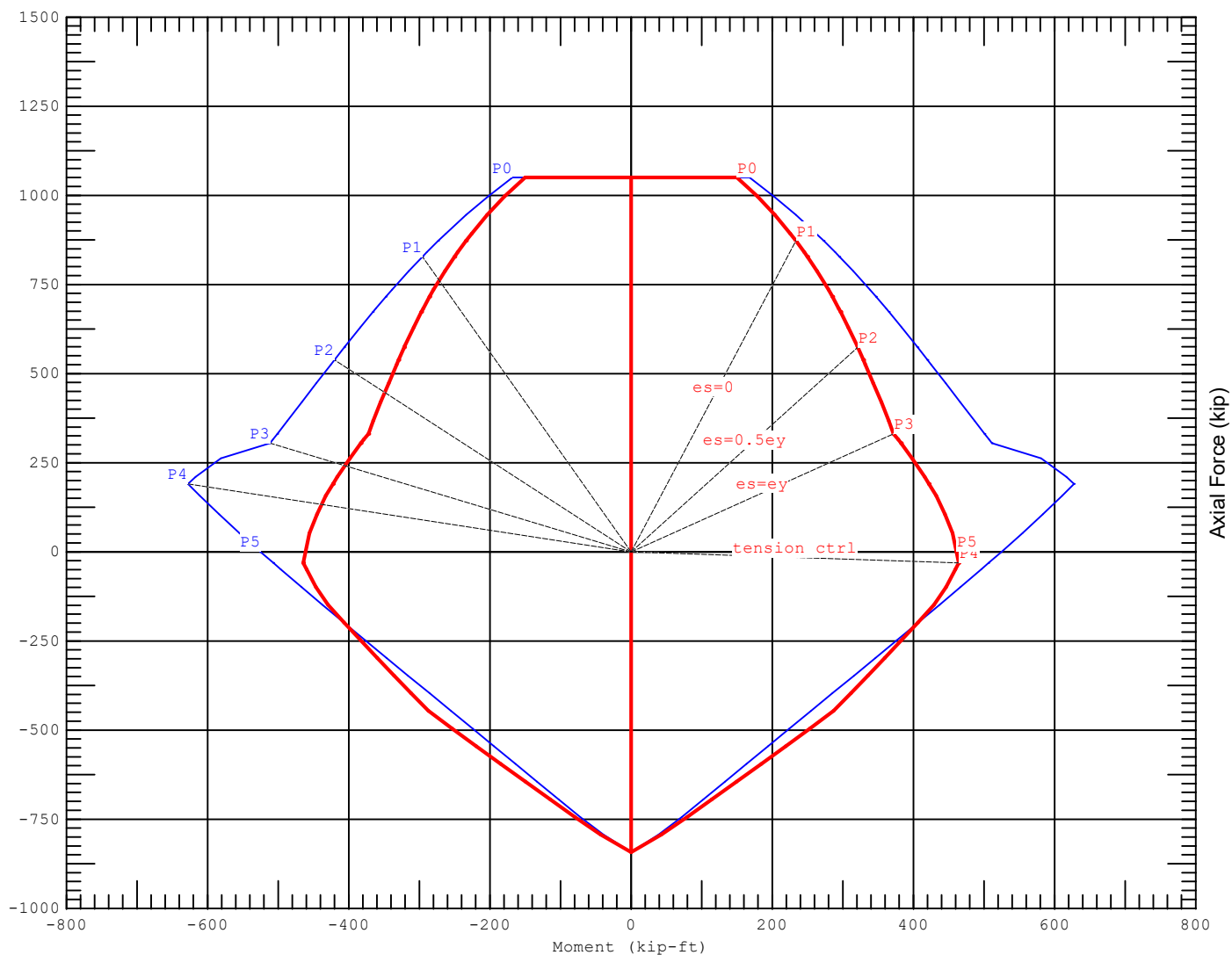
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	149.93	-0.00049
P1	872.23	233.60	0.00000
P2	573.10	321.22	0.00103
P3	330.87	371.98	0.00207
P4	-31.41	464.17	0.00507
P5	0.02	461.22	0.00481
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-167.99	-0.00063
P1	827.33	-295.43	0.00000
P2	537.78	-420.15	0.00103
P3	304.33	-511.37	0.00207
P4	190.68	-627.39	0.00507
P5	0.01	-524.79	0.00848
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#11_NX5_NY2_cc2.705

Section 137 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 10 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 15.60 in^2

Roh: 3.55%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	133.90	-0.00052
P1	860.32	211.81	0.00000
P2	561.66	287.28	0.00103
P3	319.11	330.82	0.00207
P4	-59.30	403.34	0.00507
P5	0.01	399.28	0.00460
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-189.24	-0.00061
P1	834.96	-328.18	0.00000
P2	543.45	-471.64	0.00103
P3	308.84	-576.44	0.00207
P4	221.23	-727.22	0.00507
P5	0.01	-593.26	0.00940
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram

The diagram illustrates the interaction between Axial Force (kip) on the y-axis and Moment (kip-ft) on the x-axis. The blue boundary represents the full capacity, while the red boundary shows a reduced capacity. The points P0 through P5 are key design points. The dashed line from the origin to P0 indicates the design point for the interaction. The labels 'es=0', 'es=0.5ey', and 'es=ey' represent different levels of strain, and 'tension ctrl' indicates the tension control point.

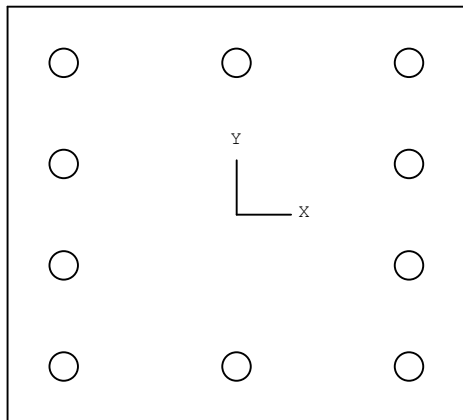
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#11_NX4_NY3_cc2.705



Section 138 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

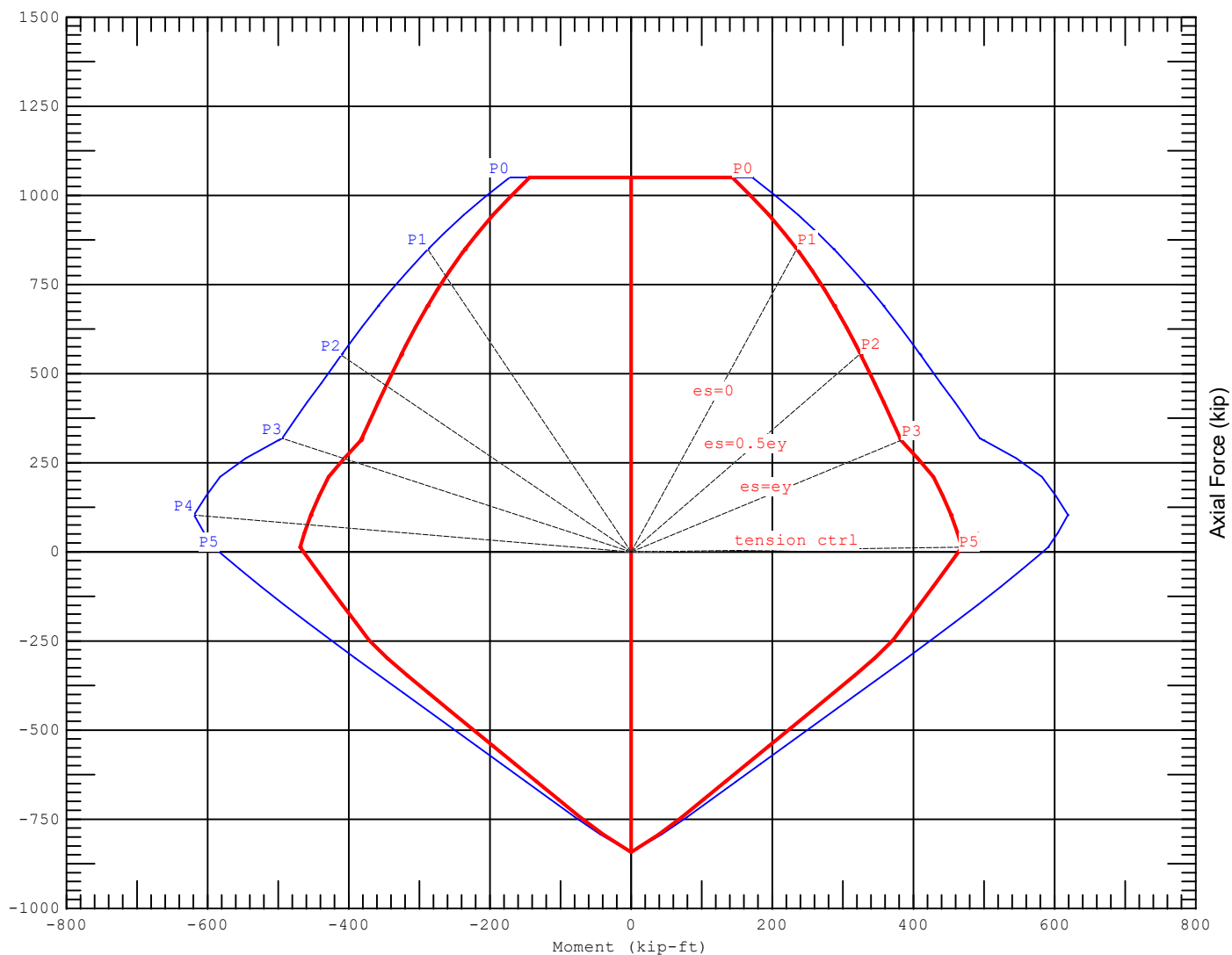
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	143.44	-0.00055
P1	849.32	234.66	0.00000
P2	555.43	324.81	0.00103
P3	312.46	382.51	0.00207
P4	13.07	468.66	0.00507
P5	0.00	463.97	0.00522
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-171.74	-0.00057
P1	847.38	-287.92	0.00000
P2	551.61	-410.34	0.00103
P3	317.91	-494.12	0.00207
P4	102.67	-618.86	0.00507
P5	0.01	-583.44	0.00629
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



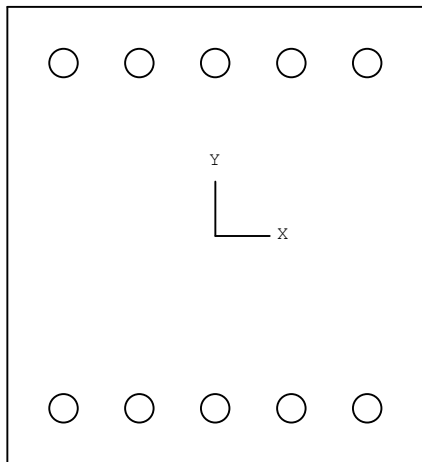
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_10#11_NX2_NY5_cc2.705



Section 139 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

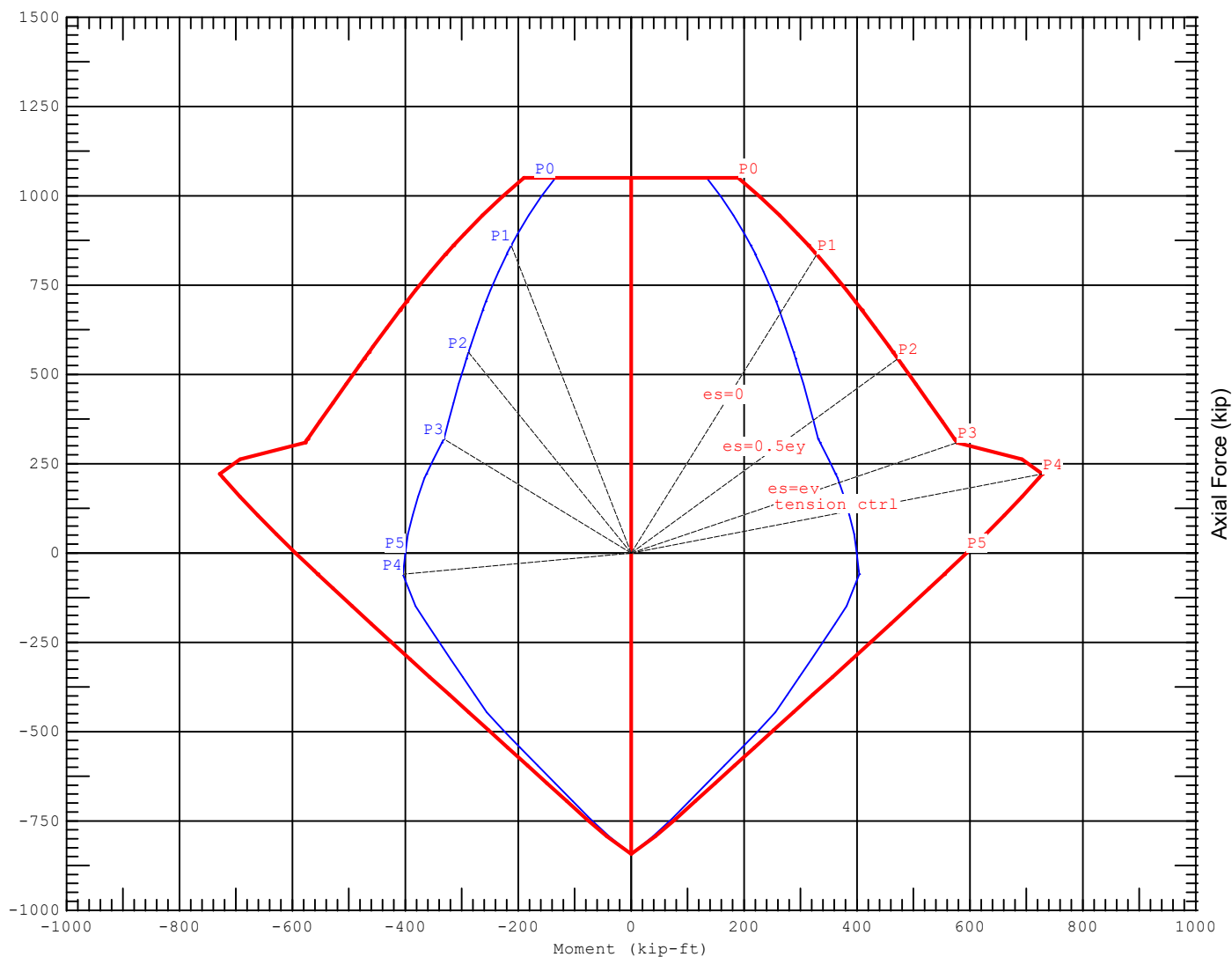
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	189.24	-0.00061
P1	834.96	328.18	0.00000
P2	543.45	471.64	0.00103
P3	308.84	576.44	0.00207
P4	221.23	727.22	0.00507
P5	0.01	593.26	0.00940
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-133.90	-0.00052
P1	860.32	-211.81	0.00000
P2	561.66	-287.28	0.00103
P3	319.11	-330.82	0.00207
P4	-59.30	-403.34	0.00507
P5	0.01	-399.28	0.00460
Pmin	-842.40	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

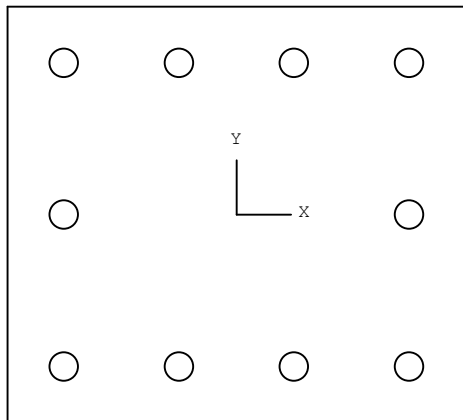
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#11_NX3_NY4_cc2.705



Section 140 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

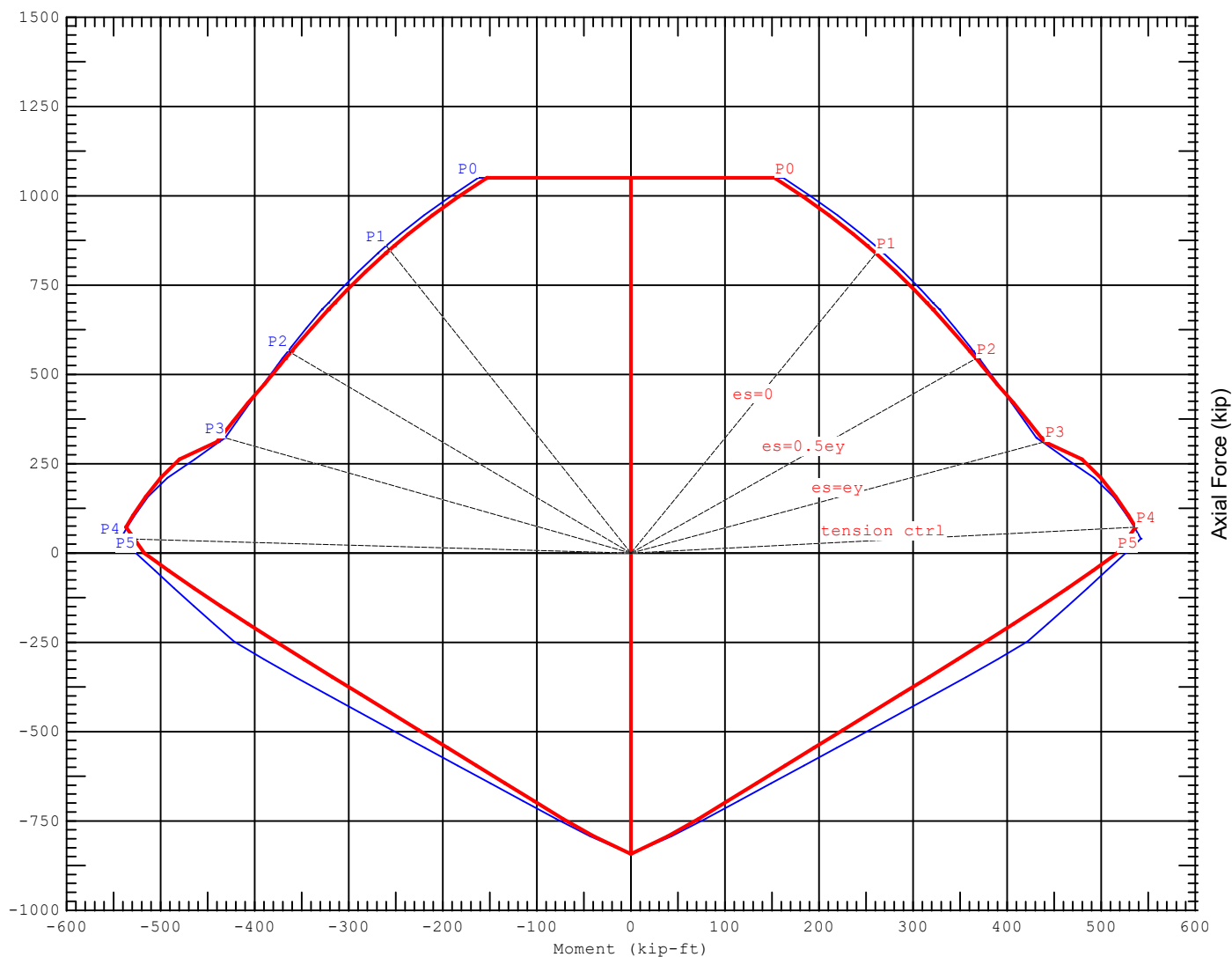
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.12 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	152.54	-0.00059
P1	838.33	260.02	0.00000
P2	544.02	366.25	0.00103
P3	310.98	438.97	0.00207
P4	72.11	535.33	0.00507
P5	0.00	515.96	0.00576
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-161.63	-0.00053
P1	859.81	-259.30	0.00000
P2	564.94	-363.52	0.00103
P3	321.81	-430.29	0.00207
P4	40.08	-541.00	0.00507
P5	0.00	-525.05	0.00554
Pmin	-842.40	-0.00	0.20000

P-Mx and P-My Interaction Diagram



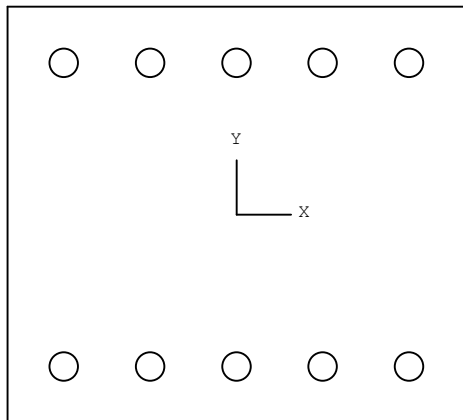
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_10#11_NX2_NY5_cc2.705



Section 141 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

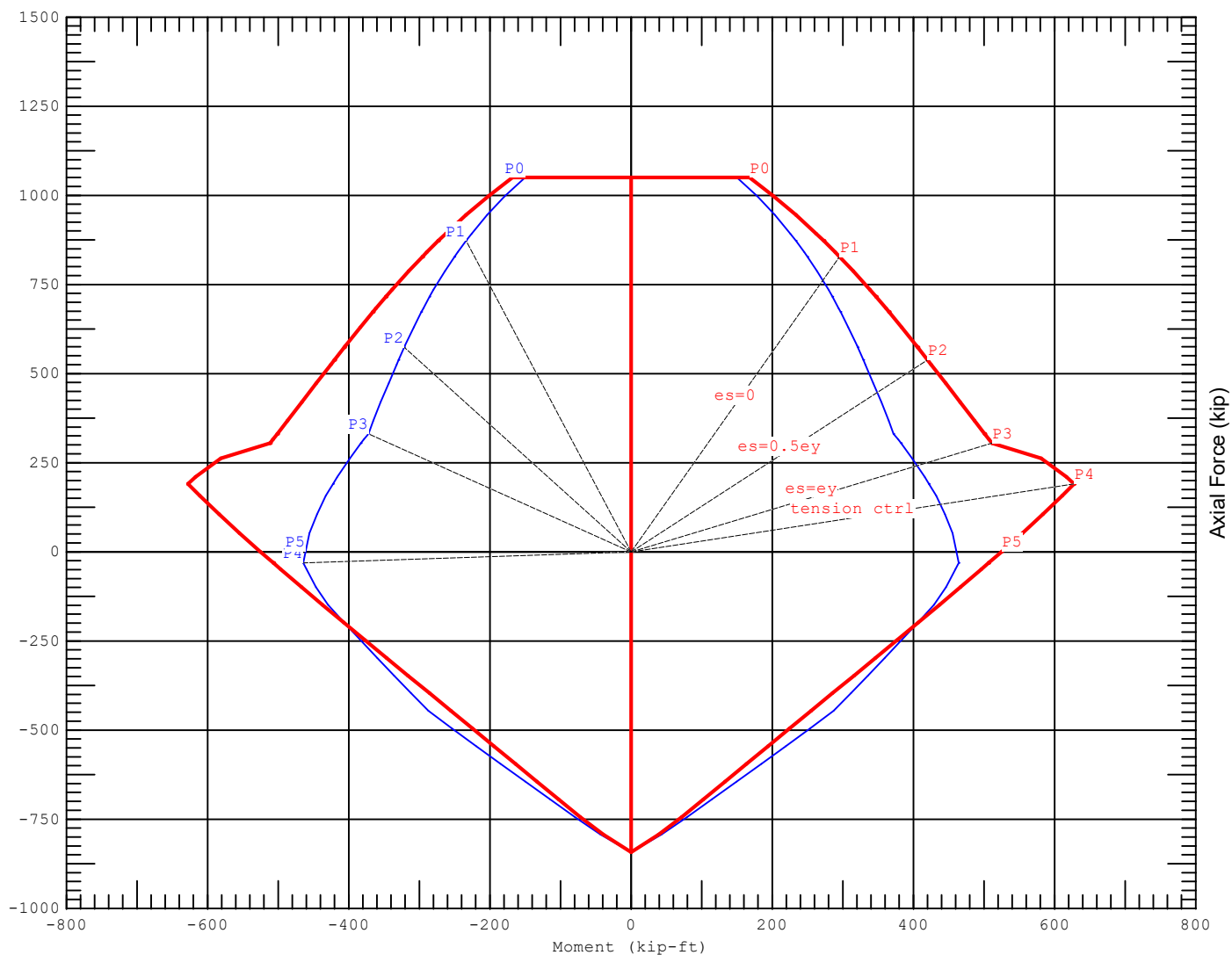
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 10 # 11
Confinement: Tied
Ag: 440.00 in²
As: 15.60 in²
Roh: 3.55%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1049.47	167.99	-0.00063
P1	827.33	295.43	0.00000
P2	537.78	420.15	0.00103
P3	304.33	511.37	0.00207
P4	190.68	627.39	0.00507
P5	0.01	524.79	0.00848
Pmin	-842.40	0.00	0.20000

PT	P	My (-)	max es
P0	1049.47	-149.93	-0.00049
P1	872.23	-233.60	0.00000
P2	573.10	-321.22	0.00103
P3	330.87	-371.98	0.00207
P4	-31.41	-464.17	0.00507
P5	0.02	-461.22	0.00481
Pmin	-842.40	0.00	0.20000

P-Mx and P-My Interaction Diagram



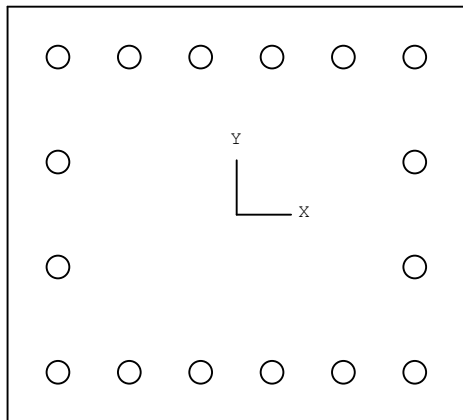
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#9_NX4_NY6_cc2.439



Section 142 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

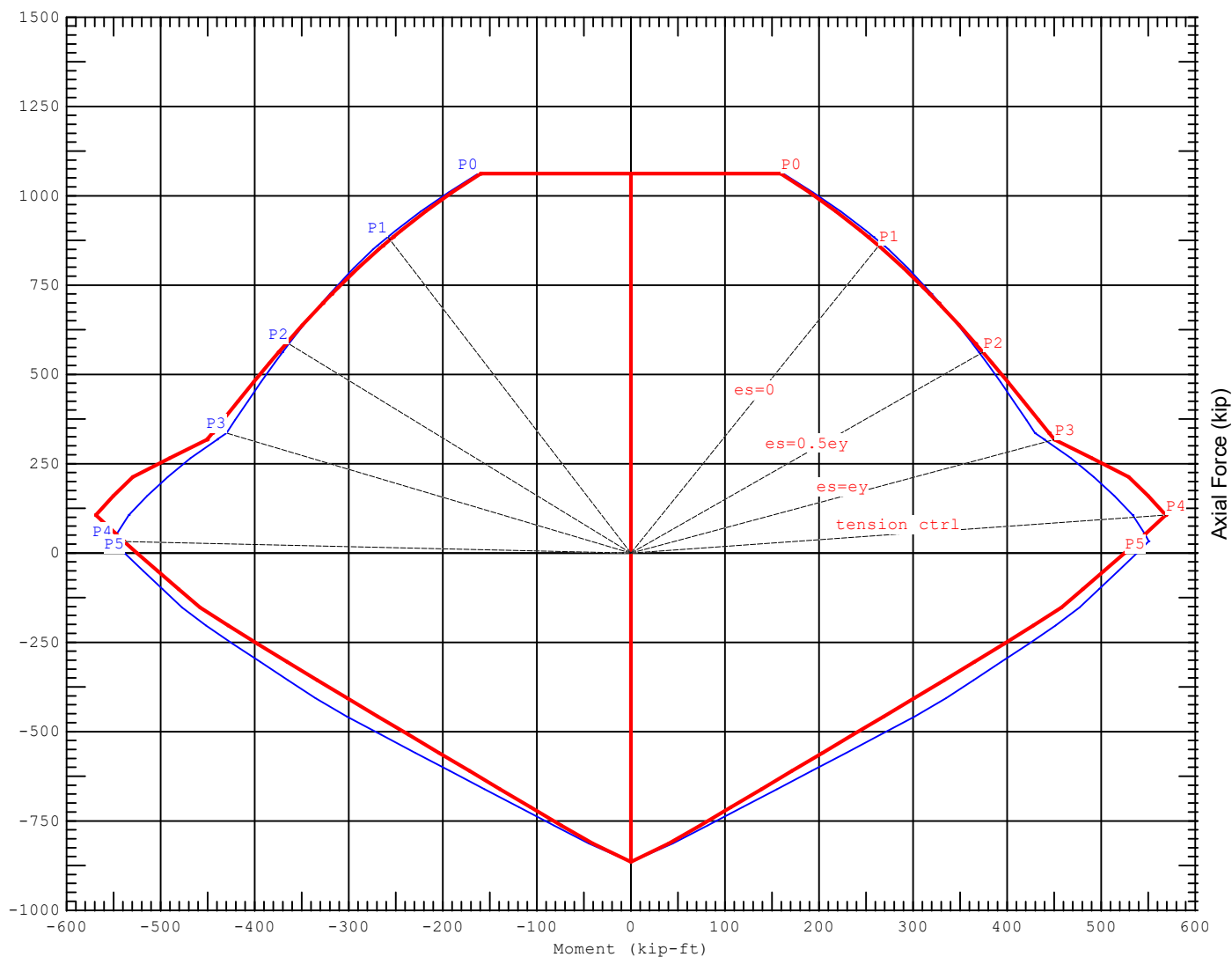
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.41	159.06	-0.00056
P1	859.12	263.05	0.00000
P2	561.46	373.47	0.00103
P3	317.44	449.31	0.00207
P4	105.94	567.51	0.00507
P5	-0.00	523.76	0.00651
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.42	-161.90	-0.00050
P1	884.09	-257.70	0.00000
P2	584.86	-362.87	0.00103
P3	335.49	-428.97	0.00207
P4	33.09	-549.54	0.00507
P5	-0.00	-536.84	0.00545
Pmin	-864.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

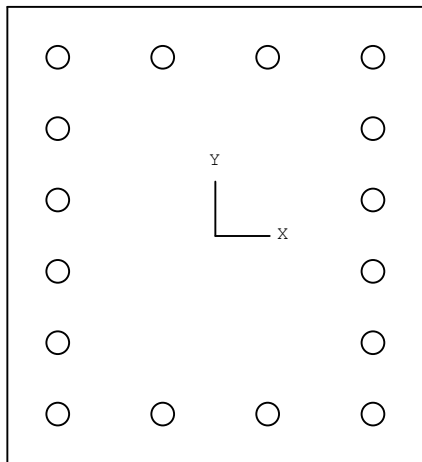
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#9_NX6_NY4_cc2.439



Section 143 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

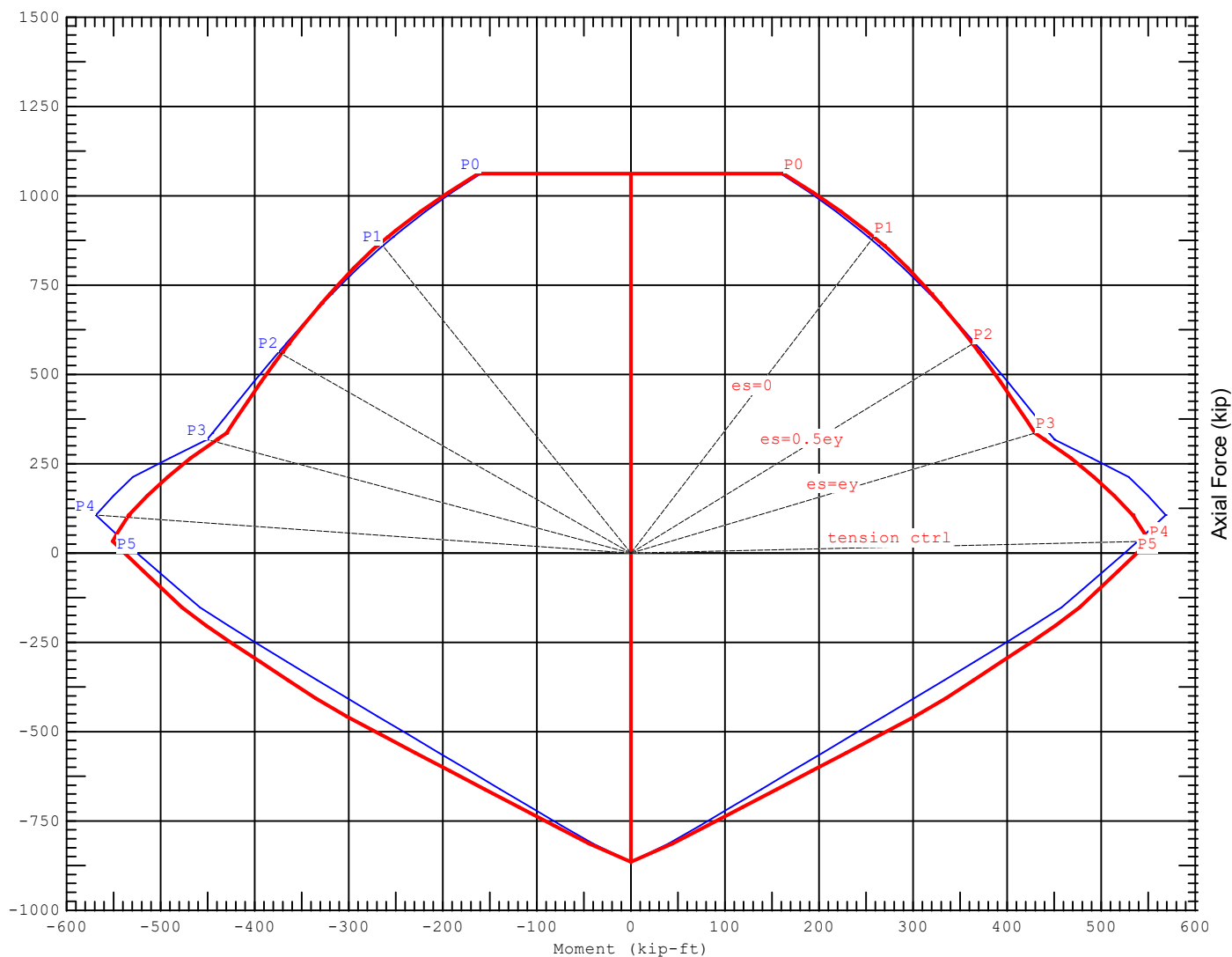
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.42	161.90	-0.00050
P1	884.09	257.70	0.00000
P2	584.86	362.87	0.00103
P3	335.49	428.97	0.00207
P4	33.09	549.54	0.00507
P5	-0.00	536.84	0.00545
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.41	-159.06	-0.00056
P1	859.12	-263.05	0.00000
P2	561.46	-373.47	0.00103
P3	317.44	-449.31	0.00207
P4	105.94	-567.51	0.00507
P5	-0.00	-523.76	0.00651
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



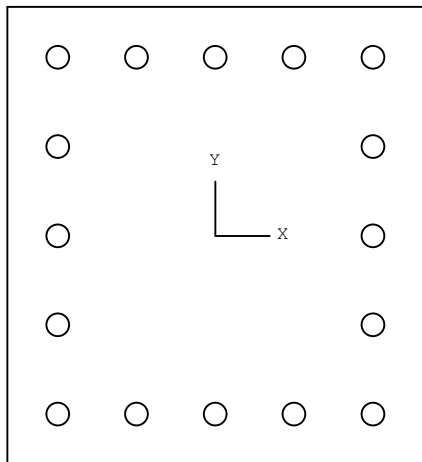
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#9_NX5_NY5_cc2.439



Section 144 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

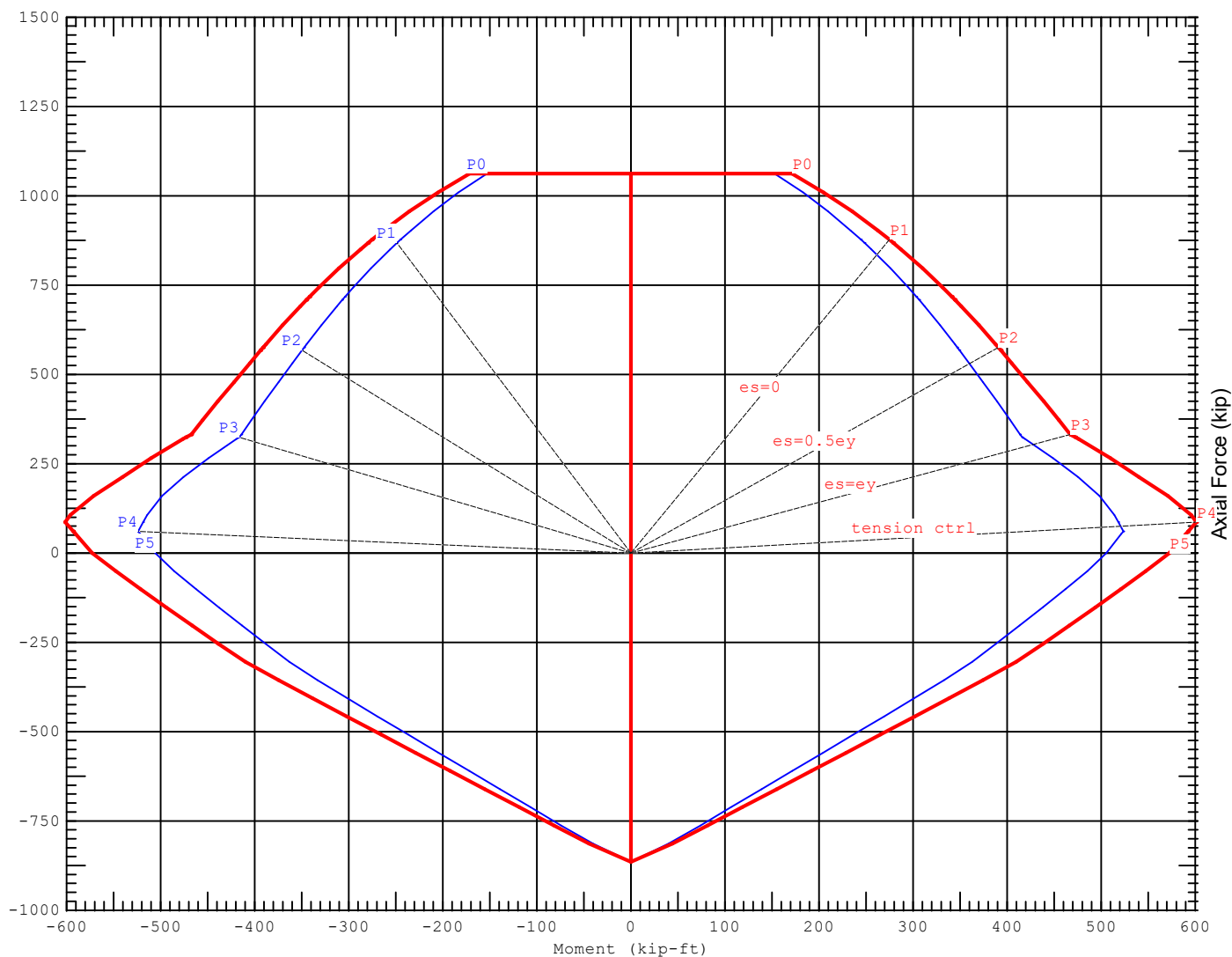
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.42	171.06	-0.00052
P1	876.44	274.26	0.00000
P2	575.14	389.89	0.00103
P3	331.51	466.25	0.00207
P4	86.13	599.86	0.00507
P5	-0.00	571.33	0.00597
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.42	-152.57	-0.00054
P1	867.16	-248.04	0.00000
P2	566.79	-348.77	0.00103
P3	323.38	-415.26	0.00207
P4	60.16	-522.50	0.00507
P5	0.00	-504.35	0.00568
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



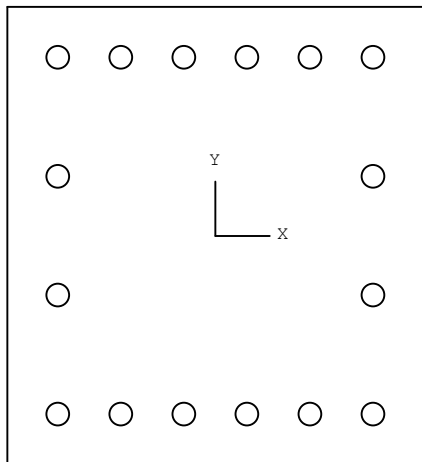
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#9_NX4_NY6_cc2.439



Section 145 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

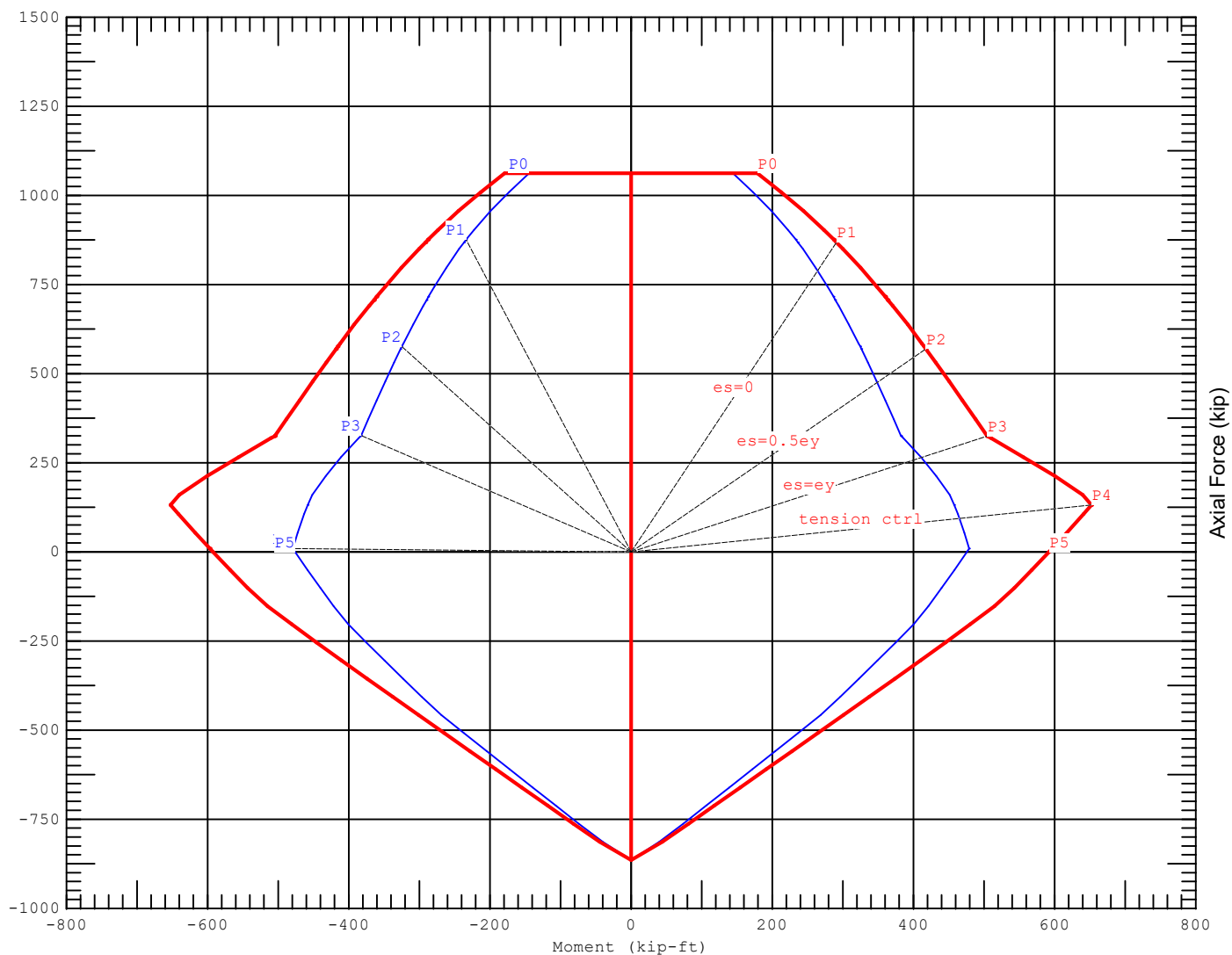
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.42	178.89	-0.00054
P1	867.60	291.09	0.00000
P2	568.73	417.64	0.00103
P3	324.22	504.53	0.00207
P4	131.41	652.31	0.00507
P5	-0.01	592.16	0.00695
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.42	-144.41	-0.00052
P1	875.20	-233.72	0.00000
P2	575.43	-324.70	0.00103
P3	326.00	-382.08	0.00207
P4	9.22	-479.09	0.00507
P5	-0.01	-475.90	0.00517
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



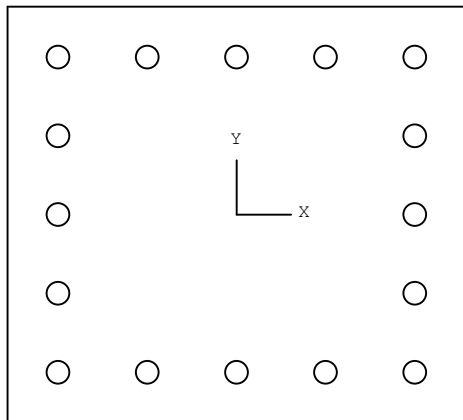
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#9_NX5_NY5_cc2.439



Section 146 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

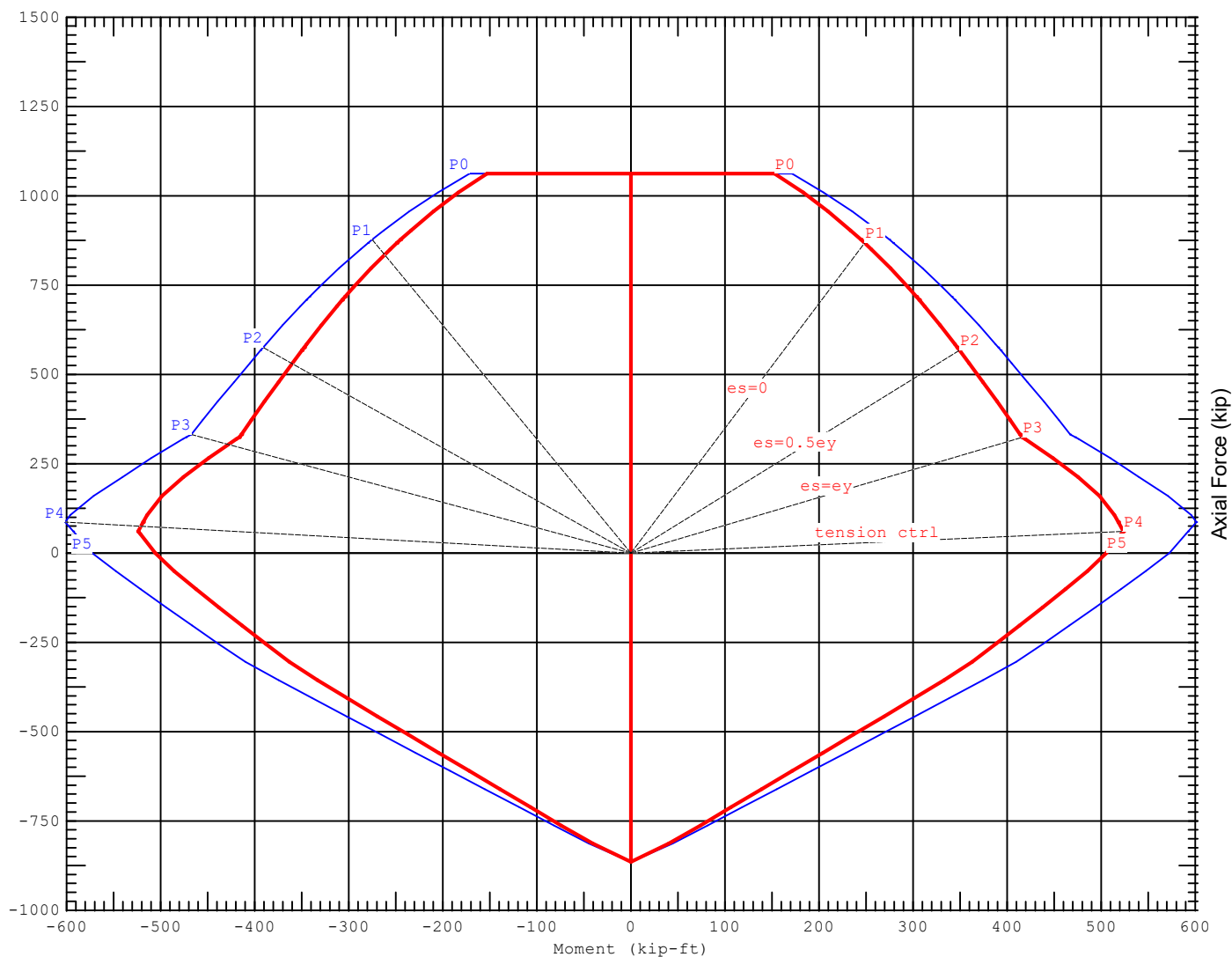
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.42	152.57	-0.00054
P1	867.16	248.04	0.00000
P2	566.79	348.77	0.00103
P3	323.38	415.26	0.00207
P4	60.16	522.50	0.00507
P5	0.00	504.35	0.00568
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.42	-171.06	-0.00052
P1	876.44	-274.26	0.00000
P2	575.14	-389.89	0.00103
P3	331.51	-466.25	0.00207
P4	86.13	-599.86	0.00507
P5	-0.00	-571.33	0.00597
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



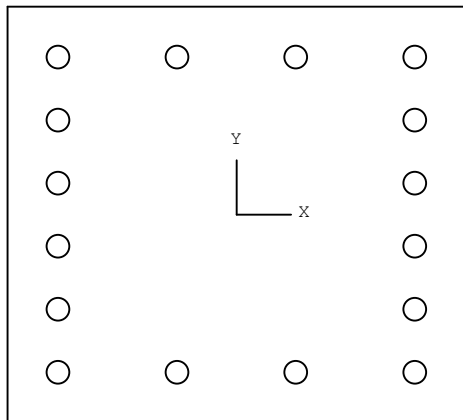
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#9_NX6_NY4_cc2.439



Section 147 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

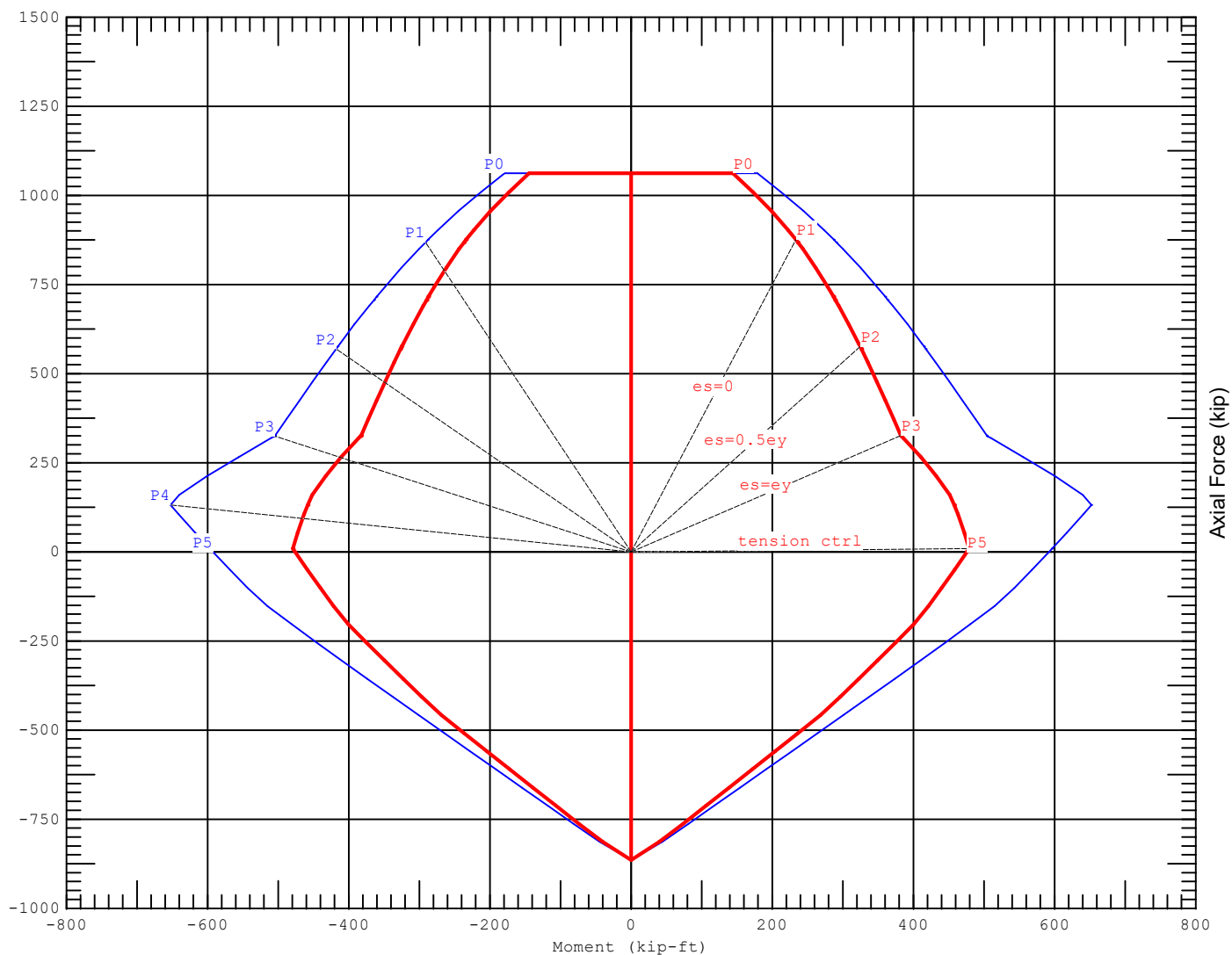
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 16 # 9
Confinement: Tied
Ag: 440.00 in²
As: 16.00 in²
Roh: 3.64%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1061.42	144.41	-0.00052
P1	875.20	233.72	0.00000
P2	575.43	324.70	0.00103
P3	326.00	382.08	0.00207
P4	9.22	479.09	0.00507
P5	-0.01	475.90	0.00517
Pmin	-864.00	0.00	0.20000

PT	P	My (-)	max es
P0	1061.42	-178.89	-0.00054
P1	867.60	-291.09	0.00000
P2	568.73	-417.64	0.00103
P3	324.22	-504.53	0.00207
P4	131.41	-652.31	0.00507
P5	-0.01	-592.16	0.00695
Pmin	-864.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



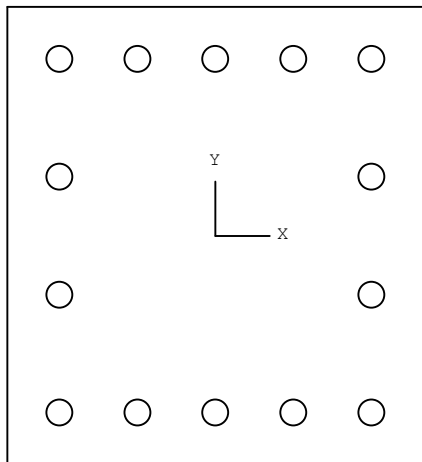
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#10_NX4_NY5_cc2.51



Section 148 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

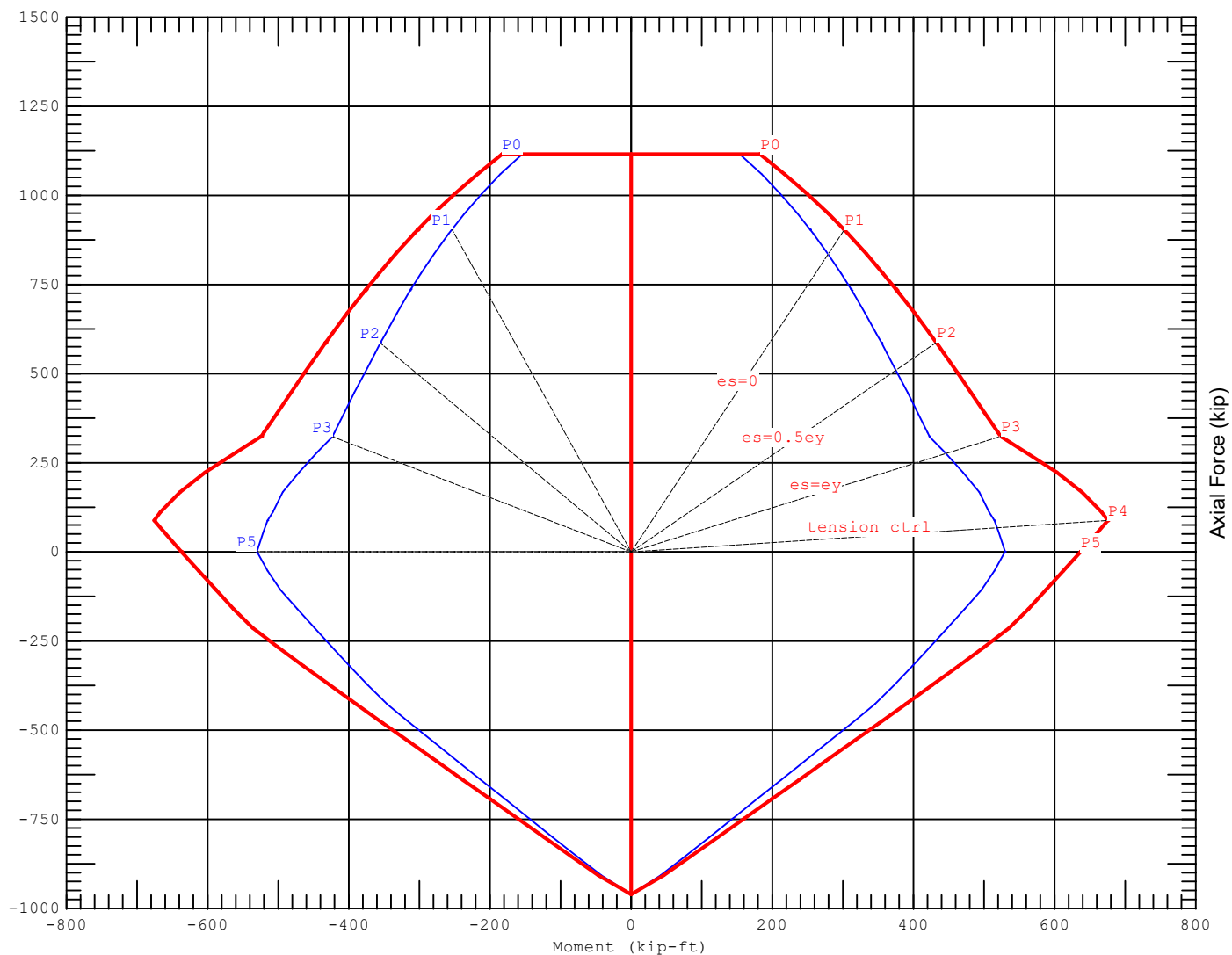
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 440.00 in²
As: 17.78 in²
Roh: 4.04%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.59	182.53	-0.00056
P1	903.02	301.94	0.00000
P2	586.68	432.34	0.00103
P3	323.61	523.76	0.00207
P4	87.71	675.18	0.00507
P5	-0.01	636.74	0.00617
Pmin	-960.12	-0.00	0.20000

PT	P	My (-)	max es
P0	1114.60	-153.89	-0.00056
P1	903.71	-253.56	0.00000
P2	584.90	-354.98	0.00103
P3	322.83	-422.93	0.00207
P4	0.78	-529.84	0.00507
P5	0.01	-529.63	0.00508
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



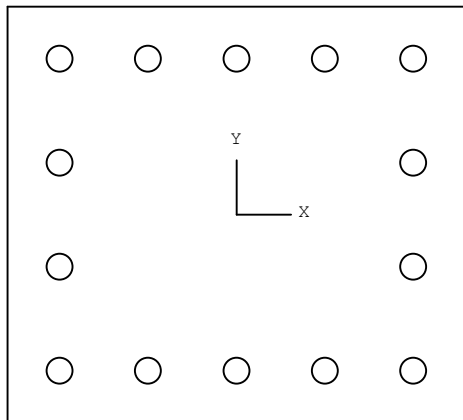
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#10_NX4_NY5_cc2.51



Section 149 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

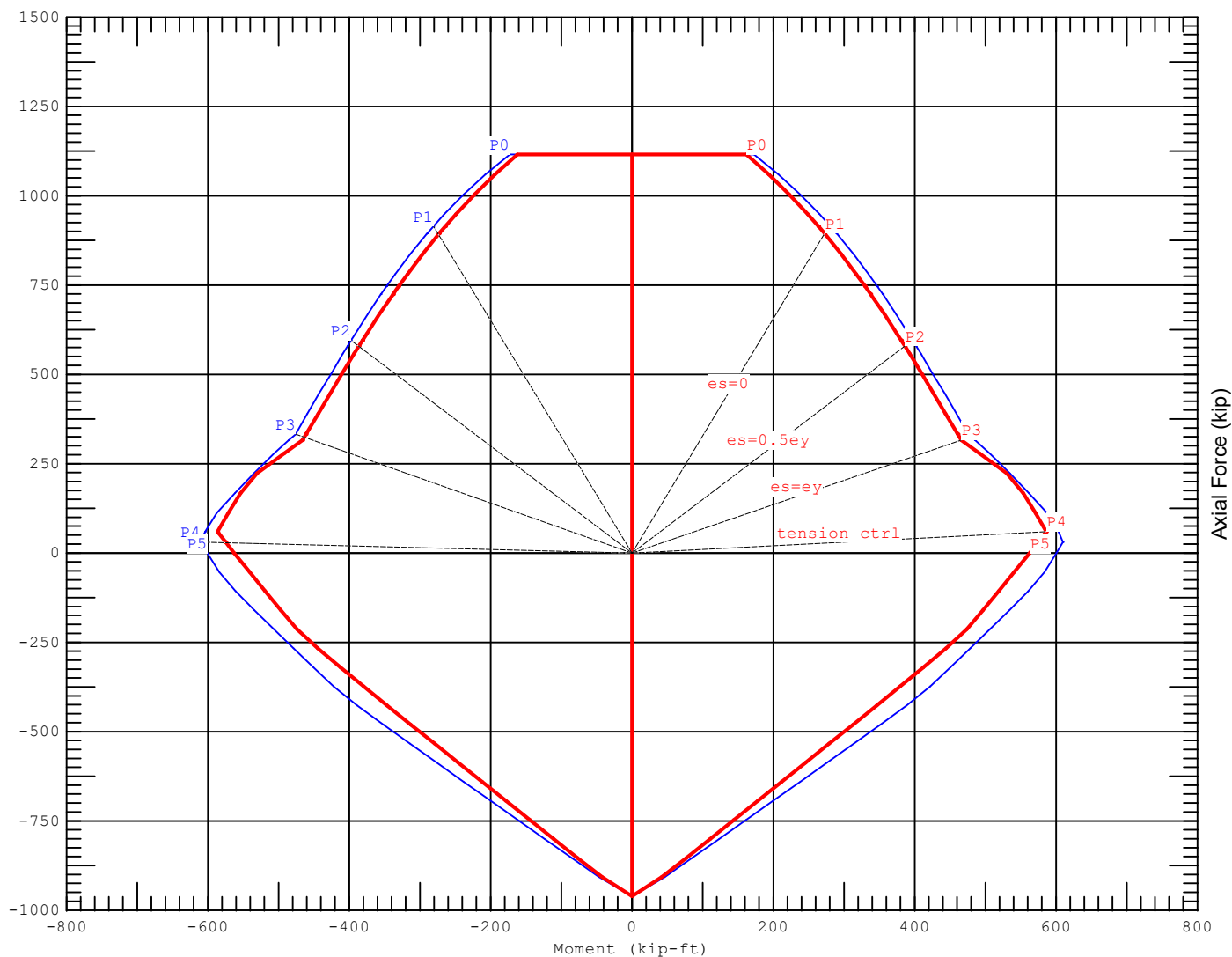
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 440.00 in²
As: 17.78 in²
Roh: 4.04%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.60	161.99	-0.00058
P1	893.84	272.49	0.00000
P2	578.58	386.14	0.00103
P3	315.85	465.86	0.00207
P4	59.12	585.94	0.00507
P5	-0.01	562.57	0.00577
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1114.60	-172.70	-0.00053
P1	913.96	-280.68	0.00000
P2	594.43	-397.30	0.00103
P3	332.38	-475.45	0.00207
P4	30.02	-609.66	0.00507
P5	-0.00	-600.45	0.00534
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

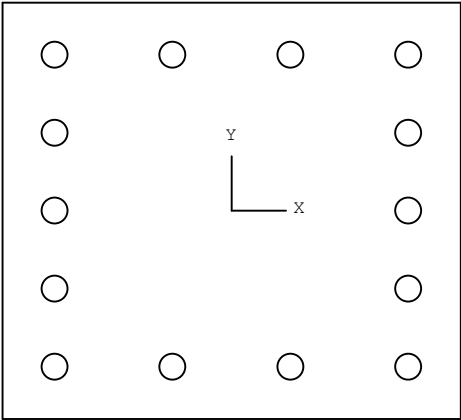
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#10_NX5_NY4_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 14 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 17.78 in^2

Roh: 4.04%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

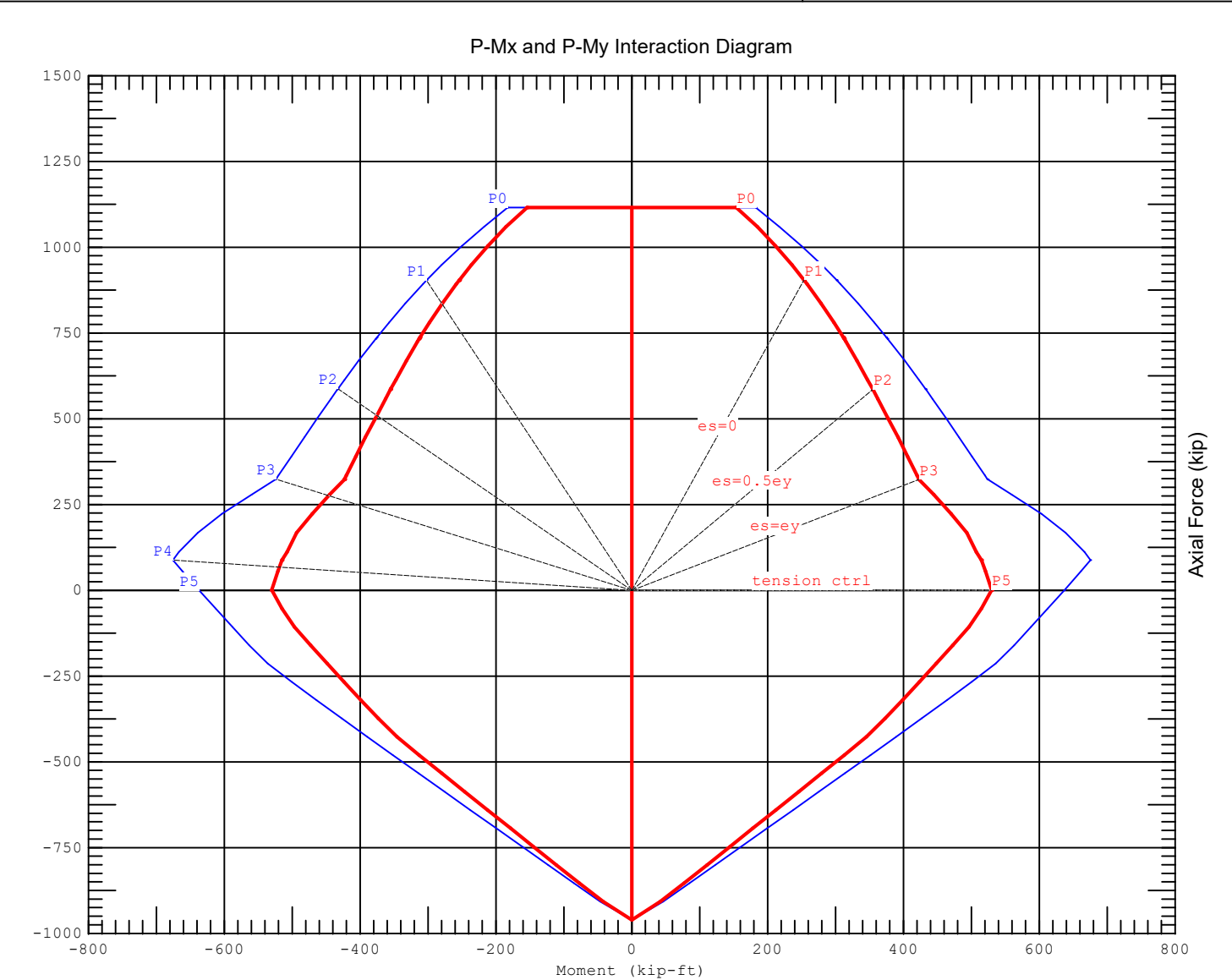
Y0: 0.00 in

Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.60	153.89	-0.00056
P1	903.71	253.56	0.00000
P2	584.90	354.98	0.00103
P3	322.83	422.93	0.00207
P4	0.78	529.84	0.00507
P5	0.01	529.63	0.00508
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1114.59	-182.53	-0.00056
P1	903.02	-301.94	0.00000
P2	586.68	-432.34	0.00103
P3	323.61	-523.76	0.00207
P4	87.71	-675.18	0.00507
P5	-0.01	-636.74	0.00617
Pmin	-960.12	0.00	0.20000



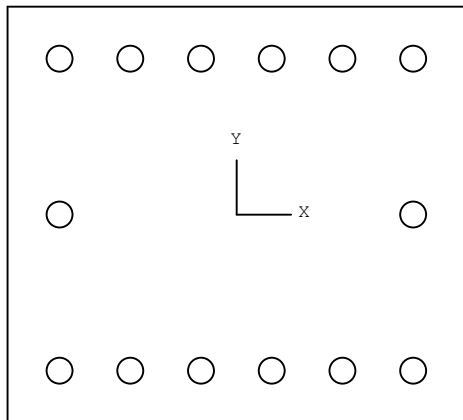
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#10_NX3_NY6_cc2.51



Section 151 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

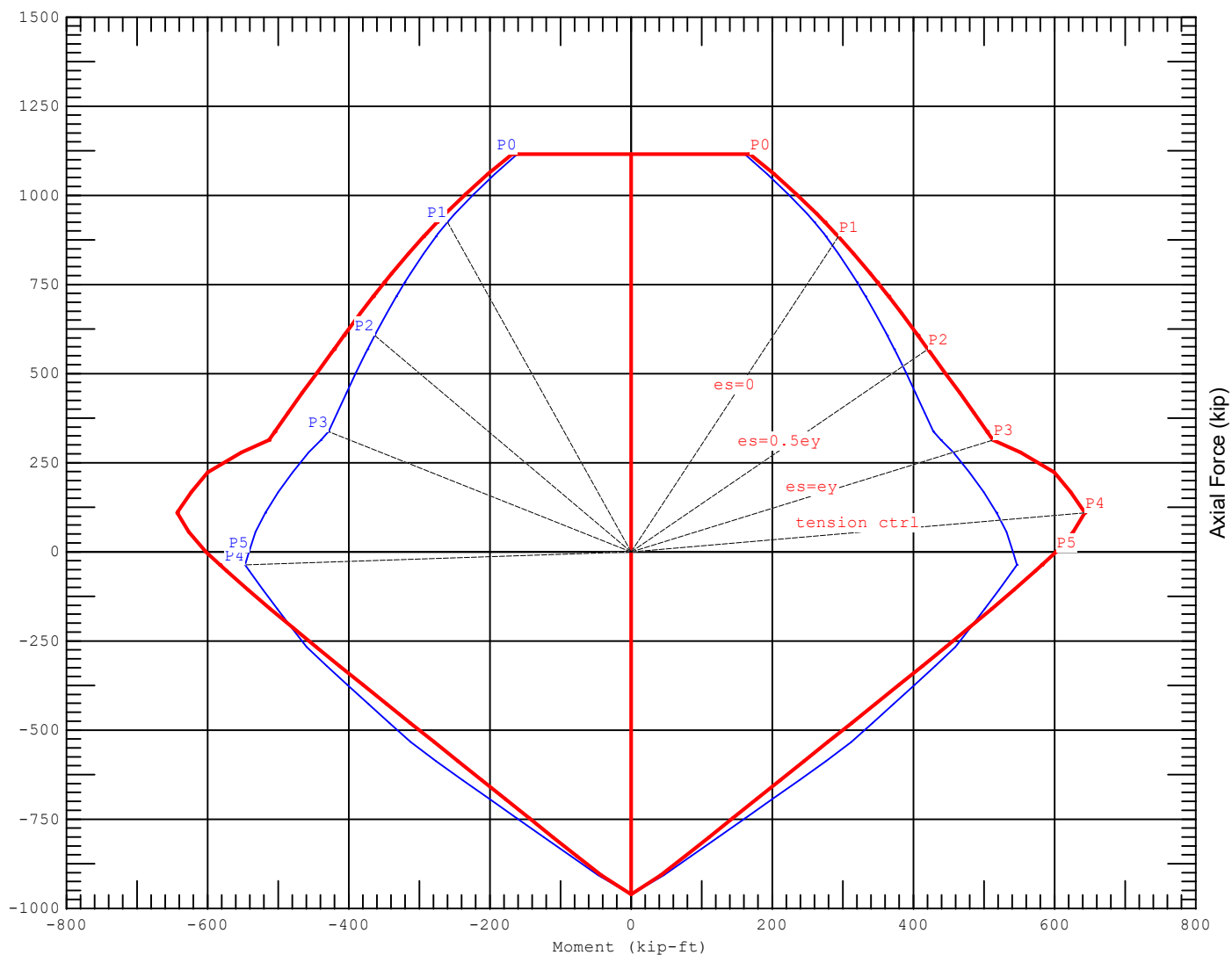
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 440.00 in²
As: 17.78 in²
Roh: 4.04%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.60	168.38	-0.00061
P1	883.96	293.56	0.00000
P2	568.05	420.60	0.00103
P3	313.08	512.84	0.00207
P4	109.49	642.87	0.00507
P5	-0.01	602.17	0.00643
Pmin	-960.12	-0.00	0.20000

PT	P	My (-)	max es
P0	1114.60	-161.13	-0.00051
P1	923.84	-259.96	0.00000
P2	606.38	-363.20	0.00103
P3	336.93	-428.40	0.00207
P4	-36.57	-546.72	0.00507
P5	-0.01	-541.20	0.00473
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



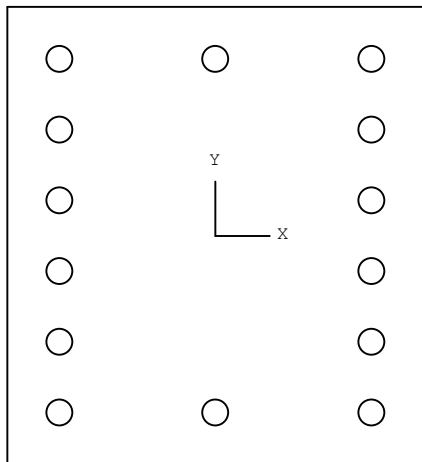
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#10_NX6_NY3_cc2.51



Section 152 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

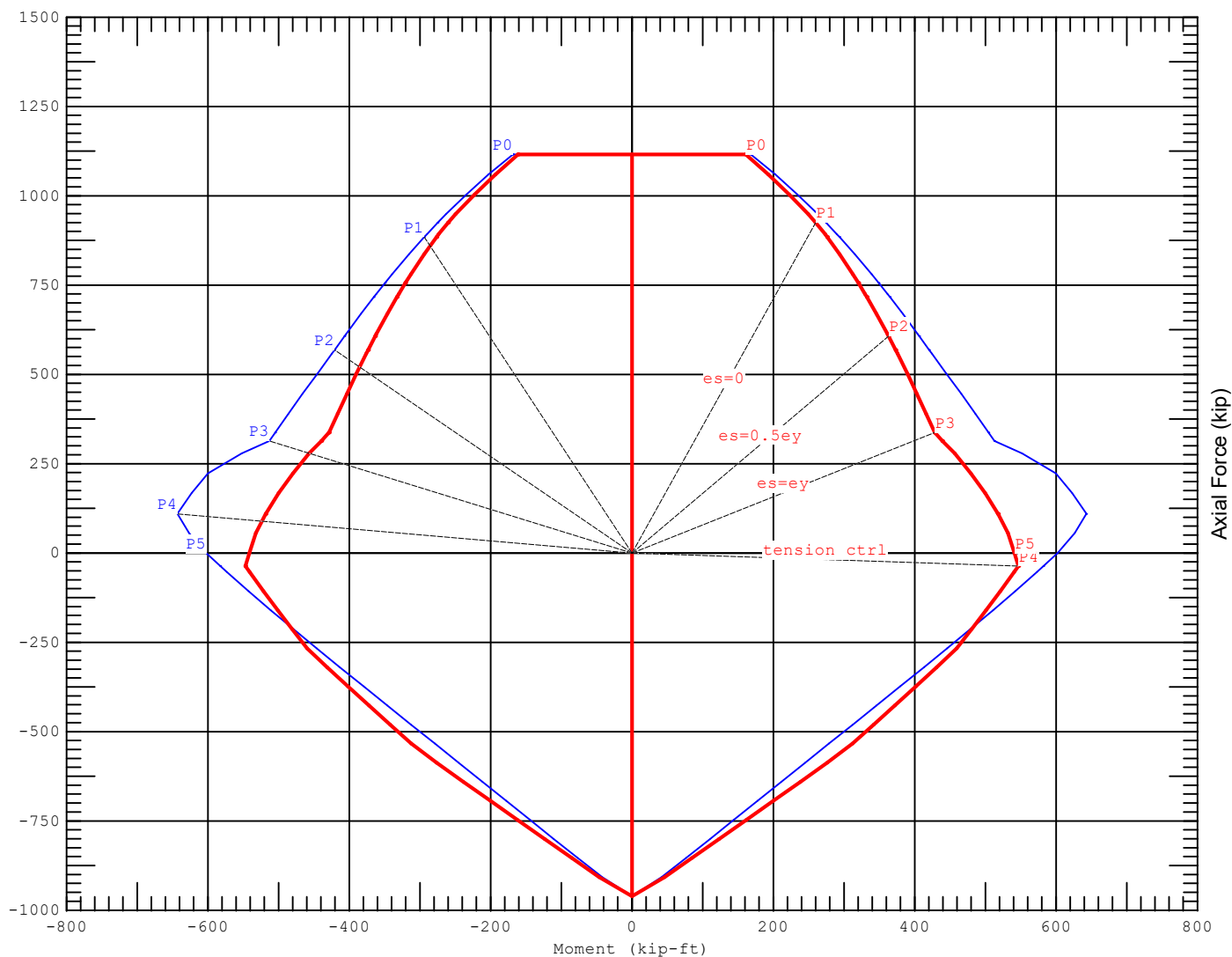
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 440.00 in²
As: 17.78 in²
Roh: 4.04%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.60	161.13	-0.00051
P1	923.84	259.96	0.00000
P2	606.38	363.20	0.00103
P3	336.93	428.40	0.00207
P4	-36.57	546.72	0.00507
P5	-0.01	541.20	0.00473
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1114.60	-168.38	-0.00061
P1	883.96	-293.56	0.00000
P2	568.05	-420.60	0.00103
P3	313.08	-512.84	0.00207
P4	109.49	-642.87	0.00507
P5	-0.01	-602.17	0.00643
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



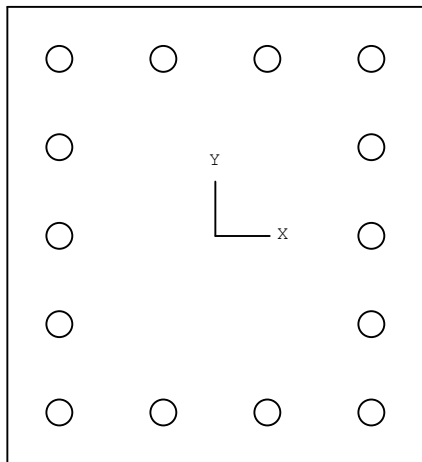
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#10_NX5_NY4_cc2.51



Section 153 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

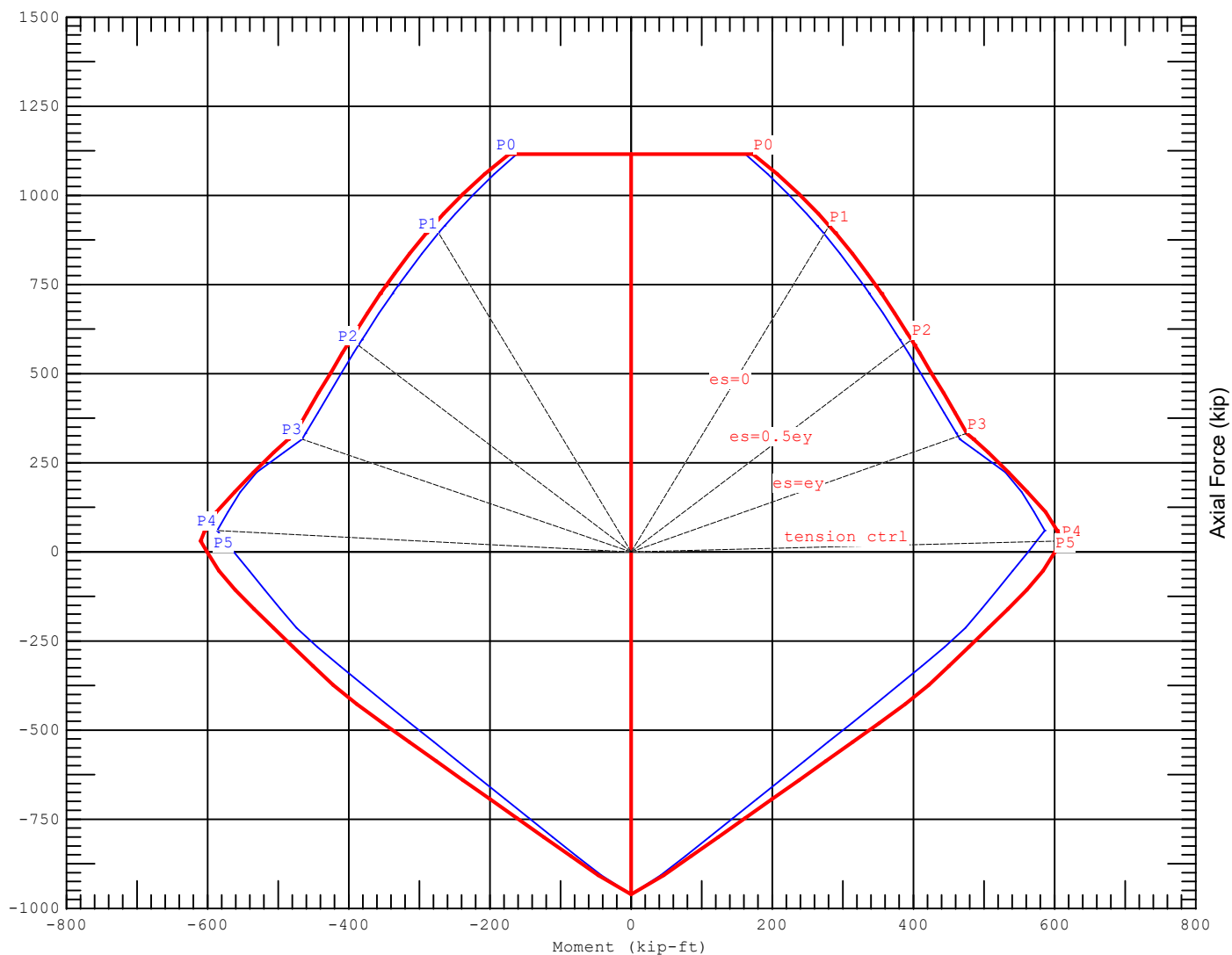
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 14 # 10
Confinement: Tied
Ag: 440.00 in²
As: 17.78 in²
Roh: 4.04%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.97 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1114.60	172.70	-0.00053
P1	913.96	280.68	0.00000
P2	594.43	397.30	0.00103
P3	332.38	475.45	0.00207
P4	30.02	609.66	0.00507
P5	-0.00	600.45	0.00534
Pmin	-960.12	0.00	0.20000

PT	P	My (-)	max es
P0	1114.60	-161.99	-0.00058
P1	893.84	-272.49	0.00000
P2	578.58	-386.14	0.00103
P3	315.85	-465.86	0.00207
P4	59.12	-585.94	0.00507
P5	-0.01	-562.57	0.00577
Pmin	-960.12	0.00	0.20000

P-Mx and P-My Interaction Diagram



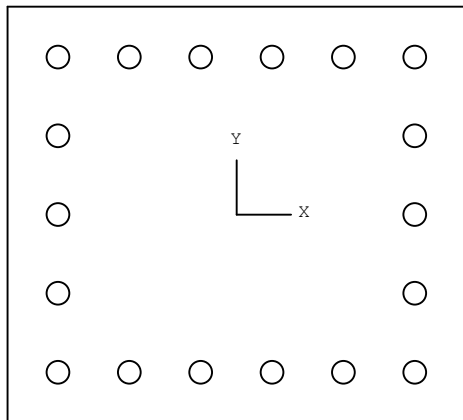
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_18#9_NX5_NY6_cc2.439



Section 154 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

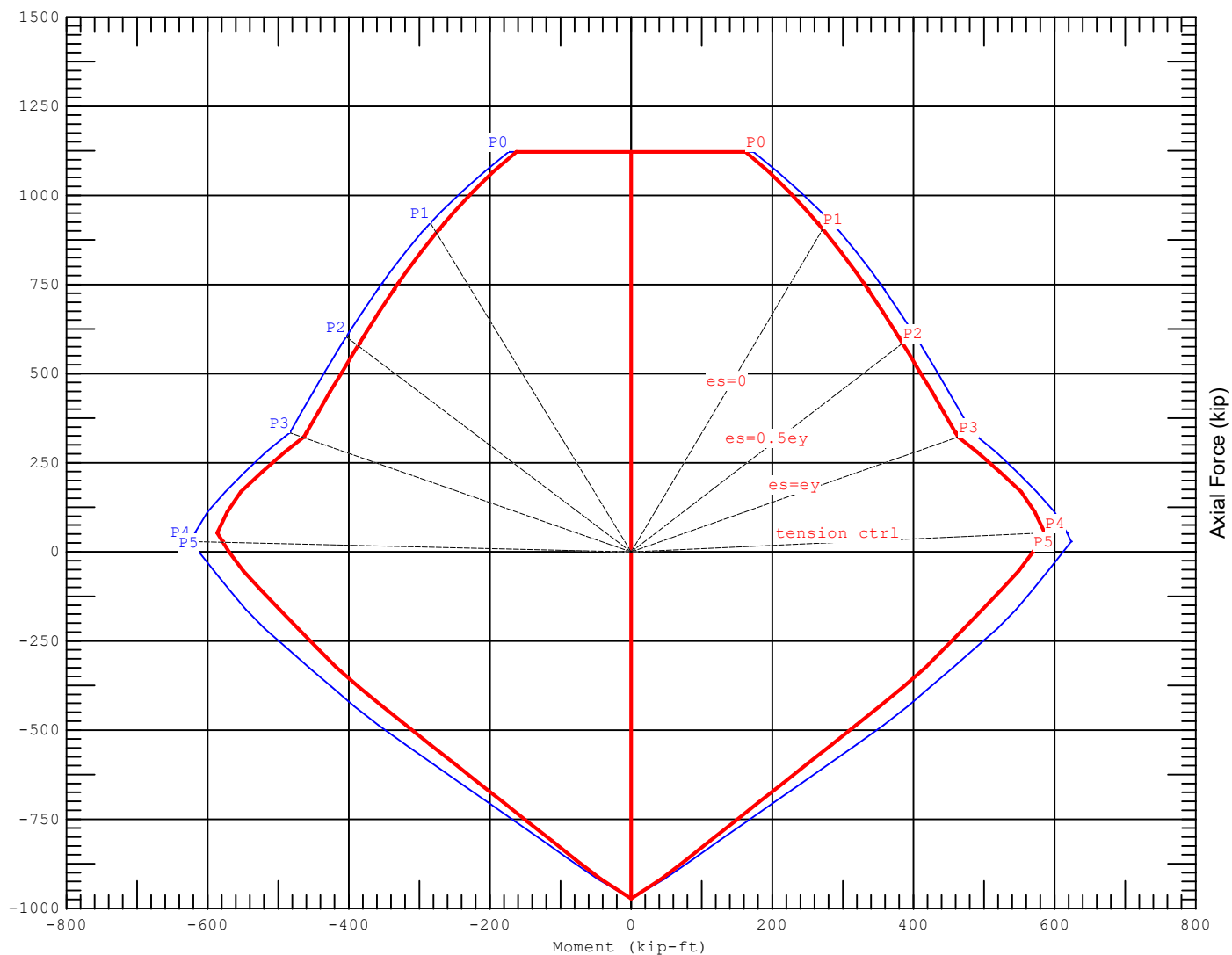
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 18 # 9
Confinement: Tied
Ag: 440.00 in²
As: 18.00 in²
Roh: 4.09%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1121.16	162.17	-0.00057
P1	904.51	271.57	0.00000
P2	584.63	384.58	0.00103
P3	321.72	463.36	0.00207
P4	52.91	585.98	0.00507
P5	0.01	569.44	0.00558
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1121.17	-173.46	-0.00053
P1	921.43	-284.34	0.00000
P2	602.70	-403.43	0.00103
P3	333.84	-483.44	0.00207
P4	28.84	-623.56	0.00507
P5	-0.00	-612.17	0.00539
Pmin	-972.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



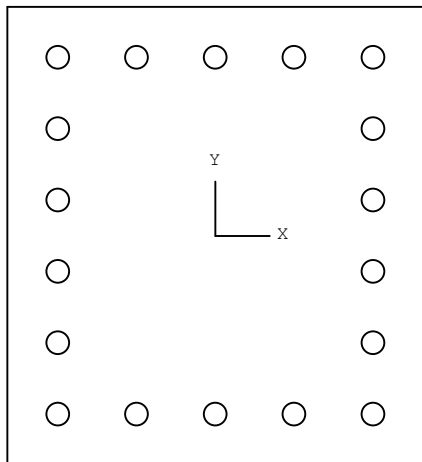
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_18#9_NX6_NY5_cc2.439



Section 155 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

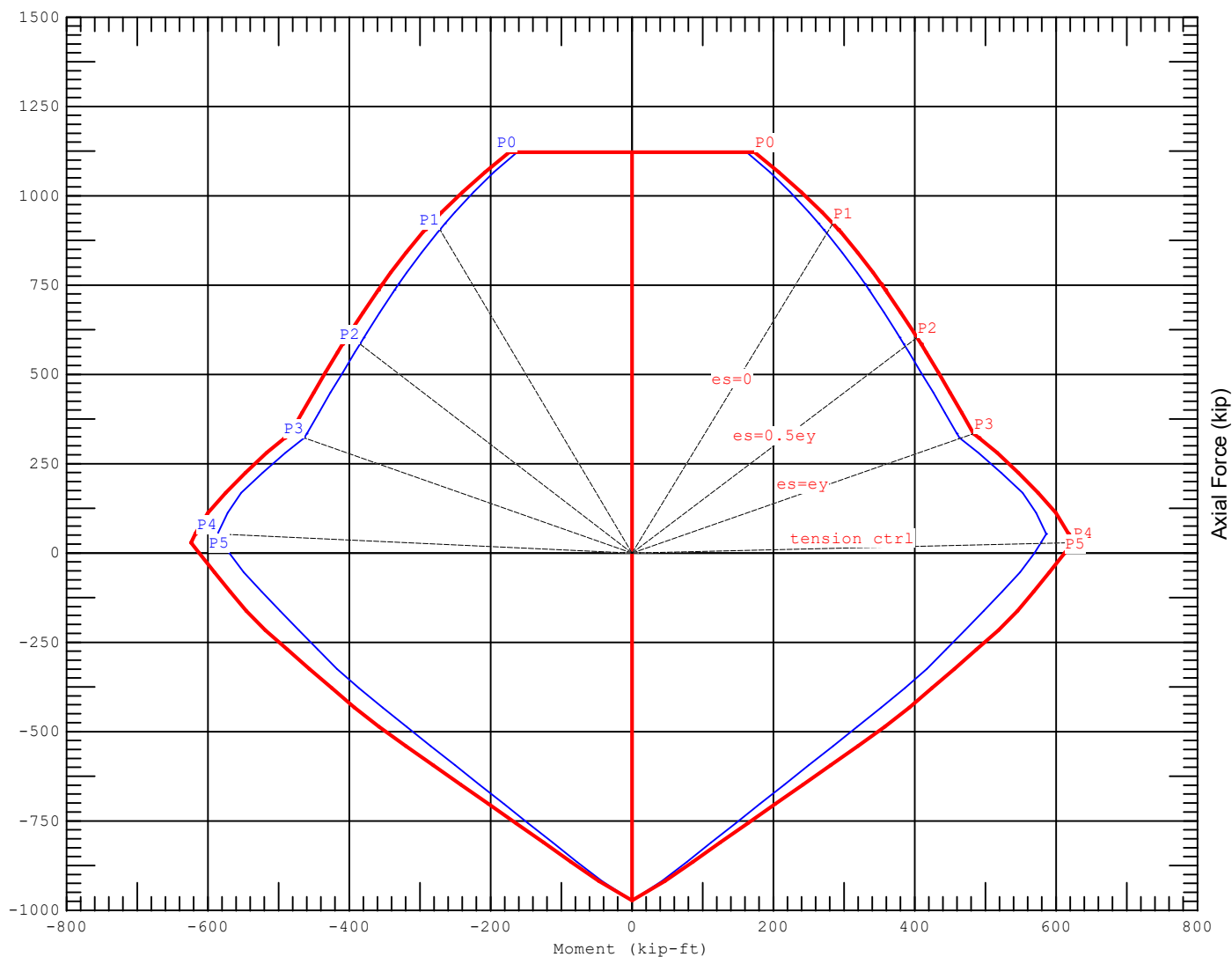
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 18 # 9
Confinement: Tied
Ag: 440.00 in²
As: 18.00 in²
Roh: 4.09%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.30 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1121.17	173.46	-0.00053
P1	921.43	284.34	0.00000
P2	602.70	403.43	0.00103
P3	333.84	483.44	0.00207
P4	28.84	623.56	0.00507
P5	-0.00	612.17	0.00539
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1121.16	-162.17	-0.00057
P1	904.51	-271.57	0.00000
P2	584.63	-384.58	0.00103
P3	321.72	-463.36	0.00207
P4	52.91	-585.98	0.00507
P5	0.01	-569.44	0.00558
Pmin	-972.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



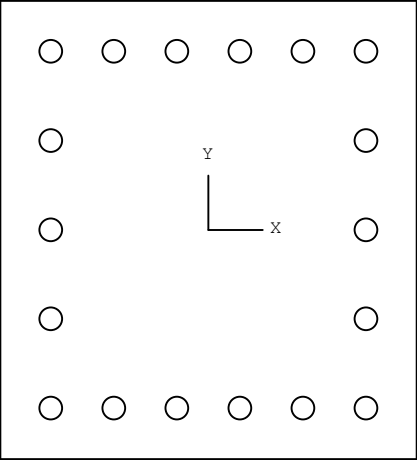
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_18#9_NX5_NY6_cc2.439



Section 156 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

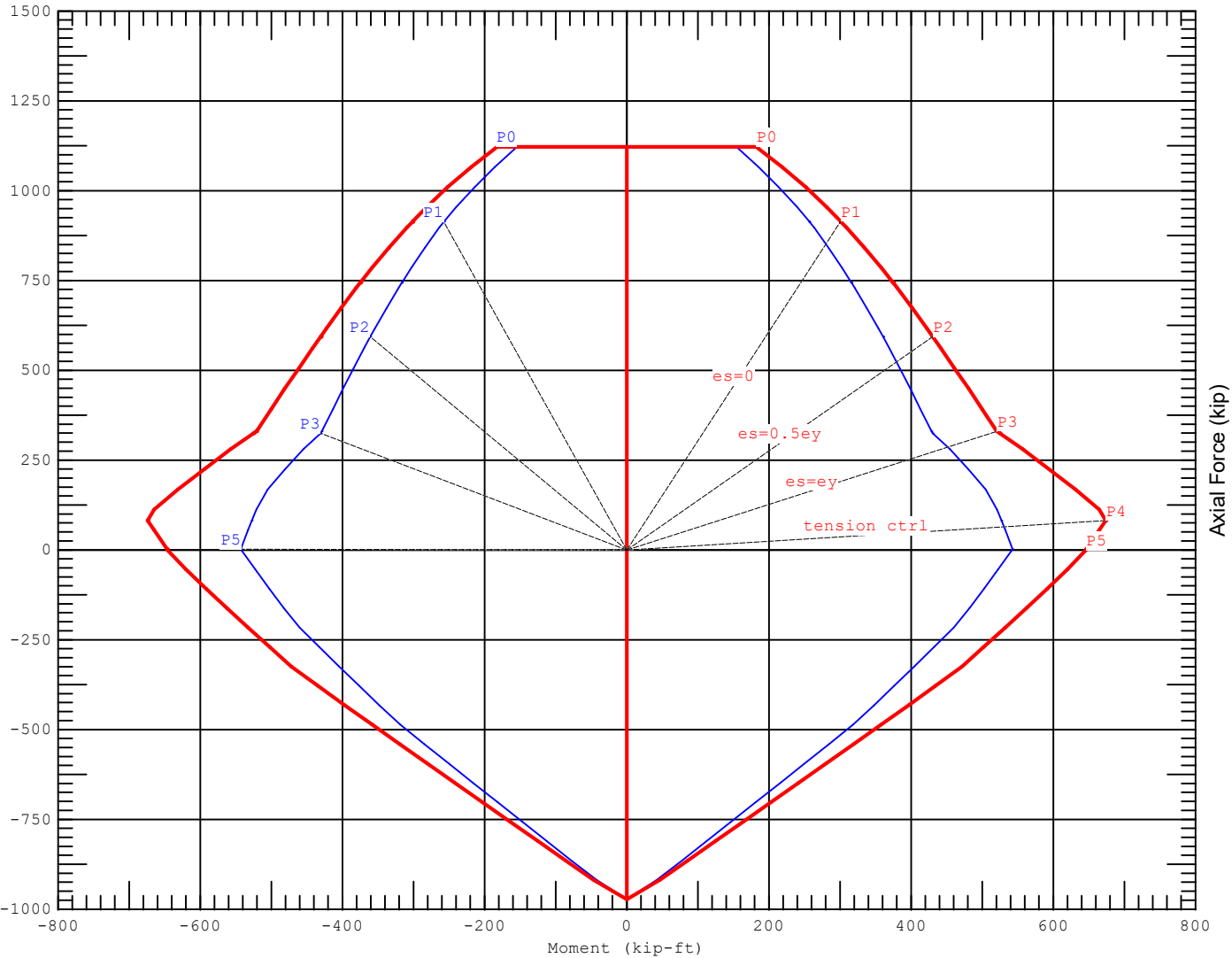
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 18 # 9
Confinement: Tied
Ag: 440.00 in²
As: 18.00 in²
Roh: 4.09%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1121.17	182.06	-0.00055
P1	913.79	300.90	0.00000
P2	592.98	430.44	0.00103
P3	329.86	520.71	0.00207
P4	81.87	673.87	0.00507
P5	-0.01	645.75	0.00590
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1121.17	-154.48	-0.00055
P1	912.54	-257.25	0.00000
P2	593.27	-360.52	0.00103
P3	324.34	-430.19	0.00207
P4	1.97	-542.58	0.00507
P5	0.00	-541.88	0.00509
Pmin	-972.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



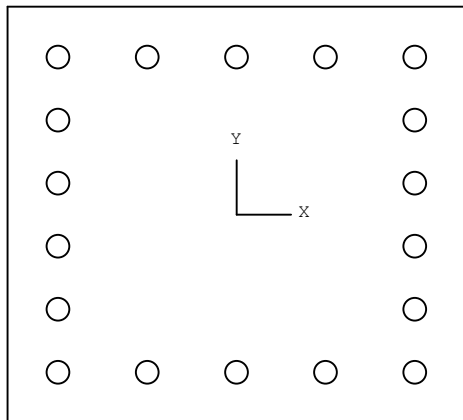
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_18#9_NX6_NY5_cc2.439



Section 157 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

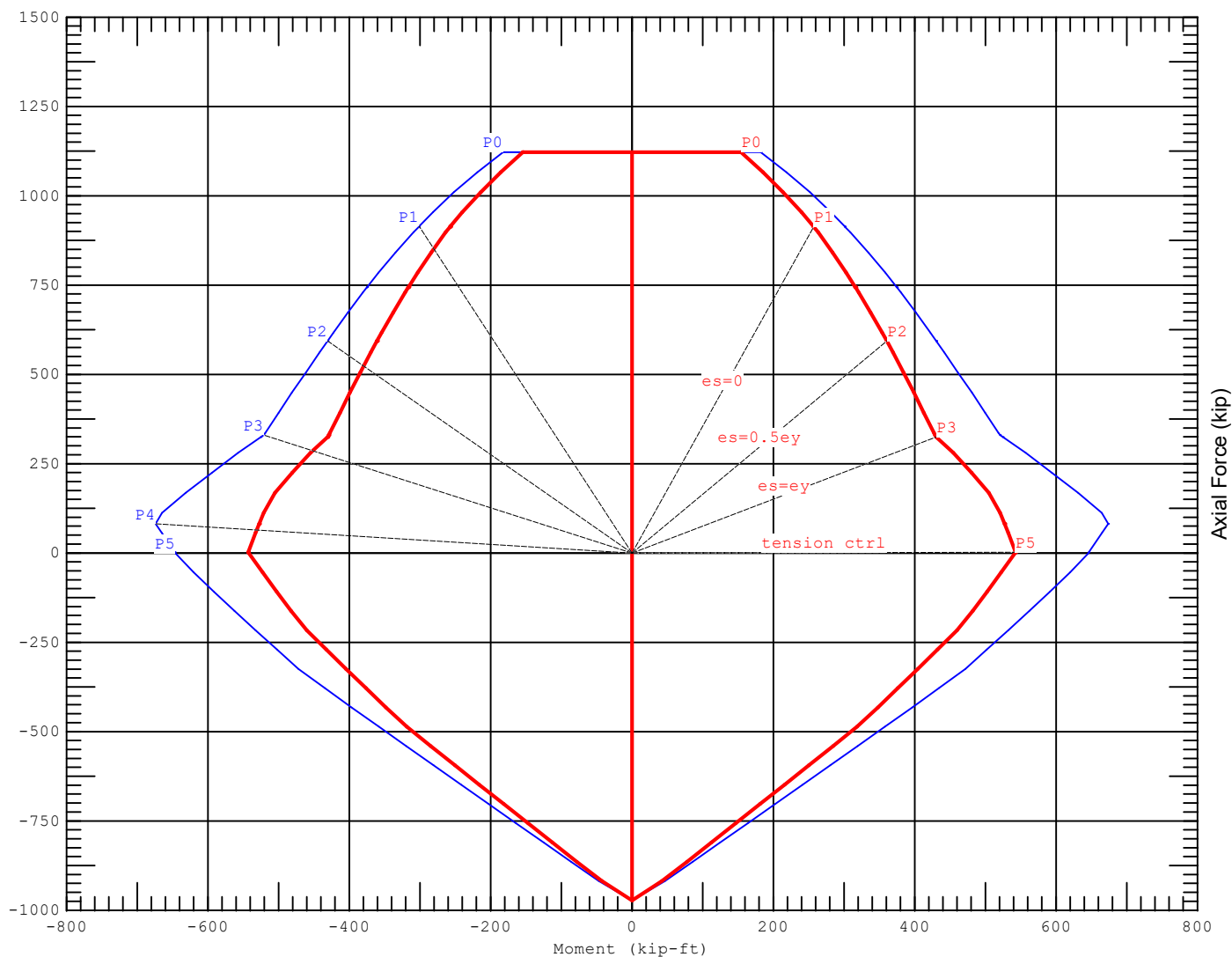
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 18 # 9
Confinement: Tied
Ag: 440.00 in²
As: 18.00 in²
Roh: 4.09%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1121.17	154.48	-0.00055
P1	912.54	257.25	0.00000
P2	593.27	360.52	0.00103
P3	324.34	430.19	0.00207
P4	1.97	542.58	0.00507
P5	0.00	541.88	0.00509
Pmin	-972.00	0.00	0.20000

PT	P	My (-)	max es
P0	1121.17	-182.06	-0.00055
P1	913.79	-300.90	0.00000
P2	592.98	-430.44	0.00103
P3	329.86	-520.71	0.00207
P4	81.87	-673.87	0.00507
P5	-0.01	-645.75	0.00590
Pmin	-972.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



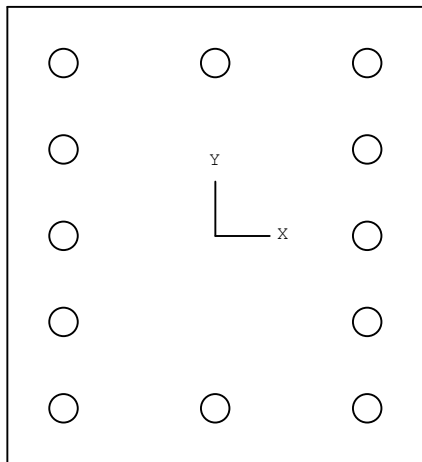
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#11_NX5_NY3_cc2.705



Section 158 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

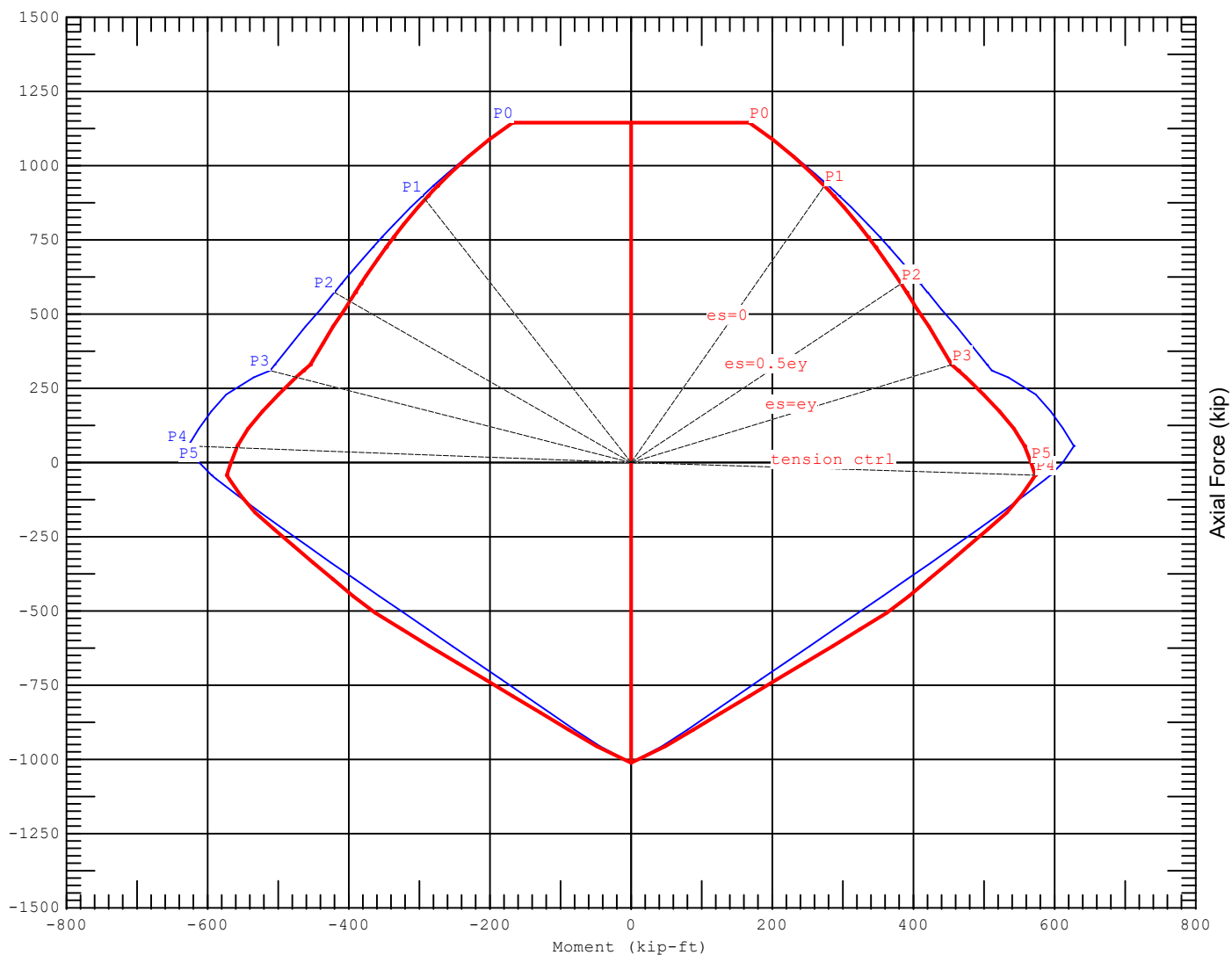
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 440.00 in²
As: 18.72 in²
Roh: 4.25%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.68	167.50	-0.00054
P1	930.49	273.86	0.00000
P2	600.94	382.51	0.00103
P3	328.29	454.30	0.00207
P4	-43.14	572.52	0.00507
P5	-0.01	566.52	0.00473
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1142.68	-166.39	-0.00064
P1	896.58	-295.43	0.00000
P2	571.85	-420.15	0.00103
P3	308.40	-511.37	0.00207
P4	55.06	-627.39	0.00507
P5	0.01	-611.56	0.00556
Pmin	-1010.88	-0.00	0.20000

P-Mx and P-My Interaction Diagram



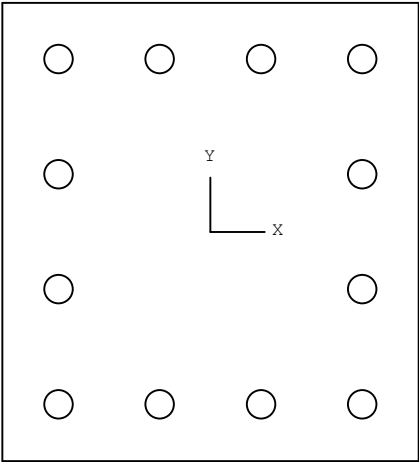
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#11_NX4_NY4_cc2.705



Section 159 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

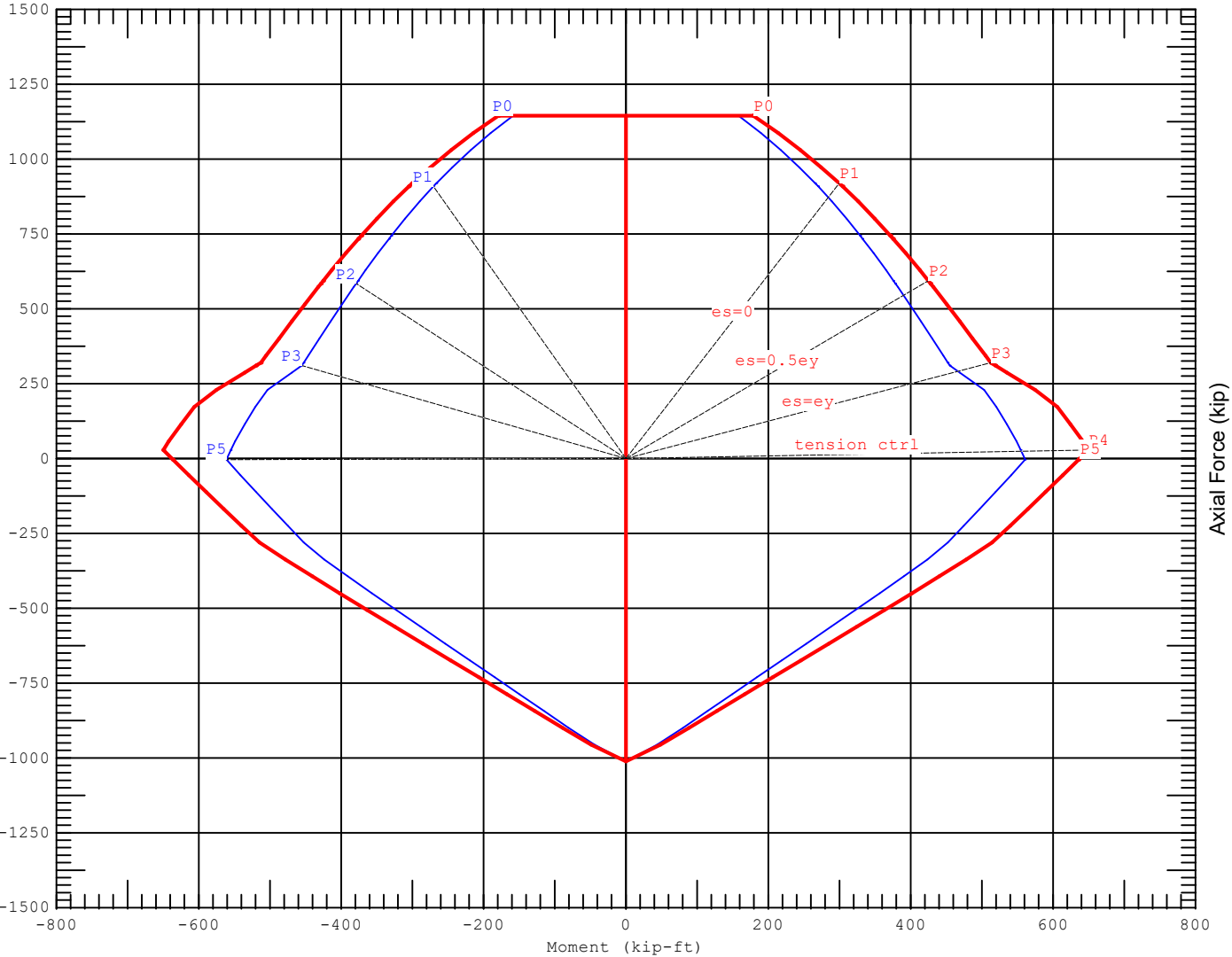
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 440.00 in²
As: 18.72 in²
Roh: 4.25%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.68	178.92	-0.00057
P1	918.06	299.57	0.00000
P2	592.78	424.82	0.00103
P3	319.22	512.61	0.00207
P4	28.35	649.36	0.00507
P5	-0.00	637.60	0.00538
Pmin	-1010.88	-0.00	0.20000

PT	P	My (-)	max es
P0	1142.67	-158.40	-0.00060
P1	907.58	-270.07	0.00000
P2	583.26	-378.72	0.00103
P3	309.88	-454.91	0.00207
P4	-3.98	-560.71	0.00507
P5	-0.01	-560.03	0.00503
Pmin	-1010.88	-0.00	0.20000

P-Mx and P-My Interaction Diagram



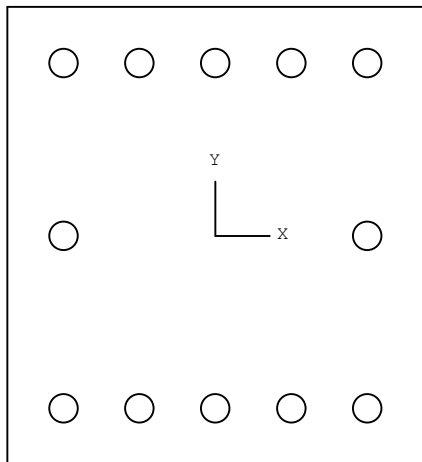
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_12#11_NX3_NY5_cc2.705



Section 160 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

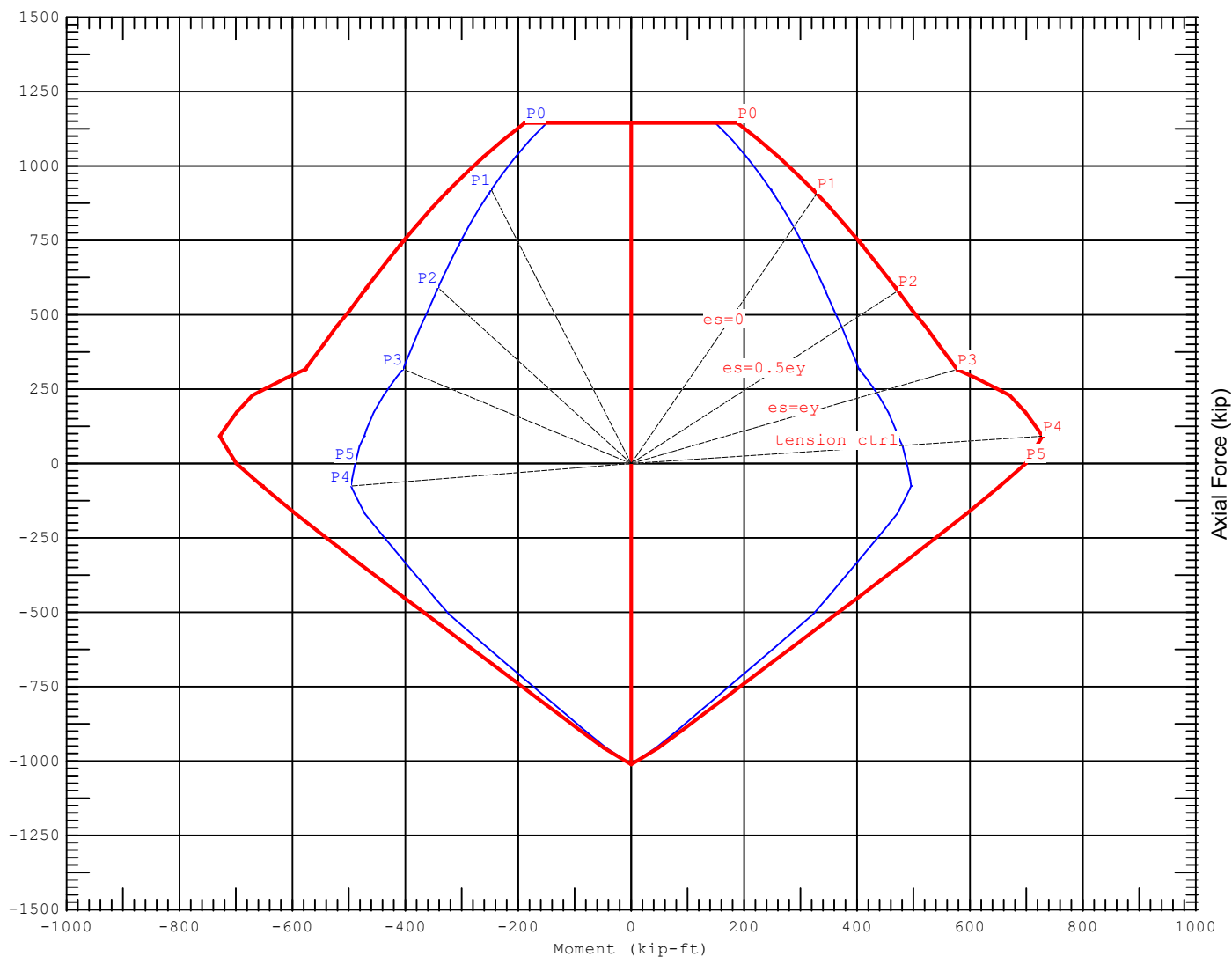
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 440.00 in²
As: 18.72 in²
Roh: 4.25%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.67	187.72	-0.00061
P1	905.64	328.18	0.00000
P2	579.44	471.64	0.00103
P3	315.33	576.44	0.00207
P4	90.94	727.22	0.00507
P5	0.01	697.86	0.00595
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1142.68	-149.08	-0.00057
P1	918.57	-247.23	0.00000
P2	589.50	-341.19	0.00103
P3	316.53	-403.22	0.00207
P4	-76.36	-495.39	0.00507
P5	0.01	-487.52	0.00449
Pmin	-1010.88	0.00	0.20000

P-Mx and P-My Interaction Diagram



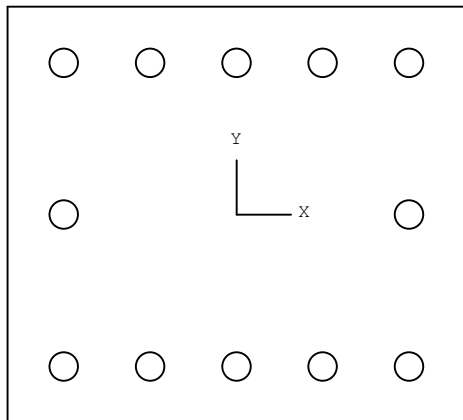
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#11_NX3_NY5_cc2.705



Section 161 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

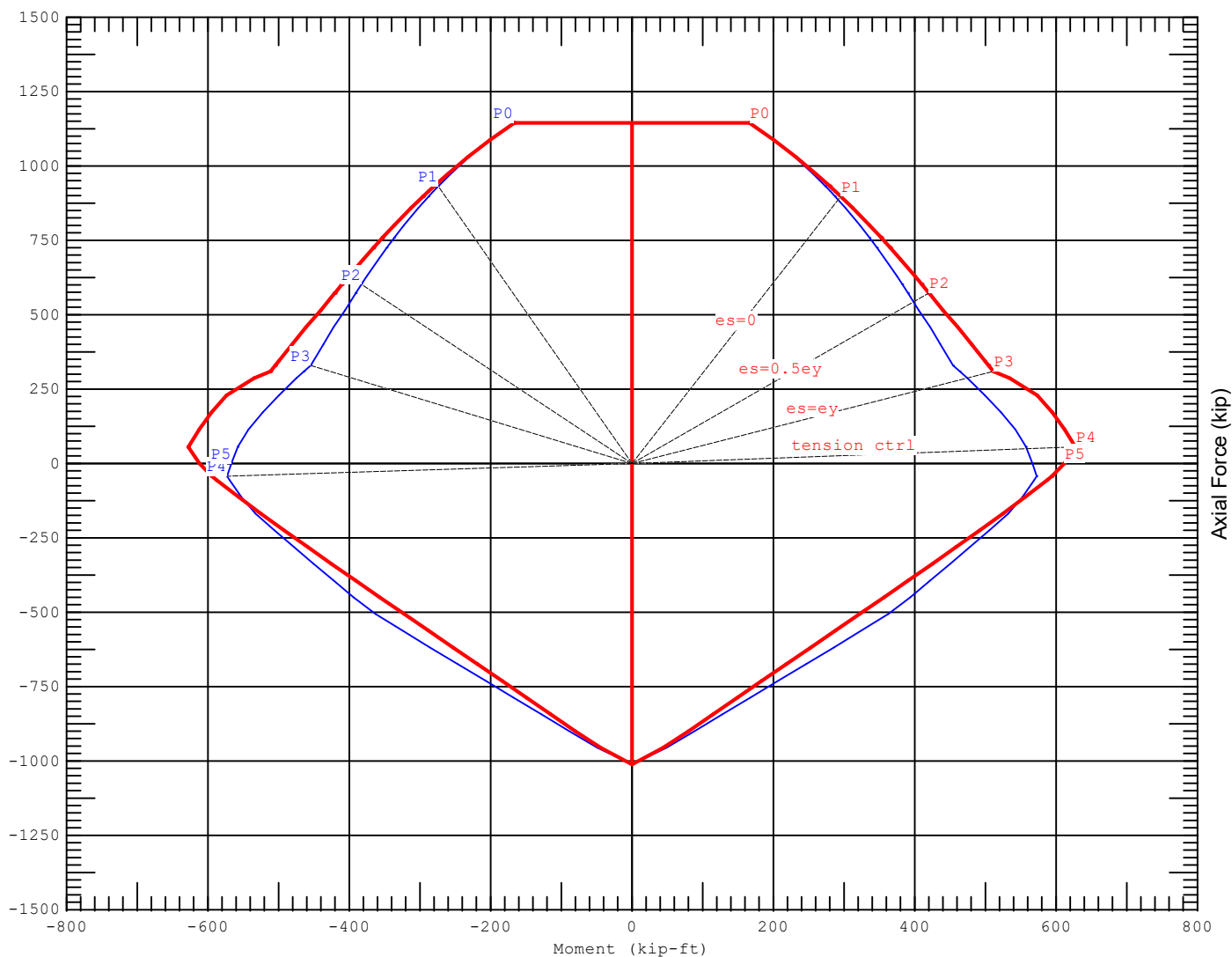
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 440.00 in²
As: 18.72 in²
Roh: 4.25%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.68	166.39	-0.00064
P1	896.58	295.43	0.00000
P2	571.85	420.15	0.00103
P3	308.40	511.37	0.00207
P4	55.06	627.39	0.00507
P5	0.01	611.56	0.00556
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1142.68	-167.50	-0.00054
P1	930.49	-273.86	0.00000
P2	600.94	-382.51	0.00103
P3	328.29	-454.30	0.00207
P4	-43.14	-572.52	0.00507
P5	-0.01	-566.52	0.00473
Pmin	-1010.88	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

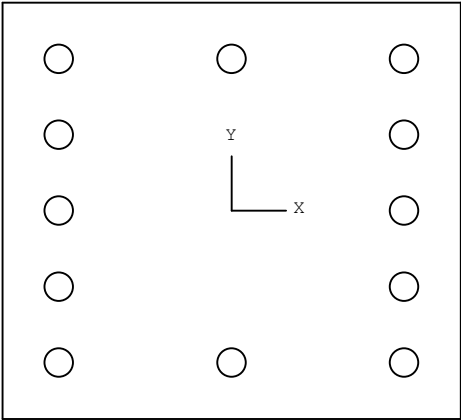
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#11_NX5_NY3_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 12 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 18.72 in^2

Roh: 4.25%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 2.24 in

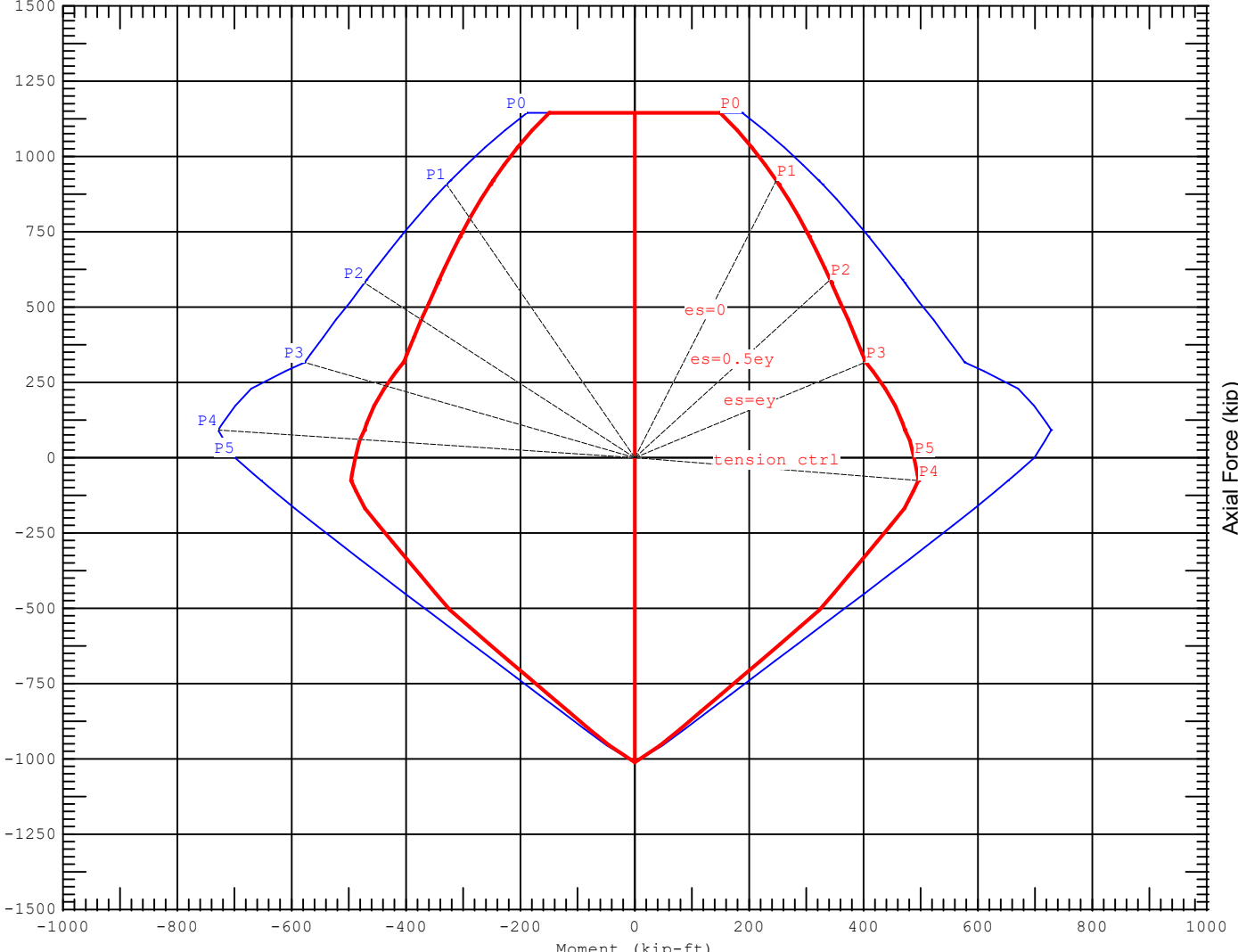
Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.68	149.08	-0.00057
P1	918.57	247.23	0.00000
P2	589.50	341.19	0.00103
P3	316.53	403.22	0.00207
P4	-76.36	495.39	0.00507
P5	0.01	487.52	0.00449
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1142.67	-187.72	-0.00061
P1	905.64	-328.18	0.00000
P2	579.44	-471.64	0.00103
P3	315.33	-576.44	0.00207
P4	90.94	-727.22	0.00507
P5	0.01	-697.86	0.00595
Pmin	-1010.88	-0.00	0.20000

Section 162 of 238

P-Mx and P-My Interaction Diagram



The diagram plots Axial Force (kip) on the y-axis (ranging from -1500 to 1500) against Moment (kip-ft) on the x-axis (ranging from -1000 to 1000). The blue boundary represents the full capacity, while the red boundary represents a reduced capacity. Key points P0, P1, P2, P3, P4, and P5 are identified on the curves. Dashed lines from the origin indicate eccentricity (es) levels: es=0, es=0.5ey, and es=ey. A red line labeled 'tension ctrl' is also present.

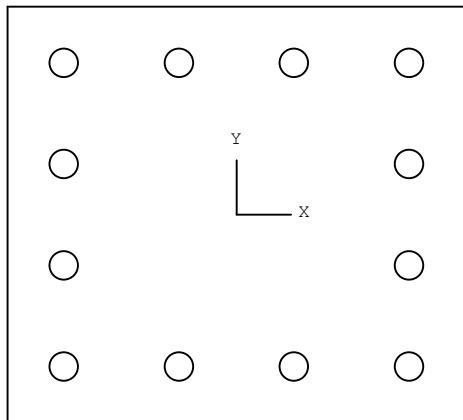
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_12#11_NX4_NY4_cc2.705



Section 163 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

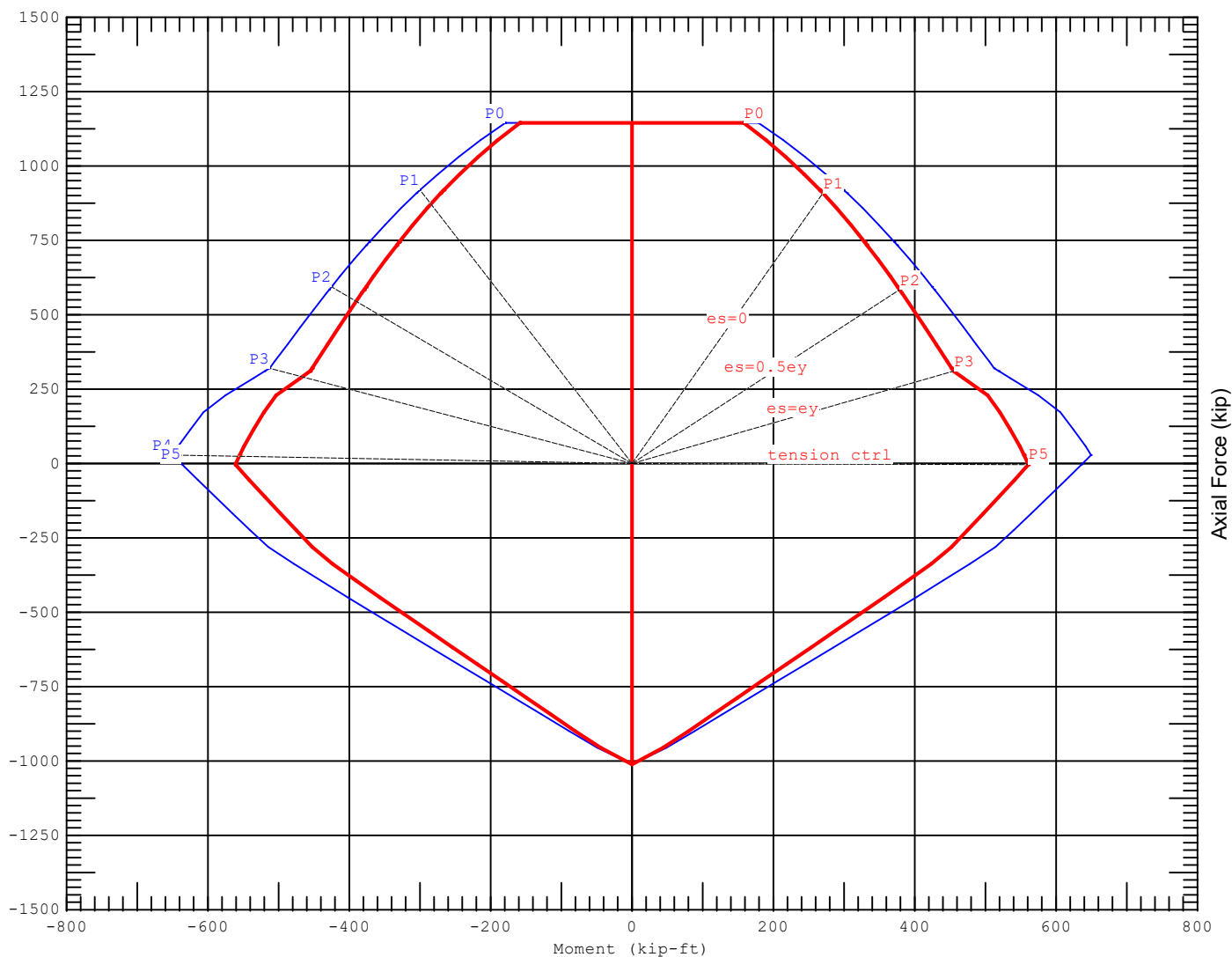
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 12 # 11
Confinement: Tied
Ag: 440.00 in²
As: 18.72 in²
Roh: 4.25%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1142.67	158.40	-0.00060
P1	907.58	270.07	0.00000
P2	583.26	378.72	0.00103
P3	309.88	454.91	0.00207
P4	-3.98	560.71	0.00507
P5	-0.01	560.03	0.00503
Pmin	-1010.88	0.00	0.20000

PT	P	My (-)	max es
P0	1142.68	-178.92	-0.00057
P1	918.06	-299.57	0.00000
P2	592.78	-424.82	0.00103
P3	319.22	-512.61	0.00207
P4	28.35	-649.36	0.00507
P5	-0.00	-637.60	0.00538
Pmin	-1010.88	-0.00	0.20000

P-Mx and P-My Interaction Diagram



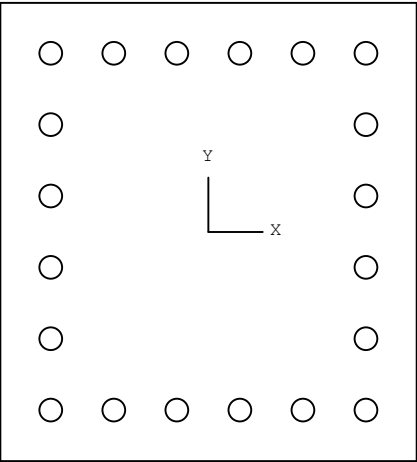
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_20#9_NX6_NY6_cc2.439



Section 164 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

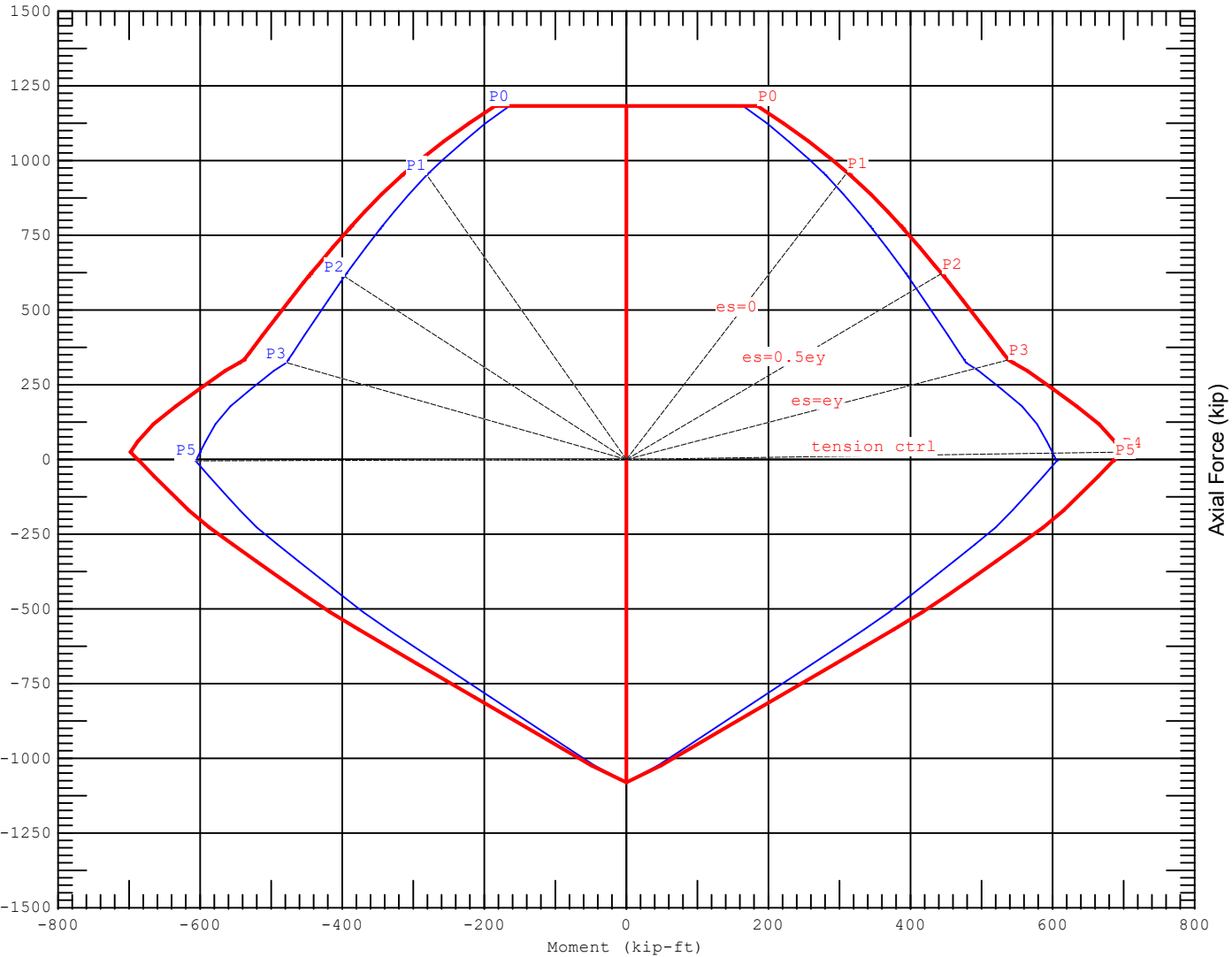
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 20 # 9
Confinement: Tied
Ag: 440.00 in²
As: 20.00 in²
Roh: 4.55%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1180.92	184.73	-0.00056
P1	958.77	310.98	0.00000
P2	620.55	443.98	0.00103
P3	332.18	537.90	0.00207
P4	24.58	697.57	0.00507
P5	0.01	687.61	0.00533
Pmin	-1080.00	0.00	0.20000

PT	P	My (-)	max es
P0	1180.91	-164.31	-0.00058
P1	949.89	-280.78	0.00000
P2	611.12	-396.33	0.00103
P3	322.68	-478.29	0.00207
P4	-5.27	-606.06	0.00507
P5	0.02	-604.97	0.00502
Pmin	-1080.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



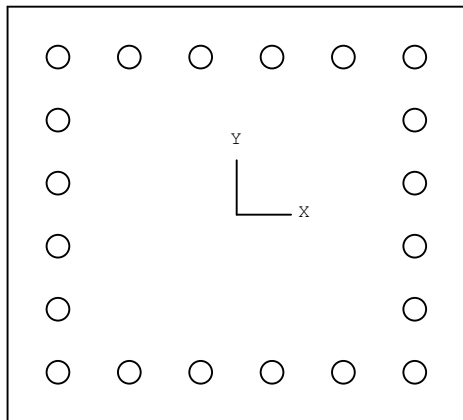
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_20#9_NX6_NY6_cc2.439



Section 165 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

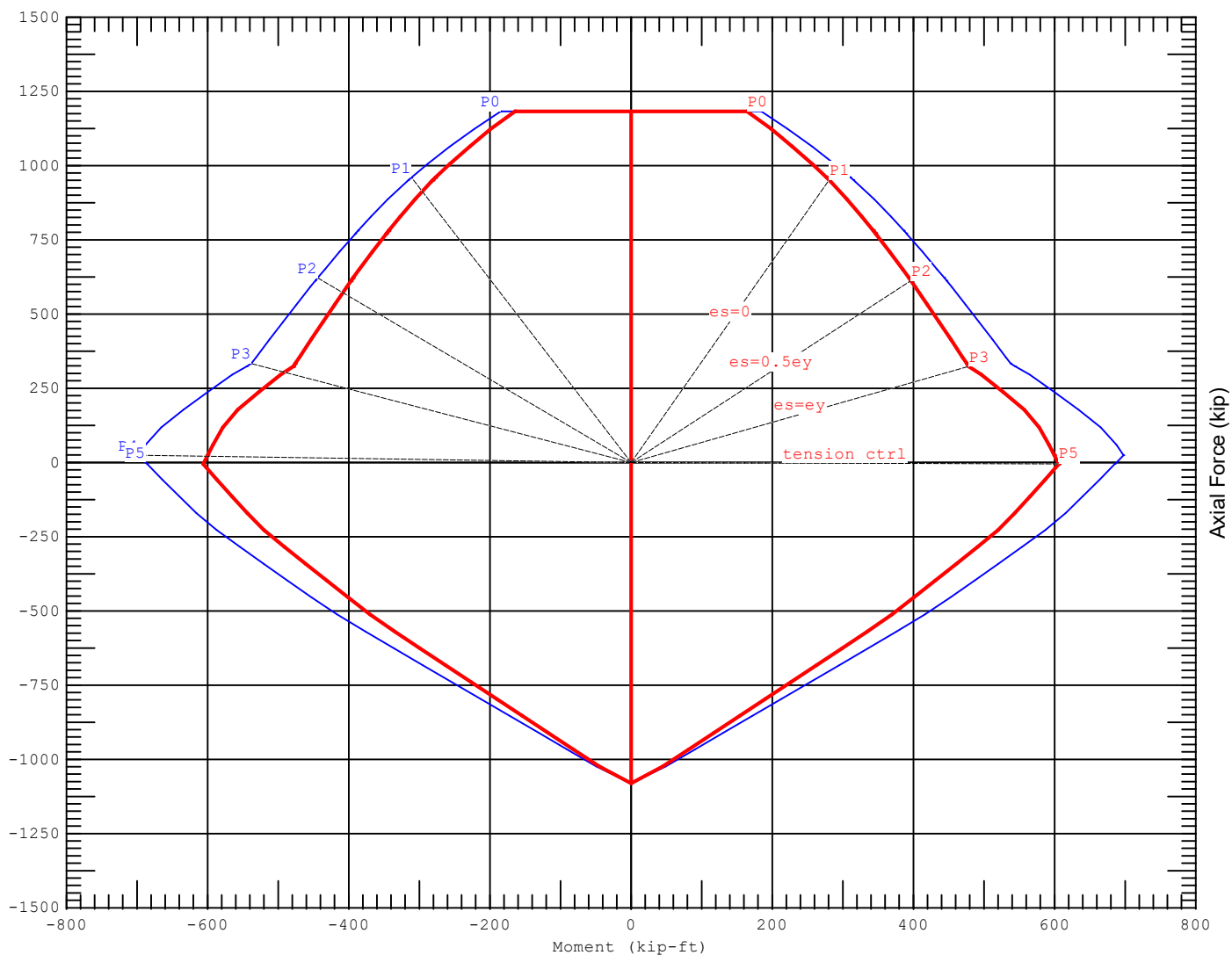
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 20 # 9
Confinement: Tied
Ag: 440.00 in²
As: 20.00 in²
Roh: 4.55%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1180.91	164.31	-0.00058
P1	949.89	280.78	0.00000
P2	611.12	396.33	0.00103
P3	322.68	478.29	0.00207
P4	-5.27	606.06	0.00507
P5	0.02	604.97	0.00502
Pmin	-1080.00	0.00	0.20000

PT	P	My (-)	max es
P0	1180.92	-184.73	-0.00056
P1	958.77	-310.98	0.00000
P2	620.55	-443.98	0.00103
P3	332.18	-537.90	0.00207
P4	24.58	-697.57	0.00507
P5	0.01	-687.61	0.00533
Pmin	-1080.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

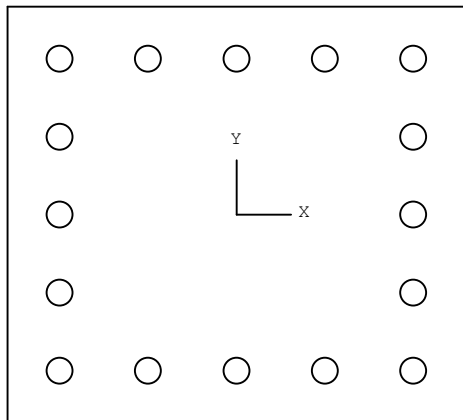
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#10_NX5_NY5_cc2.51



Section 166 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

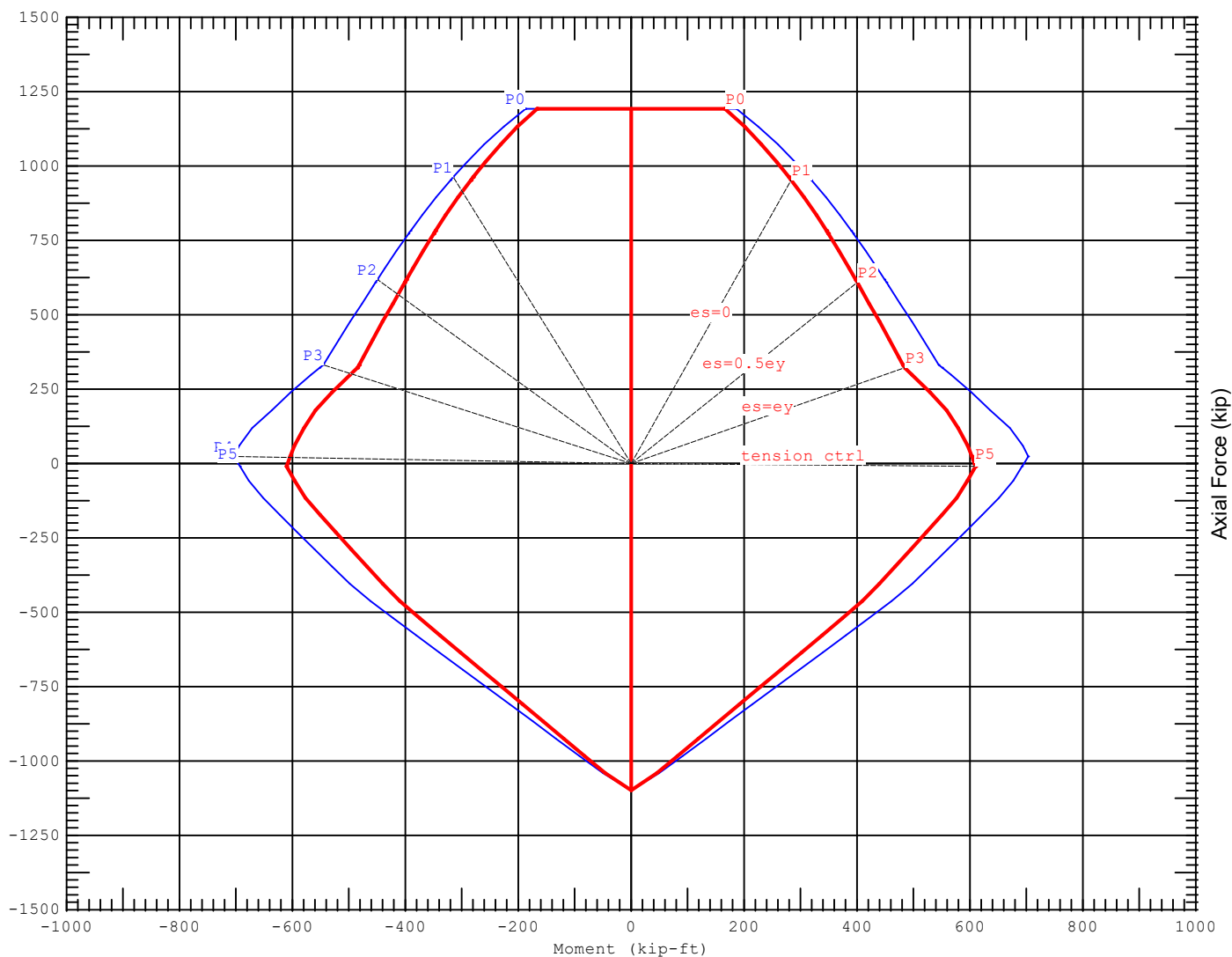
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 16 # 10
Confinement: Tied
Ag: 440.00 in²
As: 20.32 in²
Roh: 4.62%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1190.47	166.05	-0.00059
P1	951.14	283.16	0.00000
P2	607.56	400.04	0.00103
P3	320.72	483.45	0.00207
P4	-9.66	608.94	0.00507
P5	0.02	607.21	0.00499
Pmin	-1097.28	-0.00	0.20000

PT	P	My (-)	max es
P0	1190.48	-186.66	-0.00057
P1	961.38	-314.23	0.00000
P2	617.09	-448.38	0.00103
P3	330.27	-544.05	0.00207
P4	23.52	-702.10	0.00507
P5	0.00	-694.55	0.00527
Pmin	-1097.28	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

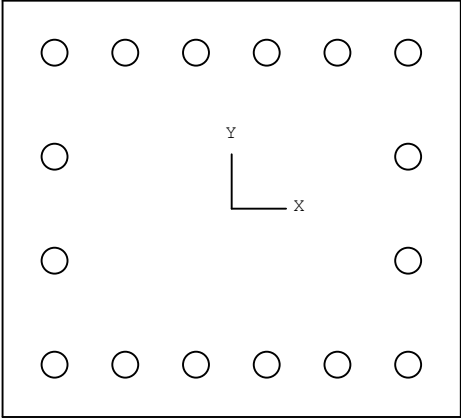
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#10_NX4_NY6_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 16 # 10

Confinement: Tied

Ag: 440.00 in^2

As: 20.32 in^2

Roh: 4.62%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

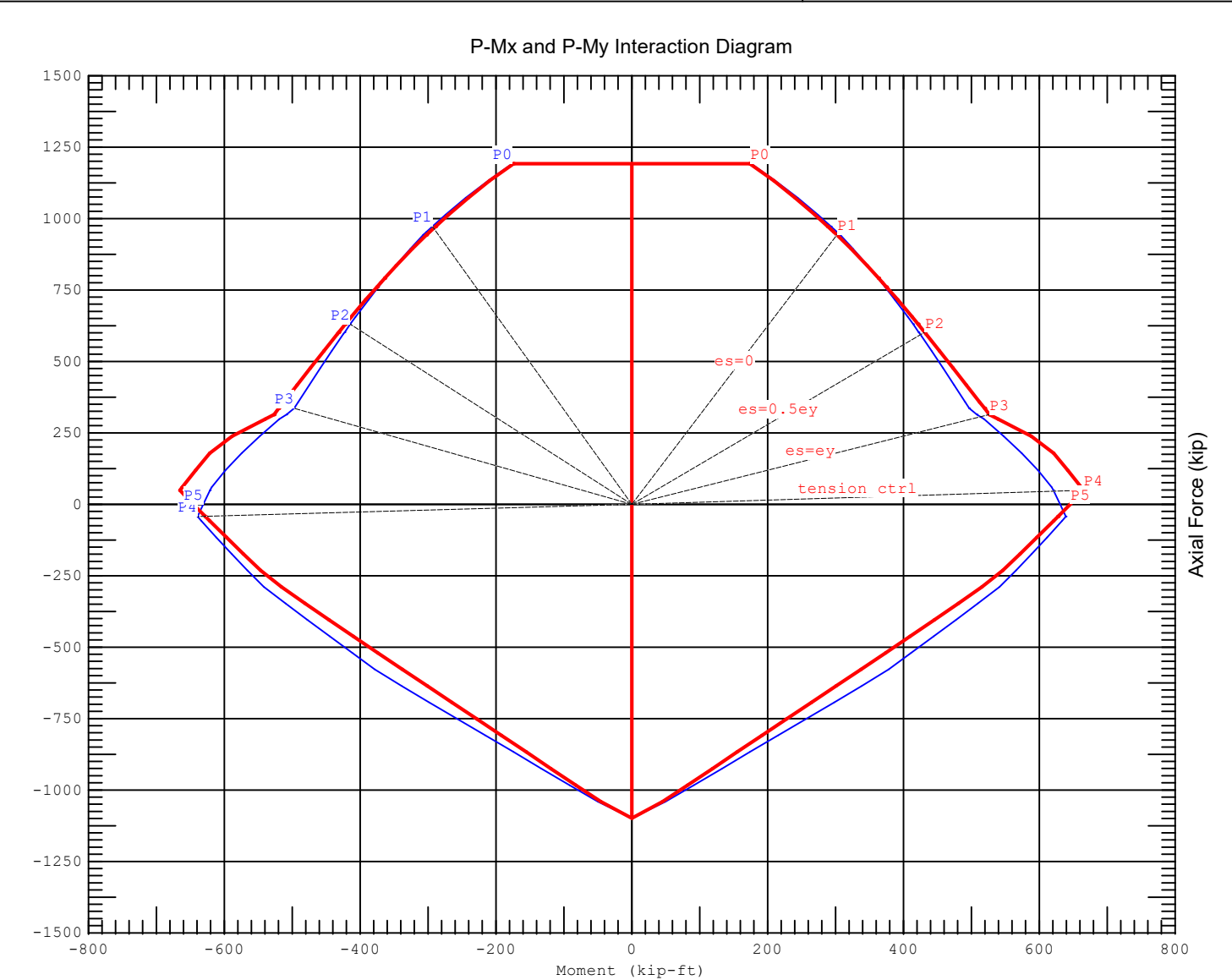
Y0: 0.00 in

Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1190.48	174.04	-0.00062
P1	941.26	302.09	0.00000
P2	601.24	431.20	0.00103
P3	313.75	526.38	0.00207
P4	48.68	665.04	0.00507
P5	0.02	645.28	0.00561
Pmin	-1097.28	0.00	0.20000

PT	P	My (-)	max es
P0	1190.47	-175.90	-0.00055
P1	971.27	-293.51	0.00000
P2	629.04	-414.27	0.00103
P3	334.83	-497.00	0.00207
P4	-43.07	-639.16	0.00507
P5	-0.01	-630.79	0.00470
Pmin	-1097.28	0.00	0.20000



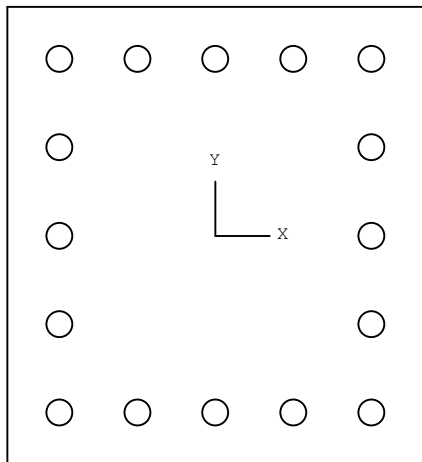
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#10_NX5_NY5_cc2.51



Section 168 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

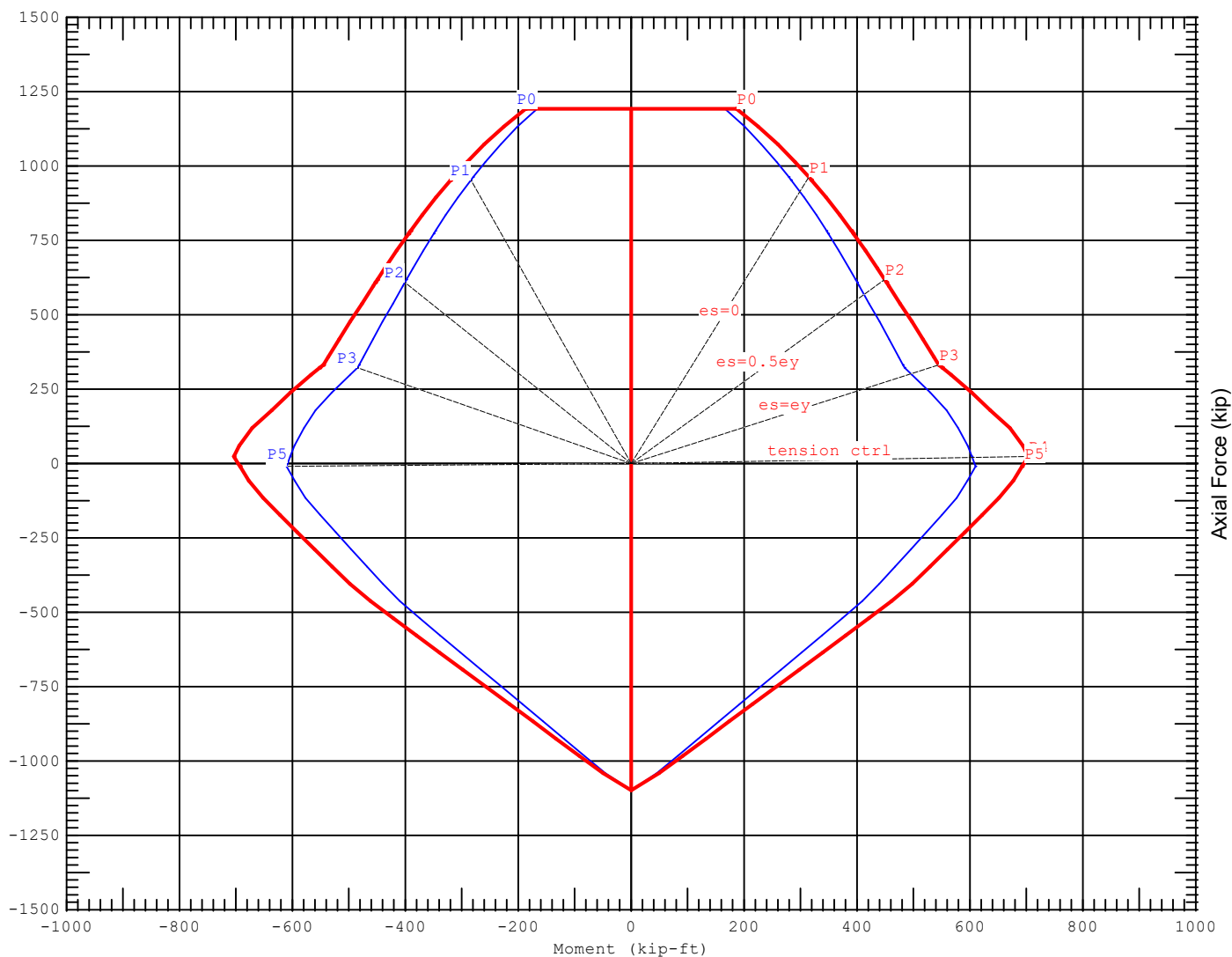
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 16 # 10
Confinement: Tied
Ag: 440.00 in²
As: 20.32 in²
Roh: 4.62%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1190.48	186.66	-0.00057
P1	961.38	314.23	0.00000
P2	617.09	448.38	0.00103
P3	330.27	544.05	0.00207
P4	23.52	702.10	0.00507
P5	0.00	694.55	0.00527
Pmin	-1097.28	-0.00	0.20000

PT	P	My (-)	max es
P0	1190.47	-166.05	-0.00059
P1	951.14	-283.16	0.00000
P2	607.56	-400.04	0.00103
P3	320.72	-483.45	0.00207
P4	-9.66	-608.94	0.00507
P5	0.02	-607.21	0.00499
Pmin	-1097.28	0.00	0.20000

P-Mx and P-My Interaction Diagram



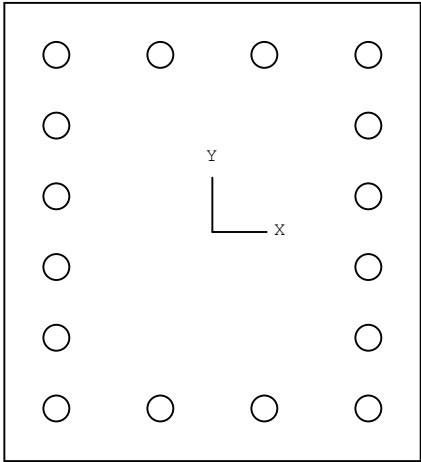
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#10_NX6_NY4_cc2.51



Section 169 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

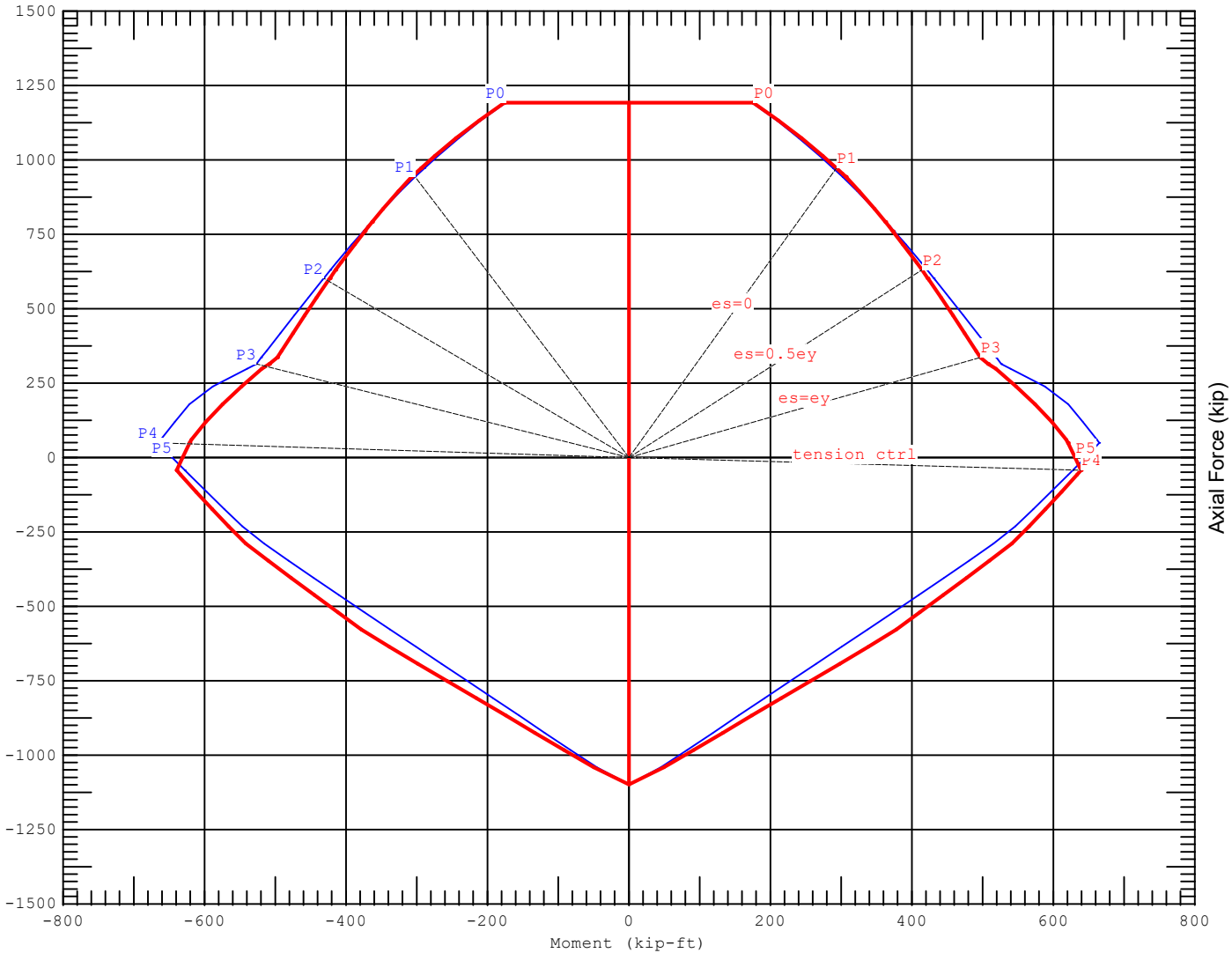
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 16 # 10
Confinement: Tied
Ag: 440.00 in²
As: 20.32 in²
Roh: 4.62%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1190.47	175.90	-0.00055
P1	971.27	293.51	0.00000
P2	629.04	414.27	0.00103
P3	334.83	497.00	0.00207
P4	-43.07	639.16	0.00507
P5	-0.01	630.79	0.00470
Pmin	-1097.28	0.00	0.20000

PT	P	My (-)	max es
P0	1190.48	-174.04	-0.00062
P1	941.26	-302.09	0.00000
P2	601.24	-431.20	0.00103
P3	313.75	-526.38	0.00207
P4	48.68	-665.04	0.00507
P5	0.02	-645.28	0.00561
Pmin	-1097.28	0.00	0.20000

P-Mx and P-My Interaction Diagram



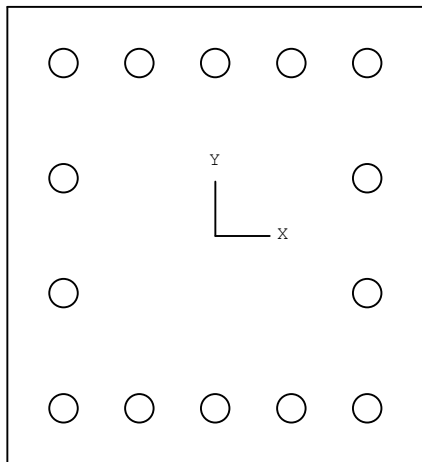
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#11_NX4_NY5_cc2.705



Section 170 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

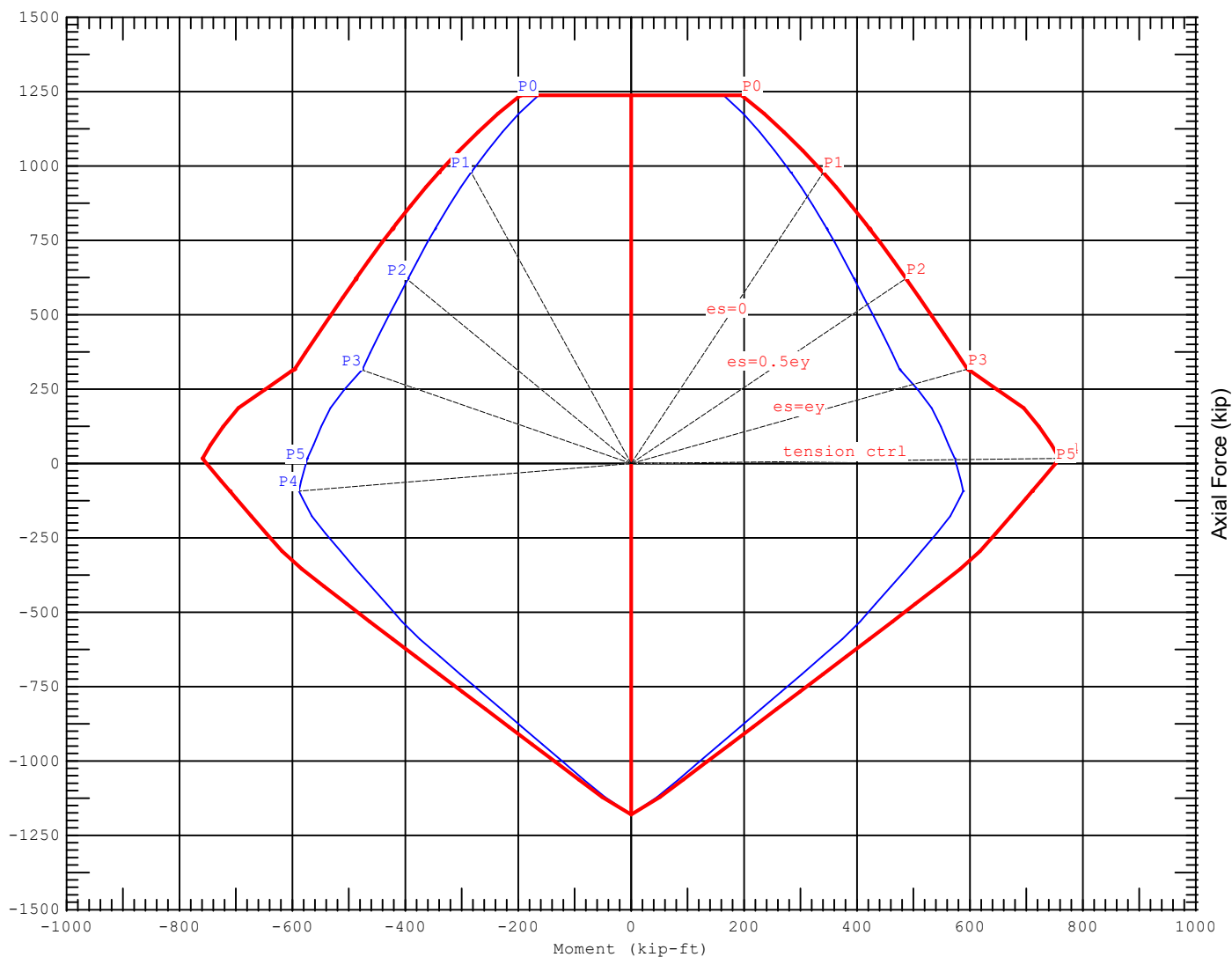
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 14 # 11
Confinement: Tied
Ag: 440.00 in²
As: 21.84 in²
Roh: 4.96%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1235.88	195.65	-0.00062
P1	976.31	339.84	0.00000
P2	620.61	486.12	0.00103
P3	316.64	594.94	0.00207
P4	16.62	757.71	0.00507
P5	0.01	750.58	0.00524
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1235.89	-163.75	-0.00061
P1	976.83	-282.64	0.00000
P2	617.33	-395.10	0.00103
P3	313.94	-475.62	0.00207
P4	-93.42	-587.44	0.00507
P5	-0.01	-574.85	0.00440
Pmin	-1179.36	0.00	0.20000

P-Mx and P-My Interaction Diagram



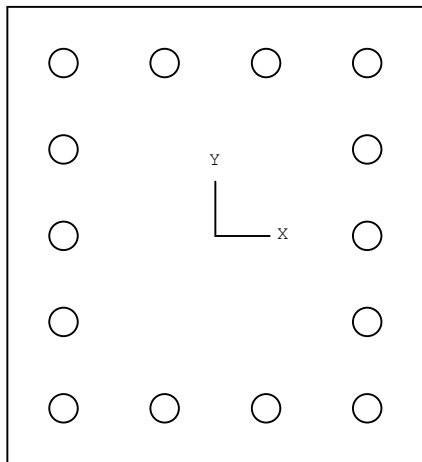
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_14#11_NX5_NY4_cc2.705



Section 171 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

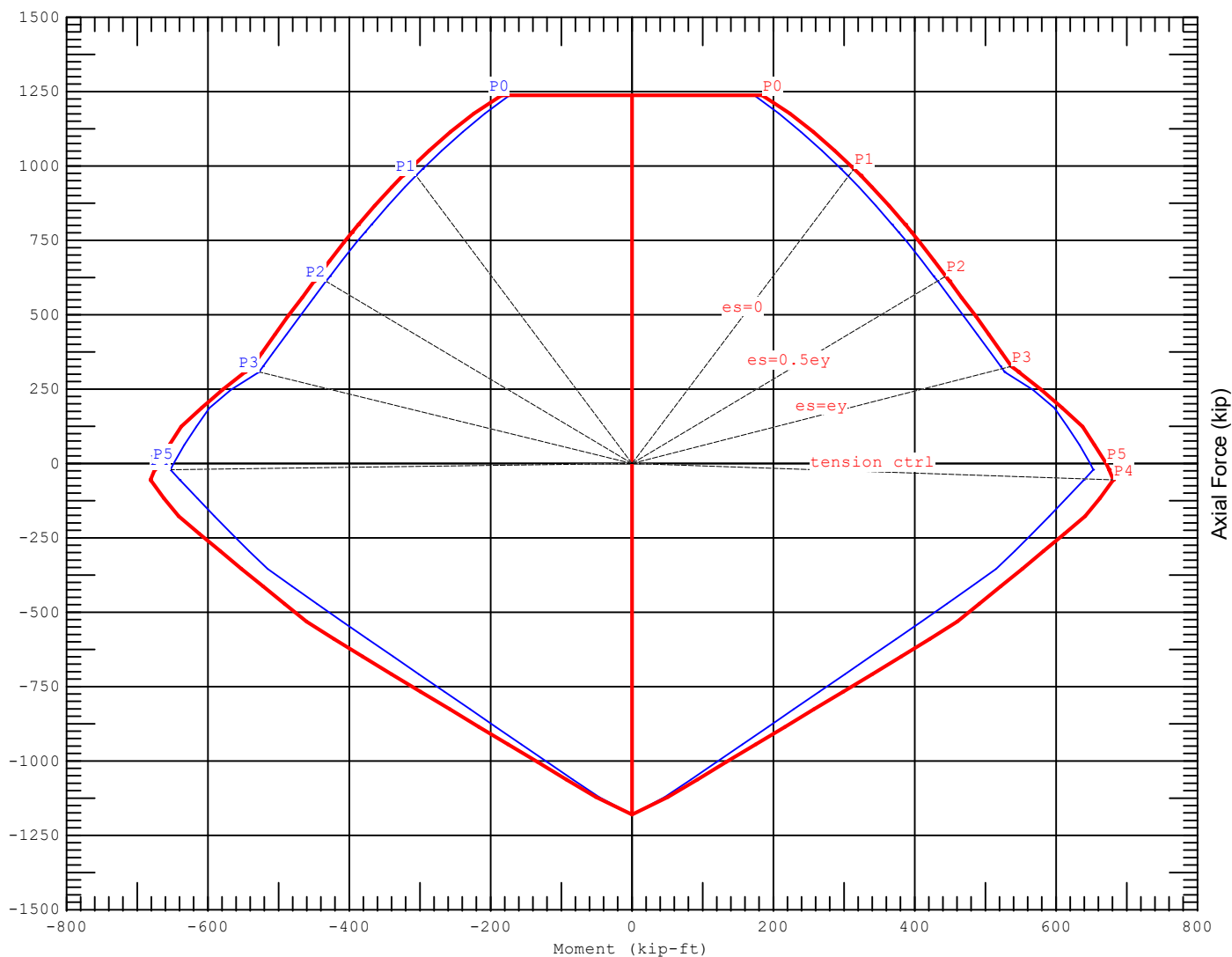
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 14 # 11
Confinement: Tied
Ag: 440.00 in²
As: 21.84 in²
Roh: 4.96%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1235.89	184.41	-0.00059
P1	988.74	314.13	0.00000
P2	628.77	443.81	0.00103
P3	325.70	536.62	0.00207
P4	-54.87	680.88	0.00507
P5	0.01	670.95	0.00466
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1235.89	-172.91	-0.00064
P1	965.83	-305.49	0.00000
P2	611.10	-432.63	0.00103
P3	307.29	-527.31	0.00207
P4	-21.04	-652.76	0.00507
P5	0.00	-648.34	0.00486
Pmin	-1179.36	-0.00	0.20000

P-Mx and P-My Interaction Diagram

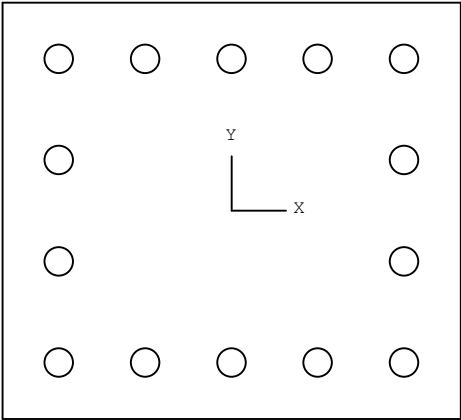


Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

Rect22x20_fc3_fy60_14#11_NX4_NY5_cc2.705



Section 172 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 22 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 14 # 11

Confinement: Tied

Ag: 440.00 in^2

As: 21.84 in^2

Roh: 4.96%

Ix: 14666.7 in^4

Iy: 17746.7 in^4

X0: 0.00 in

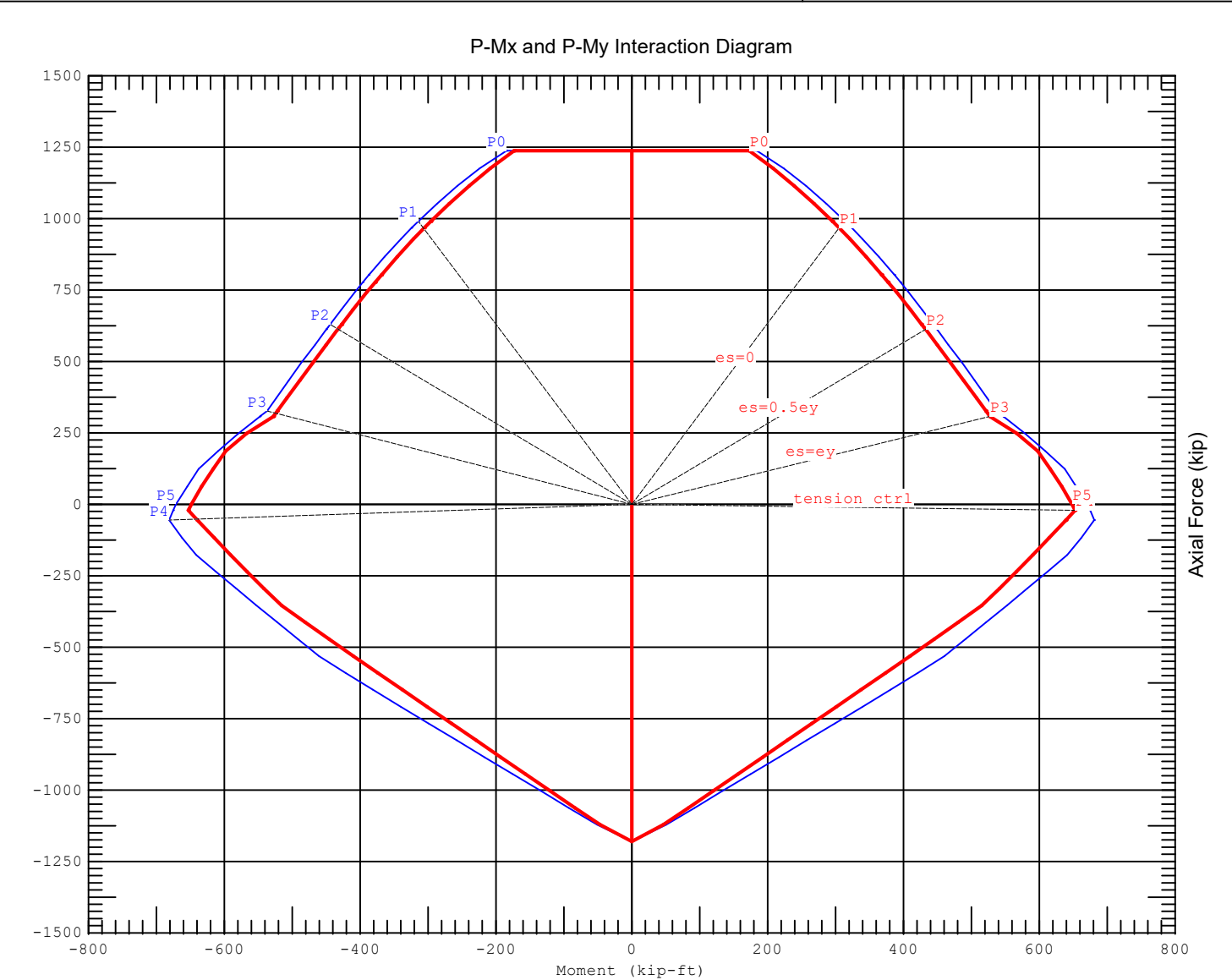
Y0: 0.00 in

Clear spacing: 2.74 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1235.89	172.91	-0.00064
P1	965.83	305.49	0.00000
P2	611.10	432.63	0.00103
P3	307.29	527.31	0.00207
P4	-21.04	652.76	0.00507
P5	0.00	648.34	0.00486
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1235.89	-184.41	-0.00059
P1	988.74	-314.13	0.00000
P2	628.77	-443.81	0.00103
P3	325.70	-536.62	0.00207
P4	-54.87	-680.88	0.00507
P5	0.01	-670.95	0.00466
Pmin	-1179.36	0.00	0.20000



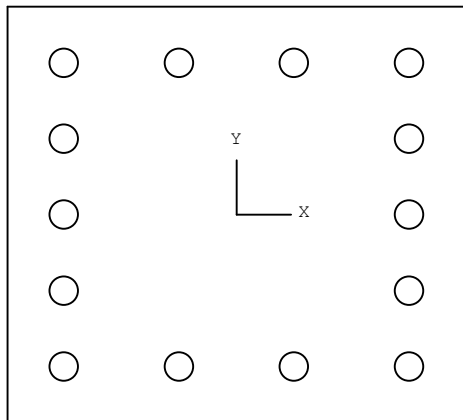
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_14#11_NX5_NY4_cc2.705



Section 173 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

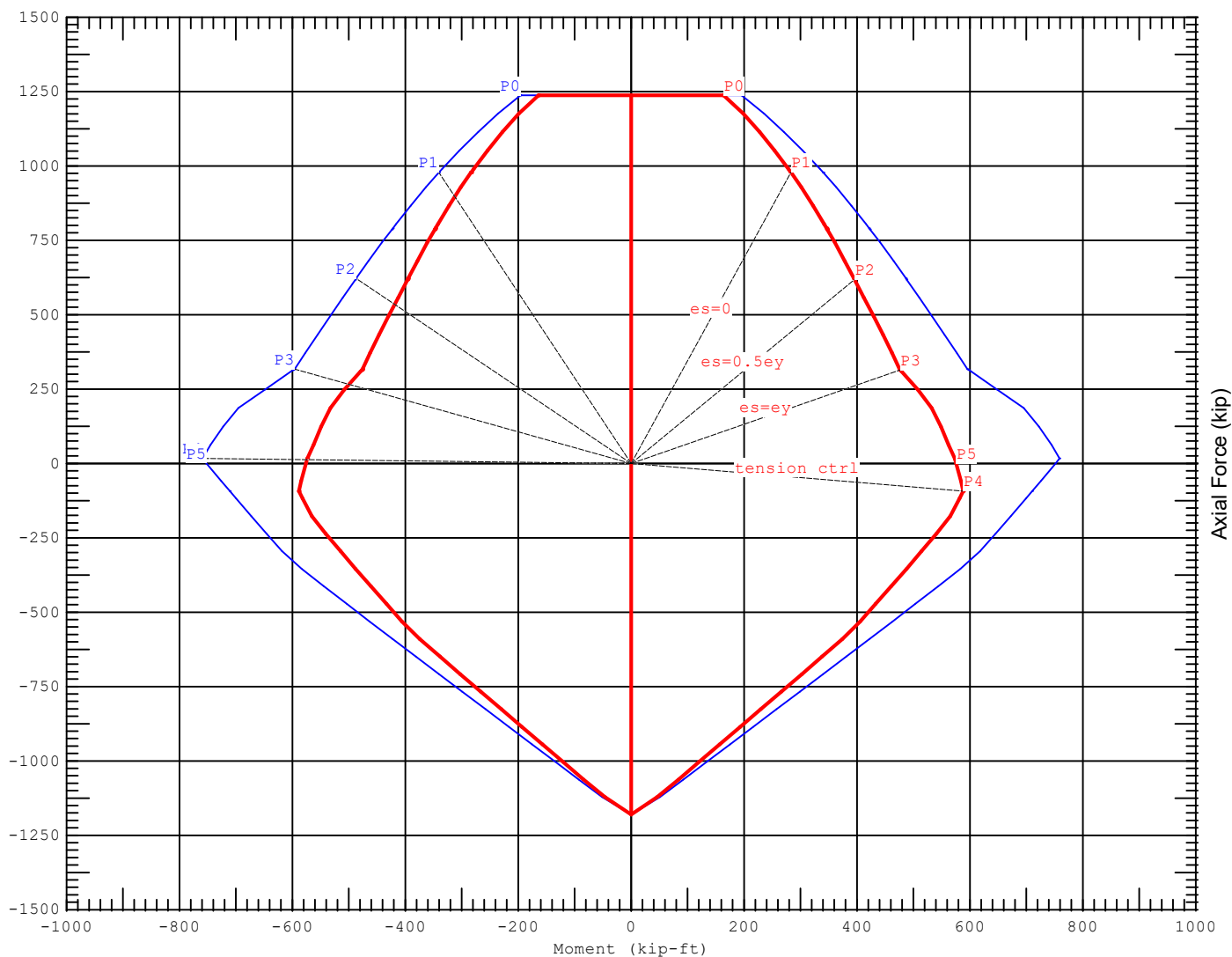
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 14 # 11
Confinement: Tied
Ag: 440.00 in²
As: 21.84 in²
Roh: 4.96%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1235.89	163.75	-0.00061
P1	976.83	282.64	0.00000
P2	617.33	395.10	0.00103
P3	313.94	475.62	0.00207
P4	-93.42	587.44	0.00507
P5	-0.01	574.85	0.00440
Pmin	-1179.36	0.00	0.20000

PT	P	My (-)	max es
P0	1235.88	-195.65	-0.00062
P1	976.31	-339.84	0.00000
P2	620.61	-486.12	0.00103
P3	316.64	-594.94	0.00207
P4	16.62	-757.71	0.00507
P5	0.01	-750.58	0.00524
Pmin	-1179.36	-0.00	0.20000

P-Mx and P-My Interaction Diagram



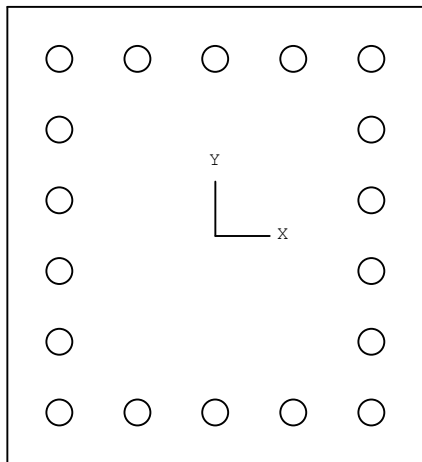
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_18#10_NX6_NY5_cc2.51



Section 174 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

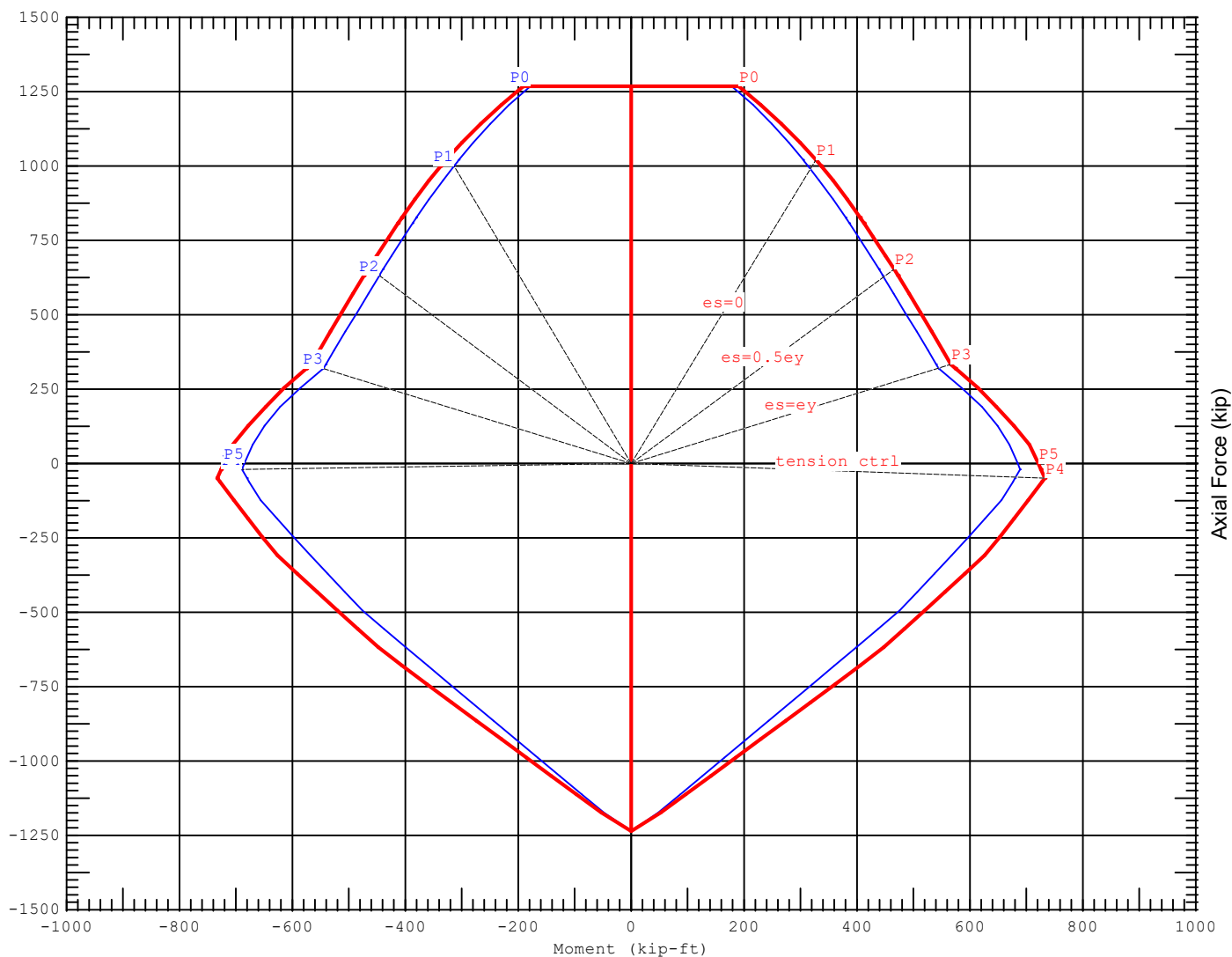
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 18 # 10
Confinement: Tied
Ag: 440.00 in²
As: 22.86 in²
Roh: 5.20%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1266.35	190.25	-0.00059
P1	1018.69	327.07	0.00000
P2	651.70	465.34	0.00103
P3	332.72	565.59	0.00207
P4	-49.56	731.60	0.00507
P5	-0.00	720.05	0.00466
Pmin	-1234.44	0.00	0.20000

PT	P	My (-)	max es
P0	1266.36	-177.92	-0.00063
P1	998.56	-312.76	0.00000
P2	630.22	-445.10	0.00103
P3	318.62	-543.96	0.00207
P4	-20.10	-688.04	0.00507
P5	0.00	-683.86	0.00491
Pmin	-1234.44	0.00	0.20000

P-Mx and P-My Interaction Diagram



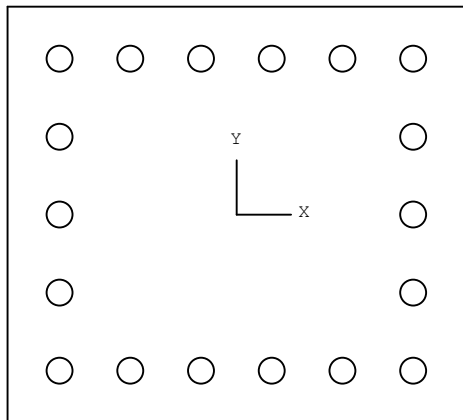
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_18#10_NX5_NY6_cc2.51



Section 175 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

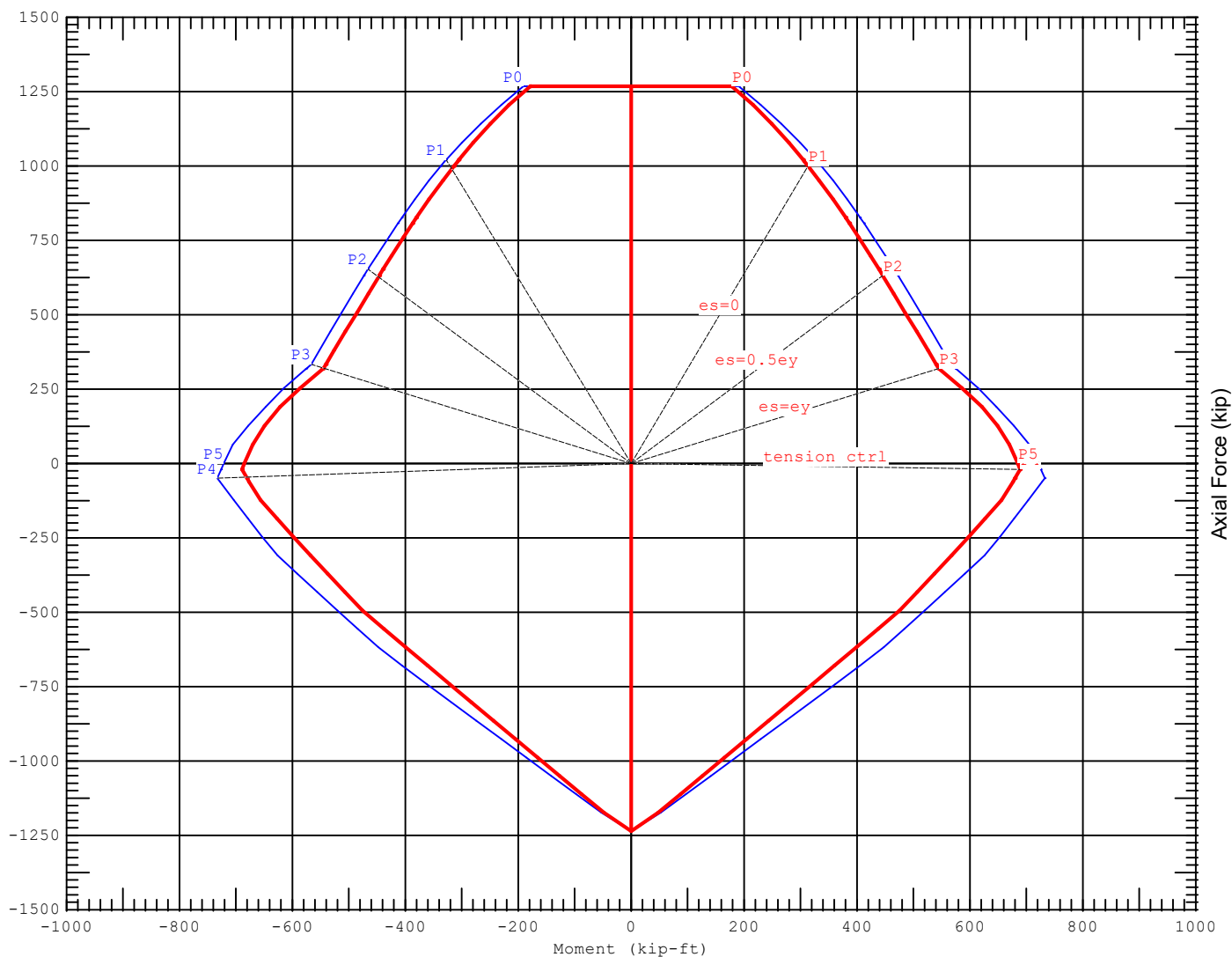
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 18 # 10
Confinement: Tied
Ag: 440.00 in²
As: 22.86 in²
Roh: 5.20%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.13 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1266.36	177.92	-0.00063
P1	998.56	312.76	0.00000
P2	630.22	445.10	0.00103
P3	318.62	543.96	0.00207
P4	-20.10	688.04	0.00507
P5	0.00	683.86	0.00491
Pmin	-1234.44	-0.00	0.20000

PT	P	My (-)	max es
P0	1266.35	-190.25	-0.00059
P1	1018.69	-327.07	0.00000
P2	651.70	-465.34	0.00103
P3	332.72	-565.59	0.00207
P4	-49.56	-731.60	0.00507
P5	-0.00	-720.05	0.00466
Pmin	-1234.44	0.00	0.20000

P-Mx and P-My Interaction Diagram



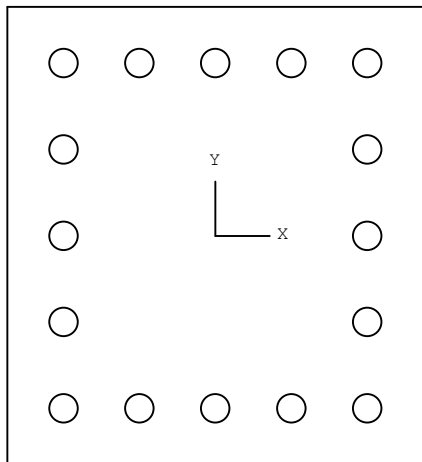
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x22_fc3_fy60_16#11_NX5_NY5_cc2.705



Section 176 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

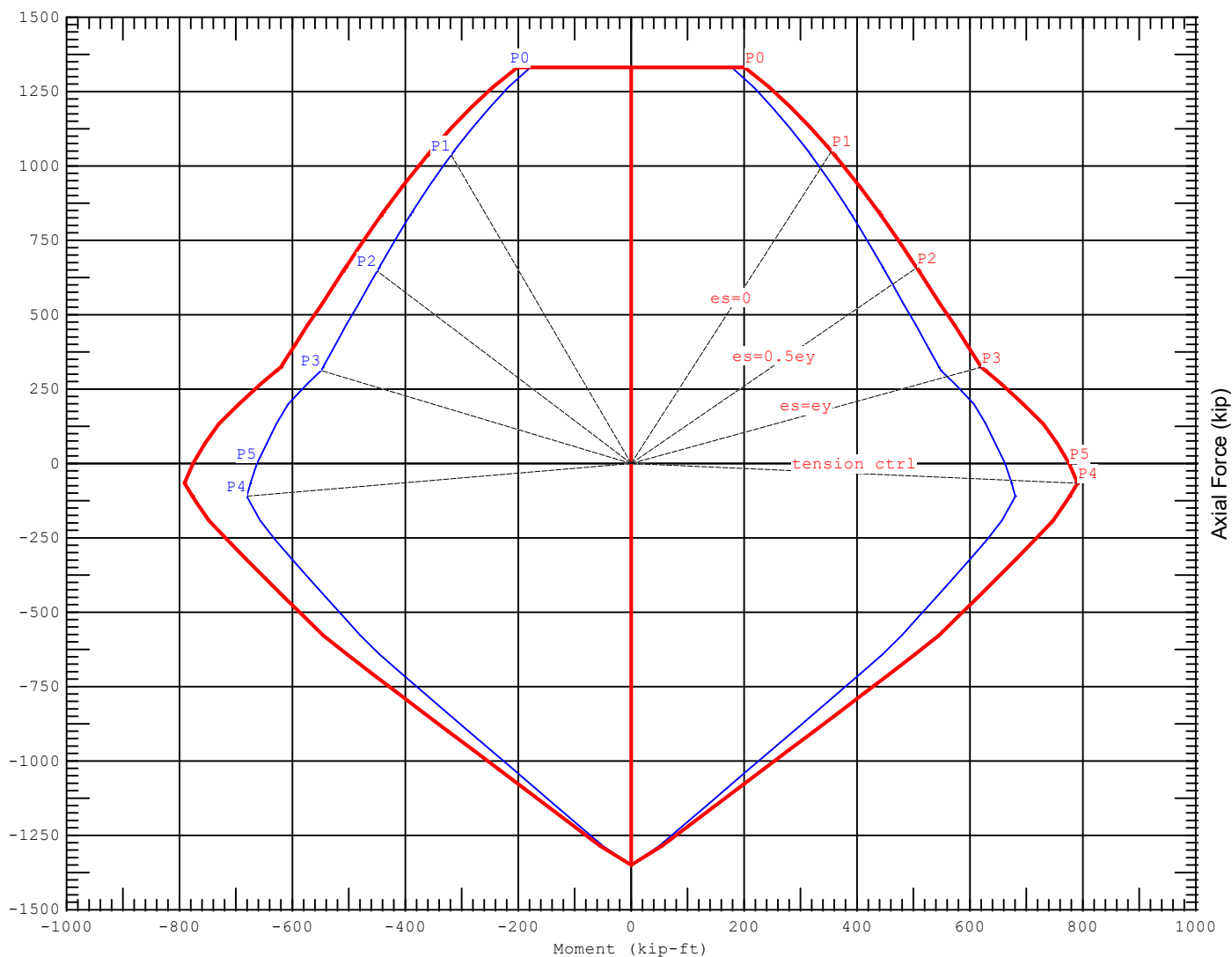
b x h: 20 x 22 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 16 # 11
Confinement: Tied
Ag: 440.00 in²
As: 24.96 in²
Roh: 5.67%
Ix: 17746.7 in⁴
Iy: 14666.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1329.10	200.84	-0.00063
P1	1046.99	354.40	0.00000
P2	656.60	505.11	0.00103
P3	323.12	618.95	0.00207
P4	-66.60	789.23	0.00507
P5	-0.02	774.65	0.00460
Pmin	-1347.84	0.00	0.20000

PT	P	My (-)	max es
P0	1329.08	-178.03	-0.00065
P1	1035.08	-318.05	0.00000
P2	645.17	-449.00	0.00103
P3	311.36	-548.02	0.00207
P4	-110.47	-679.49	0.00507
P5	0.01	-661.39	0.00432
Pmin	-1347.84	0.00	0.20000

P-Mx and P-My Interaction Diagram



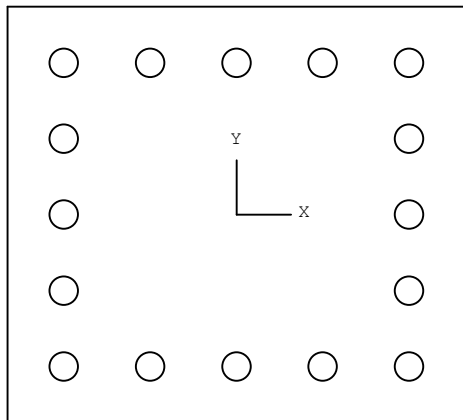
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect22x20_fc3_fy60_16#11_NX5_NY5_cc2.705



Section 177 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

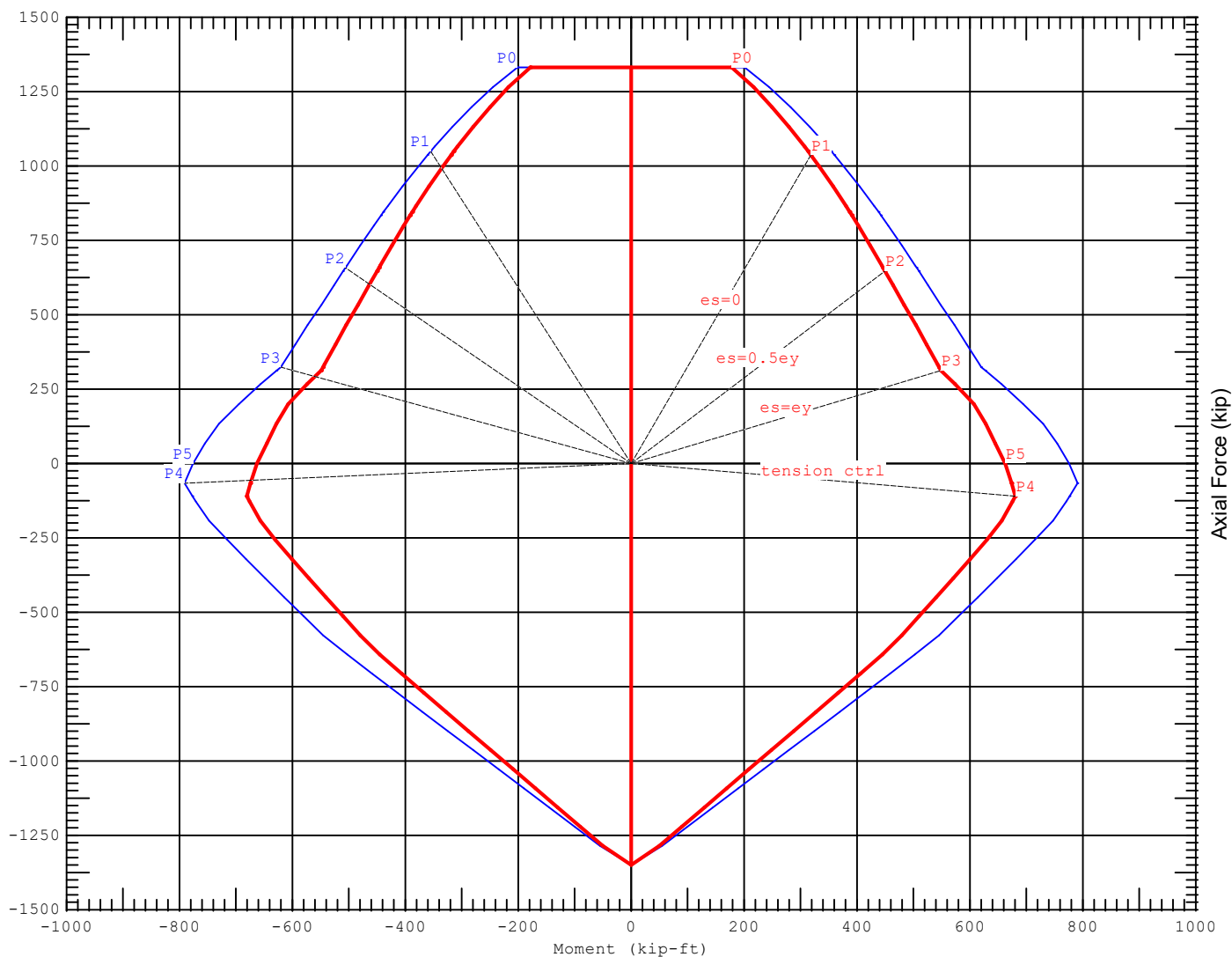
b x h: 22 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 16 # 11
Confinement: Tied
Ag: 440.00 in²
As: 24.96 in²
Roh: 5.67%
Ix: 14666.7 in⁴
Iy: 17746.7 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.24 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1329.08	178.03	-0.00065
P1	1035.08	318.05	0.00000
P2	645.17	449.00	0.00103
P3	311.36	548.02	0.00207
P4	-110.47	679.49	0.00507
P5	0.01	661.39	0.00432
Pmin	-1347.84	0.00	0.20000

PT	P	My (-)	max es
P0	1329.10	-200.84	-0.00063
P1	1046.99	-354.40	0.00000
P2	656.60	-505.11	0.00103
P3	323.12	-618.95	0.00207
P4	-66.60	-789.23	0.00507
P5	-0.02	-774.65	0.00460
Pmin	-1347.84	0.00	0.20000

P-Mx and P-My Interaction Diagram



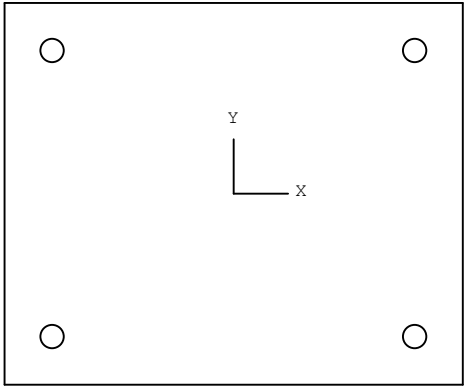
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_4#10_NX2_NY2_cc2.51



Section 178 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

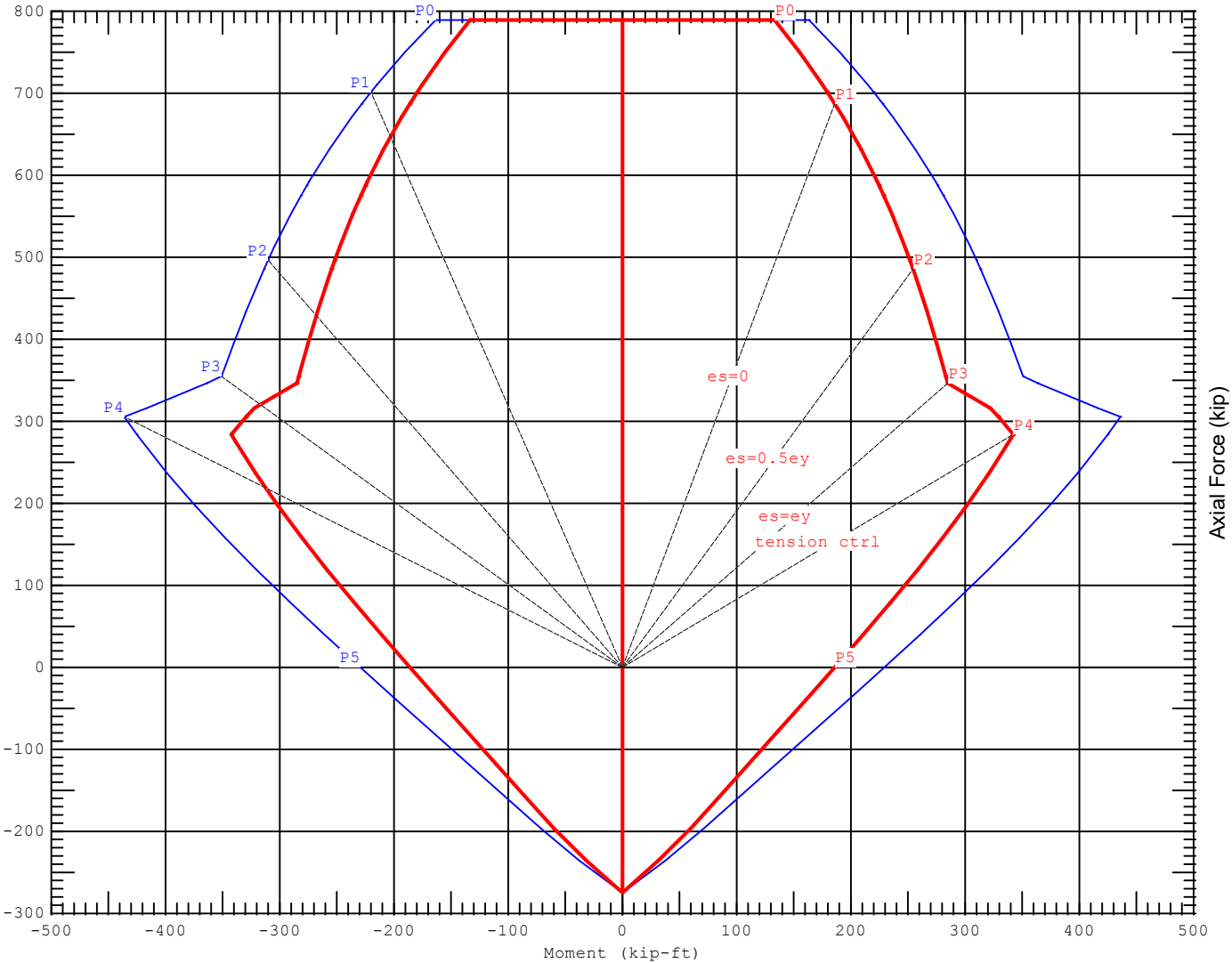
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 4 # 10
Confinement: Tied
Ag: 480.00 in²
As: 5.08 in²
Roh: 1.06%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.71 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	788.24	133.01	-0.00037
P1	686.24	185.70	0.00000
P2	485.07	254.02	0.00103
P3	345.80	284.39	0.00207
P4	283.57	341.78	0.00507
P5	0.00	185.55	0.01664
Pmin	-274.32	0.00	0.20000

PT	P	My (-)	max es
P0	788.24	-163.06	-0.00032
P1	700.38	-219.67	0.00000
P2	495.59	-309.62	0.00103
P3	354.17	-350.30	0.00207
P4	305.14	-435.25	0.00507
P5	-0.01	-228.97	0.01945
Pmin	-274.32	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	788.24	163.06	-0.00032
P1	700.38	219.67	0.00000
P2	495.59	309.62	0.00103
P3	354.17	350.30	0.00207
P4	305.14	435.25	0.00507
P5	-0.01	228.97	0.01945
Pmin	-274.32	0.00	0.20000

PT	P	My (-)	max es
P0	788.24	-133.01	-0.00037
P1	686.24	-185.70	0.00000
P2	485.07	-254.02	0.00103
P3	345.80	-284.39	0.00207
P4	283.57	-341.78	0.00507
P5	0.00	-185.55	0.01664
Pmin	-274.32	0.00	0.20000

Rect20x24_fc3_fy60_4#10_NX2_NY2_cc2.51

Y

X

Section 179 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 24 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 4 # 10

Confinement: Tied

Ag: 480.00 in^2

As: 5.08 in^2

Roh: 1.06%

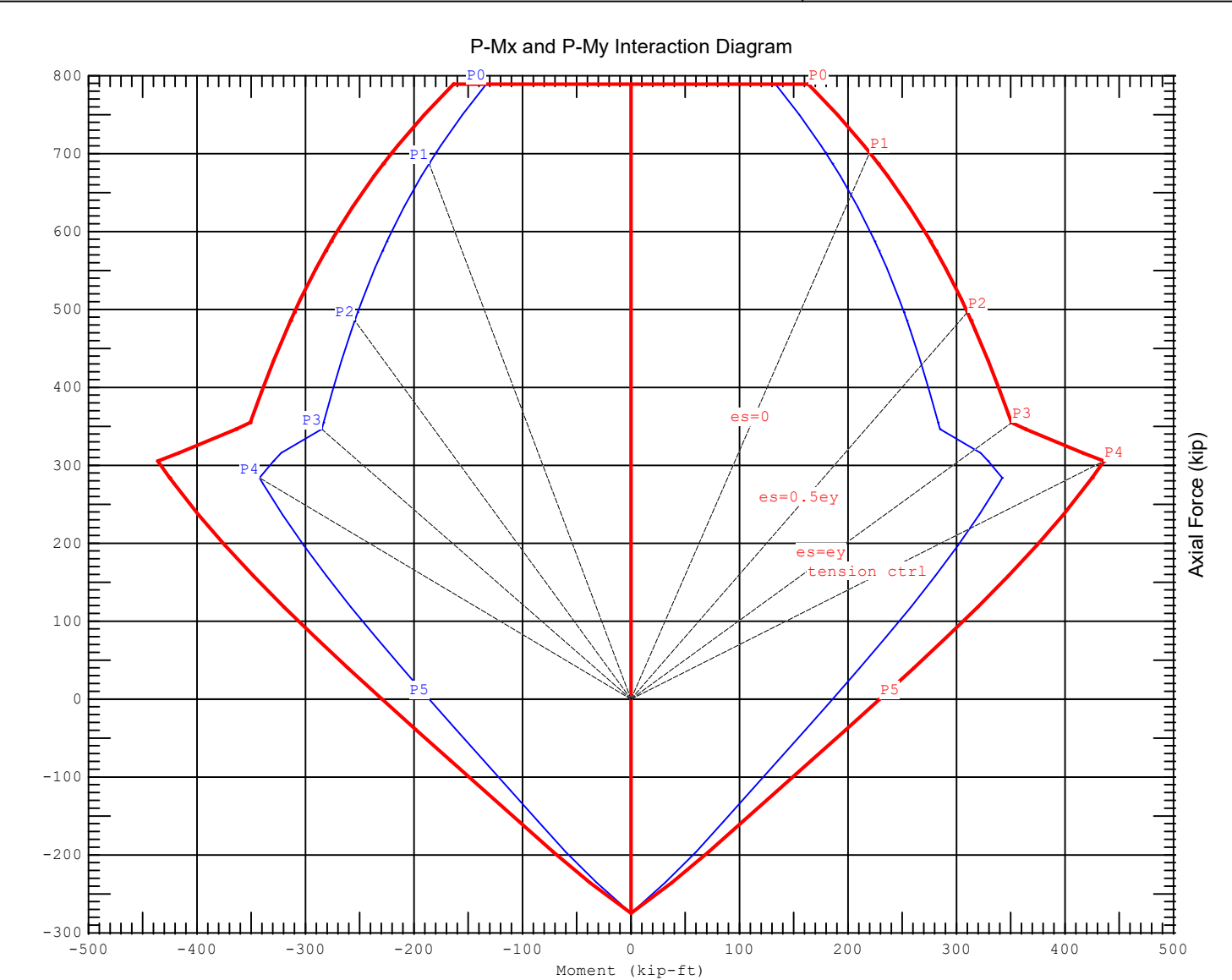
Ix: 23040 in^4

Iy: 16000 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 13.71 in



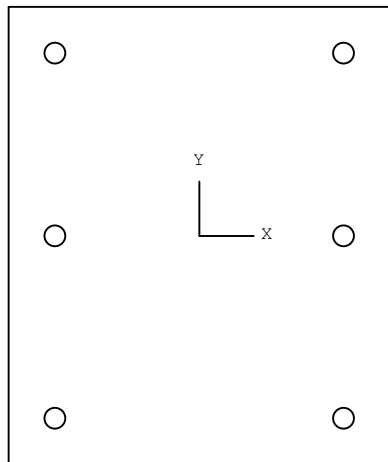
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#9_NX3_NY2_cc2.439



Section 180 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

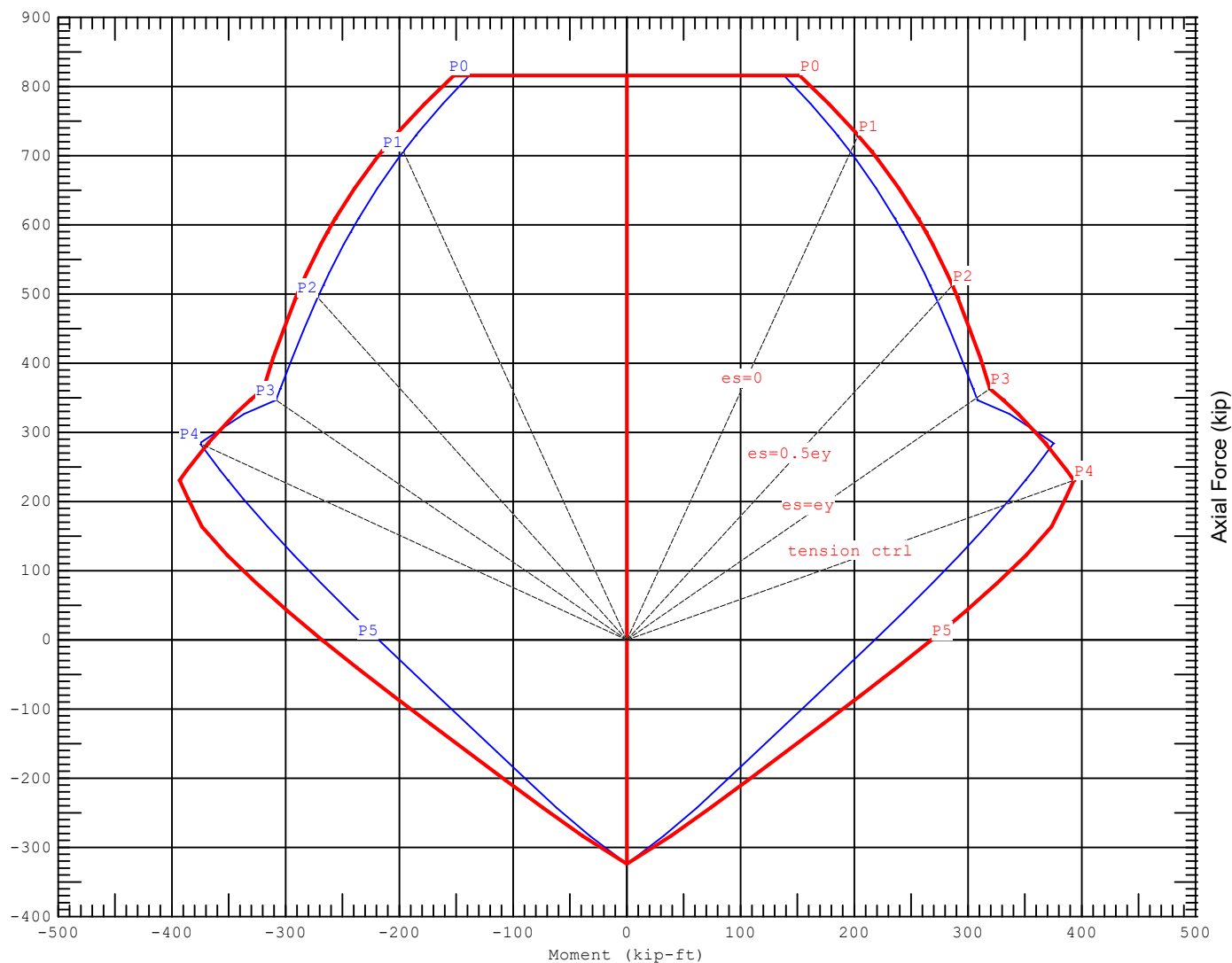
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 480.00 in²
As: 6.00 in²
Roh: 1.25%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 8.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	815.72	151.75	-0.00031
P1	729.06	203.12	0.00000
P2	512.57	285.82	0.00103
P3	362.99	318.71	0.00207
P4	230.34	392.40	0.00507
P5	-0.01	267.57	0.01295
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	815.72	-138.06	-0.00039
P1	705.82	-196.10	0.00000
P2	495.06	-271.19	0.00103
P3	346.45	-307.80	0.00207
P4	283.94	-374.50	0.00507
P5	0.00	-217.79	0.01578
Pmin	-324.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



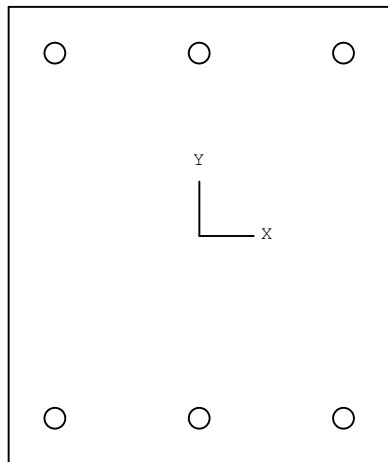
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#9_NX2_NY3_cc2.439



Section 181 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

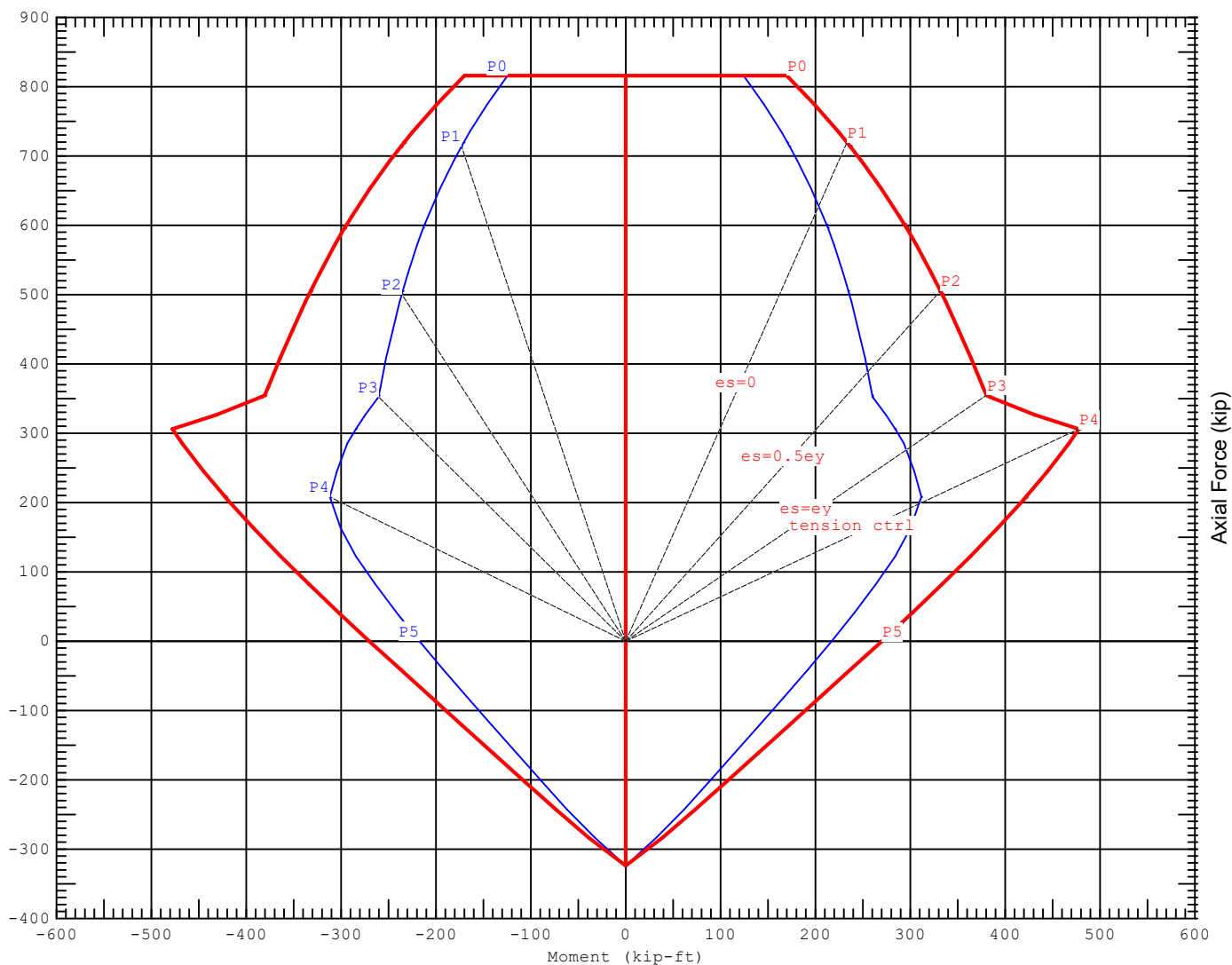
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 480.00 in²
As: 6.00 in²
Roh: 1.25%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	815.72	169.55	-0.00034
P1	719.56	232.87	0.00000
P2	505.28	331.11	0.00103
P3	354.59	379.54	0.00207
P4	305.87	476.62	0.00507
P5	-0.01	269.46	0.01801
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	815.72	-124.13	-0.00036
P1	713.86	-172.57	0.00000
P2	500.39	-235.38	0.00103
P3	352.39	-259.70	0.00207
P4	207.94	-311.02	0.00507
P5	0.00	-216.87	0.01155
Pmin	-324.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

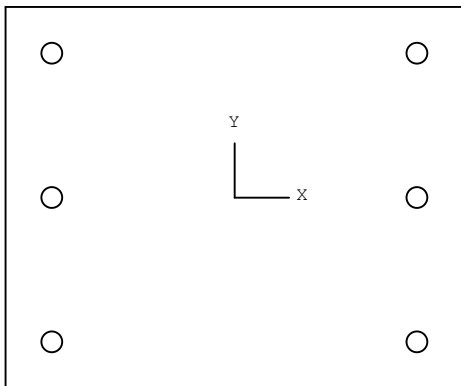
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#9_NX3_NY2_cc2.439



Section 182 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

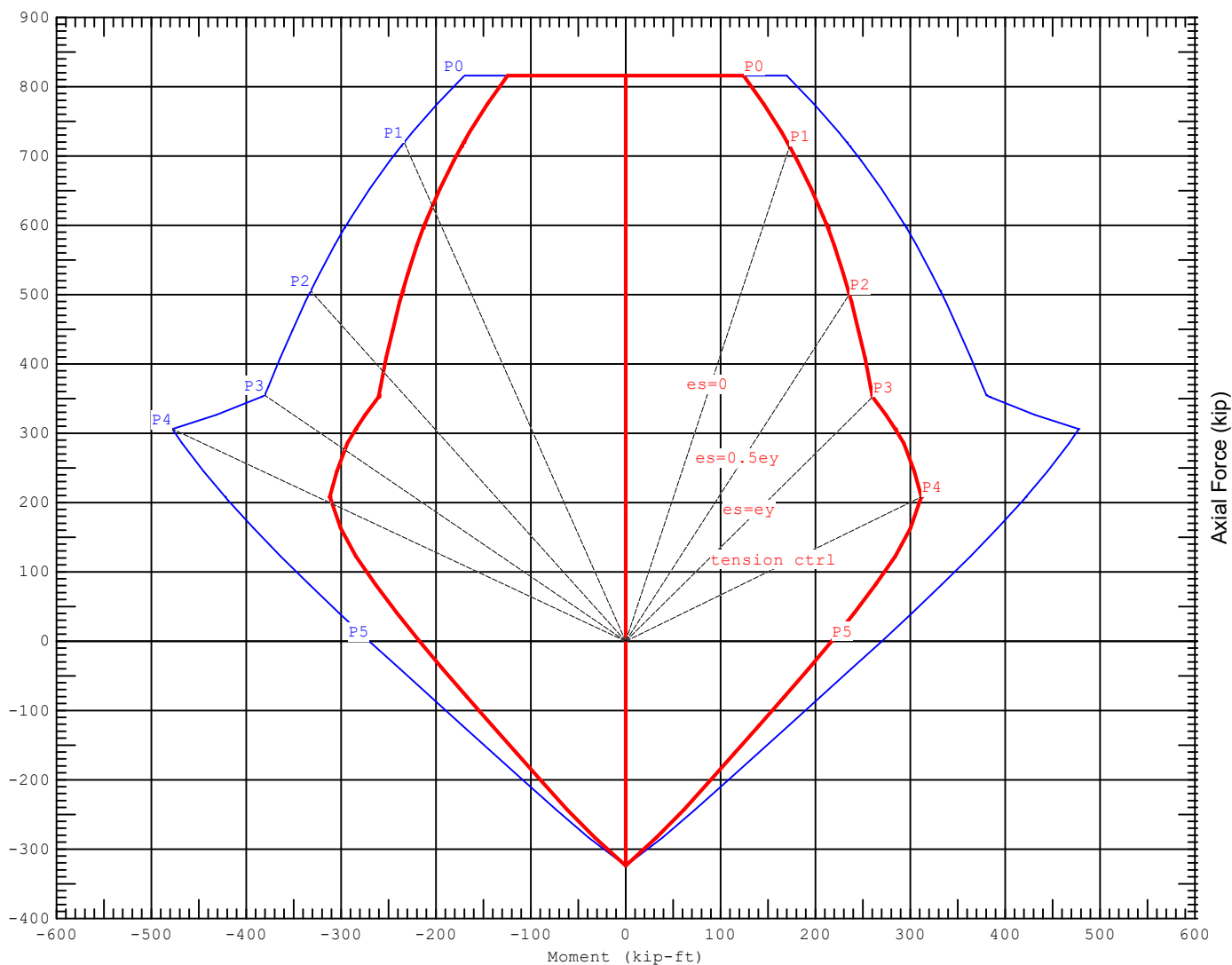
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 480.00 in²
As: 6.00 in²
Roh: 1.25%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	815.72	124.13	-0.00036
P1	713.86	172.57	0.00000
P2	500.39	235.38	0.00103
P3	352.39	259.70	0.00207
P4	207.94	311.02	0.00507
P5	0.00	216.87	0.01155
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	815.72	-169.55	-0.00034
P1	719.56	-232.87	0.00000
P2	505.28	-331.11	0.00103
P3	354.59	-379.54	0.00207
P4	305.87	-476.62	0.00507
P5	-0.01	-269.46	0.01801
Pmin	-324.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



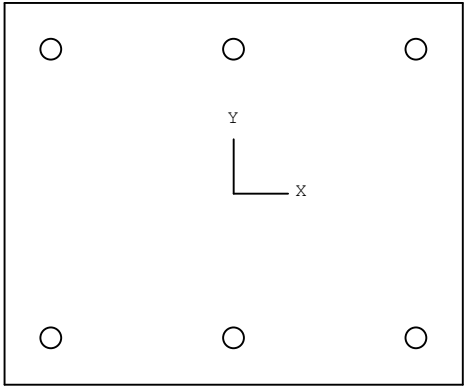
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#9_NX2_NY3_cc2.439



Section 183 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

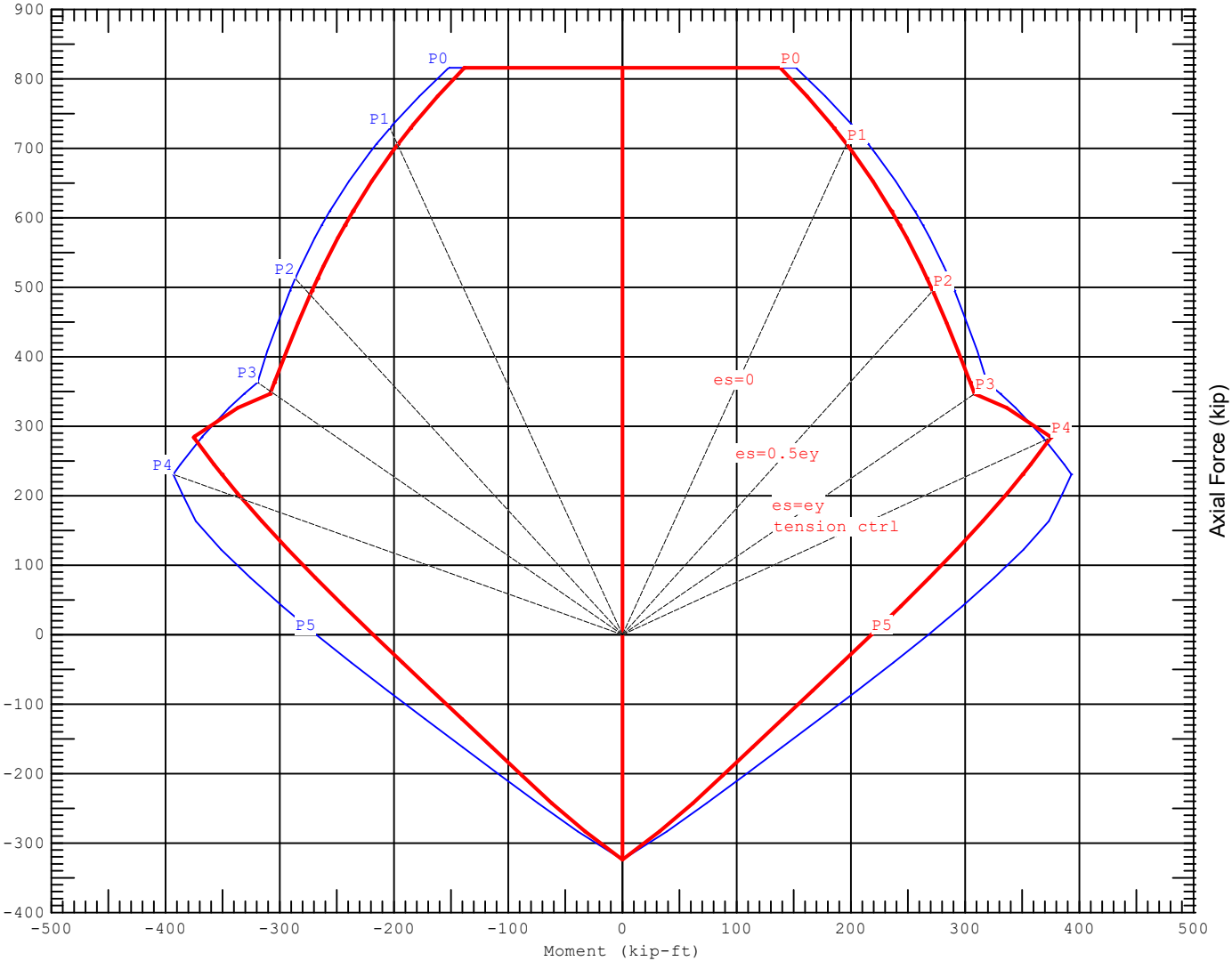
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 6 # 9
Confinement: Tied
Ag: 480.00 in²
As: 6.00 in²
Roh: 1.25%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 8.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	815.72	138.06	-0.00039
P1	705.82	196.10	0.00000
P2	495.06	271.19	0.00103
P3	346.45	307.80	0.00207
P4	283.94	374.50	0.00507
P5	0.00	217.79	0.01578
Pmin	-324.00	0.00	0.20000

PT	P	My (-)	max es
P0	815.72	-151.75	-0.00031
P1	729.06	-203.12	0.00000
P2	512.57	-285.82	0.00103
P3	362.99	-318.71	0.00207
P4	230.34	-392.40	0.00507
P5	-0.01	-267.57	0.01295
Pmin	-324.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



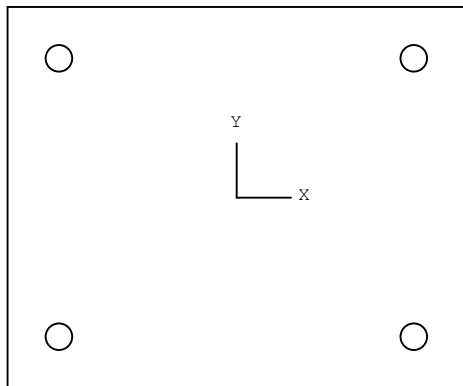
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_4#11_NX2_NY2_cc2.705



Section 184 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

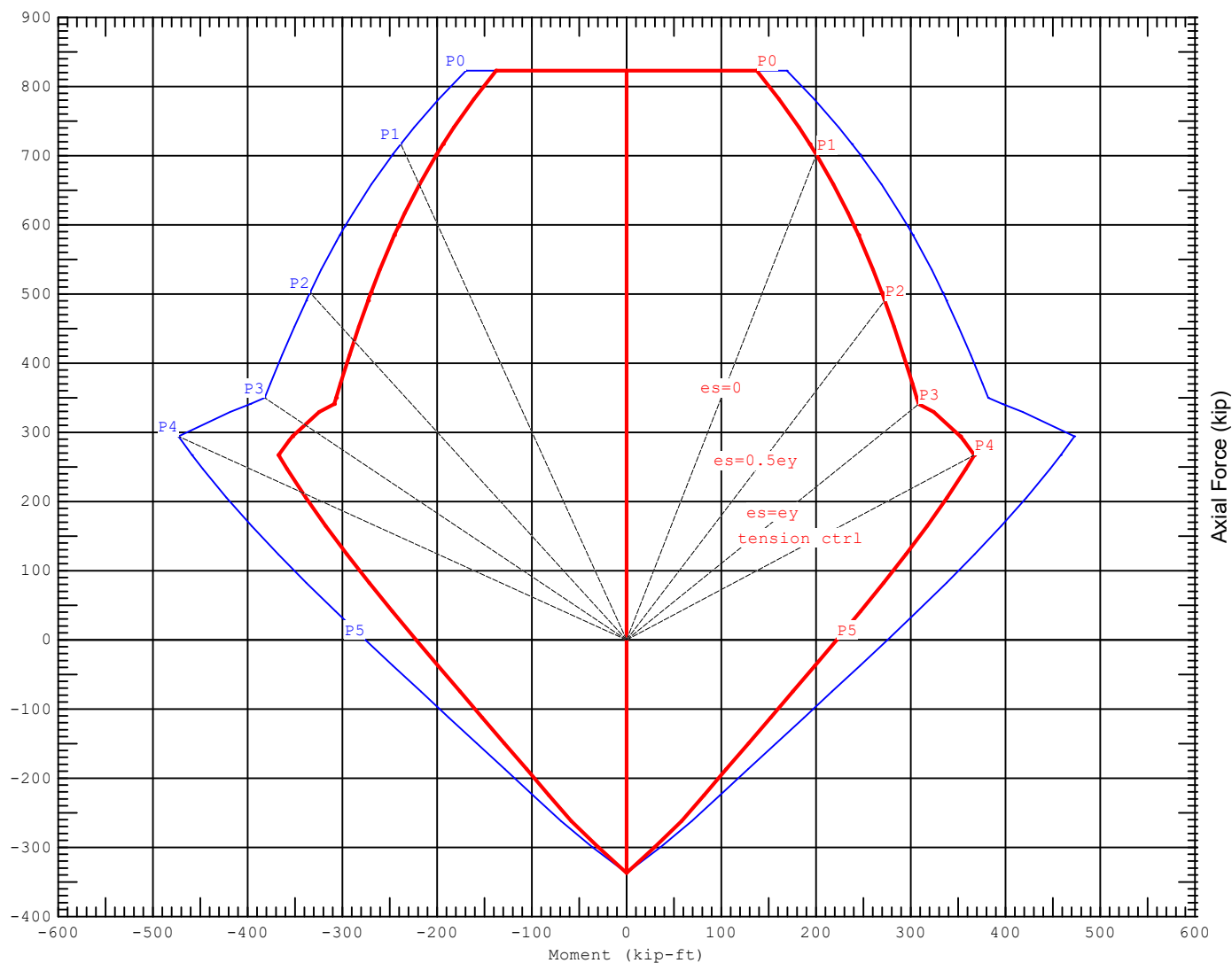
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 4 # 11
Confinement: Tied
Ag: 480.00 in²
As: 6.24 in²
Roh: 1.30%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.18 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.89	137.15	-0.00043
P1	701.30	199.95	0.00000
P2	490.52	272.13	0.00103
P3	340.93	307.75	0.00207
P4	266.94	366.42	0.00507
P5	0.01	221.61	0.01410
Pmin	-336.96	0.00	0.20000

PT	P	My (-)	max es
P0	822.89	-168.88	-0.00037
P1	716.55	-237.74	0.00000
P2	501.85	-333.33	0.00103
P3	349.95	-381.11	0.00207
P4	294.09	-471.81	0.00507
P5	0.01	-274.98	0.01619
Pmin	-336.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



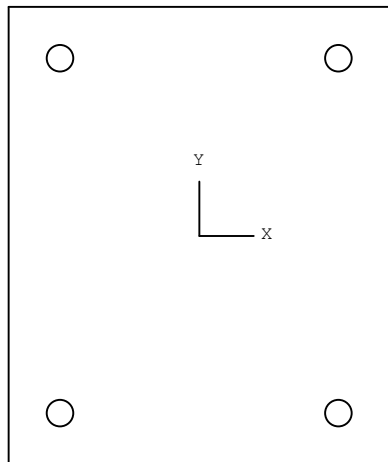
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_4#11_NX2_NY2_cc2.705



Section 185 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

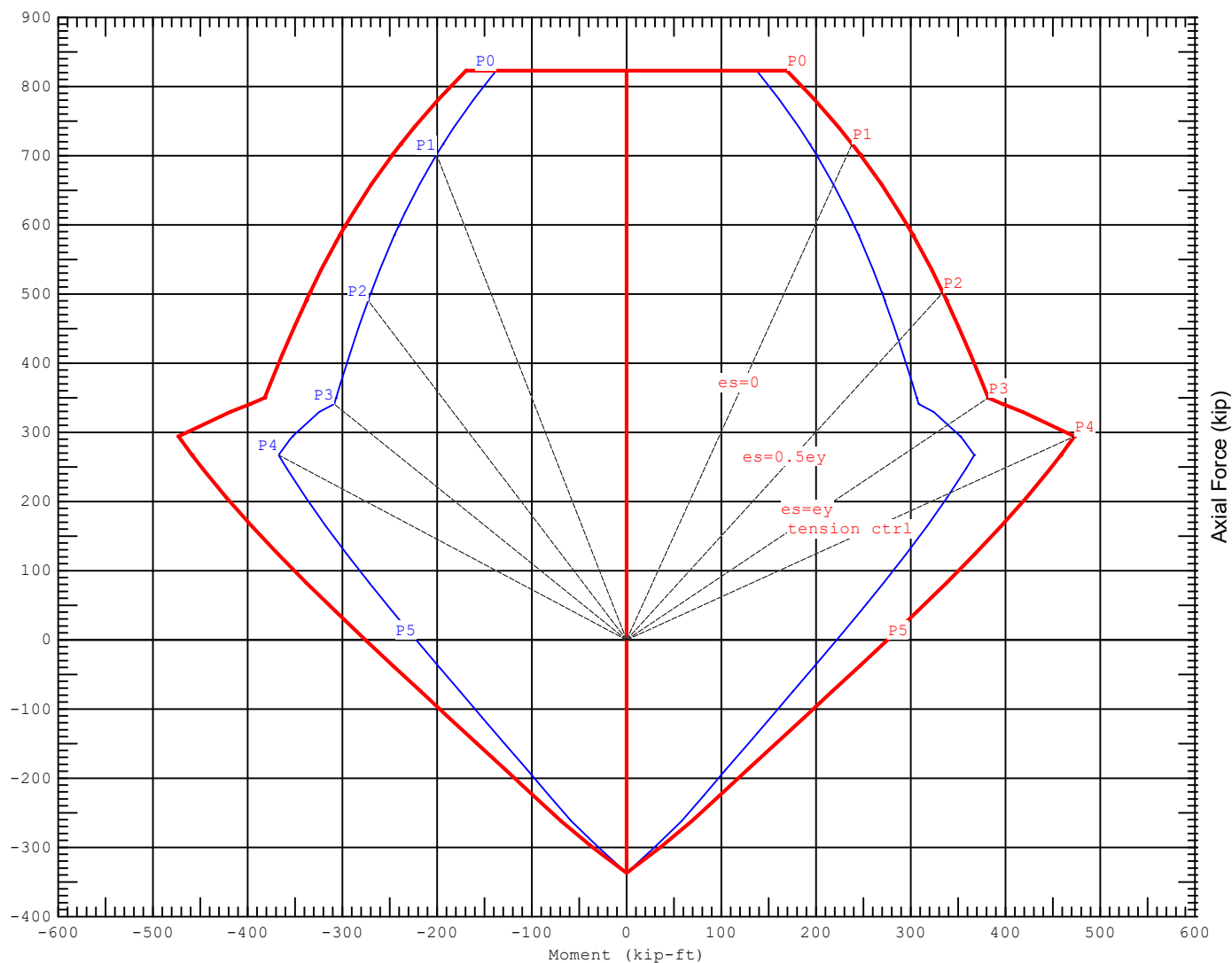
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 4 # 11
Confinement: Tied
Ag: 480.00 in²
As: 6.24 in²
Roh: 1.30%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 13.18 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	822.89	168.88	-0.00037
P1	716.55	237.74	0.00000
P2	501.85	333.33	0.00103
P3	349.95	381.11	0.00207
P4	294.09	471.81	0.00507
P5	0.01	274.98	0.01619
Pmin	-336.96	0.00	0.20000

PT	P	My (-)	max es
P0	822.89	-137.15	-0.00043
P1	701.30	-199.95	0.00000
P2	490.52	-272.13	0.00103
P3	340.93	-307.75	0.00207
P4	266.94	-366.42	0.00507
P5	0.01	-221.61	0.01410
Pmin	-336.96	0.00	0.20000

P-Mx and P-My Interaction Diagram



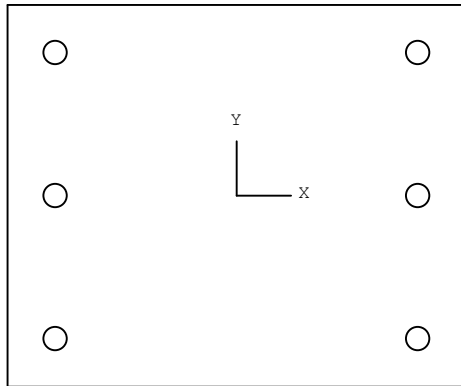
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#10_NX3_NY2_cc2.51



Section 186 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

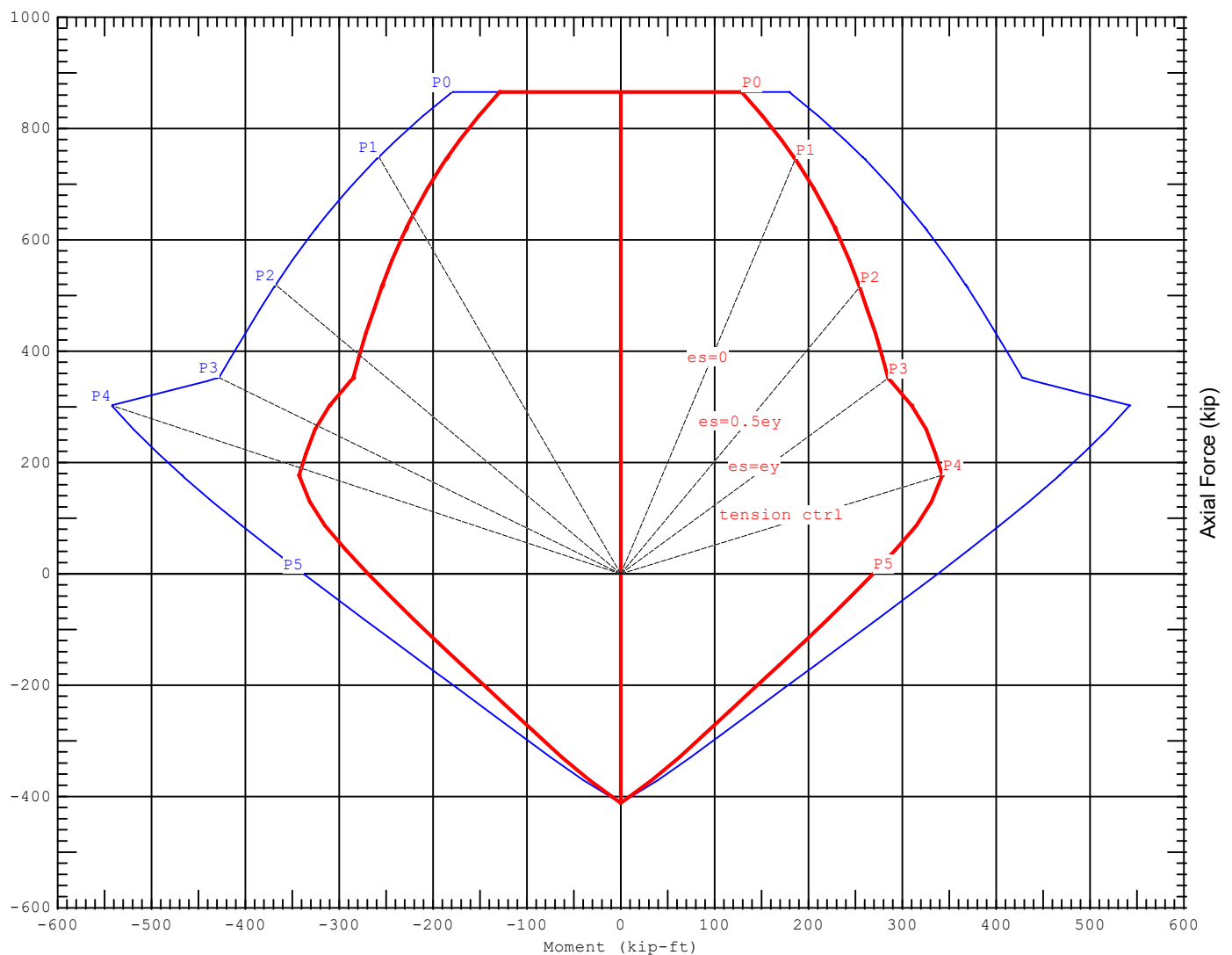
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 480.00 in²
As: 7.62 in²
Roh: 1.59%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	864.11	128.46	-0.00040
P1	743.54	185.70	0.00000
P2	514.05	254.02	0.00103
P3	350.67	284.39	0.00207
P4	176.60	341.78	0.00507
P5	0.01	268.52	0.00936
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	864.12	-179.13	-0.00038
P1	747.81	-257.18	0.00000
P2	518.25	-366.71	0.00103
P3	352.06	-426.97	0.00207
P4	301.85	-541.11	0.00507
P5	-0.01	-337.13	0.01576
Pmin	-411.48	-0.00	0.20000

P-Mx and P-My Interaction Diagram



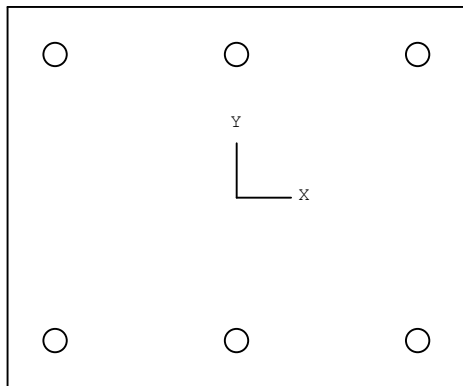
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#10_NX2_NY3_cc2.51



Section 187 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

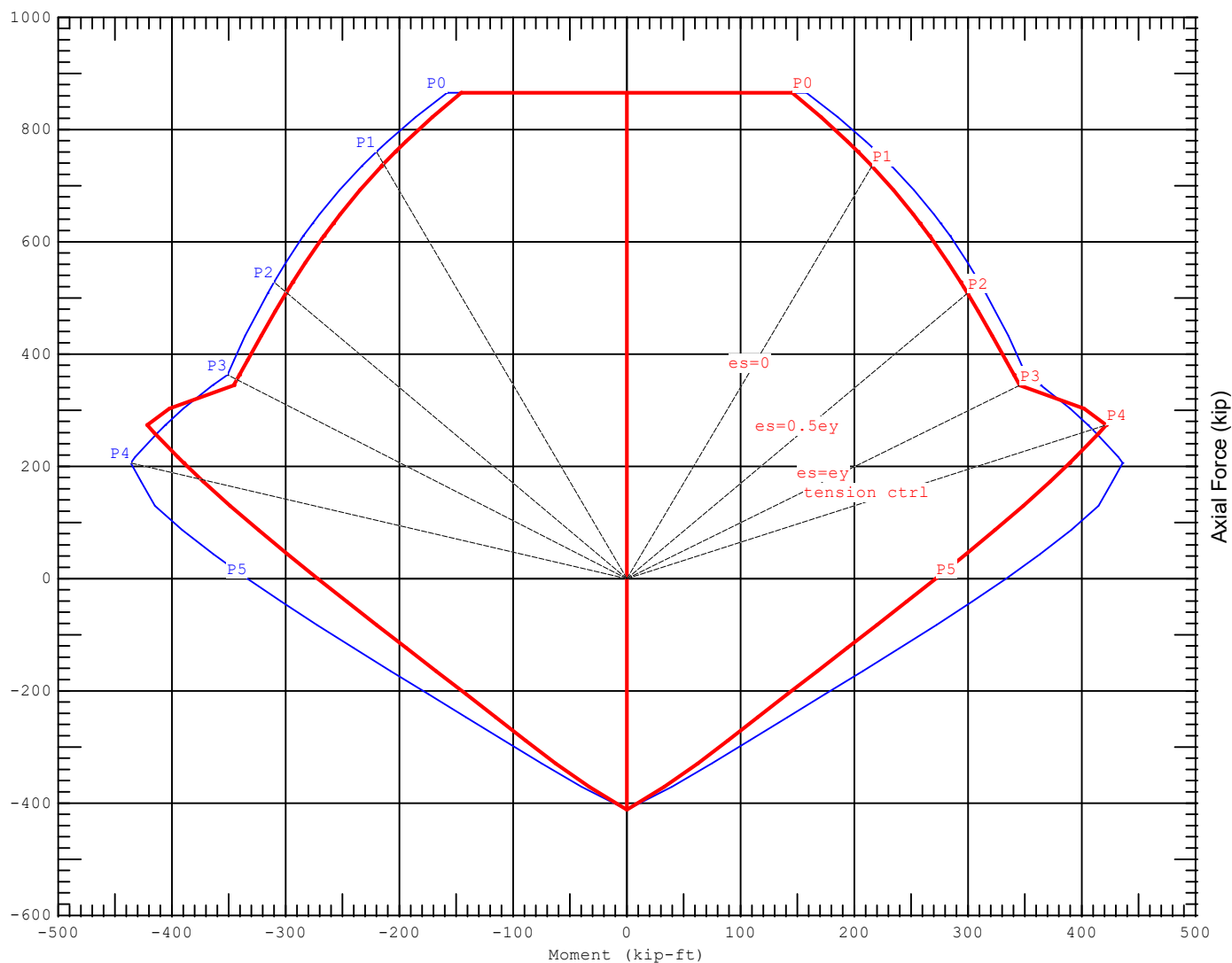
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 6 # 10
Confinement: Tied
Ag: 480.00 in²
As: 7.62 in²
Roh: 1.59%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 8.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	864.12	145.25	-0.00043
P1	733.66	215.30	0.00000
P2	507.73	299.08	0.00103
P3	343.69	344.91	0.00207
P4	273.13	420.88	0.00507
P5	-0.00	271.19	0.01338
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	864.12	-157.68	-0.00035
P1	759.60	-219.67	0.00000
P2	527.15	-309.62	0.00103
P3	362.28	-350.30	0.00207
P4	205.32	-435.25	0.00507
P5	-0.00	-332.91	0.01052
Pmin	-411.48	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

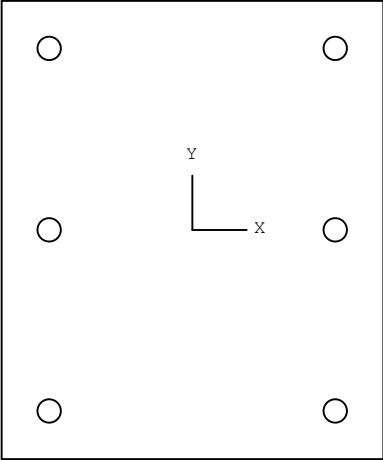
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#10_NX3_NY2_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 24 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 6 # 10

Confinement: Tied

Ag: 480.00 in^2

As: 7.62 in^2

Roh: 1.59%

Ix: 23040 in^4

Iy: 16000 in^4

X0: 0.00 in

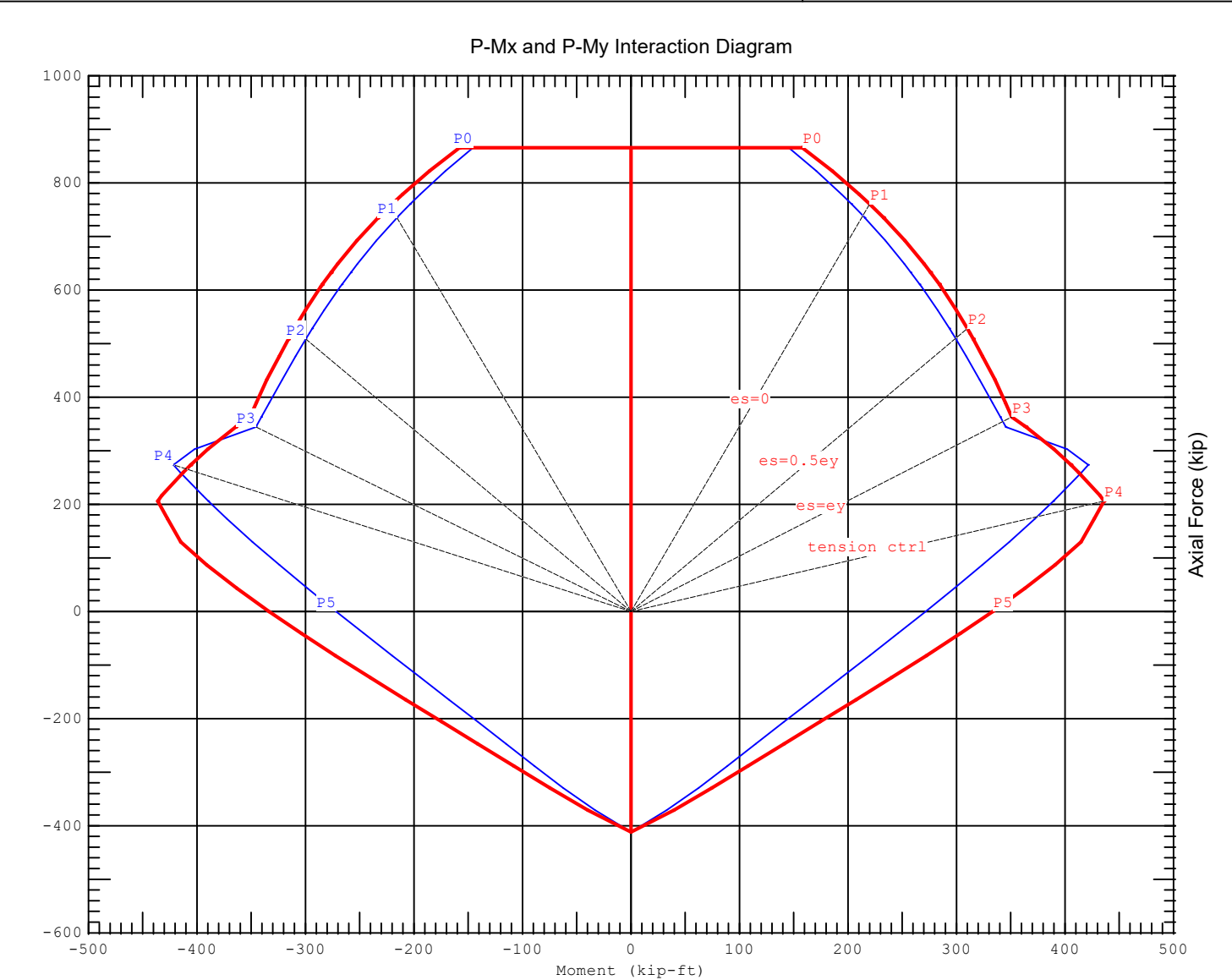
Y0: 0.00 in

Clear spacing: 8.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	864.12	157.68	-0.00035
P1	759.60	219.67	0.00000
P2	527.15	309.62	0.00103
P3	362.28	350.30	0.00207
P4	205.32	435.25	0.00507
P5	-0.00	332.91	0.01052
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	864.12	-145.25	-0.00043
P1	733.66	-215.30	0.00000
P2	507.73	-299.08	0.00103
P3	343.69	-344.91	0.00207
P4	273.13	-420.88	0.00507
P5	-0.00	-271.19	0.01338
Pmin	-411.48	0.00	0.20000



Project/Job:

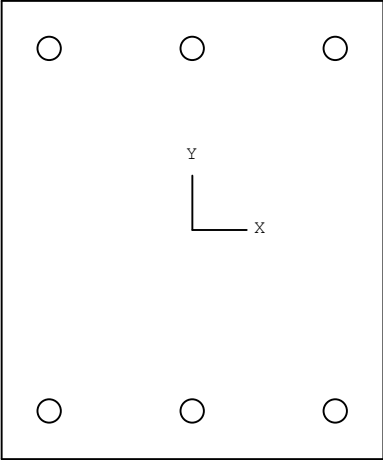
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#10_NX2_NY3_cc2.51



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 24 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 6 # 10

Confinement: Tied

Ag: 480.00 in^2

As: 7.62 in^2

Roh: 1.59%

Ix: 23040 in^4

Iy: 16000 in^4

X0: 0.00 in

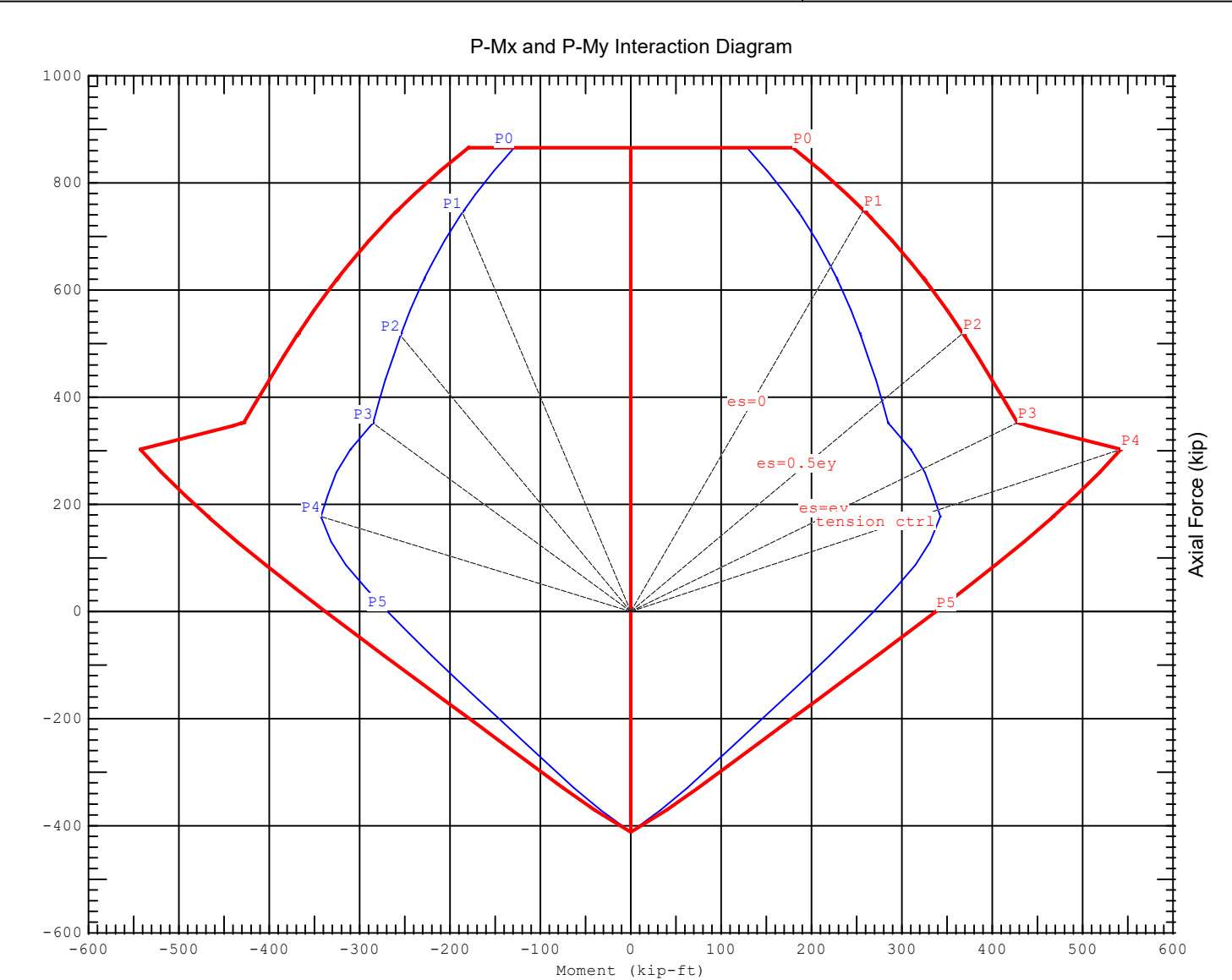
Y0: 0.00 in

Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	864.12	179.13	-0.00038
P1	747.81	257.18	0.00000
P2	518.25	366.71	0.00103
P3	352.06	426.97	0.00207
P4	301.85	541.11	0.00507
P5	-0.01	337.13	0.01576
Pmin	-411.48	0.00	0.20000

PT	P	My (-)	max es
P0	864.11	-128.46	-0.00040
P1	743.54	-185.70	0.00000
P2	514.05	-254.02	0.00103
P3	350.67	-284.39	0.00207
P4	176.60	-341.78	0.00507
P5	0.01	-268.52	0.00936
Pmin	-411.48	0.00	0.20000



Project/Job:

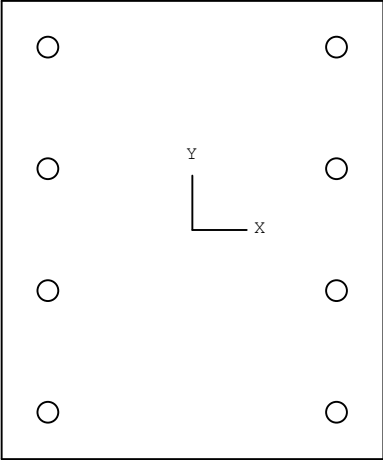
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#9_NX4_NY2_cc2.439



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 24 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.439 in

Bars: 8 # 9

Confinement: Tied

Ag: 480.00 in^2

As: 8.00 in^2

Roh: 1.67%

Ix: 23040 in^4

Iy: 16000 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 5.25 in

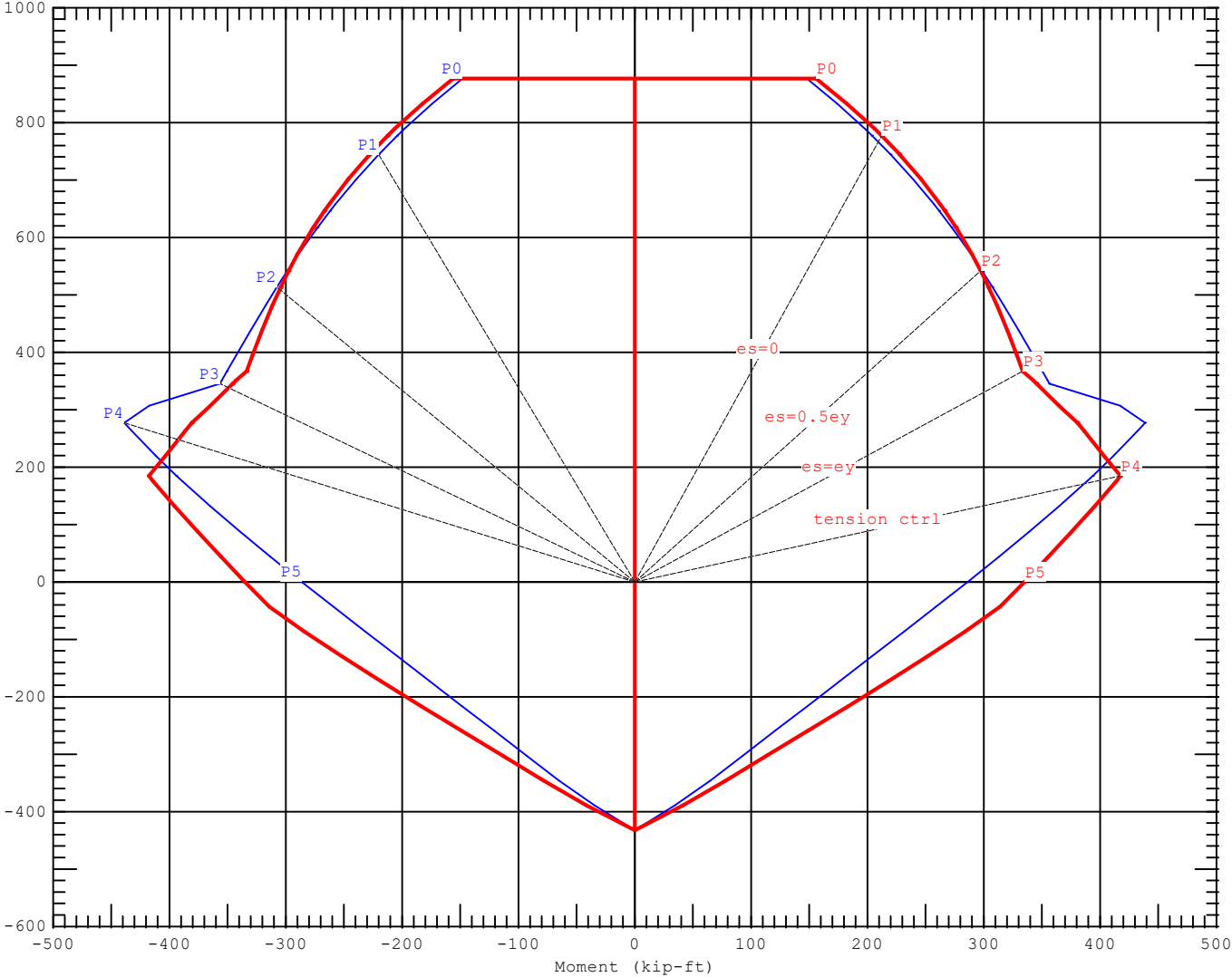
Section 190 of 238

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	155.59	-0.00032
P1	775.90	212.00	0.00000
P2	541.02	296.88	0.00103
P3	366.41	332.84	0.00207
P4	184.60	416.95	0.00507
P5	-0.01	334.47	0.00847
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-147.74	-0.00043
P1	743.16	-219.63	0.00000
P2	512.91	-307.01	0.00103
P3	344.80	-355.91	0.00207
P4	276.70	-437.98	0.00507
P5	0.00	-285.66	0.01343
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



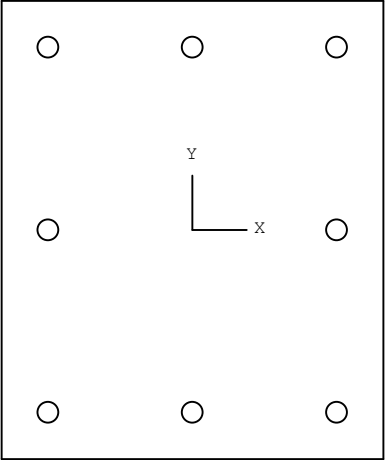
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#9_NX3_NY3_cc2.439



Section 191 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

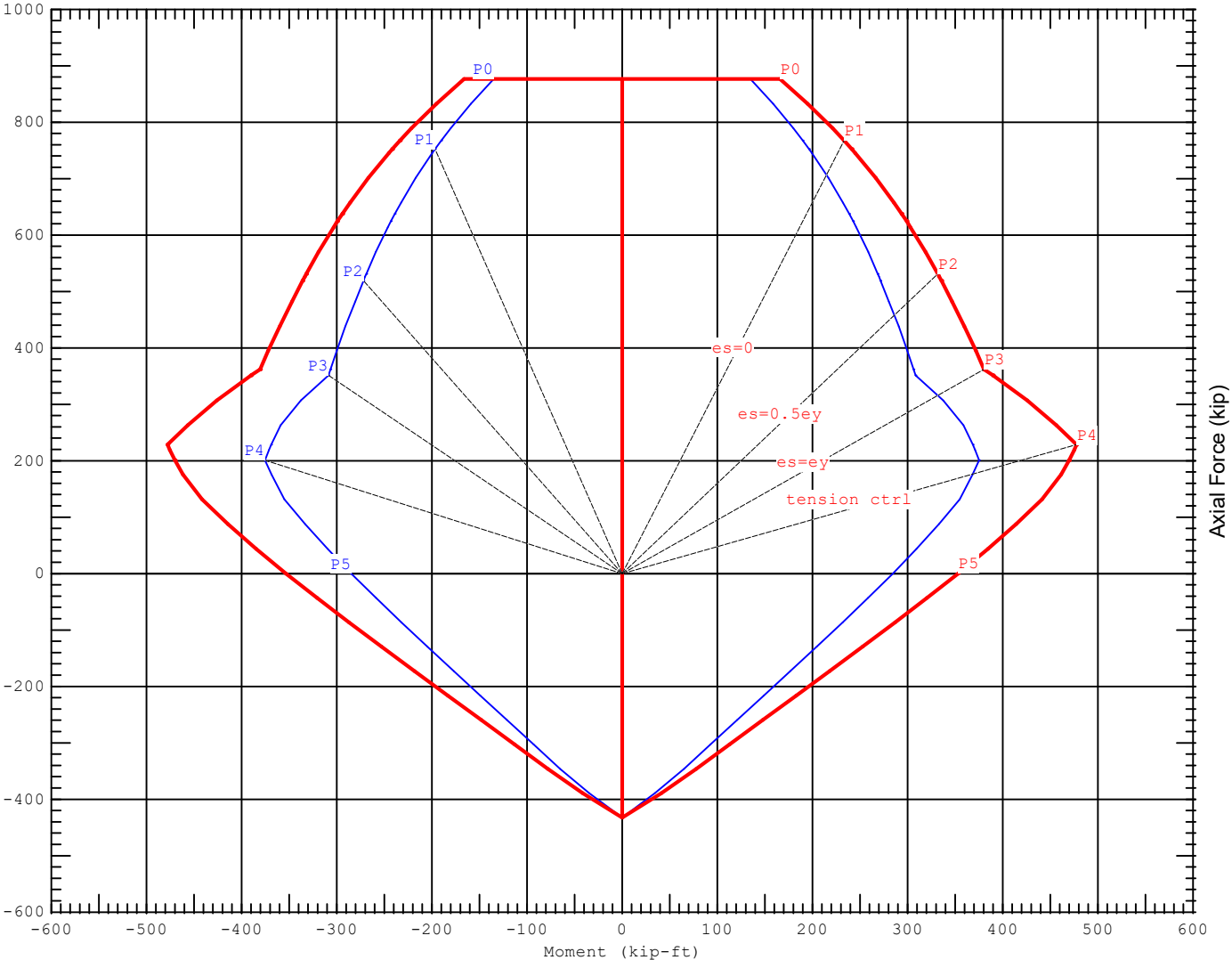
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 480.00 in²
As: 8.00 in²
Roh: 1.67%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	165.52	-0.00036
P1	766.40	232.87	0.00000
P2	530.42	331.11	0.00103
P3	361.33	379.54	0.00207
P4	228.05	476.62	0.00507
P5	0.00	352.30	0.01167
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-134.63	-0.00041
P1	751.20	-196.10	0.00000
P2	518.24	-271.19	0.00103
P3	350.73	-307.80	0.00207
P4	200.70	-374.50	0.00507
P5	-0.00	-283.82	0.01025
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



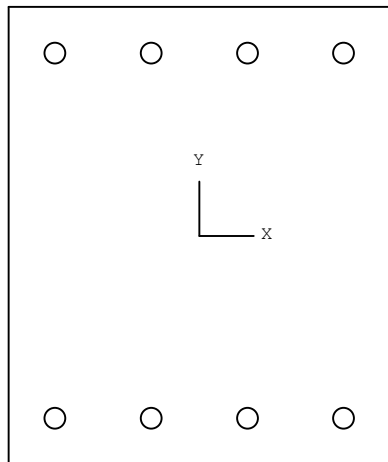
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#9_NX2_NY4_cc2.439



Section 192 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

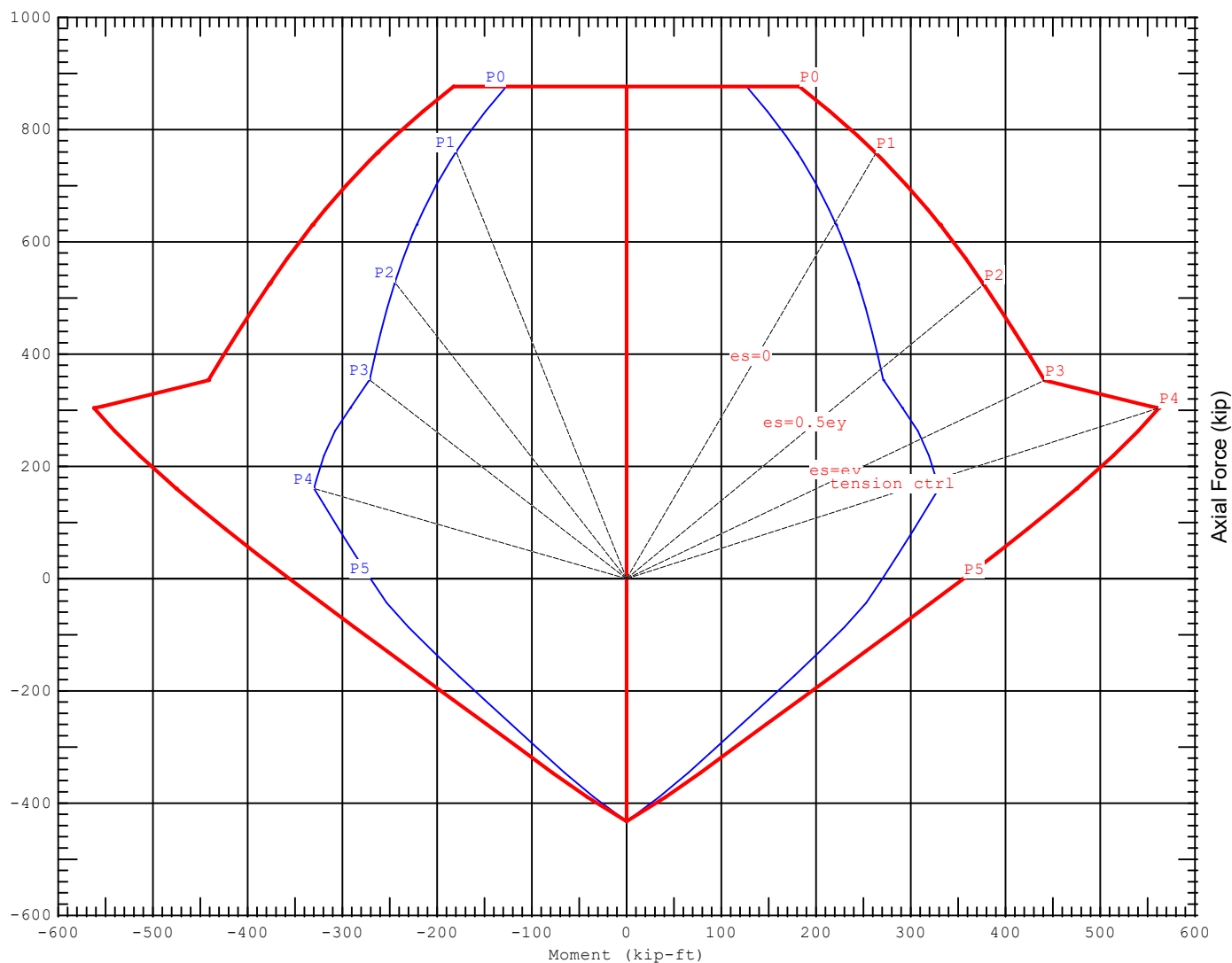
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 480.00 in²
As: 8.00 in²
Roh: 1.67%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	182.21	-0.00039
P1	756.91	262.62	0.00000
P2	523.13	376.40	0.00103
P3	352.93	440.37	0.00207
P4	303.57	560.84	0.00507
P5	-0.01	355.12	0.01581
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-126.66	-0.00038
P1	759.24	-179.39	0.00000
P2	526.88	-243.85	0.00103
P3	353.36	-270.53	0.00207
P4	160.39	-328.91	0.00507
P5	0.00	-269.50	0.00785
Pmin	-432.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



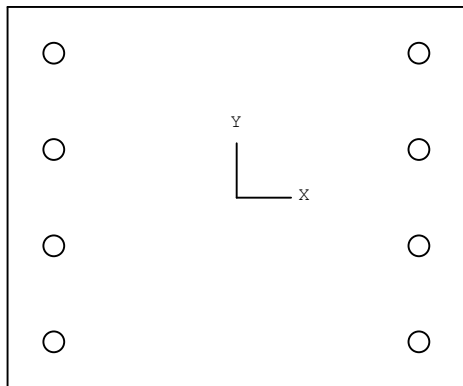
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#9_NX4_NY2_cc2.439



Section 193 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

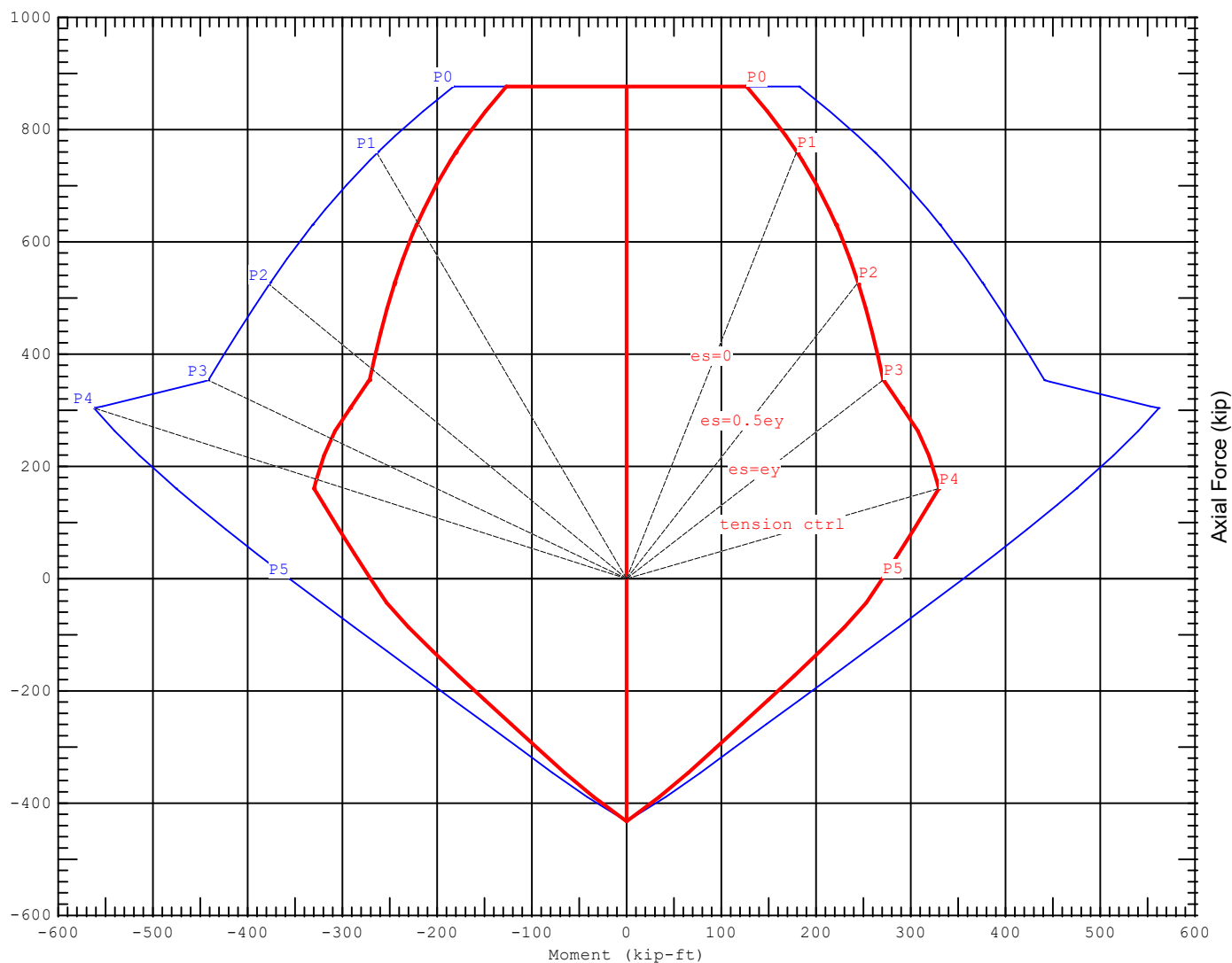
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 480.00 in²
As: 8.00 in²
Roh: 1.67%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	126.66	-0.00038
P1	759.24	179.39	0.00000
P2	526.88	243.85	0.00103
P3	353.36	270.53	0.00207
P4	160.39	328.91	0.00507
P5	0.00	269.50	0.00785
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-182.21	-0.00039
P1	756.91	-262.62	0.00000
P2	523.13	-376.40	0.00103
P3	352.93	-440.37	0.00207
P4	303.57	-560.84	0.00507
P5	-0.01	-355.12	0.01581
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



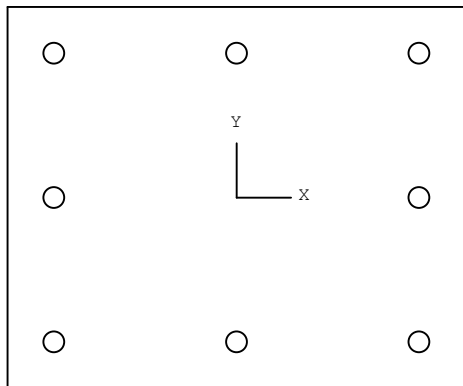
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#9_NX3_NY3_cc2.439



Section 194 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

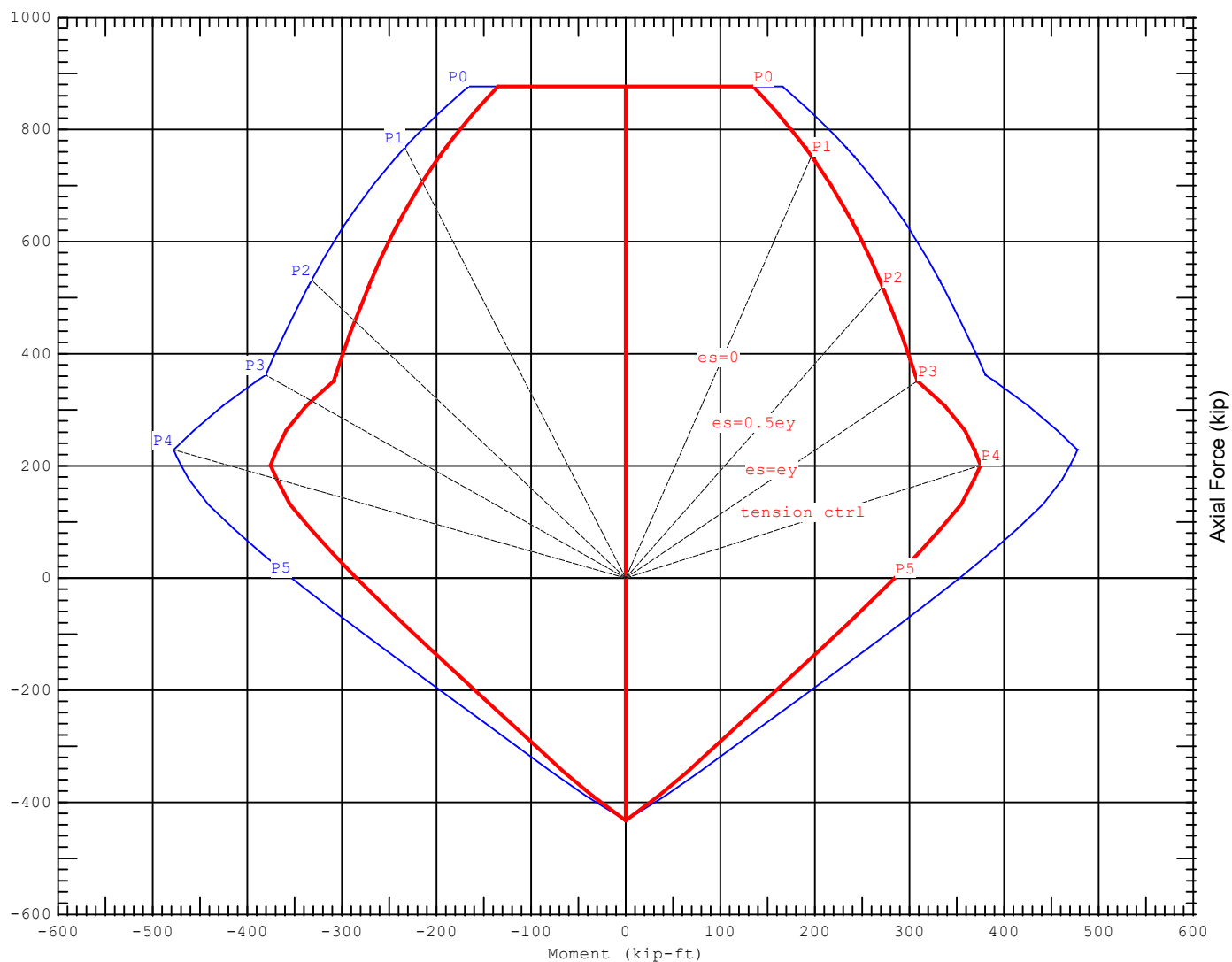
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 480.00 in²
As: 8.00 in²
Roh: 1.67%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.43 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	134.63	-0.00041
P1	751.20	196.10	0.00000
P2	518.24	271.19	0.00103
P3	350.73	307.80	0.00207
P4	200.70	374.50	0.00507
P5	-0.00	283.82	0.01025
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-165.52	-0.00036
P1	766.40	-232.87	0.00000
P2	530.42	-331.11	0.00103
P3	361.33	-379.54	0.00207
P4	228.05	-476.62	0.00507
P5	0.00	-352.30	0.01167
Pmin	-432.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



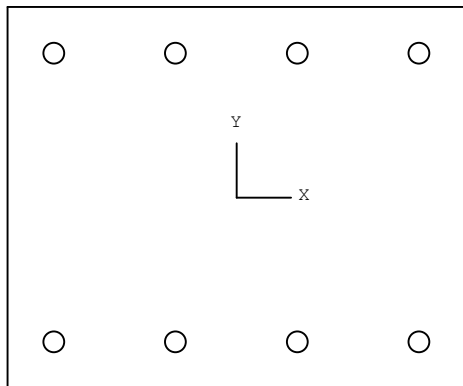
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#9_NX2_NY4_cc2.439



Section 195 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

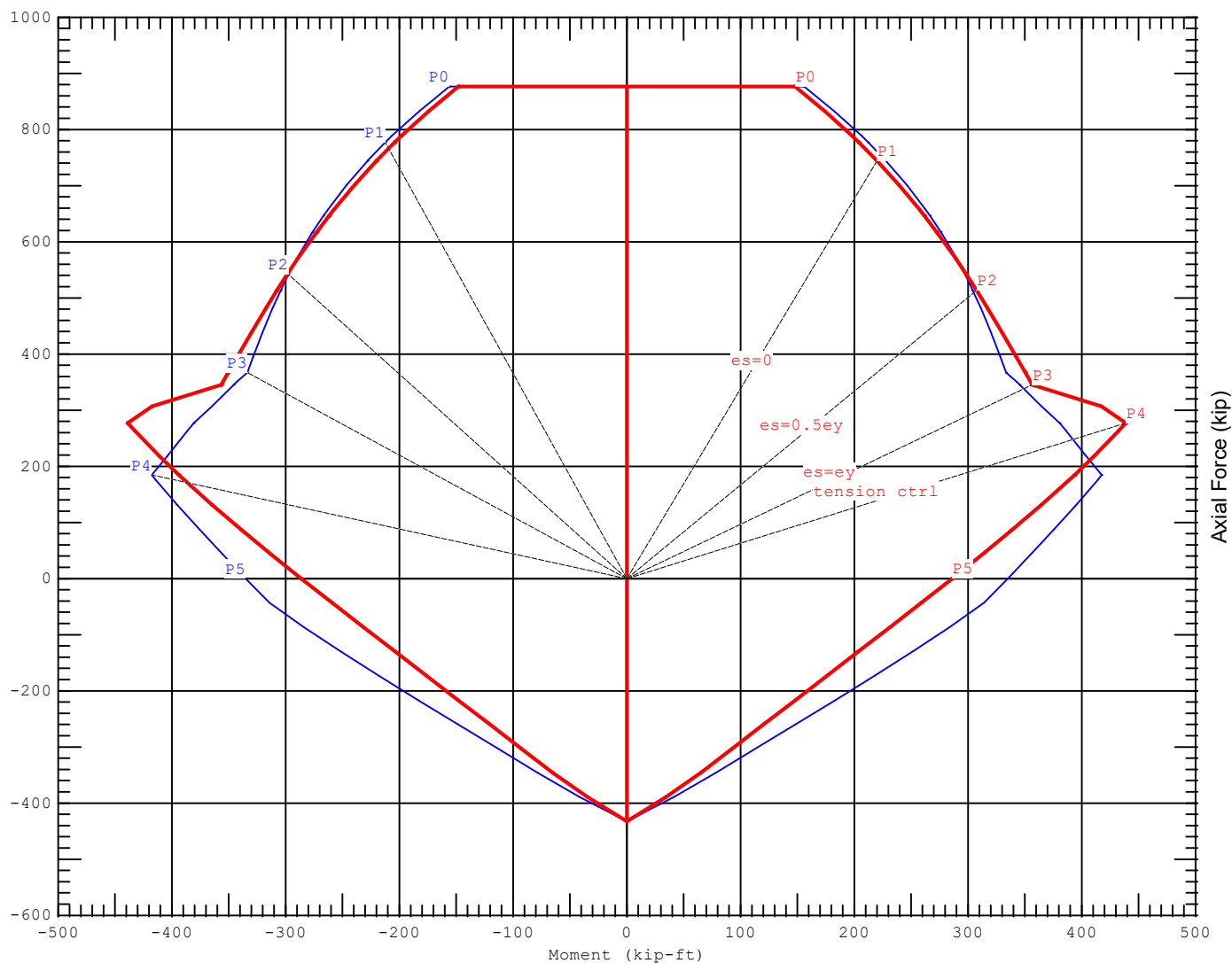
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 8 # 9
Confinement: Tied
Ag: 480.00 in²
As: 8.00 in²
Roh: 1.67%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.25 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	875.47	147.74	-0.00043
P1	743.16	219.63	0.00000
P2	512.91	307.01	0.00103
P3	344.80	355.91	0.00207
P4	276.70	437.98	0.00507
P5	0.00	285.66	0.01343
Pmin	-432.00	0.00	0.20000

PT	P	My (-)	max es
P0	875.47	-155.59	-0.00032
P1	775.90	-212.00	0.00000
P2	541.02	-296.88	0.00103
P3	366.41	-332.84	0.00207
P4	184.60	-416.95	0.00507
P5	-0.01	-334.47	0.00847
Pmin	-432.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

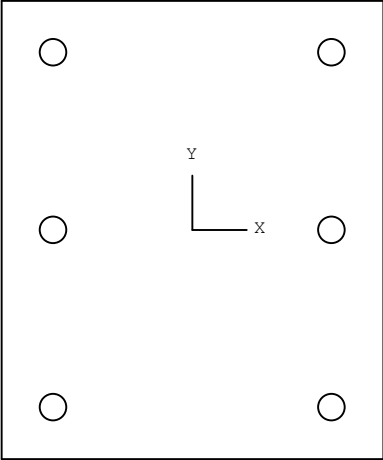
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#11_NX3_NY2_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 20 x 24 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 480.00 in^2

As: 9.36 in^2

Roh: 1.95%

Ix: 23040 in^4

Iy: 16000 in^4

X0: 0.00 in

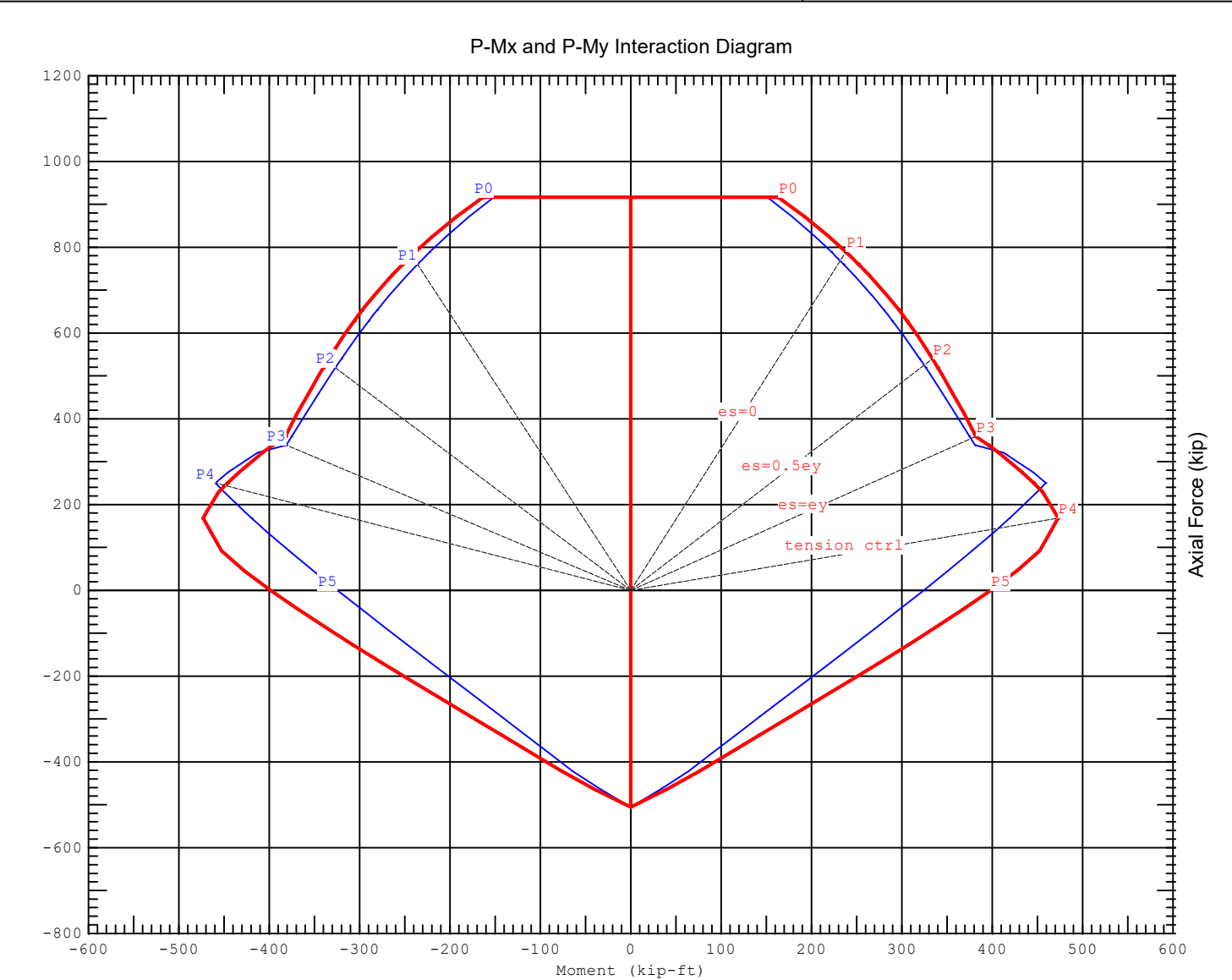
Y0: 0.00 in

Clear spacing: 7.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	916.10	162.81	-0.00040
P1	788.39	237.74	0.00000
P2	539.41	333.33	0.00103
P3	358.40	381.11	0.00207
P4	168.11	471.81	0.00507
P5	-0.01	397.49	0.00843
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	916.09	-151.09	-0.00051
P1	759.56	-235.37	0.00000
P2	518.35	-326.03	0.00103
P3	338.35	-380.15	0.00207
P4	249.88	-458.47	0.00507
P5	-0.00	-323.72	0.01129
Pmin	-505.44	-0.00	0.20000



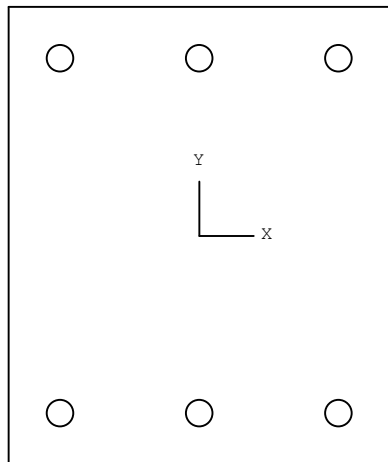
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_6#11_NX2_NY3_cc2.705



Section 197 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

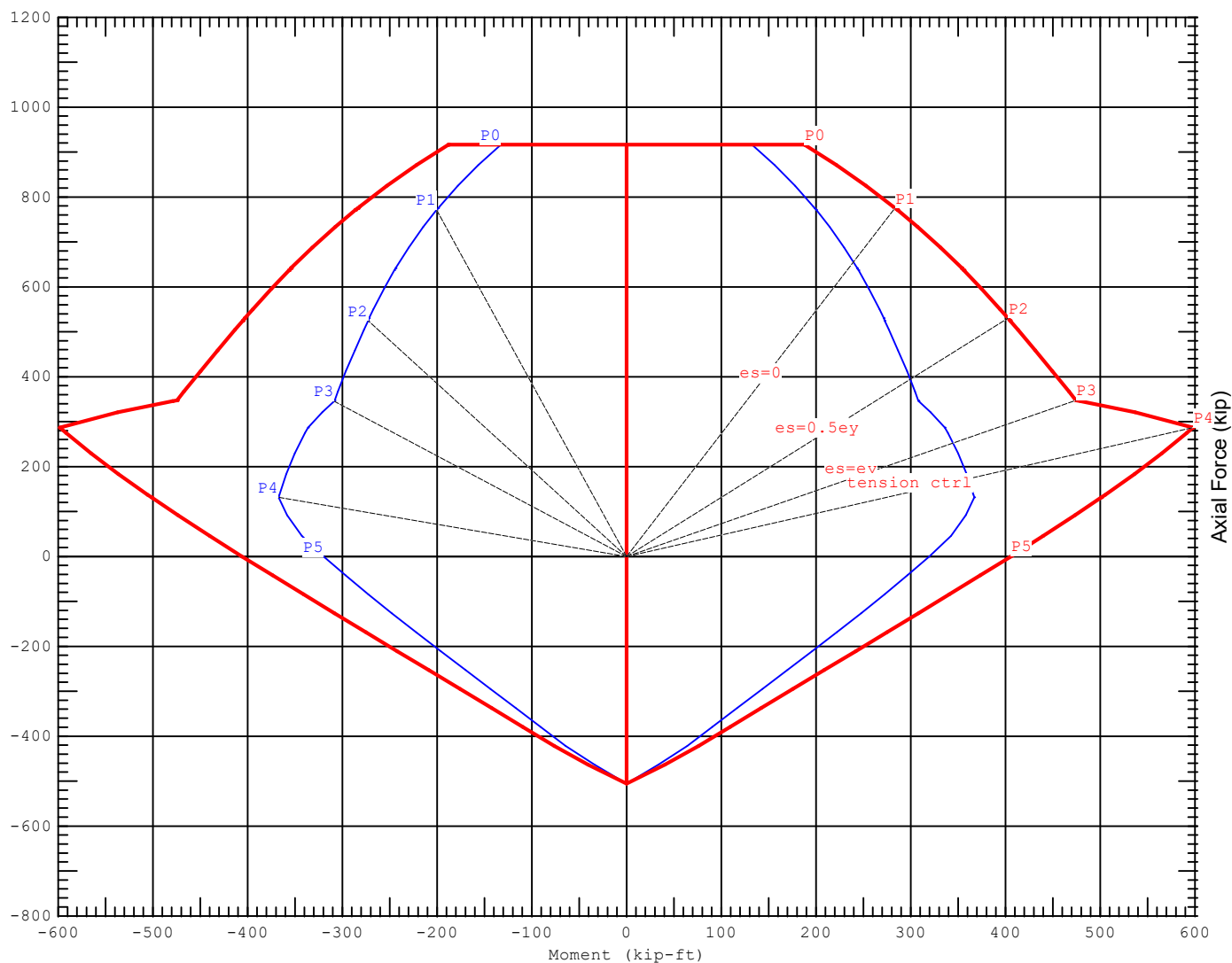
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 6 # 11
Confinement: Tied
Ag: 480.00 in²
As: 9.36 in²
Roh: 1.95%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	916.10	187.48	-0.00044
P1	774.80	282.86	0.00000
P2	529.69	402.01	0.00103
P3	347.37	473.36	0.00207
P4	286.68	596.58	0.00507
P5	0.01	404.81	0.01342
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	916.09	-132.24	-0.00047
P1	770.55	-199.95	0.00000
P2	524.59	-272.13	0.00103
P3	345.00	-307.75	0.00207
P4	131.31	-366.42	0.00507
P5	-0.00	-318.75	0.00744
Pmin	-505.44	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

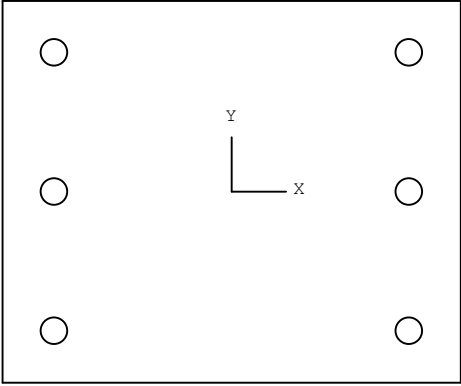
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#11_NX3_NY2_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 24 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 6 # 11

Confinement: Tied

Ag: 480.00 in^2

As: 9.36 in^2

Roh: 1.95%

Ix: 16000 in^4

Iy: 23040 in^4

X0: 0.00 in

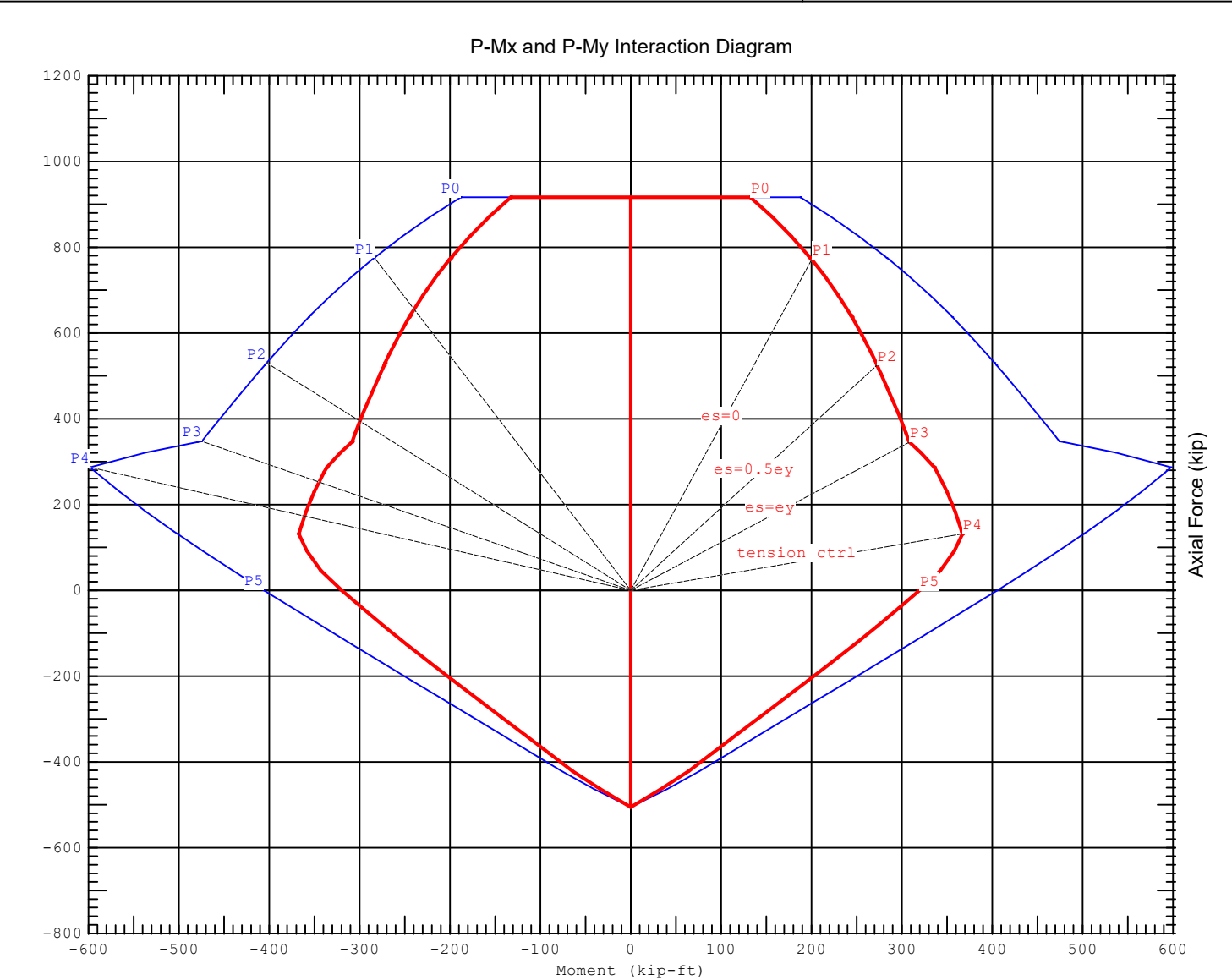
Y0: 0.00 in

Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	916.09	132.24	-0.00047
P1	770.55	199.95	0.00000
P2	524.59	272.13	0.00103
P3	345.00	307.75	0.00207
P4	131.31	366.42	0.00507
P5	-0.00	318.75	0.00744
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	916.10	-187.48	-0.00044
P1	774.80	-282.86	0.00000
P2	529.69	-402.01	0.00103
P3	347.37	-473.36	0.00207
P4	286.68	-596.58	0.00507
P5	0.01	-404.81	0.01342
Pmin	-505.44	0.00	0.20000



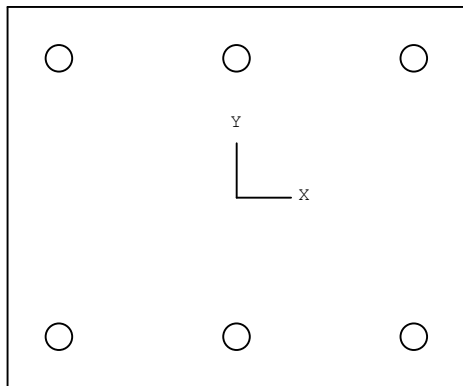
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_6#11_NX2_NY3_cc2.705



Section 199 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

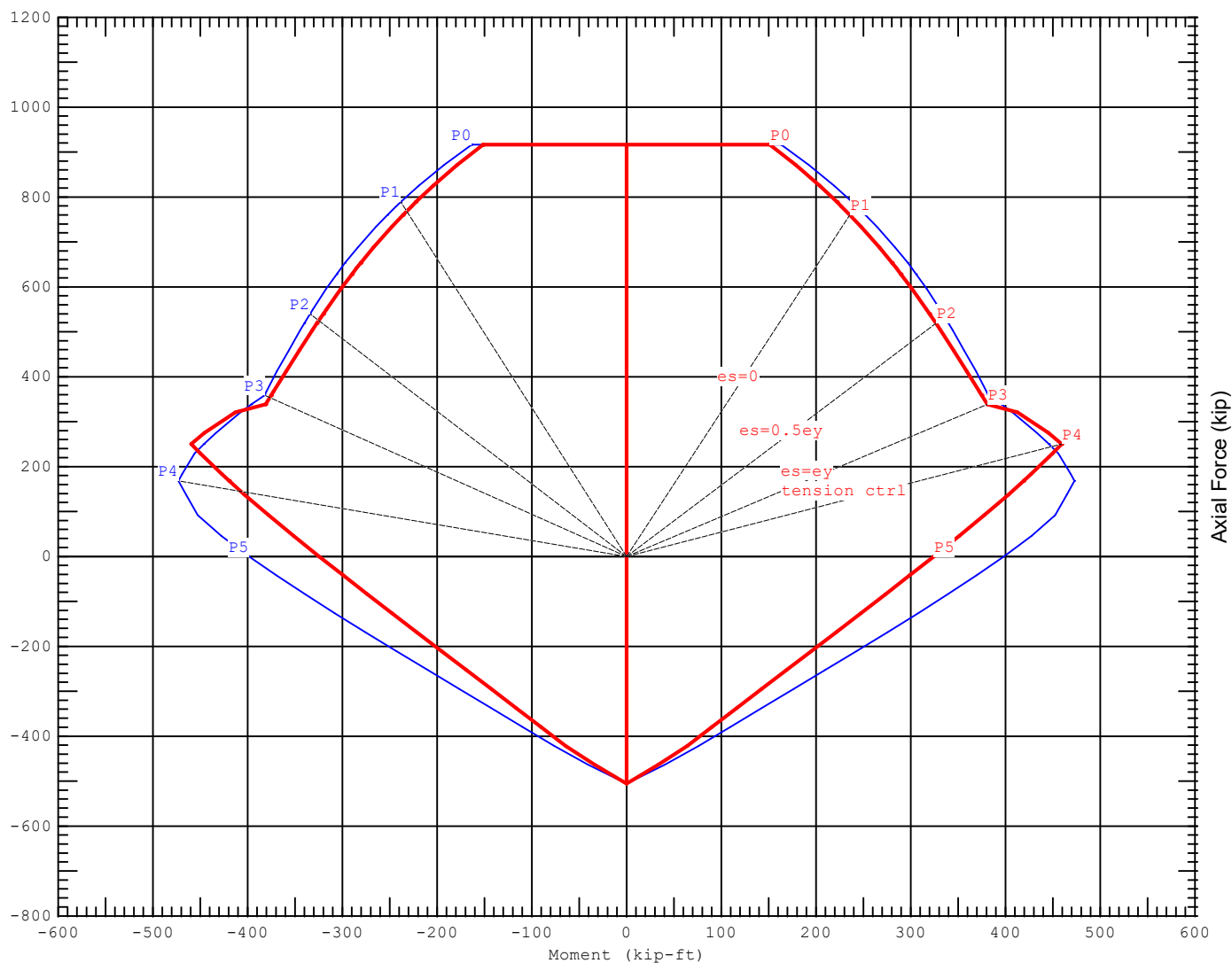
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 6 # 11
Confinement: Tied
Ag: 480.00 in²
As: 9.36 in²
Roh: 1.95%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 7.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	916.09	151.09	-0.00051
P1	759.56	235.37	0.00000
P2	518.35	326.03	0.00103
P3	338.35	380.15	0.00207
P4	249.88	458.47	0.00507
P5	-0.00	323.72	0.01129
Pmin	-505.44	0.00	0.20000

PT	P	My (-)	max es
P0	916.10	-162.81	-0.00040
P1	788.39	-237.74	0.00000
P2	539.41	-333.33	0.00103
P3	358.40	-381.11	0.00207
P4	168.11	-471.81	0.00507
P5	-0.01	-397.49	0.00843
Pmin	-505.44	0.00	0.20000

P-Mx and P-My Interaction Diagram



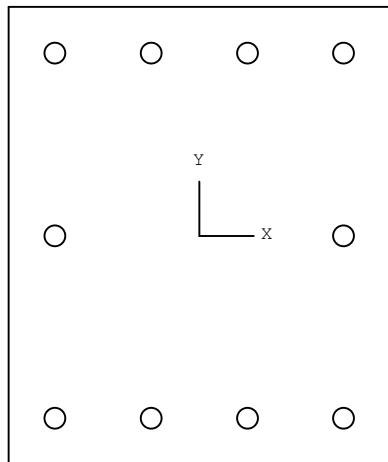
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#9_NX3_NY4_cc2.439



Section 200 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

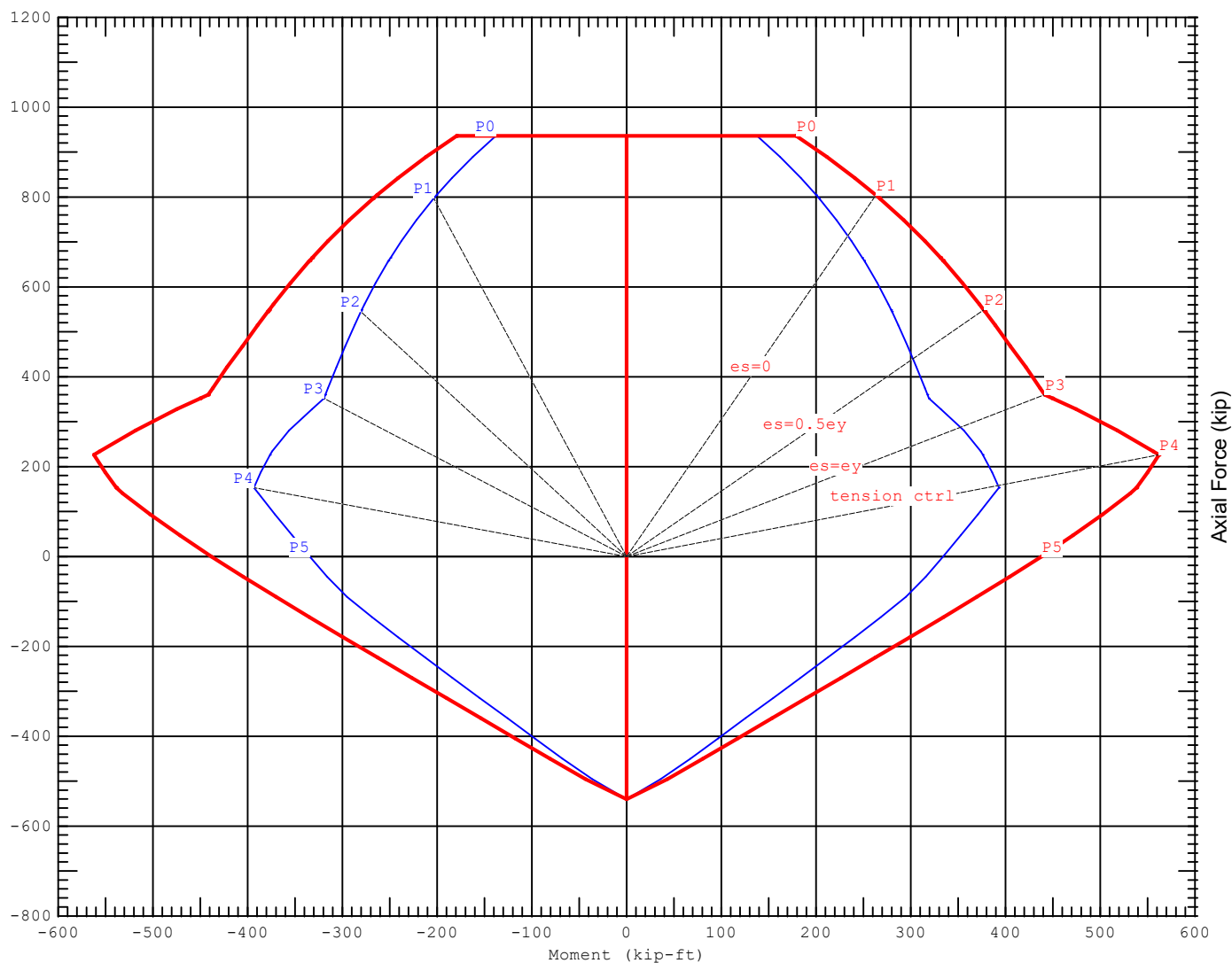
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	178.73	-0.00040
P1	803.74	262.62	0.00000
P2	548.26	376.40	0.00103
P3	359.67	440.37	0.00207
P4	225.75	560.84	0.00507
P5	-0.00	437.05	0.01080
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.21	-137.43	-0.00042
P1	796.58	-202.92	0.00000
P2	544.72	-279.67	0.00103
P3	351.70	-318.63	0.00207
P4	153.15	-392.39	0.00507
P5	-0.01	-333.59	0.00753
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



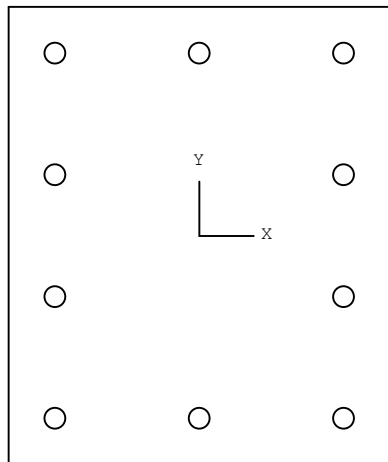
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#9_NX4_NY3_cc2.439



Section 201 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

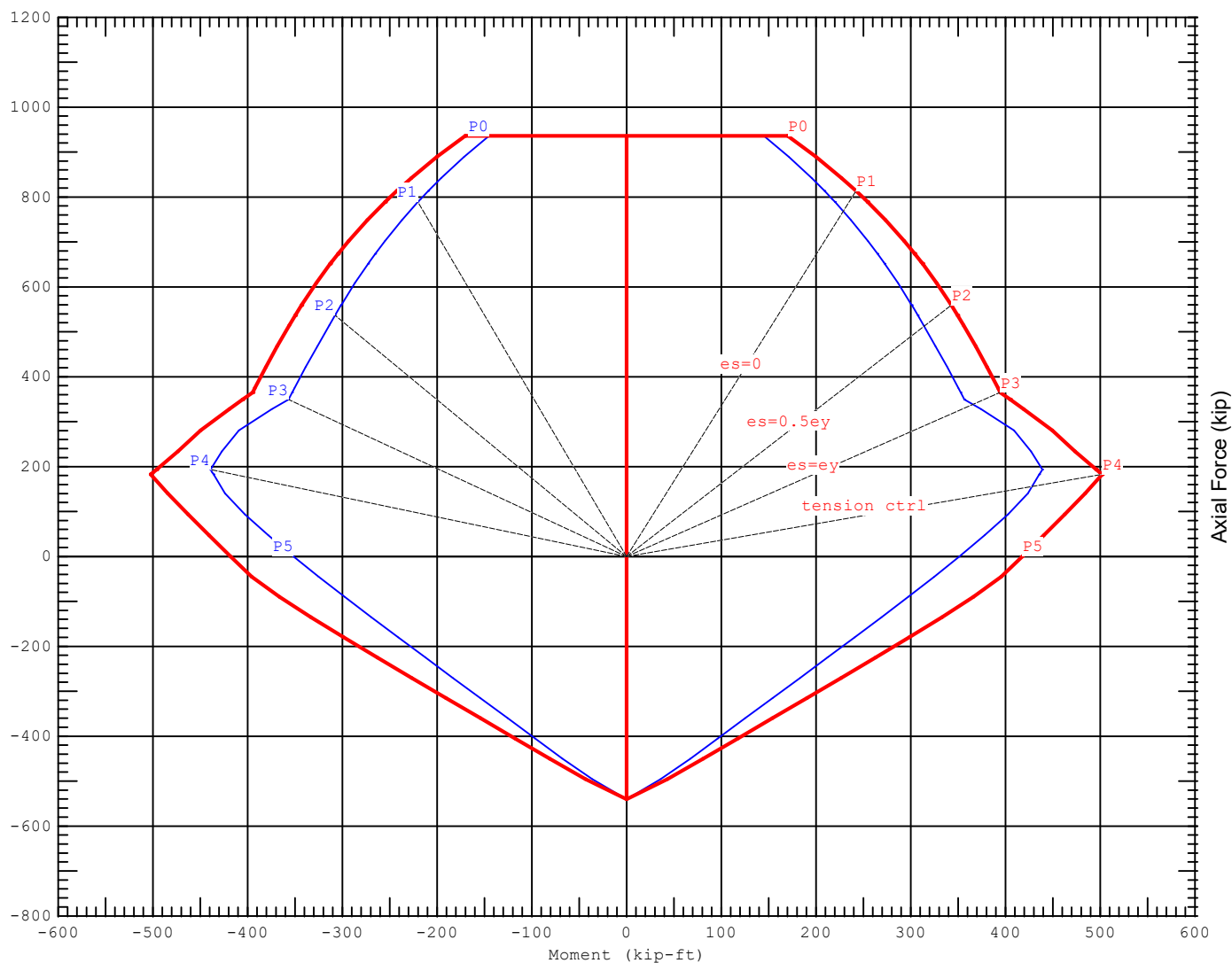
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.25 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	169.69	-0.00037
P1	813.24	241.75	0.00000
P2	558.86	342.17	0.00103
P3	364.76	393.66	0.00207
P4	182.31	501.17	0.00507
P5	0.00	416.89	0.00824
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-144.74	-0.00045
P1	788.54	-219.63	0.00000
P2	536.08	-307.01	0.00103
P3	349.08	-355.91	0.00207
P4	193.45	-437.98	0.00507
P5	0.00	-350.70	0.00937
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



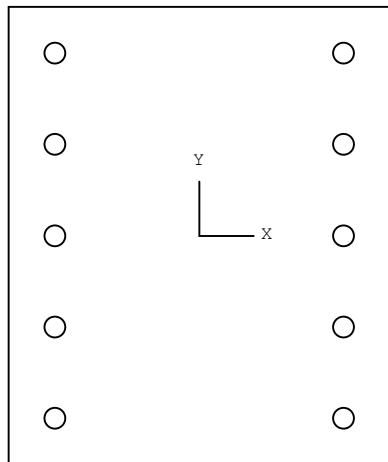
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#9_NX5_NY2_cc2.439



Section 202 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

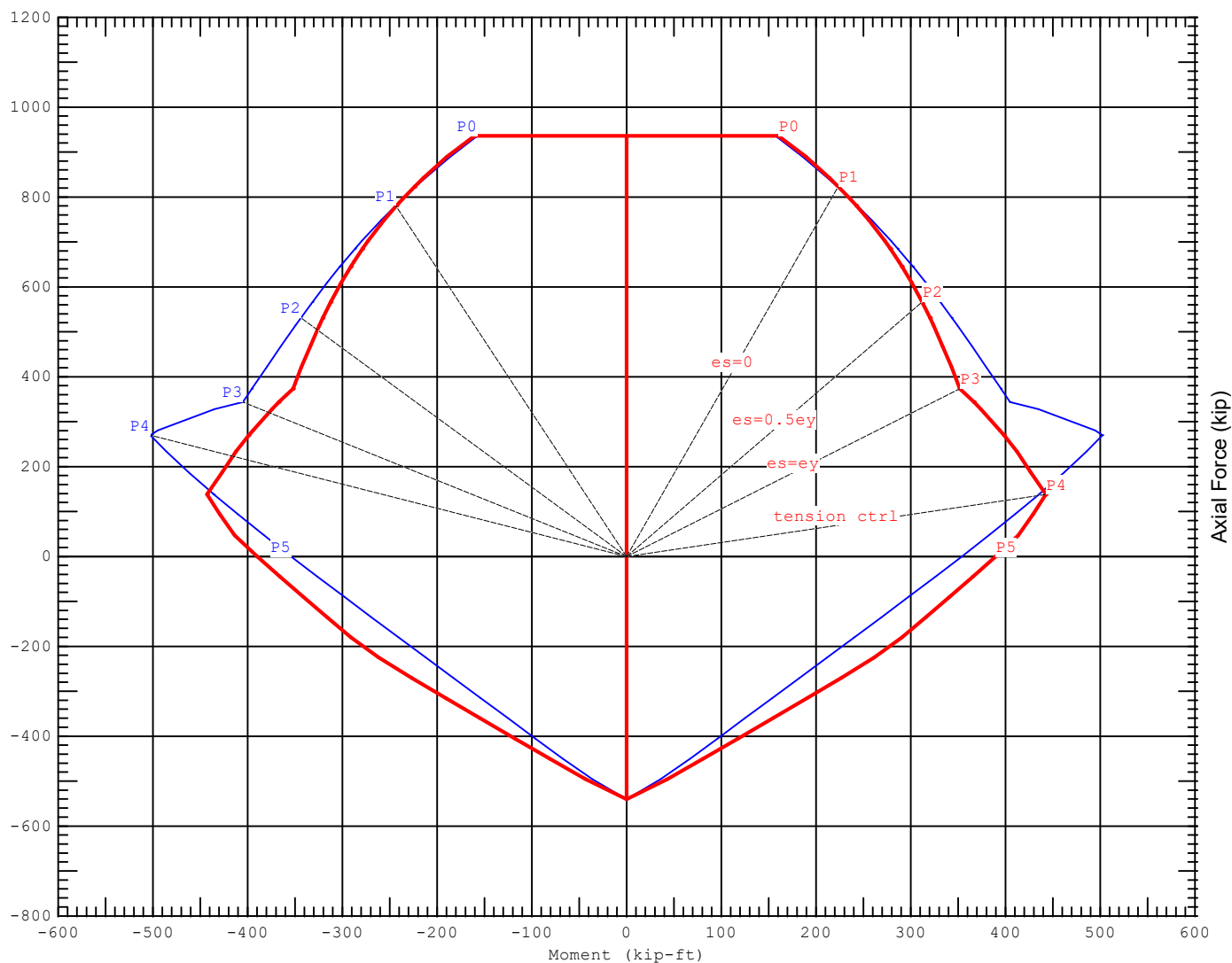
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	160.08	-0.00035
P1	822.73	223.09	0.00000
P2	566.15	311.37	0.00103
P3	373.16	351.15	0.00207
P4	137.91	441.63	0.00507
P5	-0.00	388.81	0.00706
Pmin	-540.00	-0.00	0.20000

PT	P	My (-)	max es
P0	935.21	-157.04	-0.00049
P1	780.50	-243.16	0.00000
P2	530.75	-342.82	0.00103
P3	343.14	-404.01	0.00207
P4	269.46	-501.47	0.00507
P5	-0.01	-353.25	0.01209
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



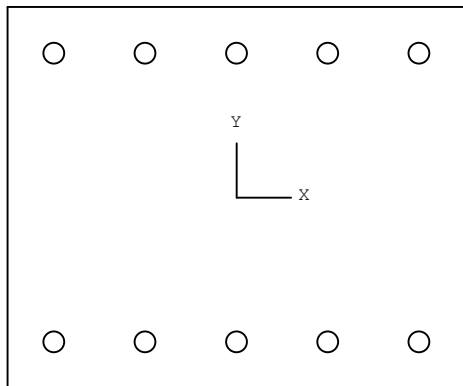
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#9_NX2_NY5_cc2.439



Section 203 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

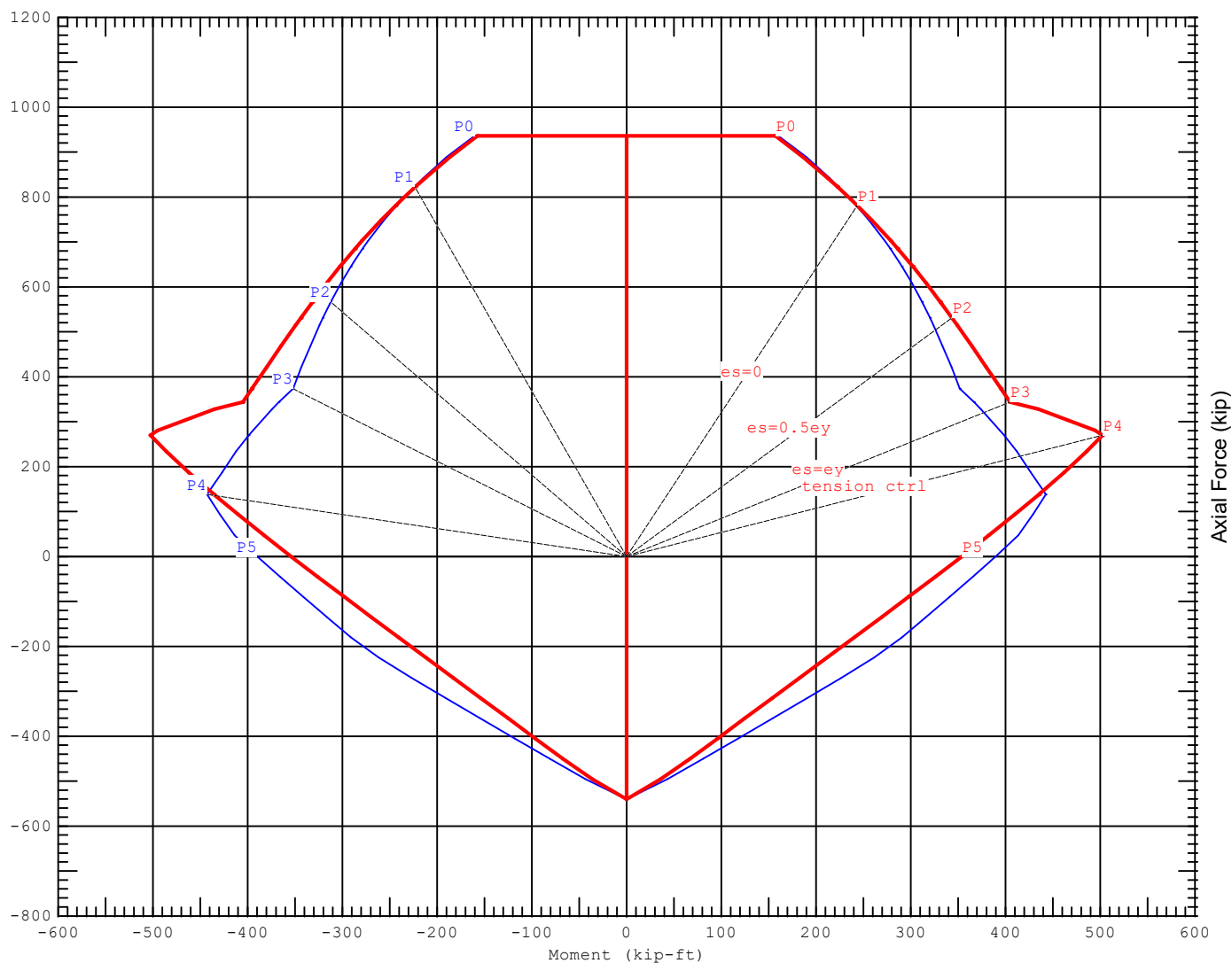
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.21	157.04	-0.00049
P1	780.50	243.16	0.00000
P2	530.75	342.82	0.00103
P3	343.14	404.01	0.00207
P4	269.46	501.47	0.00507
P5	-0.01	353.25	0.01209
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-160.08	-0.00035
P1	822.73	-223.09	0.00000
P2	566.15	-311.37	0.00103
P3	373.16	-351.15	0.00207
P4	137.91	-441.63	0.00507
P5	-0.00	-388.81	0.00706
Pmin	-540.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



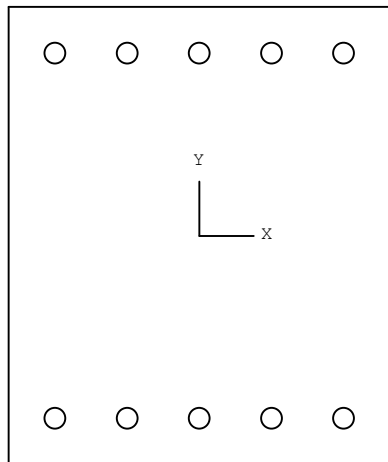
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#9_NX2_NY5_cc2.439



Section 204 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

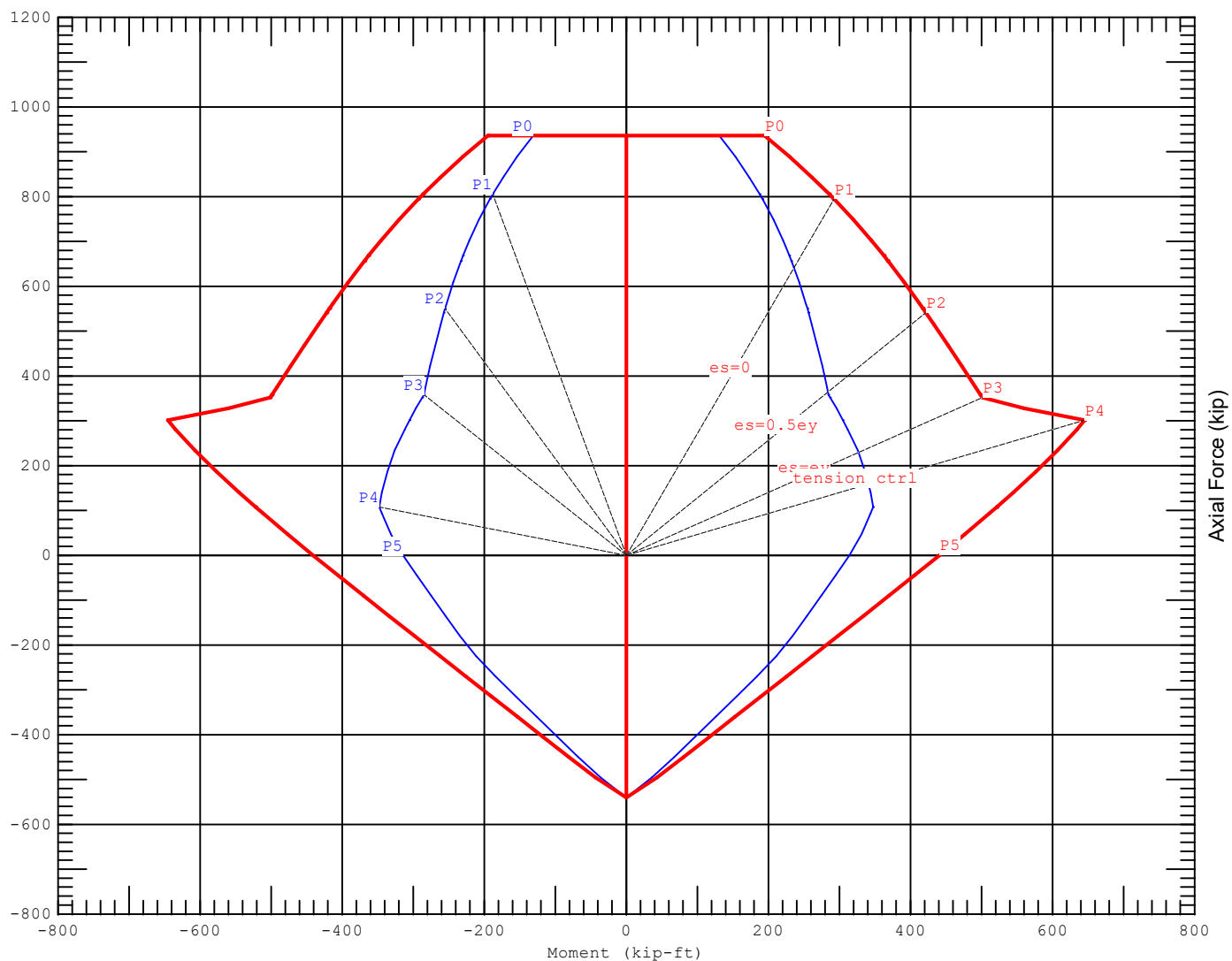
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	194.45	-0.00043
P1	794.25	292.37	0.00000
P2	540.97	421.69	0.00103
P3	351.27	501.19	0.00207
P4	301.28	645.06	0.00507
P5	0.01	440.60	0.01432
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-130.65	-0.00040
P1	804.62	-187.92	0.00000
P2	550.05	-254.96	0.00103
P3	357.63	-284.58	0.00207
P4	107.37	-347.38	0.00507
P5	-0.01	-313.93	0.00650
Pmin	-540.00	0.00	0.20000

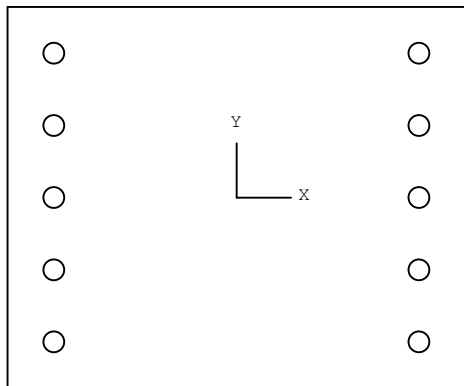
P-Mx and P-My Interaction Diagram



Engineer:

cColumn v10
(C) Computations & Graphics, Inc.

```
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes
```



Section 205 of 238

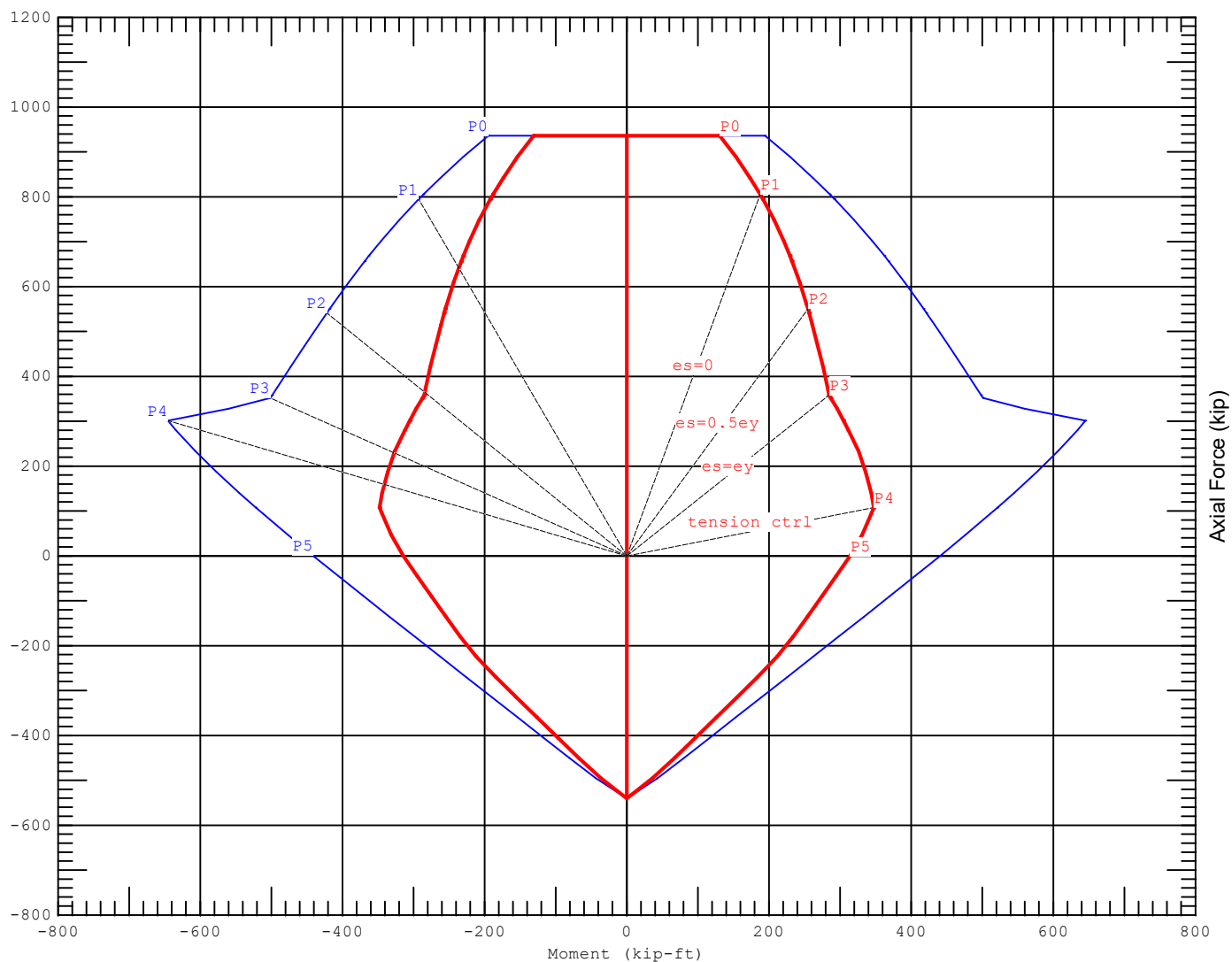
```
b x h: 24 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c.): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in^2
As: 10.00 in^2
Roh: 2.08%
Ix: 16000 in^4
Iy: 23040 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in
```

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	130.65	-0.00040
P1	804.62	187.92	0.00000
P2	550.05	254.96	0.00103
P3	357.63	284.58	0.00207
P4	107.37	347.38	0.00507
P5	-0.01	313.93	0.00650
Pmin	-540.00	-0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-194.45	-0.00043
P1	794.25	-292.37	0.00000
P2	540.97	-421.69	0.00103
P3	351.27	-501.19	0.00207
P4	301.28	-645.06	0.00507
P5	0.01	-440.60	0.01432
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



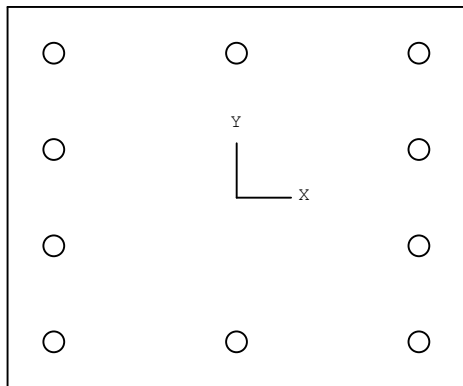
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#9_NX4_NY3_cc2.439



Section 206 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

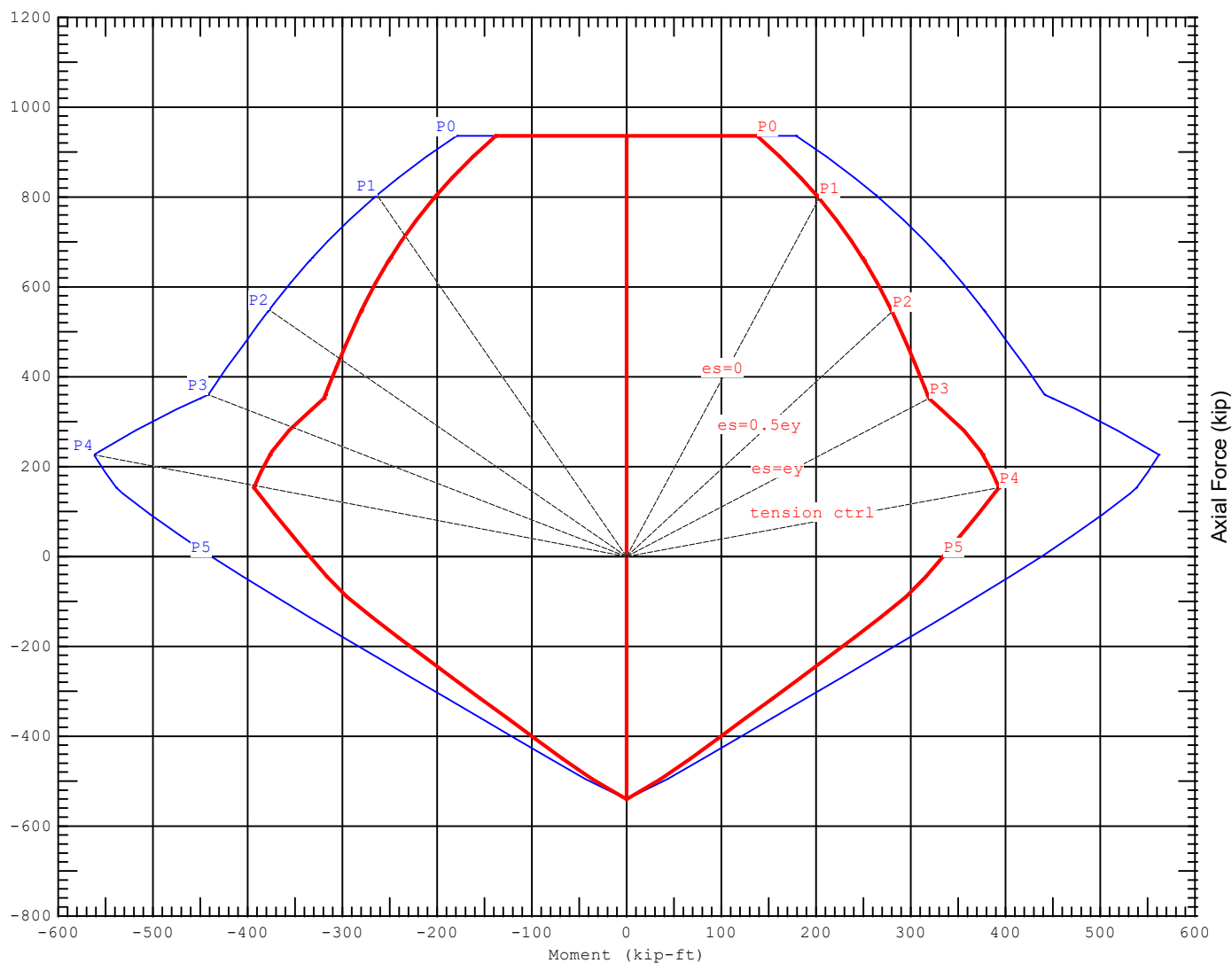
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.21	137.43	-0.00042
P1	796.58	202.92	0.00000
P2	544.72	279.67	0.00103
P3	351.70	318.63	0.00207
P4	153.15	392.39	0.00507
P5	-0.01	333.59	0.00753
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-178.73	-0.00040
P1	803.74	-262.62	0.00000
P2	548.26	-376.40	0.00103
P3	359.67	-440.37	0.00207
P4	225.75	-560.84	0.00507
P5	-0.00	-437.05	0.01080
Pmin	-540.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



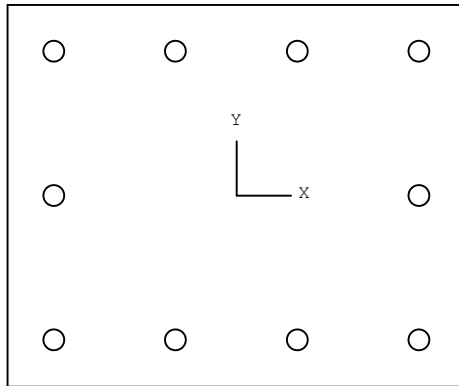
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#9_NX3_NY4_cc2.439



Section 207 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

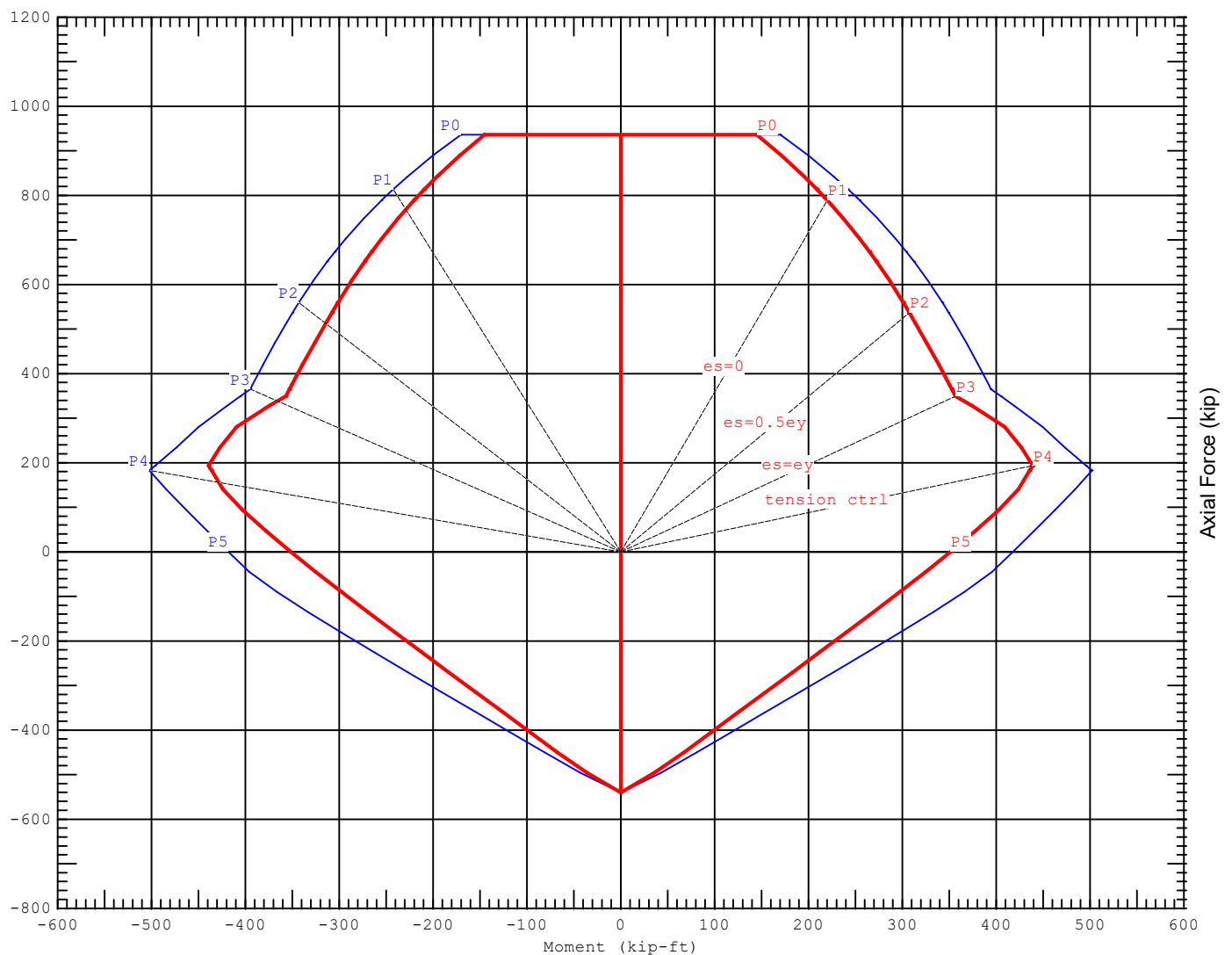
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 10 # 9
Confinement: Tied
Ag: 480.00 in²
As: 10.00 in²
Roh: 2.08%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.25 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	935.22	144.74	-0.00045
P1	788.54	219.63	0.00000
P2	536.08	307.01	0.00103
P3	349.08	355.91	0.00207
P4	193.45	437.98	0.00507
P5	0.00	350.70	0.00937
Pmin	-540.00	0.00	0.20000

PT	P	My (-)	max es
P0	935.22	-169.69	-0.00037
P1	813.24	-241.75	0.00000
P2	558.86	-342.17	0.00103
P3	364.76	-393.66	0.00207
P4	182.31	-501.17	0.00507
P5	0.00	-416.89	0.00824
Pmin	-540.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#10_NX4_NY2_cc2.51

Y

X

Section 208 of 238

Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 24 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.51 in

Bars: 8 # 10

Confinement: Tied

Ag: 480.00 in^2

As: 10.16 in^2

Roh: 2.12%

Ix: 16000 in^4

Iy: 23040 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	131.84	-0.00042
P1	800.84	194.23	0.00000
P2	547.25	264.62	0.00103
P3	351.33	297.93	0.00207
P4	115.80	363.95	0.00507
P5	0.01	322.56	0.00674
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-194.52	-0.00044
P1	795.23	-294.68	0.00000
P2	540.91	-423.80	0.00103
P3	349.96	-503.65	0.00207
P4	298.55	-646.98	0.00507
P5	-0.00	-444.88	0.01385
Pmin	-548.64	-0.00	0.20000

P-Mx and P-My Interaction Diagram

The diagram illustrates the interaction between axial force and bending moment for a column. The vertical axis represents Axial Force (kip) from -800 to 1200, and the horizontal axis represents Moment (kip-ft) from -800 to 800. A blue polygon outlines the ultimate capacity, while a red curve shows a specific design path. Control points P0 to P5 are marked on both curves. Dashed lines from the origin (0,0) indicate different strain levels: $es=0$, $es=0.5e_y$, $es=e_y$, and a tension control line.

PT	P (kip)	Mx (+) (kip-ft)	My (-) (kip-ft)	max es
P0	940.00	131.84	-194.52	-0.00042
P1	800.84	194.23	-294.68	0.00000
P2	547.25	264.62	-423.80	0.00103
P3	351.33	297.93	-503.65	0.00207
P4	115.80	363.95	-646.98	0.00507
P5	0.01	322.56	-444.88	0.00674
Pmin	-548.64	0.00	-0.00	0.20000

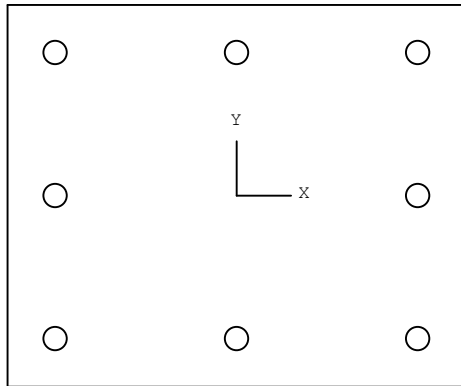
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#10_NX3_NY3_cc2.51



Section 209 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

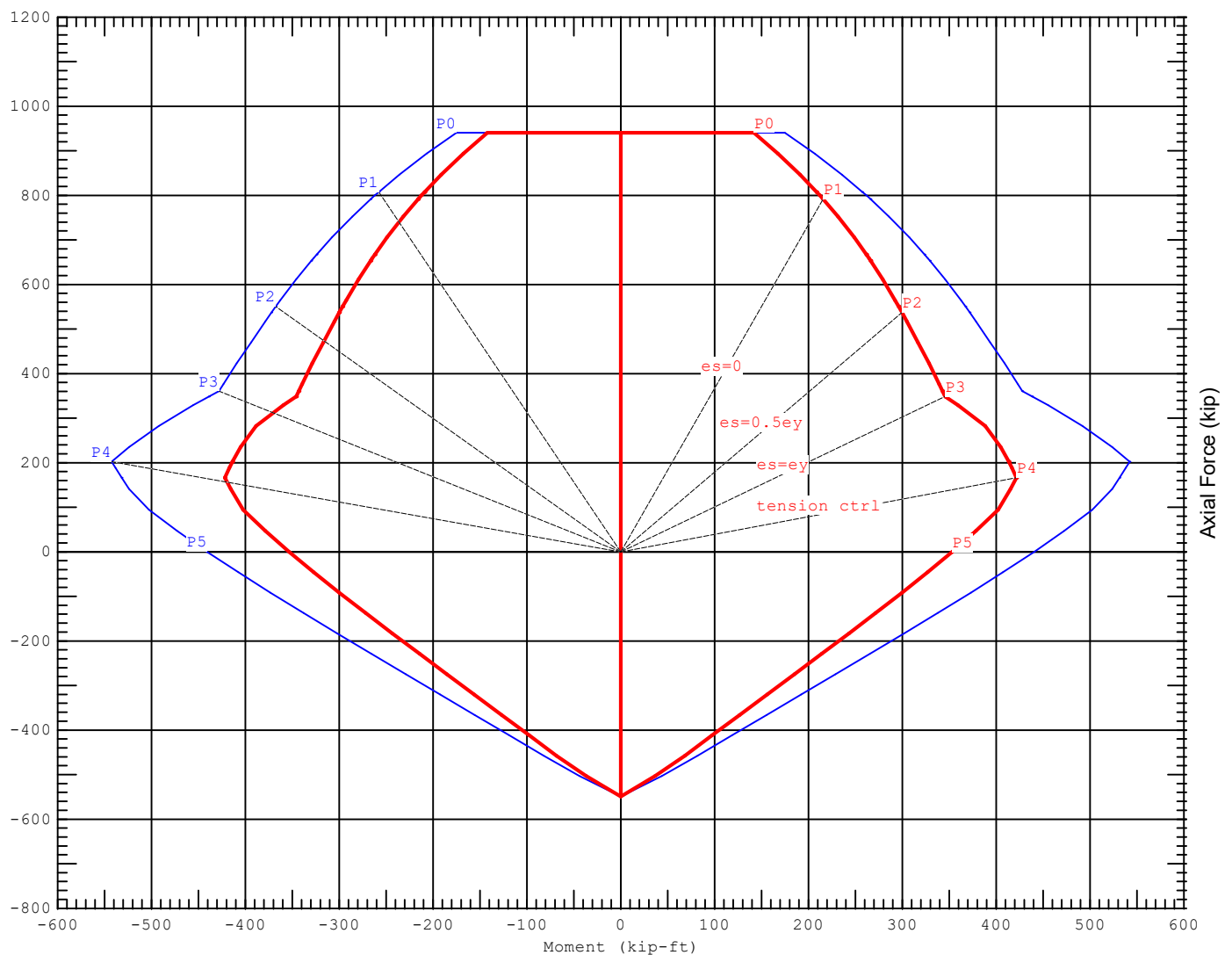
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 480.00 in²
As: 10.16 in²
Roh: 2.12%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	141.64	-0.00047
P1	790.97	215.30	0.00000
P2	536.71	299.08	0.00103
P3	348.56	344.91	0.00207
P4	166.17	420.88	0.00507
P5	-0.00	352.35	0.00838
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-174.62	-0.00040
P1	807.03	-257.18	0.00000
P2	549.81	-366.71	0.00103
P3	360.18	-426.97	0.00207
P4	202.03	-541.11	0.00507
P5	0.00	-439.46	0.00960
Pmin	-548.64	-0.00	0.20000

P-Mx and P-My Interaction Diagram



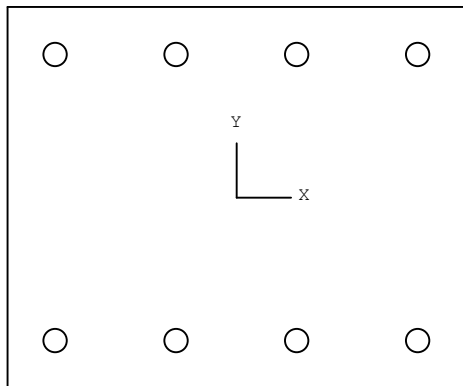
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#10_NX2_NY4_cc2.51



Section 210 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

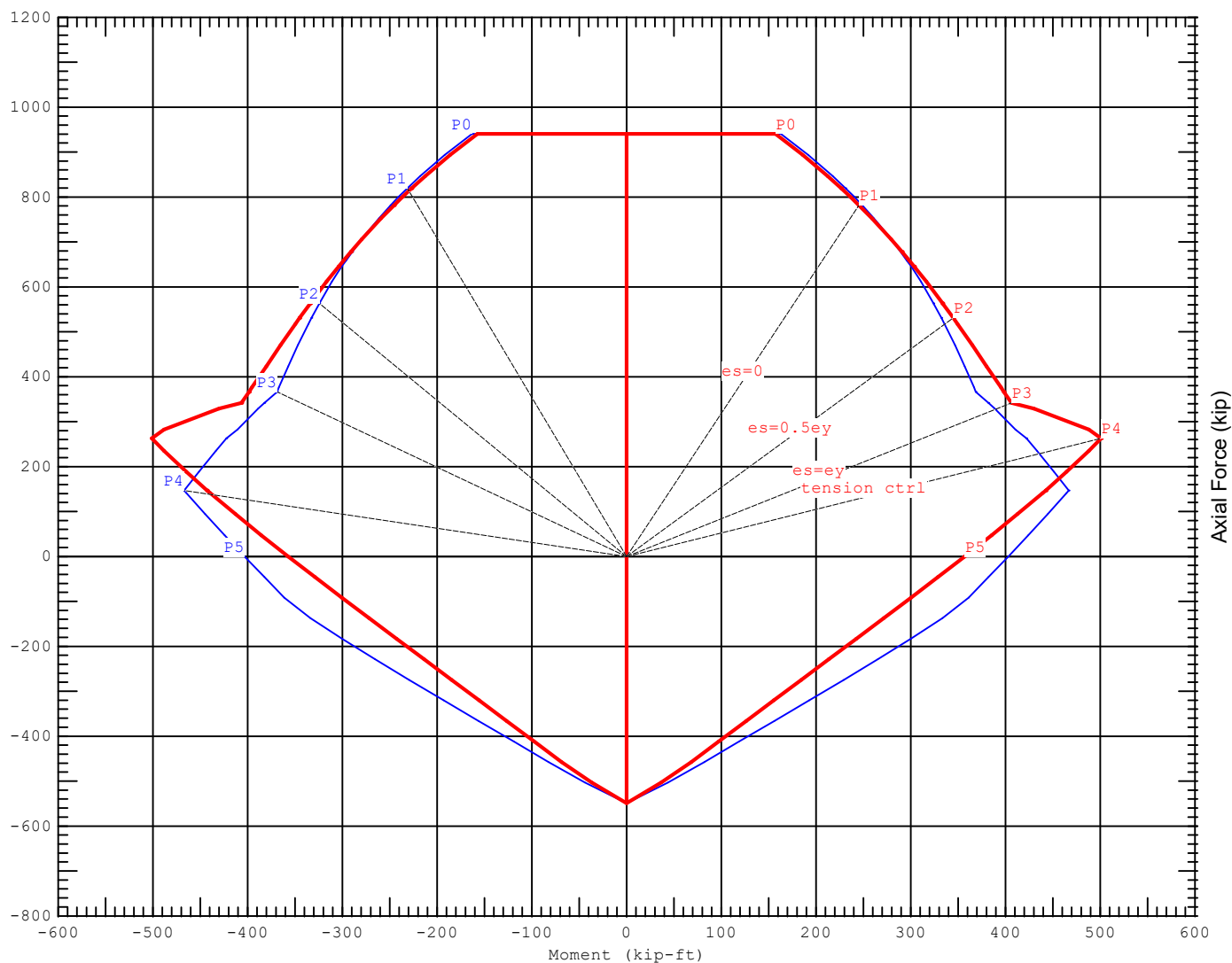
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 480.00 in²
As: 10.16 in²
Roh: 2.12%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.06 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	156.89	-0.00050
P1	781.09	244.90	0.00000
P2	530.39	344.14	0.00103
P3	341.59	405.42	0.00207
P4	262.69	499.97	0.00507
P5	-0.00	356.26	0.01167
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-162.80	-0.00037
P1	818.82	-230.82	0.00000
P2	562.92	-323.50	0.00103
P3	366.19	-368.02	0.00207
P4	146.90	-465.85	0.00507
P5	-0.01	-402.12	0.00732
Pmin	-548.64	-0.00	0.20000

P-Mx and P-My Interaction Diagram



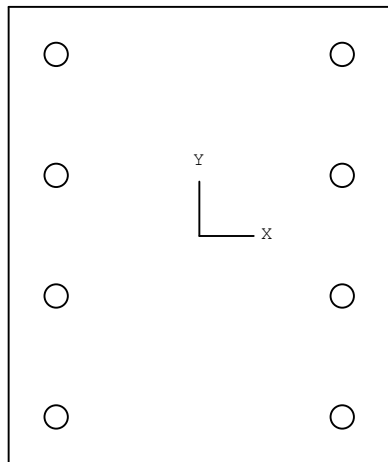
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#10_NX4_NY2_cc2.51



Section 211 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

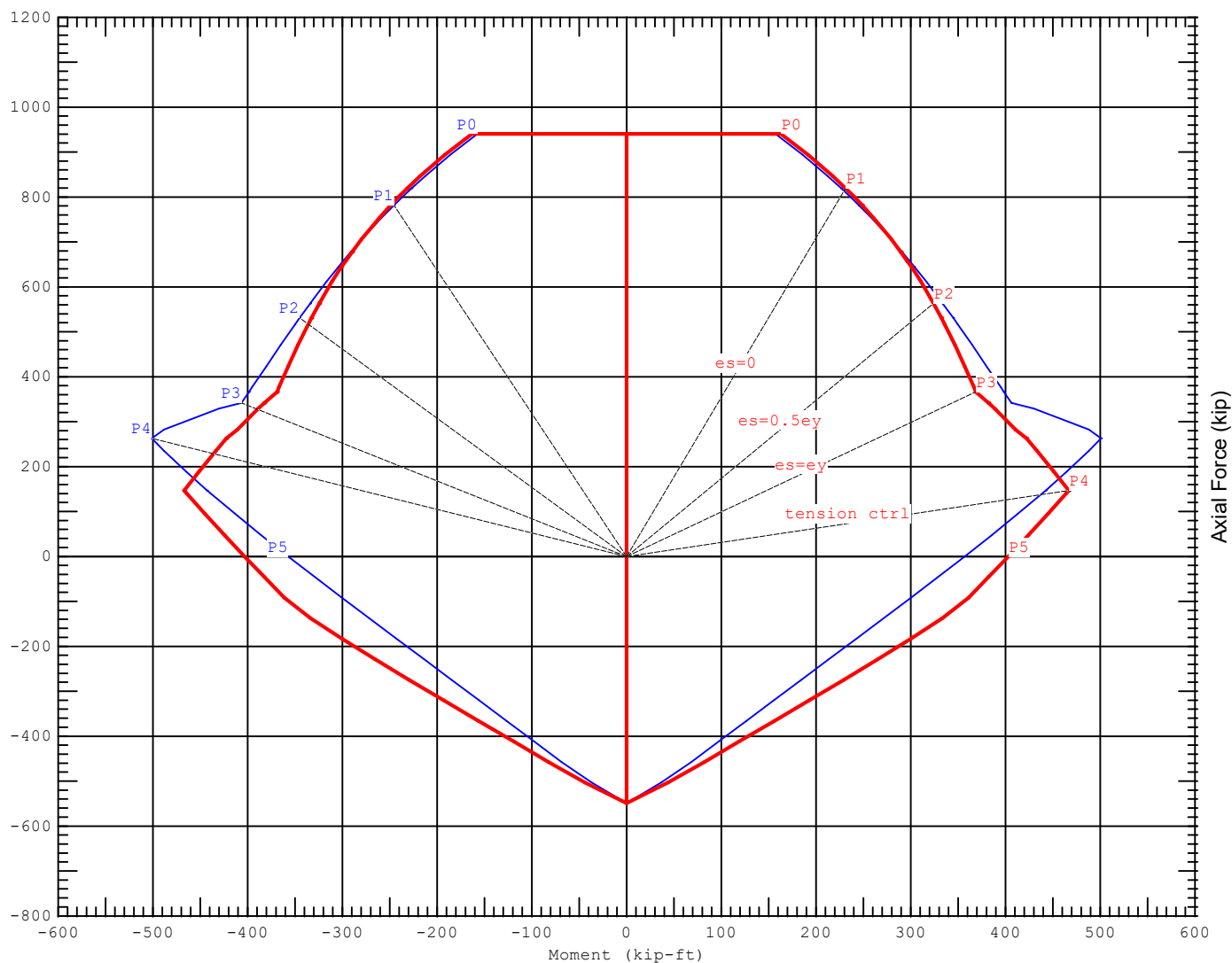
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 480.00 in²
As: 10.16 in²
Roh: 2.12%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.06 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	162.80	-0.00037
P1	818.82	230.82	0.00000
P2	562.92	323.50	0.00103
P3	366.19	368.02	0.00207
P4	146.90	465.85	0.00507
P5	-0.01	402.12	0.00732
Pmin	-548.64	-0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-156.89	-0.00050
P1	781.09	-244.90	0.00000
P2	530.39	-344.14	0.00103
P3	341.59	-405.42	0.00207
P4	262.69	-499.97	0.00507
P5	-0.00	-356.26	0.01167
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



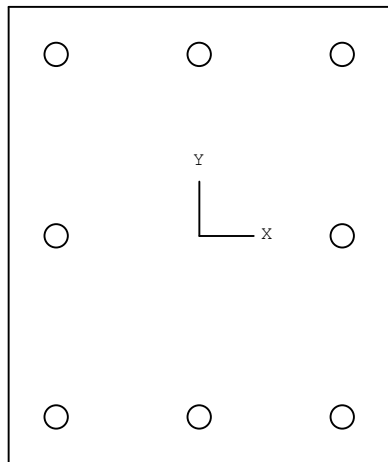
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#10_NX3_NY3_cc2.51



Section 212 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

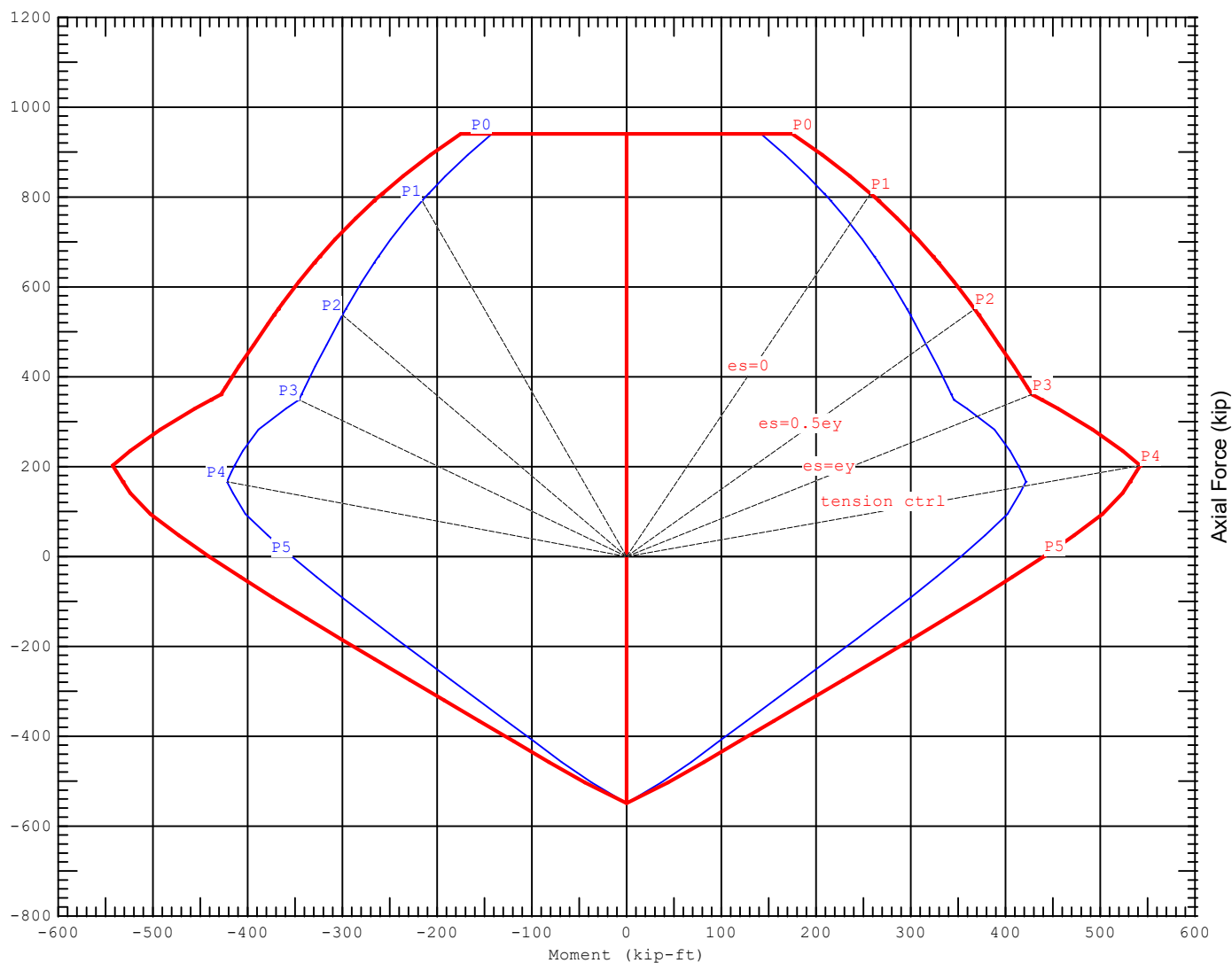
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 480.00 in²
As: 10.16 in²
Roh: 2.12%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 6.22 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	174.62	-0.00040
P1	807.03	257.18	0.00000
P2	549.81	366.71	0.00103
P3	360.18	426.97	0.00207
P4	202.03	541.11	0.00507
P5	0.00	439.46	0.00960
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-141.64	-0.00047
P1	790.97	-215.30	0.00000
P2	536.71	-299.08	0.00103
P3	348.56	-344.91	0.00207
P4	166.17	-420.88	0.00507
P5	-0.00	-352.35	0.00838
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



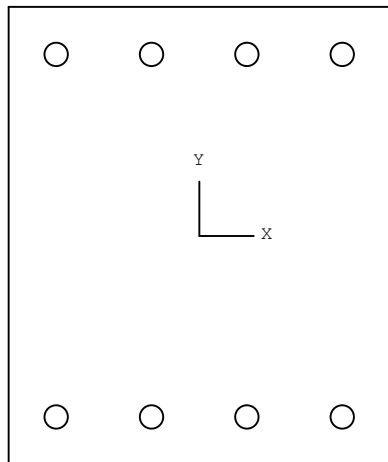
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#10_NX2_NY4_cc2.51



Section 213 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

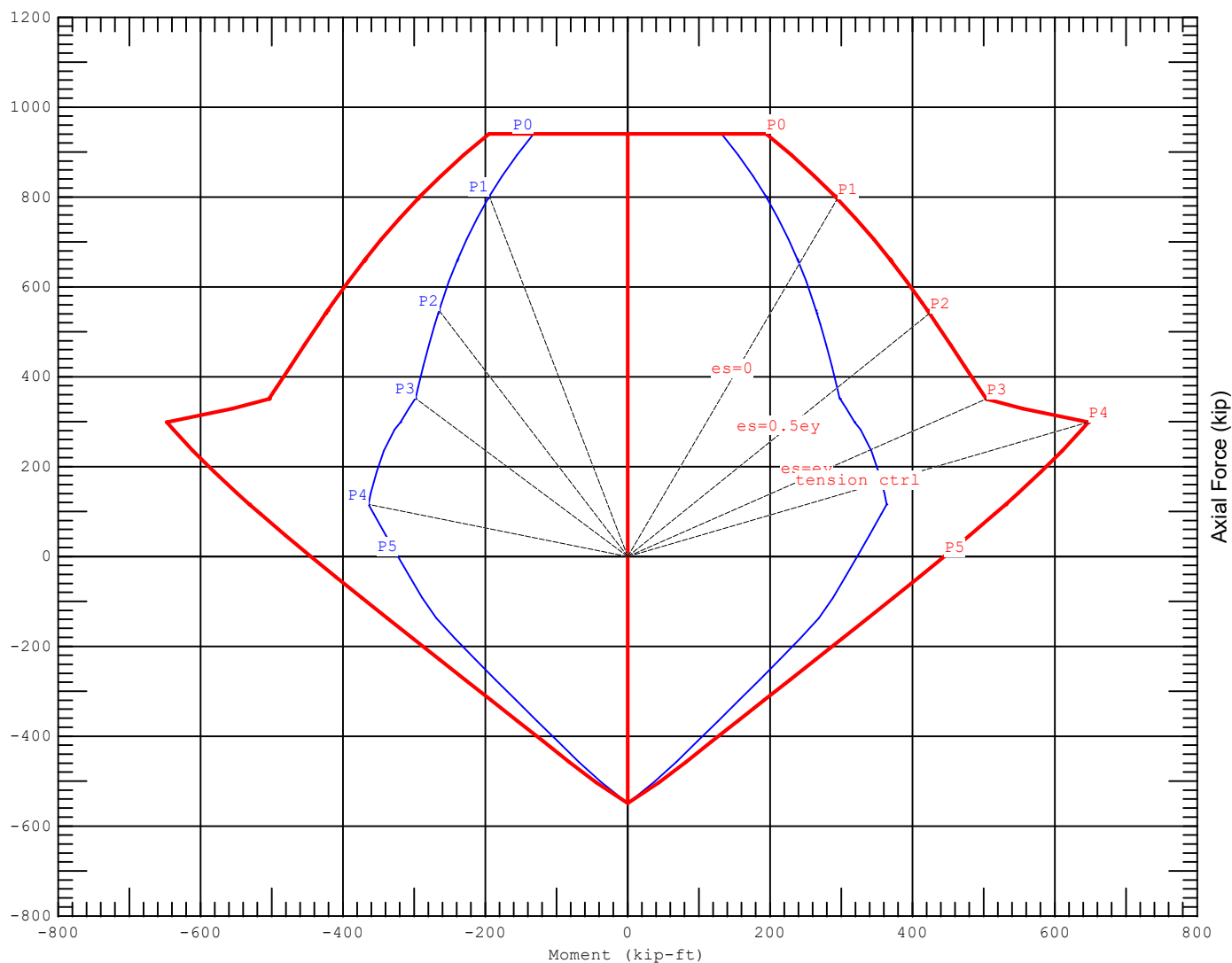
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 8 # 10
Confinement: Tied
Ag: 480.00 in²
As: 10.16 in²
Roh: 2.12%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	940.00	194.52	-0.00044
P1	795.23	294.68	0.00000
P2	540.91	423.80	0.00103
P3	349.96	503.65	0.00207
P4	298.55	646.98	0.00507
P5	-0.00	444.88	0.01385
Pmin	-548.64	0.00	0.20000

PT	P	My (-)	max es
P0	940.00	-131.84	-0.00042
P1	800.84	-194.23	0.00000
P2	547.25	-264.62	0.00103
P3	351.33	-297.93	0.00207
P4	115.80	-363.95	0.00507
P5	0.01	-322.56	0.00674
Pmin	-548.64	0.00	0.20000

P-Mx and P-My Interaction Diagram



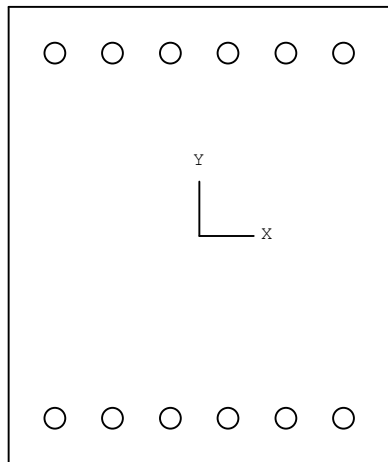
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_12#9_NX2_NY6_cc2.439



Section 214 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

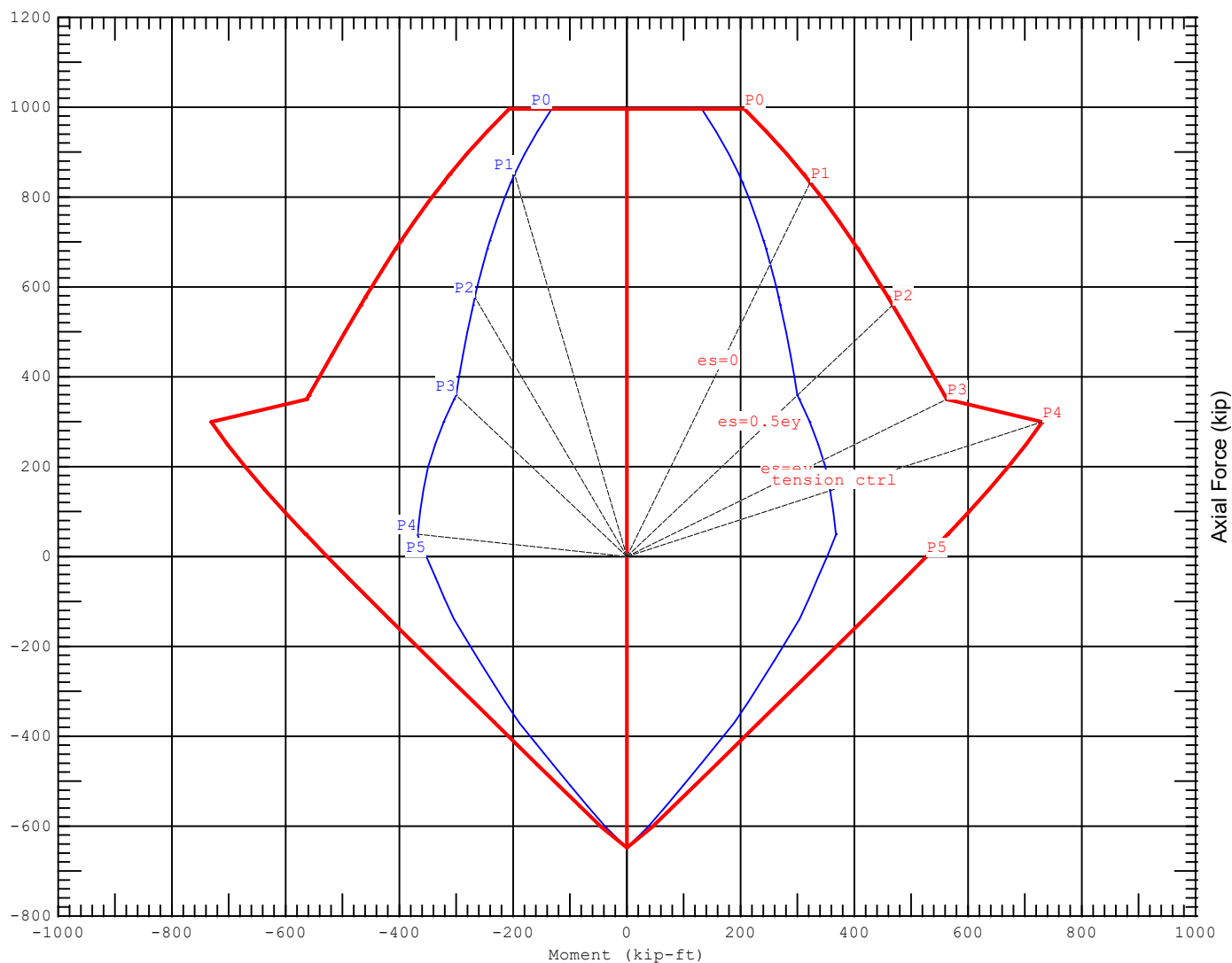
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	206.25	-0.00049
P1	831.59	322.13	0.00000
P2	558.81	466.98	0.00103
P3	349.62	562.02	0.00207
P4	298.98	729.28	0.00507
P5	-0.00	525.95	0.01323
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-131.74	-0.00042
P1	850.00	-197.12	0.00000
P2	576.54	-266.72	0.00103
P3	358.60	-299.51	0.00207
P4	49.18	-367.46	0.00507
P5	-0.01	-351.55	0.00571
Pmin	-648.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

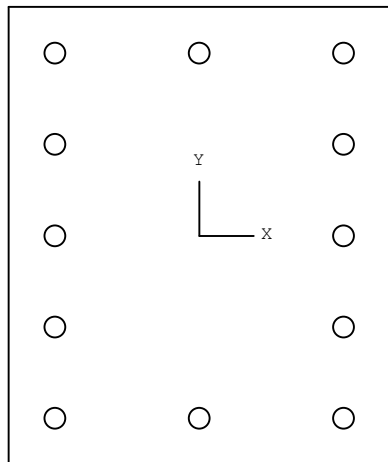
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_12#9_NX5_NY3_cc2.439



Section 215 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

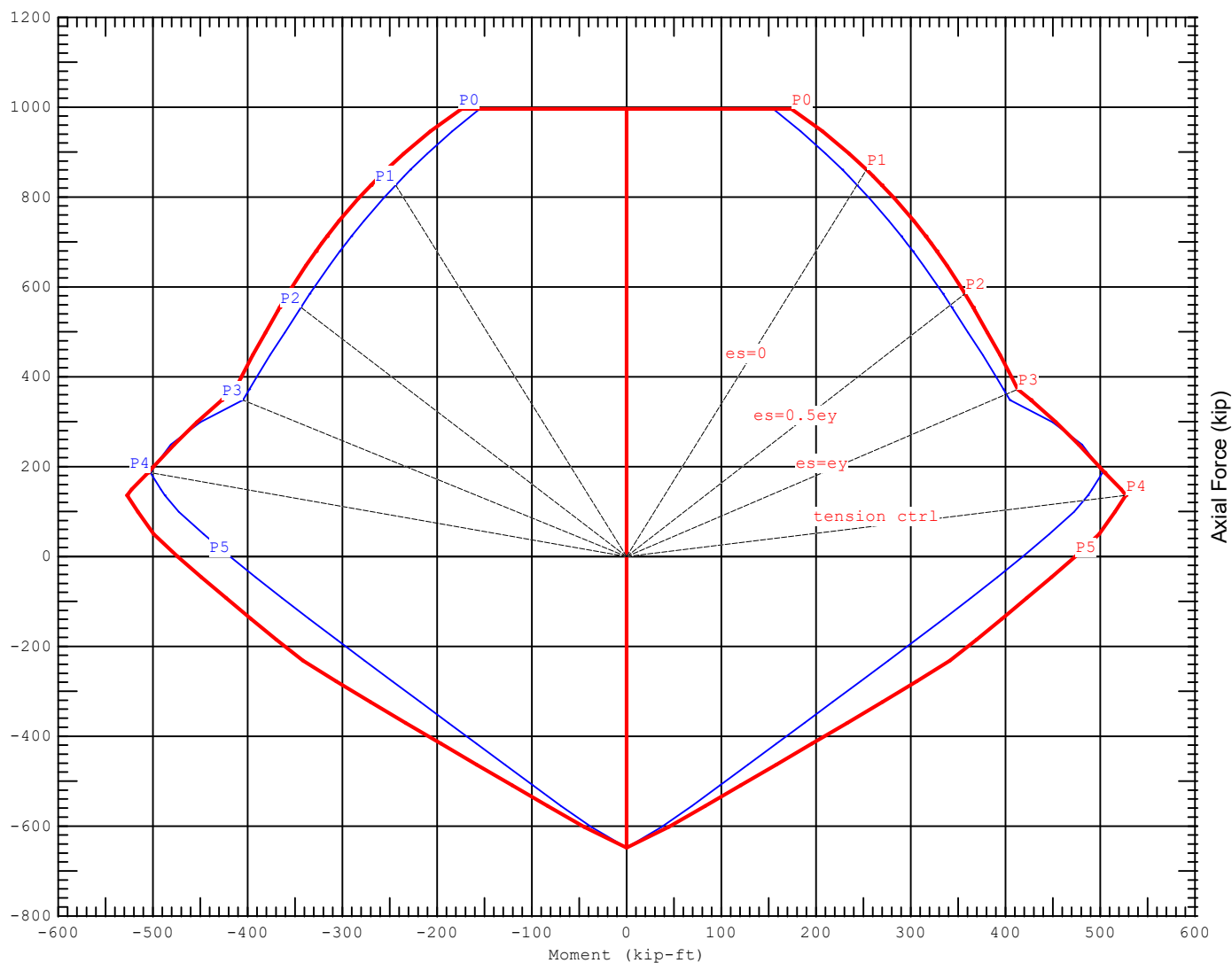
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	173.84	-0.00039
P1	860.08	252.85	0.00000
P2	584.00	356.66	0.00103
P3	371.50	411.98	0.00207
P4	135.61	525.85	0.00507
P5	-0.01	472.84	0.00692
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	994.96	-154.70	-0.00050
P1	825.88	-243.16	0.00000
P2	553.92	-342.82	0.00103
P3	347.42	-404.01	0.00207
P4	186.21	-501.47	0.00507
P5	-0.01	-417.56	0.00872
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



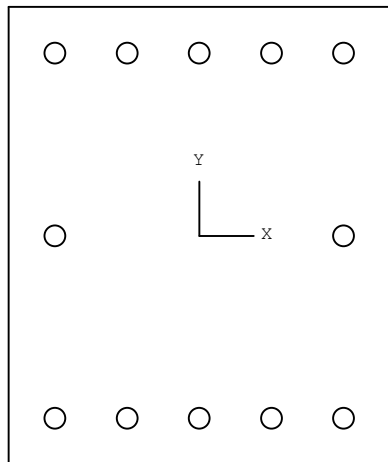
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_12#9_NX3_NY5_cc2.439



Section 216 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

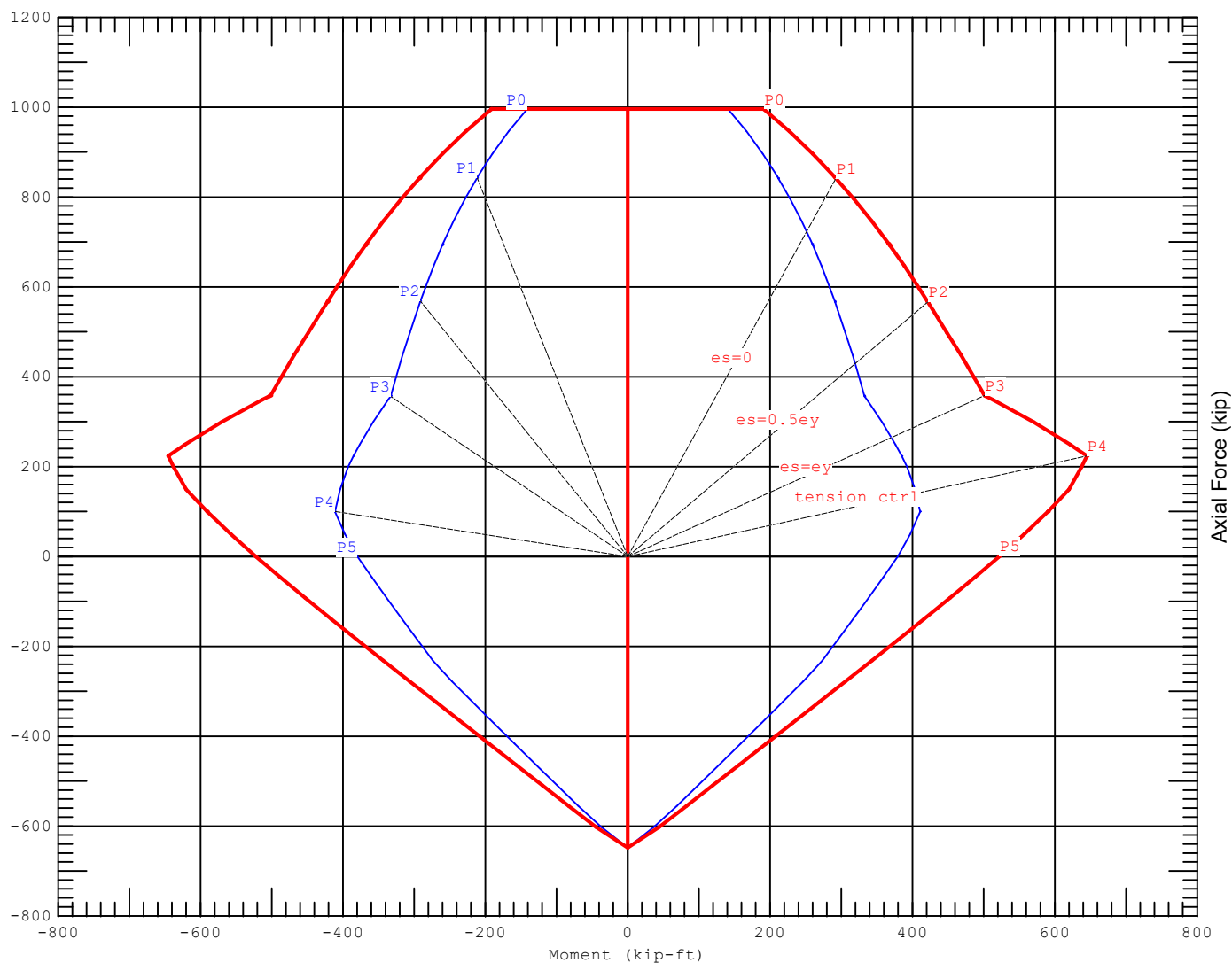
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.96	191.51	-0.00044
P1	841.09	292.37	0.00000
P2	566.10	421.69	0.00103
P3	358.02	501.19	0.00207
P4	223.46	645.06	0.00507
P5	0.01	521.86	0.01014
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.96	-141.19	-0.00044
P1	841.96	-211.44	0.00000
P2	567.90	-290.78	0.00103
P3	355.98	-332.68	0.00207
P4	100.12	-410.86	0.00507
P5	-0.01	-379.54	0.00628
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



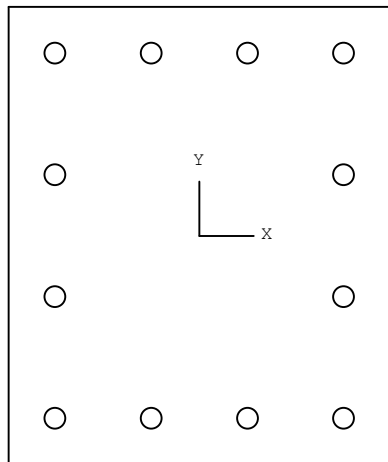
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_12#9_NX4_NY4_cc2.439



Section 217 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

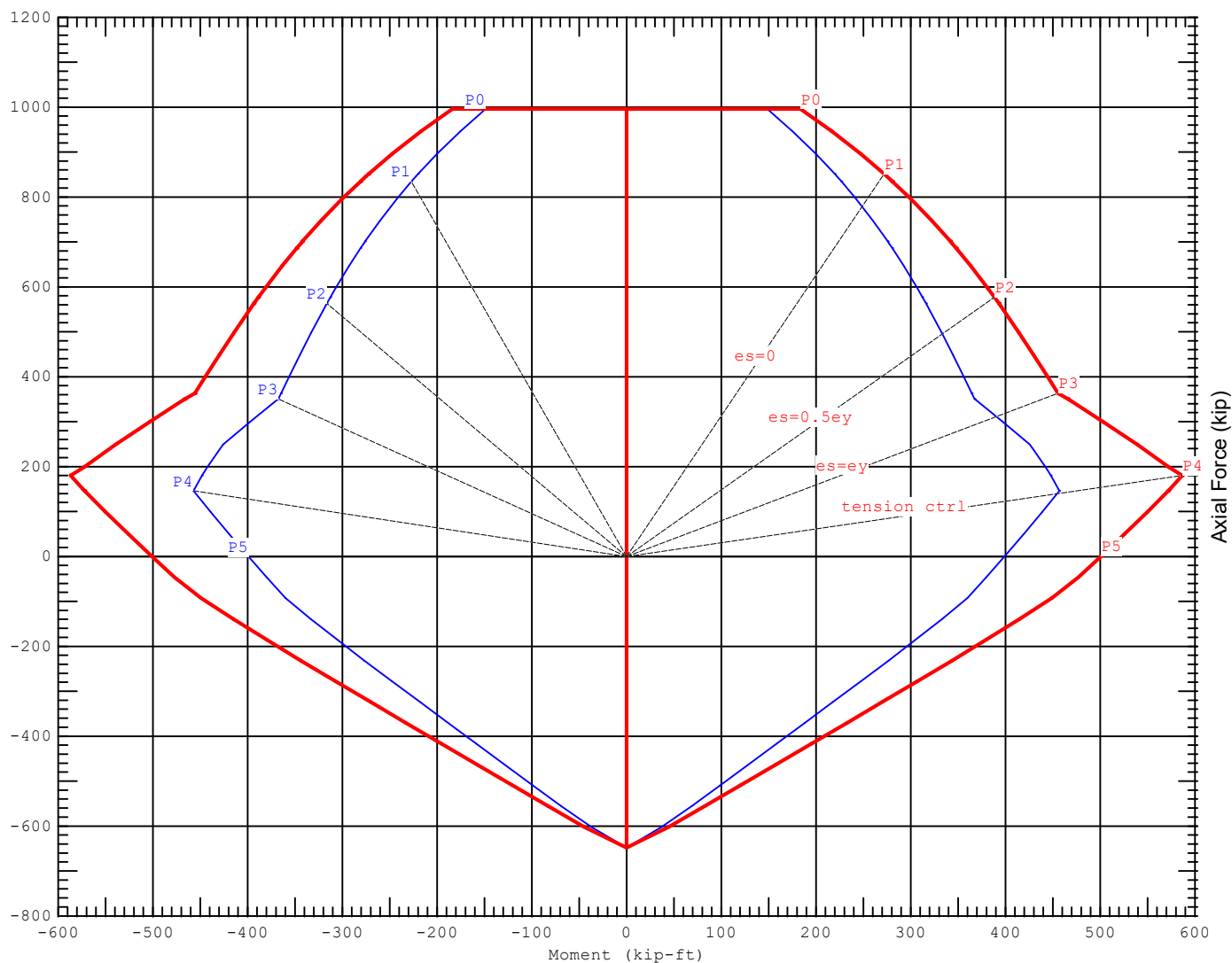
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	183.25	-0.00041
P1	850.58	271.50	0.00000
P2	576.71	387.46	0.00103
P3	363.10	454.49	0.00207
P4	180.01	585.39	0.00507
P5	0.02	499.69	0.00803
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-148.19	-0.00047
P1	833.92	-226.45	0.00000
P2	562.57	-315.48	0.00103
P3	350.04	-366.73	0.00207
P4	145.90	-455.88	0.00507
P5	-0.01	-398.14	0.00726
Pmin	-648.00	-0.00	0.20000

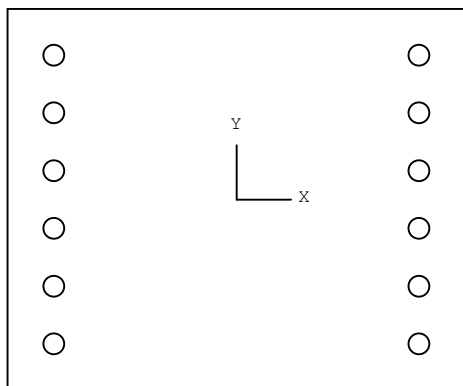
P-Mx and P-My Interaction Diagram



Engineer:

cColumn v10
(C) Computations & Graphics, Inc.

```
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes
```



Section 218 of 238

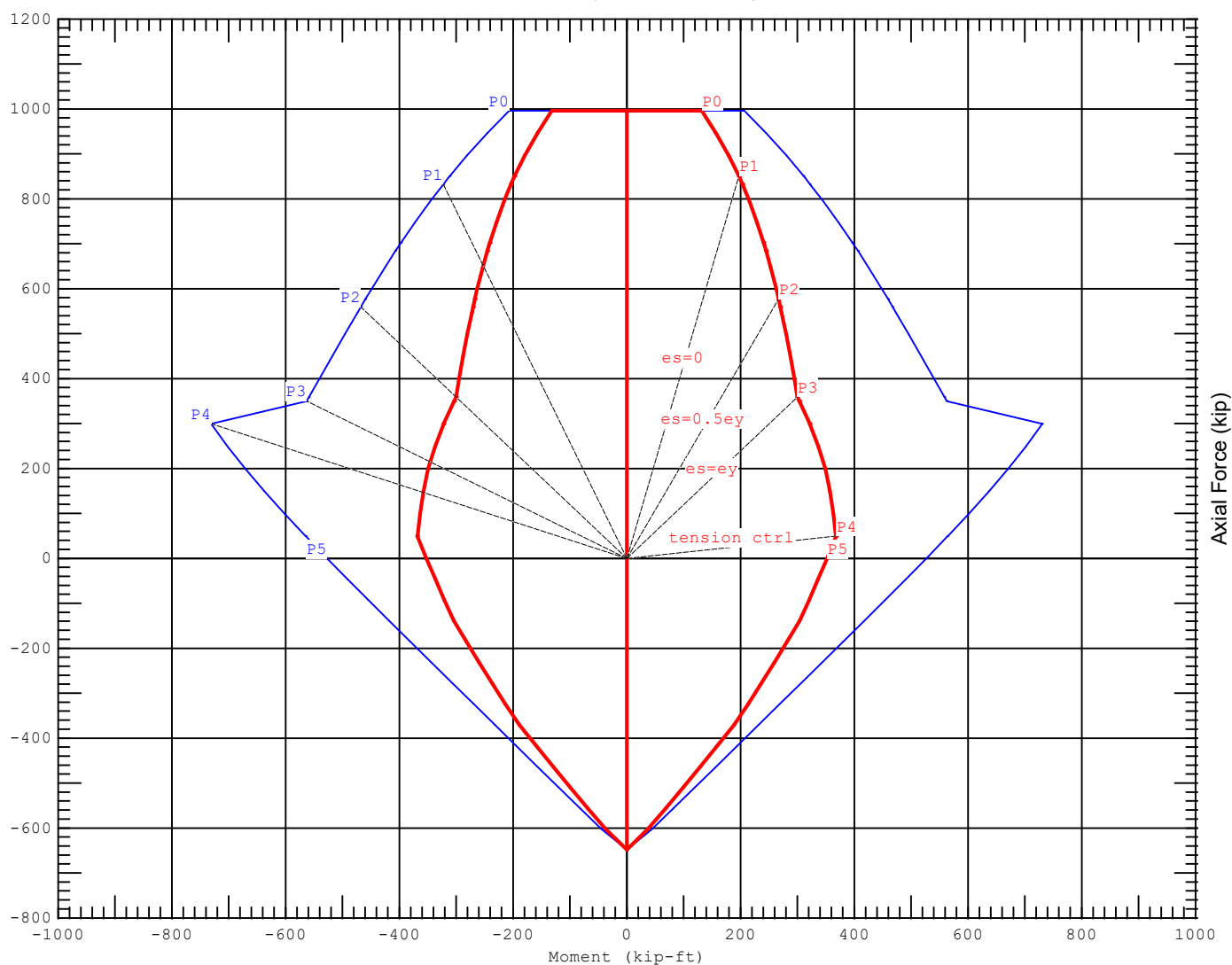
```
b x h: 24 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c.): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in^2
As: 12.00 in^2
Roh: 2.50%
Ix: 16000 in^4
Iy: 23040 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 1.90 in
```

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	131.74	-0.00042
P1	850.00	197.12	0.00000
P2	576.54	266.72	0.00103
P3	358.60	299.51	0.00207
P4	49.18	367.46	0.00507
P5	-0.01	351.55	0.00571
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-206.25	-0.00049
P1	831.59	-322.13	0.00000
P2	558.81	-466.98	0.00103
P3	349.62	-562.02	0.00207
P4	298.98	-729.28	0.00507
P5	-0.00	-525.95	0.01323
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



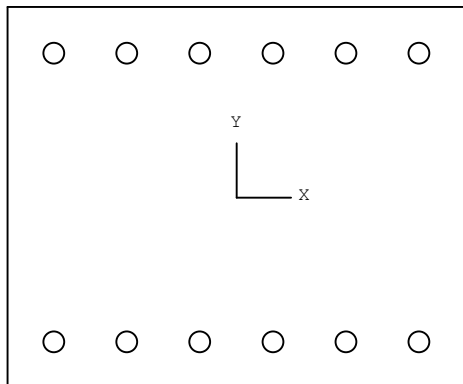
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_12#9_NX2_NY6_cc2.439



Section 219 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

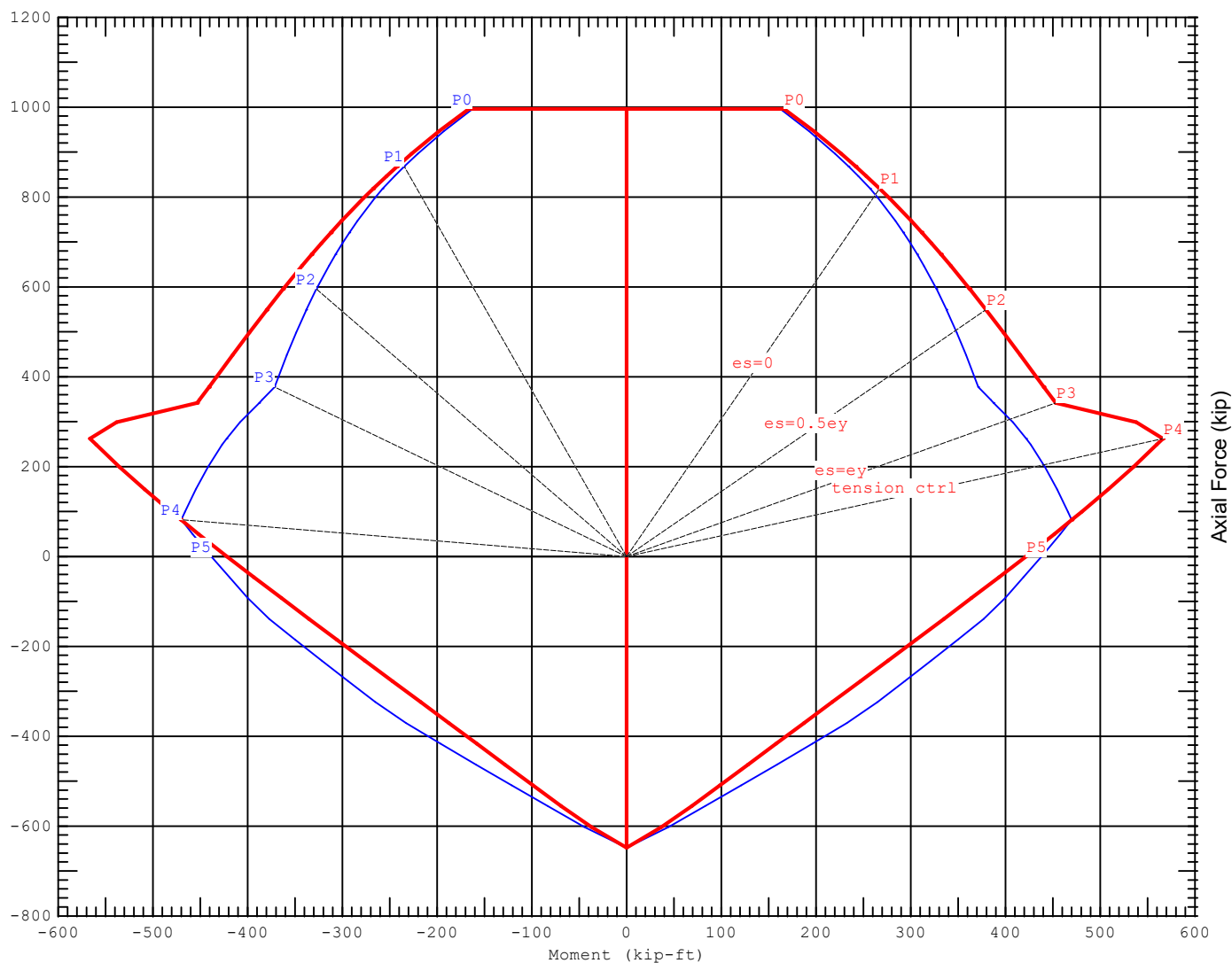
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.70 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	166.06	-0.00053
P1	817.85	266.69	0.00000
P2	548.59	378.64	0.00103
P3	341.48	452.11	0.00207
P4	262.21	564.95	0.00507
P5	-0.00	420.70	0.01111
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-161.98	-0.00037
P1	867.33	-234.01	0.00000
P2	594.60	-326.70	0.00103
P3	376.58	-370.62	0.00207
P4	81.35	-468.97	0.00507
P5	-0.01	-437.27	0.00616
Pmin	-648.00	0.00	0.20000

P-Mx and P-My Interaction Diagram



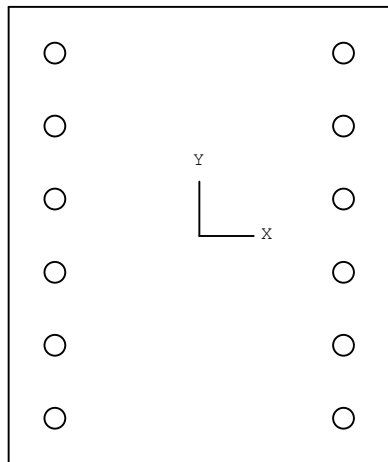
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_12#9_NX6_NY2_cc2.439



Section 220 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

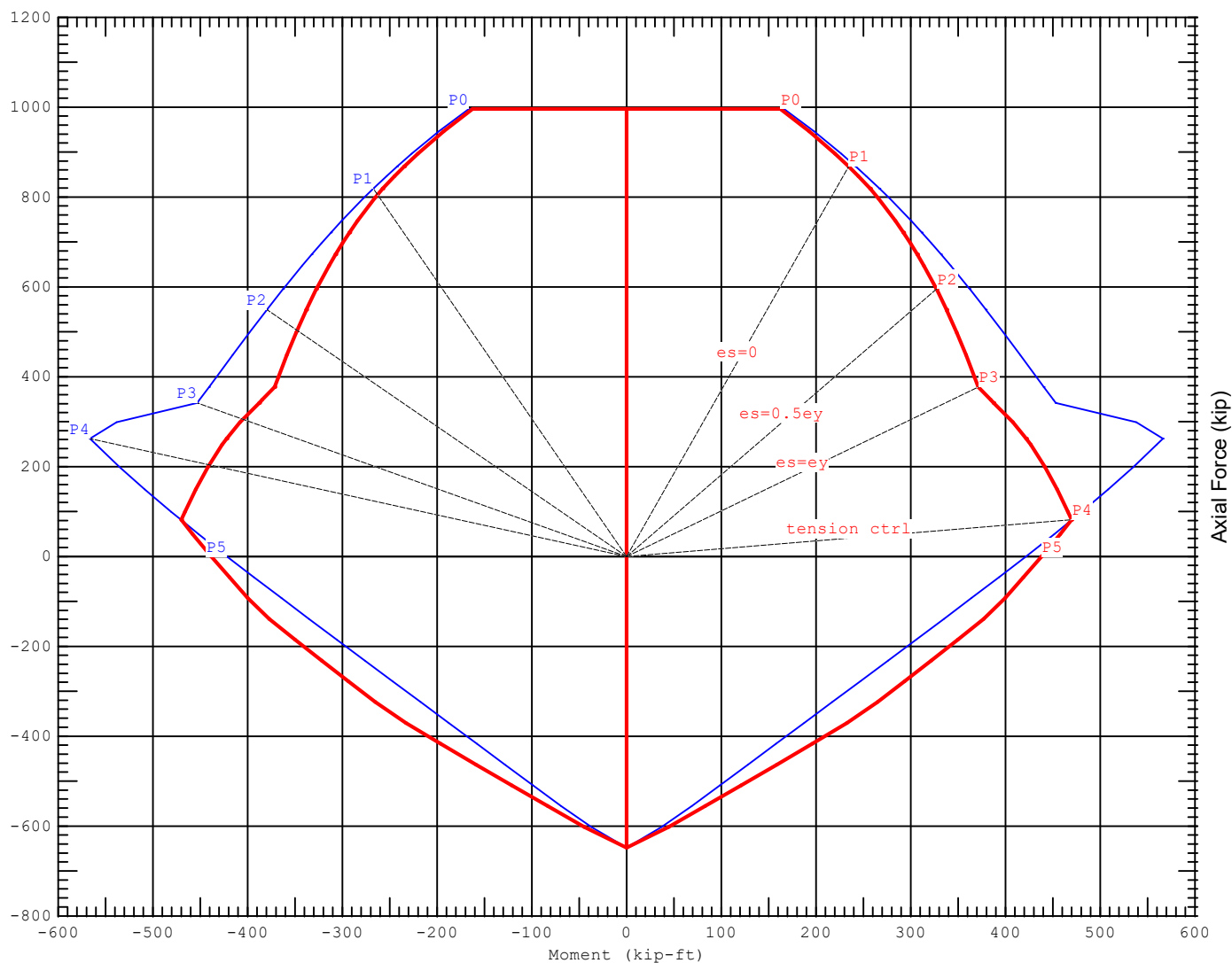
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.70 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	161.98	-0.00037
P1	867.33	234.01	0.00000
P2	594.60	326.70	0.00103
P3	376.58	370.62	0.00207
P4	81.35	468.97	0.00507
P5	-0.01	437.27	0.00616
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-166.06	-0.00053
P1	817.85	-266.69	0.00000
P2	548.59	-378.64	0.00103
P3	341.48	-452.11	0.00207
P4	262.21	-564.95	0.00507
P5	-0.00	-420.70	0.01111
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



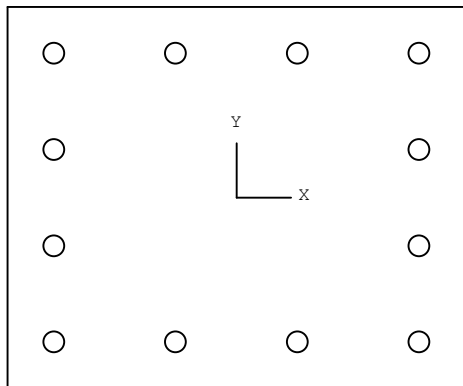
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_12#9_NX4_NY4_cc2.439



Section 221 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

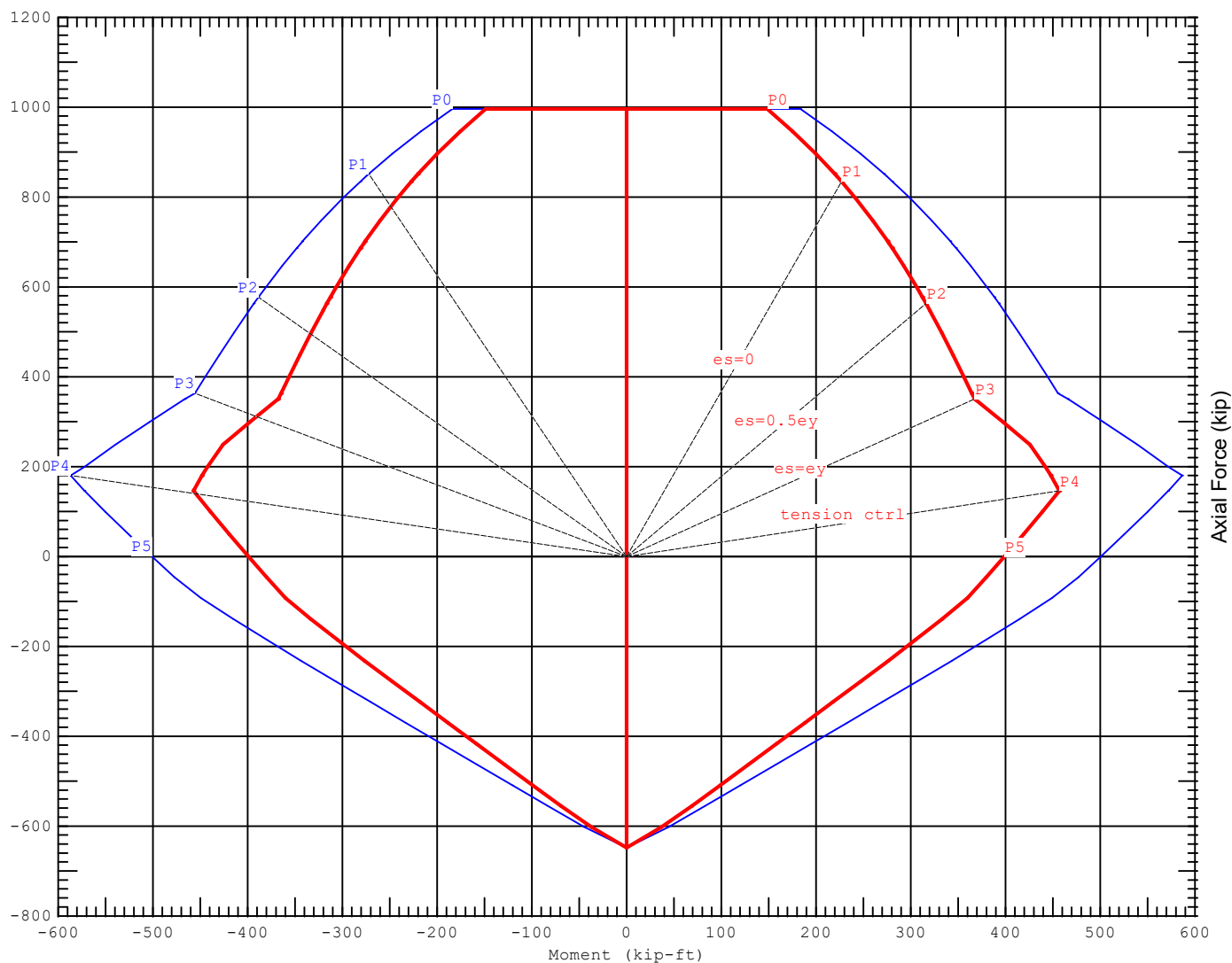
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.91 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.97	148.19	-0.00047
P1	833.92	226.45	0.00000
P2	562.57	315.48	0.00103
P3	350.04	366.73	0.00207
P4	145.90	455.88	0.00507
P5	-0.01	398.14	0.00726
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-183.25	-0.00041
P1	850.58	-271.50	0.00000
P2	576.71	-387.46	0.00103
P3	363.10	-454.49	0.00207
P4	180.01	-585.39	0.00507
P5	0.02	-499.69	0.00803
Pmin	-648.00	0.00	0.20000

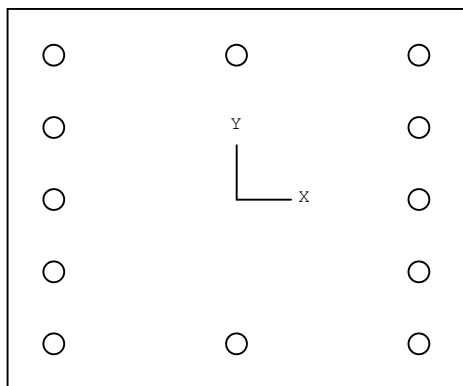
P-Mx and P-My Interaction Diagram



Engineer:

cColumn v10
(C) Computations & Graphics, Inc.

```
Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes
```



Section 222 of 238

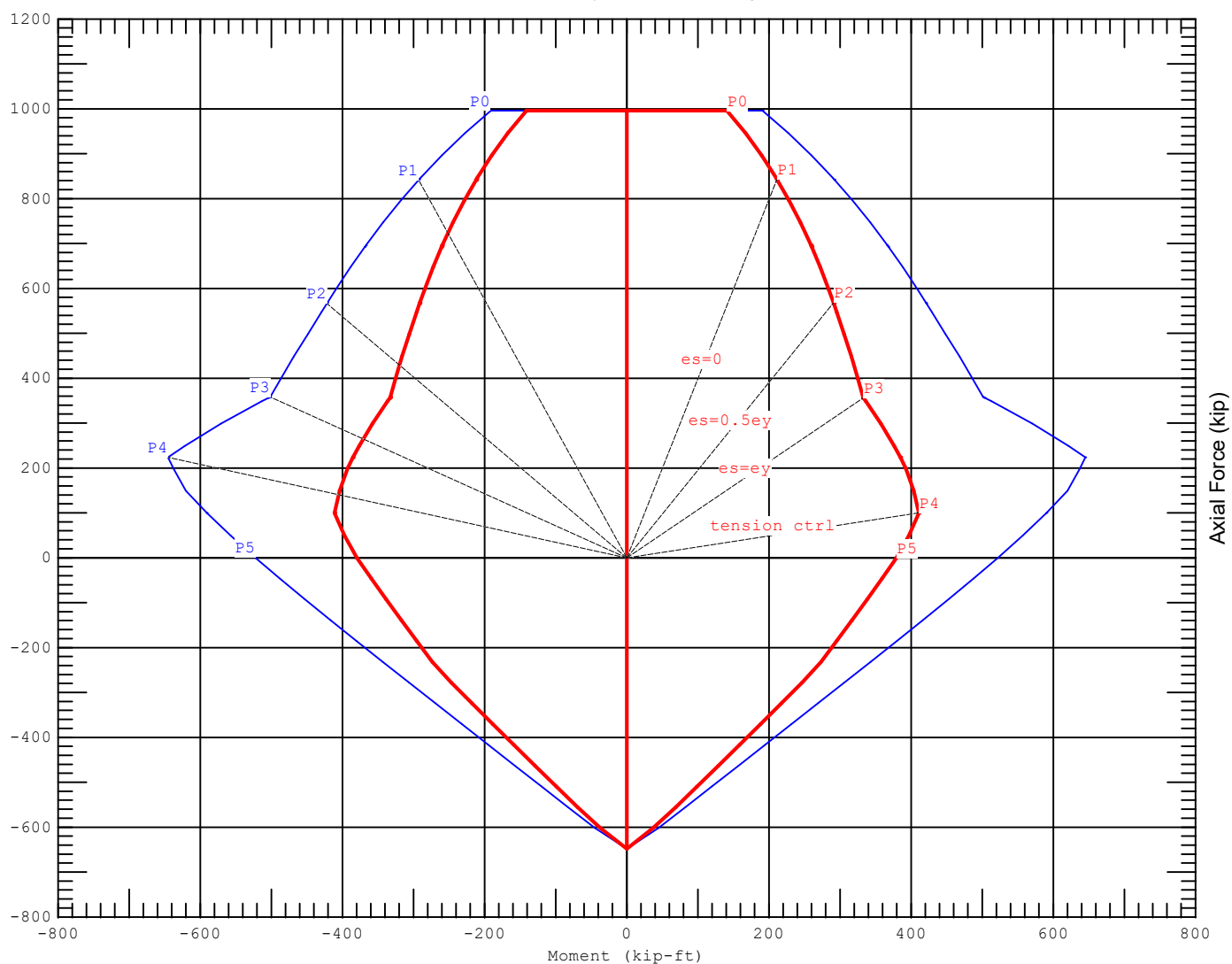
```
b x h: 24 x 20 in
fc: 3.00 kip/in^2
fy: 60.00 kip/in^2
Cover (t.c.): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in^2
As: 12.00 in^2
Roh: 2.50%
Ix: 16000 in^4
Iy: 23040 in^4
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in
```

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.96	141.19	-0.00044
P1	841.96	211.44	0.00000
P2	567.90	290.78	0.00103
P3	355.98	332.68	0.00207
P4	100.12	410.86	0.00507
P5	-0.01	379.54	0.00628
Pmin	-648.00	-0.00	0.20000

PT	P	My (-)	max es
P0	994.96	-191.51	-0.00044
P1	841.09	-292.37	0.00000
P2	566.10	-421.69	0.00103
P3	358.02	-501.19	0.00207
P4	223.46	-645.06	0.00507
P5	0.01	-521.86	0.01014
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



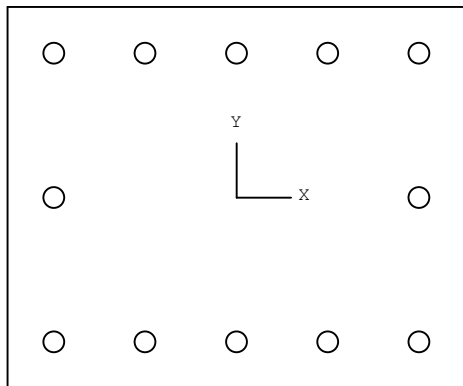
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_12#9_NX3_NY5_cc2.439



Section 223 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

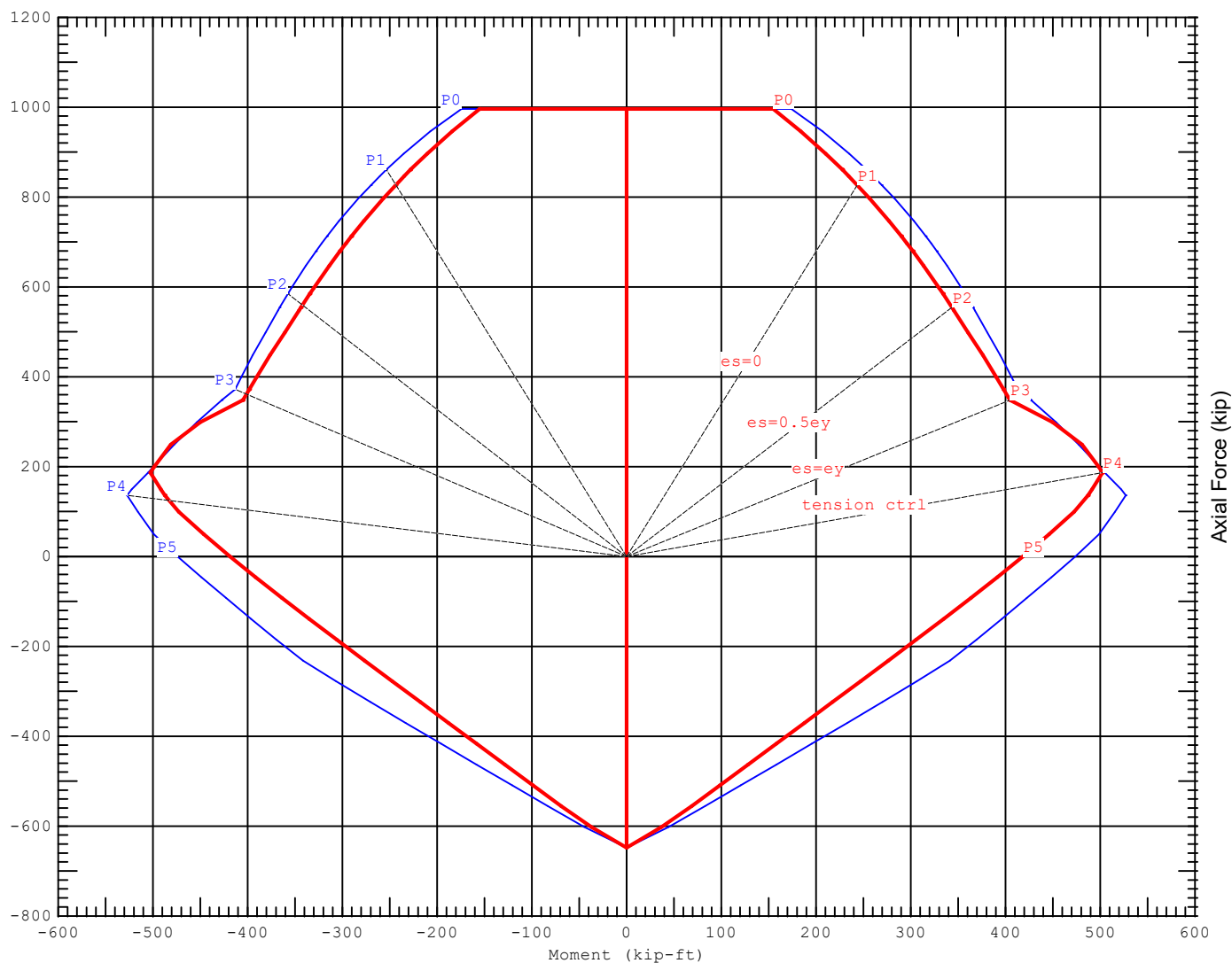
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 12 # 9
Confinement: Tied
Ag: 480.00 in²
As: 12.00 in²
Roh: 2.50%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	994.96	154.70	-0.00050
P1	825.88	243.16	0.00000
P2	553.92	342.82	0.00103
P3	347.42	404.01	0.00207
P4	186.21	501.47	0.00507
P5	-0.01	417.56	0.00872
Pmin	-648.00	0.00	0.20000

PT	P	My (-)	max es
P0	994.97	-173.84	-0.00039
P1	860.08	-252.85	0.00000
P2	584.00	-356.66	0.00103
P3	371.50	-411.98	0.00207
P4	135.61	-525.85	0.00507
P5	-0.01	-472.84	0.00692
Pmin	-648.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram



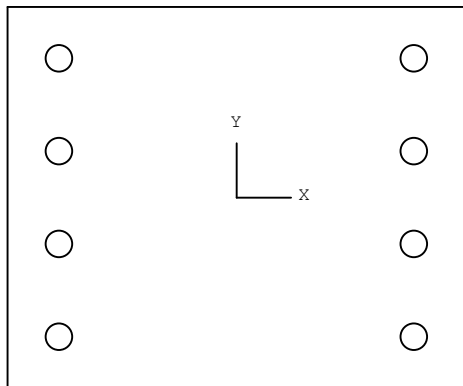
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#11_NX4_NY2_cc2.705



Section 224 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

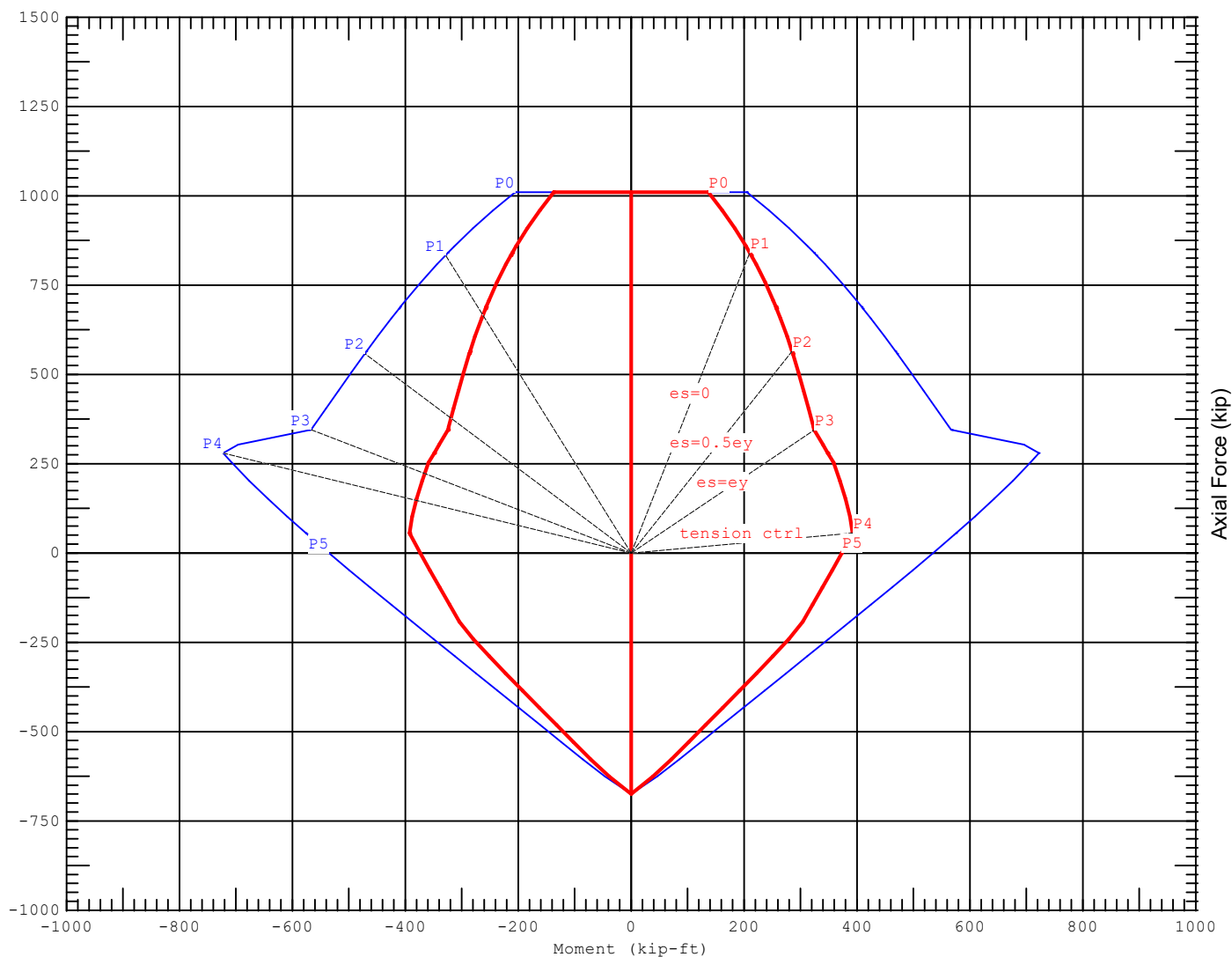
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 480.00 in²
As: 12.48 in²
Roh: 2.60%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.31	136.48	-0.00049
P1	839.80	210.01	0.00000
P2	563.83	284.60	0.00103
P3	343.89	323.69	0.00207
P4	55.22	391.80	0.00507
P5	0.00	372.75	0.00574
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.30	-205.08	-0.00052
P1	833.06	-327.98	0.00000
P2	557.52	-470.70	0.00103
P3	344.78	-565.60	0.00207
P4	279.28	-721.35	0.00507
P5	-0.01	-534.21	0.01179
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



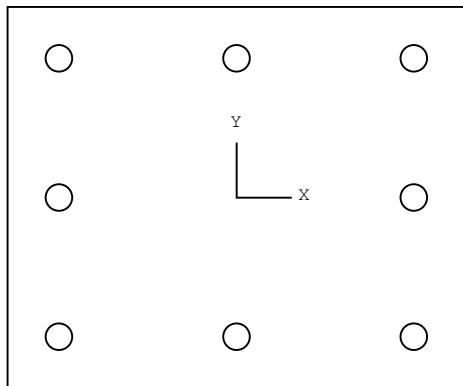
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#11_NX3_NY3_cc2.705



Section 225 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

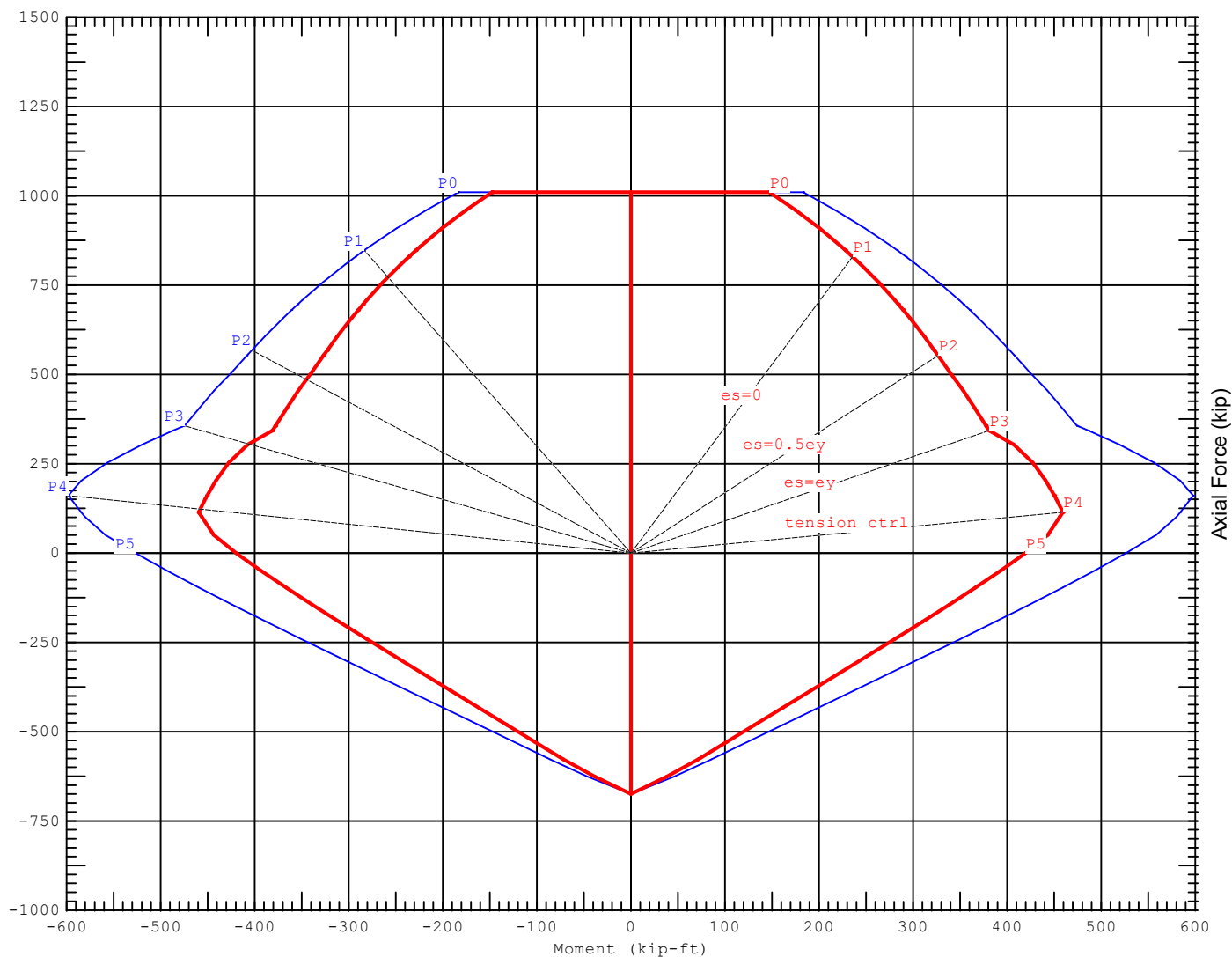
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 480.00 in²
As: 12.48 in²
Roh: 2.60%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.30	147.20	-0.00053
P1	828.81	235.37	0.00000
P2	552.42	326.03	0.00103
P3	342.41	380.15	0.00207
P4	114.26	458.47	0.00507
P5	-0.00	418.66	0.00669
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.30	-183.09	-0.00047
P1	846.64	-282.86	0.00000
P2	567.24	-402.01	0.00103
P3	355.81	-473.36	0.00207
P4	160.71	-596.58	0.00507
P5	-0.02	-525.41	0.00774
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



Project/Job:

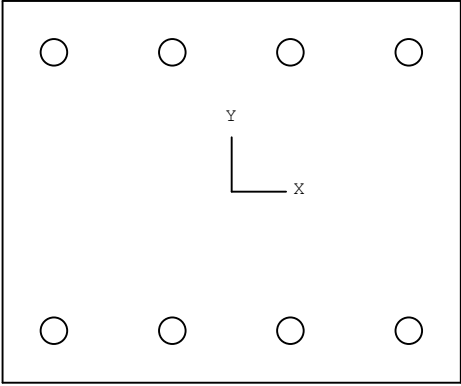
Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10

(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_8#11_NX2_NY4_cc2.705



Code: ACI 318-19

Strength reduction: Auto

Neutral axis steps: 250

Biaxial angle steps: 16

Axial capacity steps: 20

Excl. displ'd concrete: Yes

b x h: 24 x 20 in

fc: 3.00 kip/in^2

fy: 60.00 kip/in^2

Cover (t.c): 2.705 in

Bars: 8 # 11

Confinement: Tied

Ag: 480.00 in^2

As: 12.48 in^2

Roh: 2.60%

Ix: 16000 in^4

Iy: 23040 in^4

X0: 0.00 in

Y0: 0.00 in

Clear spacing: 4.79 in

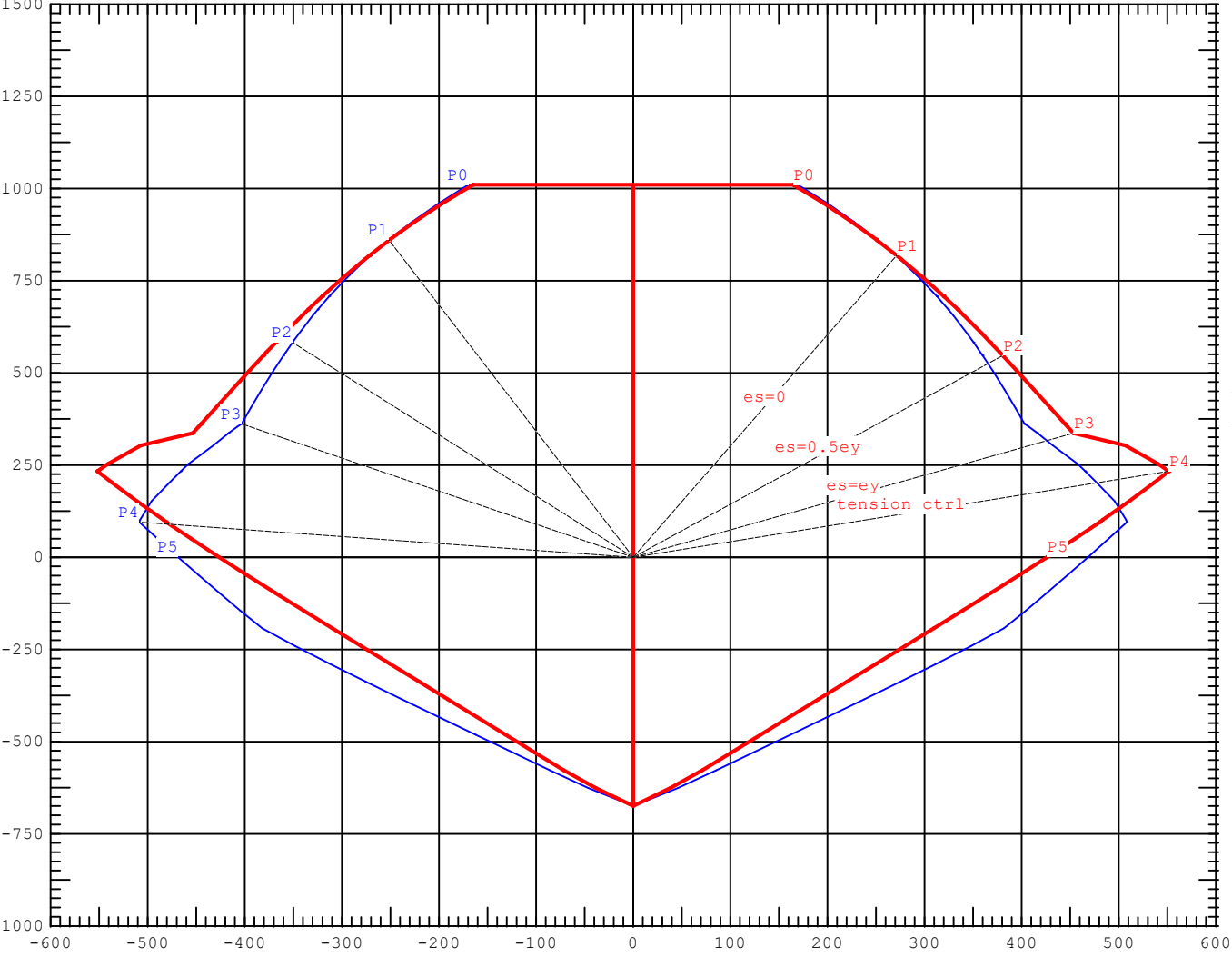
Section 226 of 238

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.31	164.43	-0.00056
P1	817.81	270.78	0.00000
P2	546.19	379.94	0.00103
P3	335.76	452.55	0.00207
P4	232.82	550.53	0.00507
P5	0.00	425.25	0.00983
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.30	-169.09	-0.00042
P1	860.23	-250.99	0.00000
P2	582.14	-349.82	0.00103
P3	361.67	-402.17	0.00207
P4	95.24	-507.47	0.00507
P5	0.01	-467.44	0.00630
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



es=0

es=0.5ey

es=ey

tension ctrl

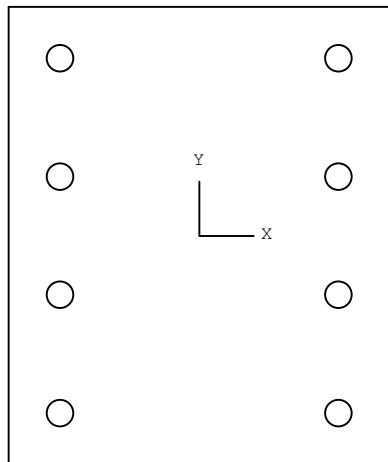
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#11_NX4_NY2_cc2.705



Section 227 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

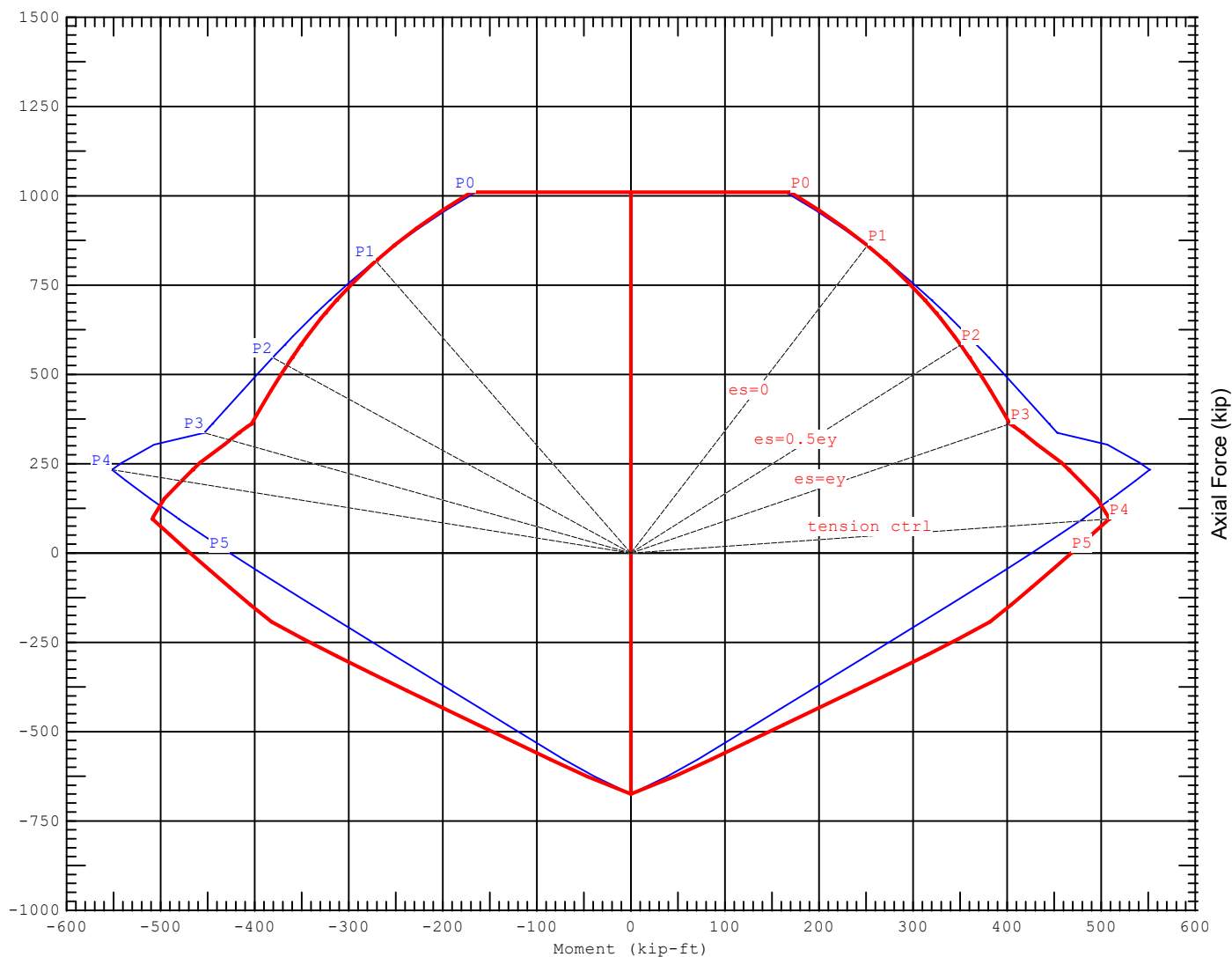
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 480.00 in²
As: 12.48 in²
Roh: 2.60%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 4.79 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.30	169.09	-0.00042
P1	860.23	250.99	0.00000
P2	582.14	349.82	0.00103
P3	361.67	402.17	0.00207
P4	95.24	507.47	0.00507
P5	0.01	467.44	0.00630
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.31	-164.43	-0.00056
P1	817.81	-270.78	0.00000
P2	546.19	-379.94	0.00103
P3	335.76	-452.55	0.00207
P4	232.82	-550.53	0.00507
P5	0.00	-425.25	0.00983
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



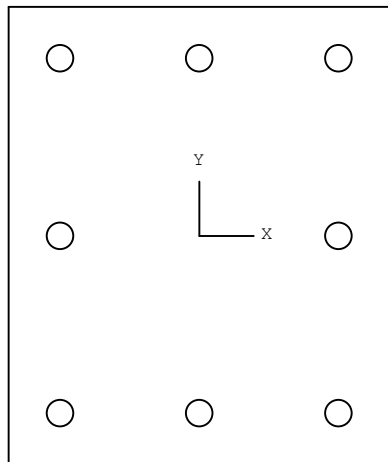
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#11_NX3_NY3_cc2.705



Section 228 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

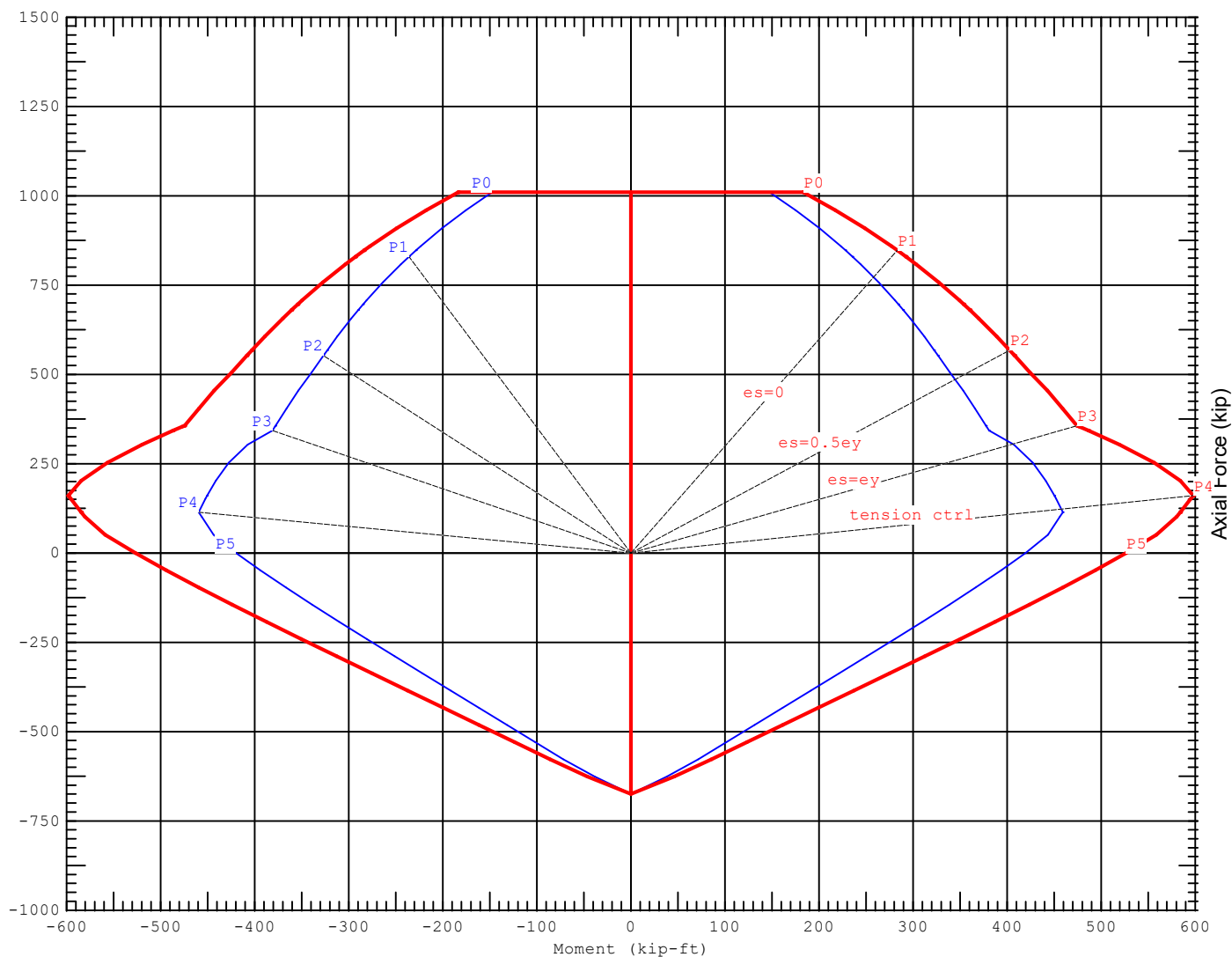
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 480.00 in²
As: 12.48 in²
Roh: 2.60%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.88 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.30	183.09	-0.00047
P1	846.64	282.86	0.00000
P2	567.24	402.01	0.00103
P3	355.81	473.36	0.00207
P4	160.71	596.58	0.00507
P5	-0.02	525.41	0.00774
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.30	-147.20	-0.00053
P1	828.81	-235.37	0.00000
P2	552.42	-326.03	0.00103
P3	342.41	-380.15	0.00207
P4	114.26	-458.47	0.00507
P5	-0.00	-418.66	0.00669
Pmin	-673.92	-0.00	0.20000

P-Mx and P-My Interaction Diagram



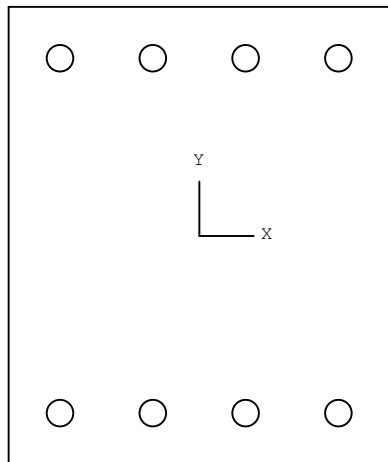
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_8#11_NX2_NY4_cc2.705



Section 229 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

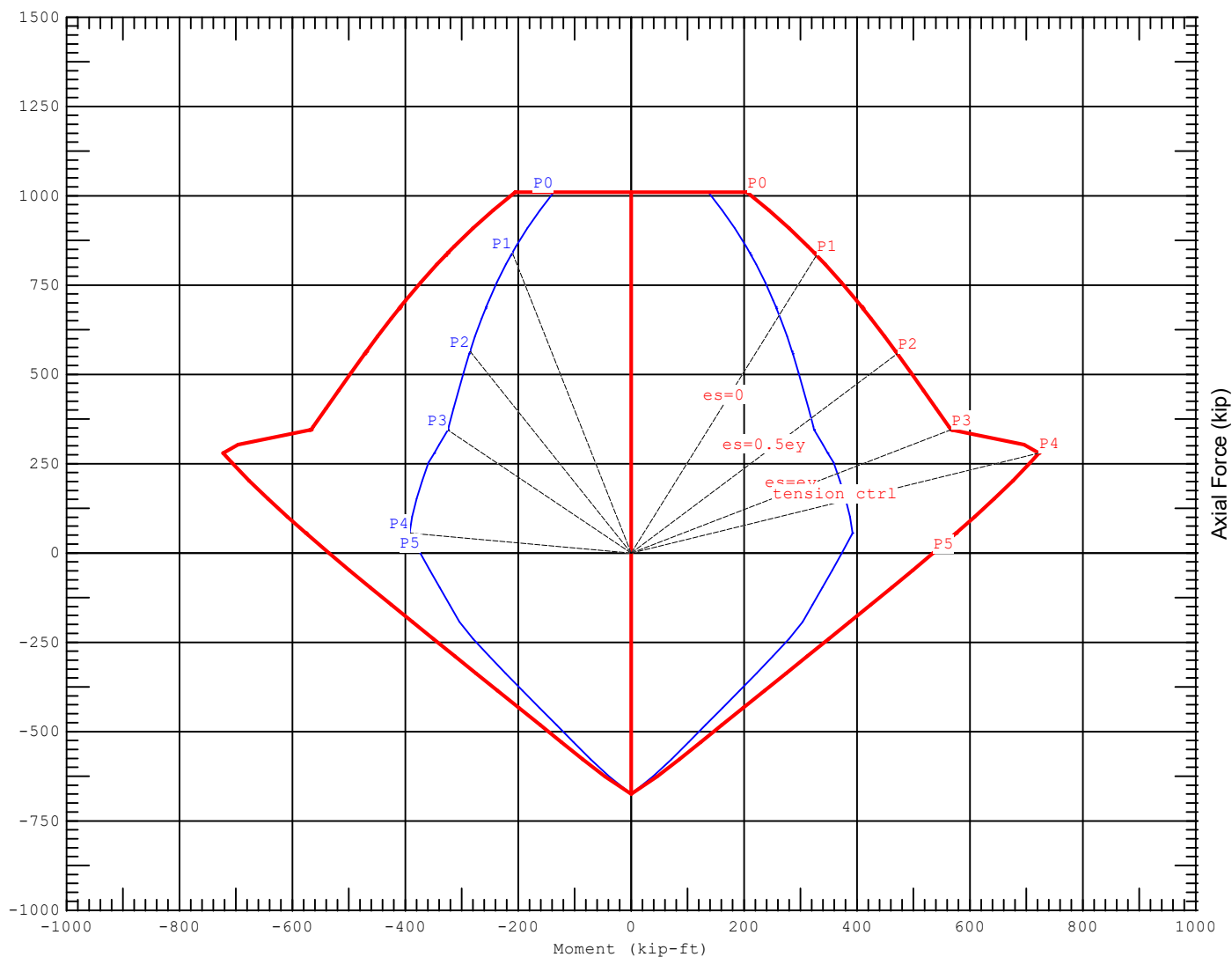
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.705 in
Bars: 8 # 11
Confinement: Tied
Ag: 480.00 in²
As: 12.48 in²
Roh: 2.60%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.45 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1009.30	205.08	-0.00052
P1	833.06	327.98	0.00000
P2	557.52	470.70	0.00103
P3	344.78	565.60	0.00207
P4	279.28	721.35	0.00507
P5	-0.01	534.21	0.01179
Pmin	-673.92	0.00	0.20000

PT	P	My (-)	max es
P0	1009.31	-136.48	-0.00049
P1	839.80	-210.01	0.00000
P2	563.83	-284.60	0.00103
P3	343.89	-323.69	0.00207
P4	55.22	-391.80	0.00507
P5	0.00	-372.75	0.00574
Pmin	-673.92	0.00	0.20000

P-Mx and P-My Interaction Diagram



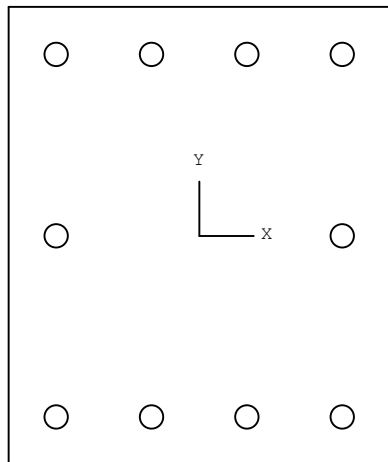
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#10_NX3_NY4_cc2.51



Section 230 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

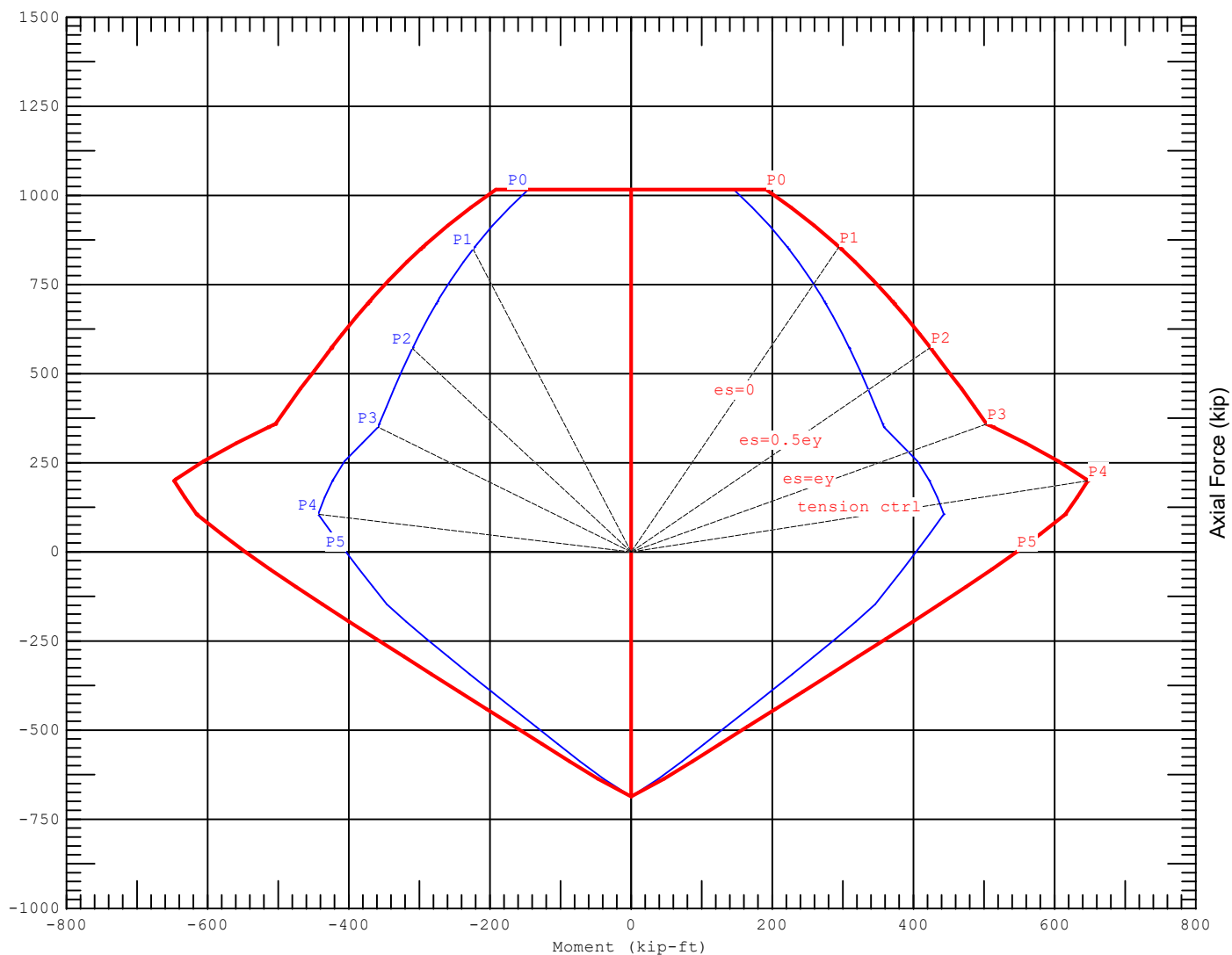
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	191.26	-0.00047
P1	854.45	294.68	0.00000
P2	572.47	423.80	0.00103
P3	358.07	503.65	0.00207
P4	198.73	646.98	0.00507
P5	0.00	546.17	0.00895
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-145.62	-0.00048
P1	848.27	-223.83	0.00000
P2	569.91	-309.68	0.00103
P3	349.23	-358.45	0.00207
P4	105.37	-443.05	0.00507
P5	0.01	-403.77	0.00648
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



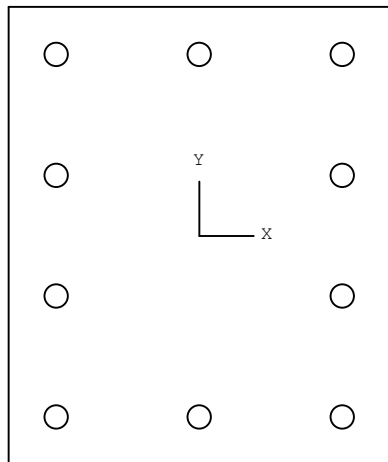
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#10_NX4_NY3_cc2.51



Section 231 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

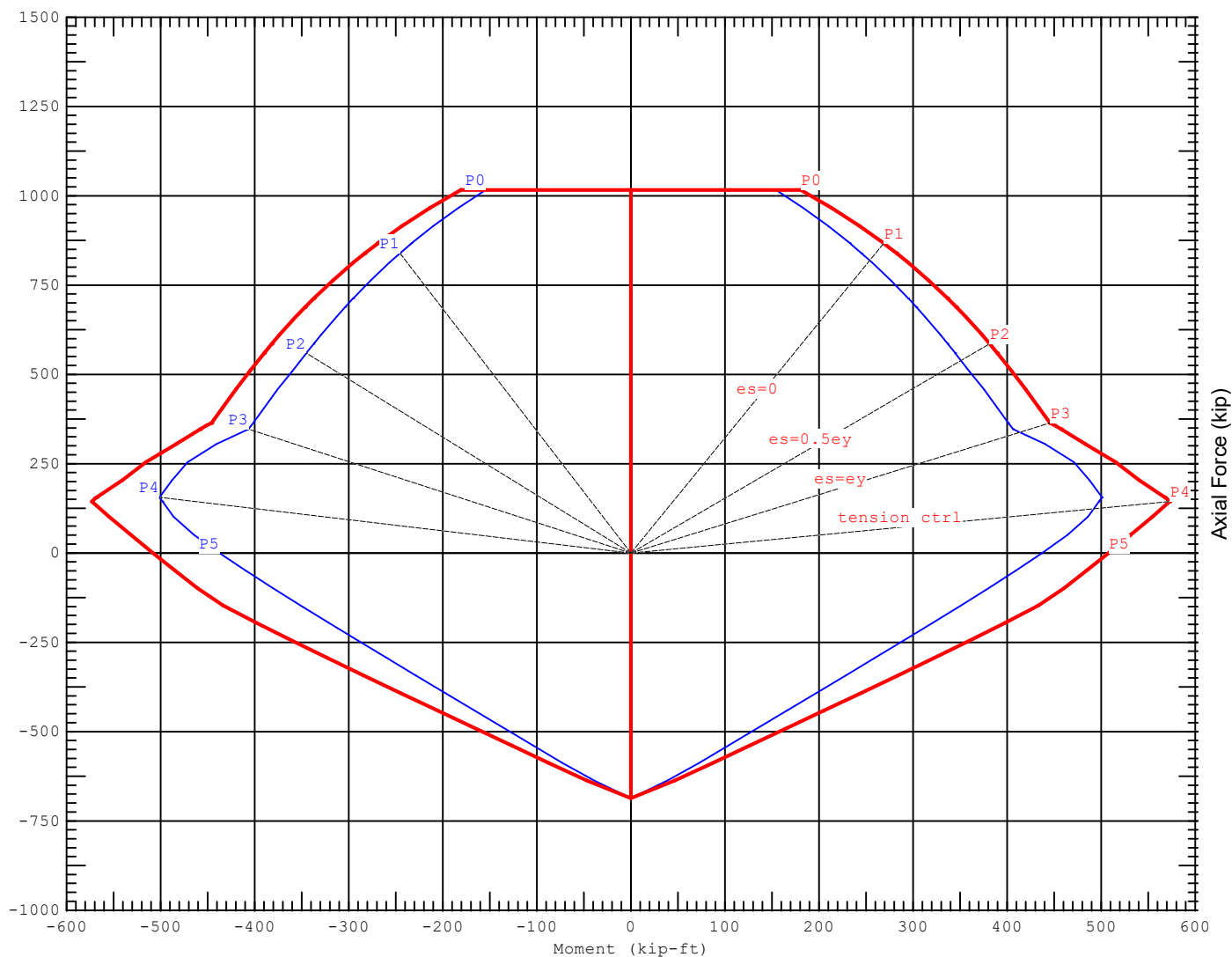
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.06 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.87	180.29	-0.00042
P1	866.25	268.32	0.00000
P2	585.58	380.59	0.00103
P3	364.08	444.70	0.00207
P4	143.61	571.71	0.00507
P5	-0.00	506.76	0.00713
Pmin	-685.80	-0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-153.98	-0.00051
P1	838.39	-244.90	0.00000
P2	559.37	-344.14	0.00103
P3	346.46	-405.42	0.00207
P4	155.73	-499.97	0.00507
P5	-0.01	-436.24	0.00772
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



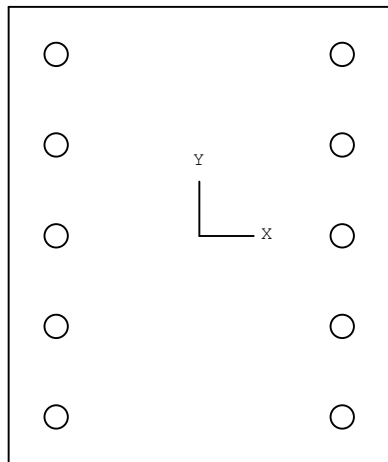
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#10_NX5_NY2_cc2.51



Section 232 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

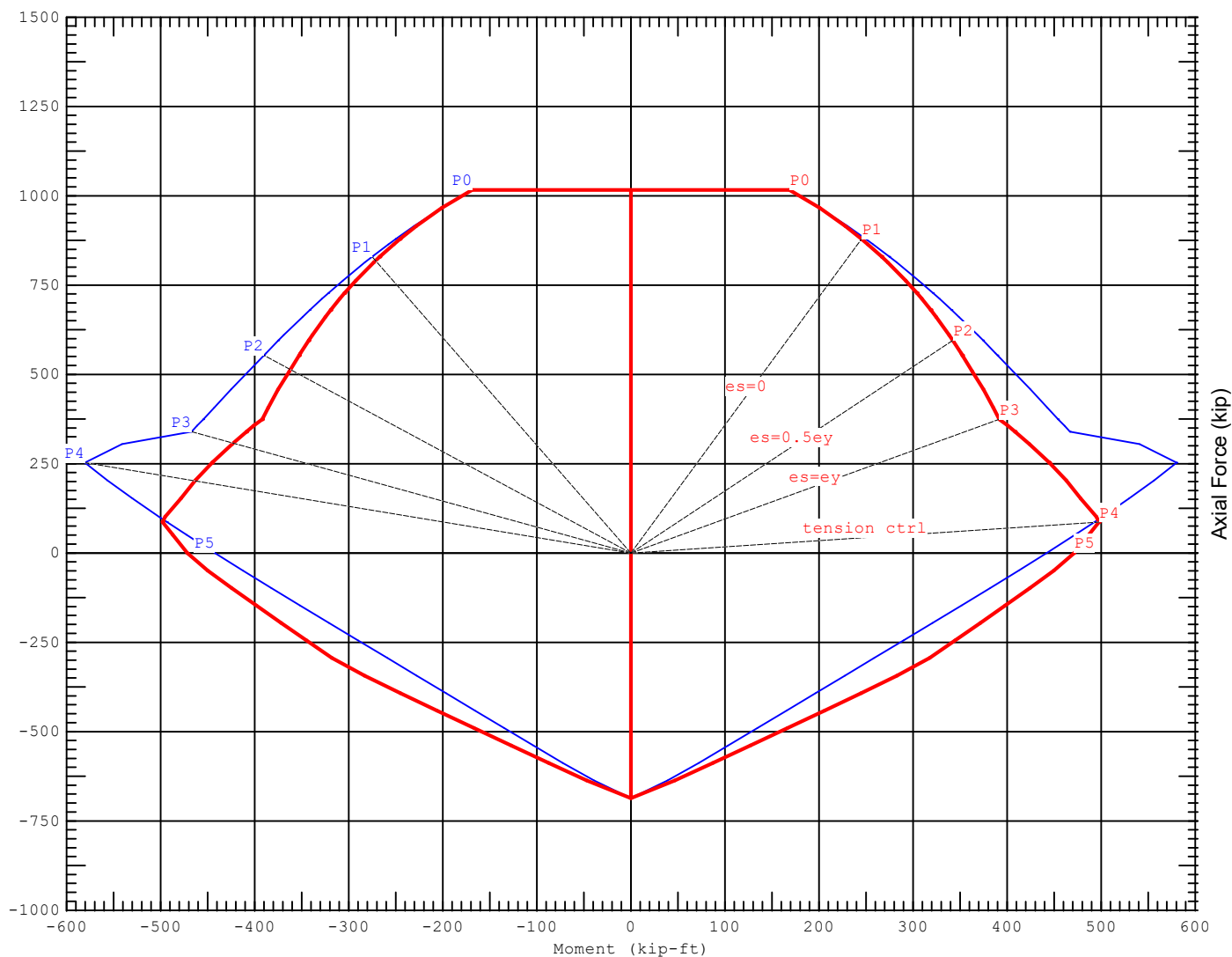
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	168.37	-0.00039
P1	878.04	244.75	0.00000
P2	594.49	341.69	0.00103
P3	374.30	391.01	0.00207
P4	86.45	496.72	0.00507
P5	0.00	470.39	0.00592
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-168.14	-0.00055
P1	828.51	-274.50	0.00000
P2	553.05	-389.20	0.00103
P3	339.48	-465.94	0.00207
P4	252.26	-579.07	0.00507
P5	0.00	-441.08	0.01052
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



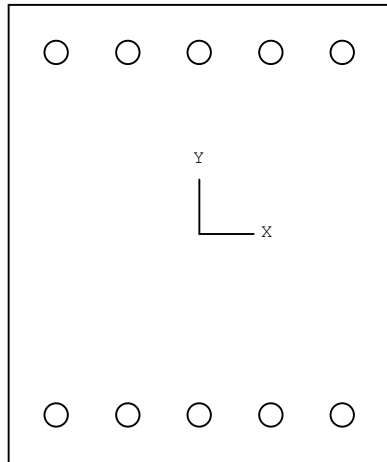
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_10#10_NX2_NY5_cc2.51



Section 233 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

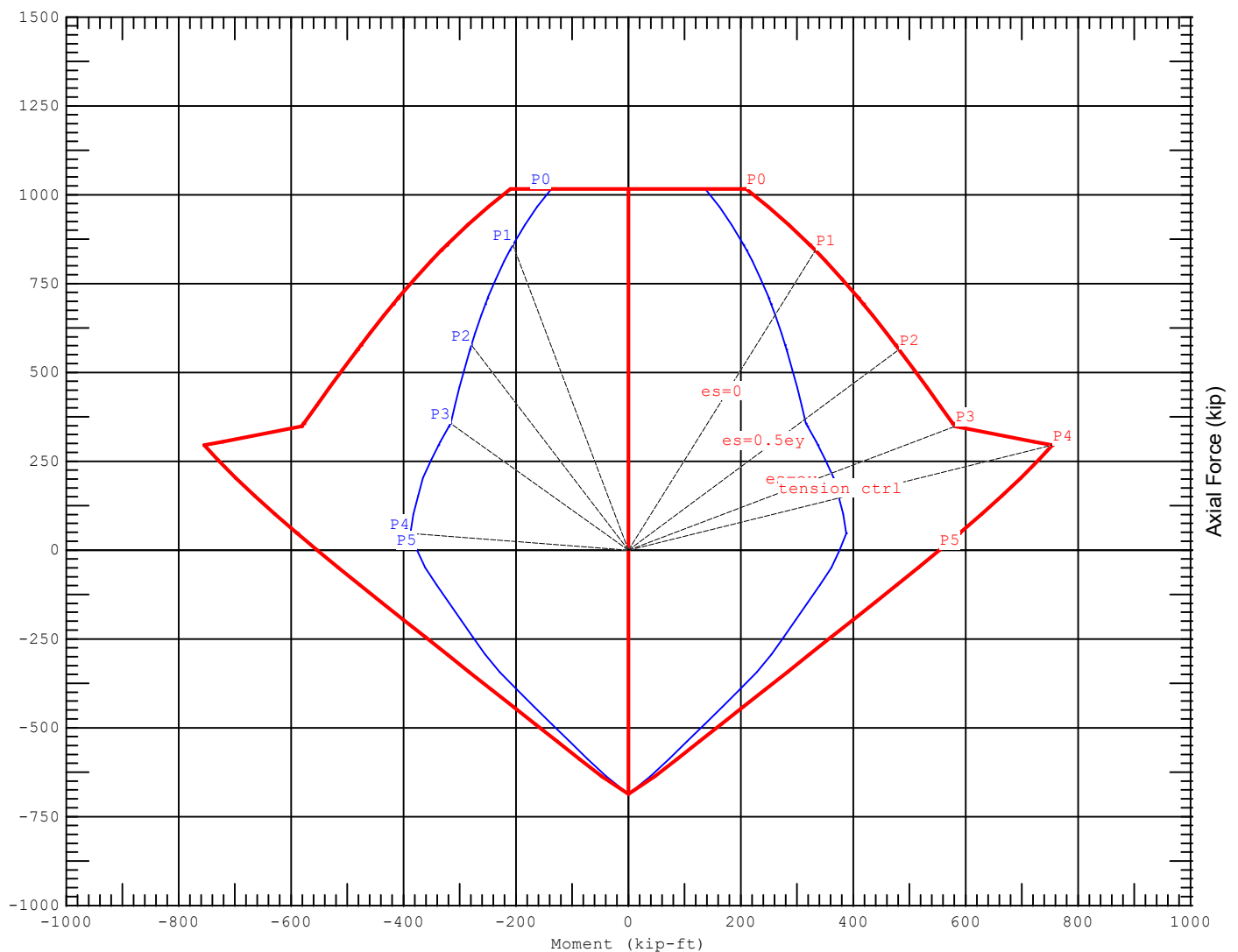
b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	209.22	-0.00051
P1	842.66	332.19	0.00000
P2	563.57	480.89	0.00103
P3	347.85	580.32	0.00207
P4	295.26	752.85	0.00507
P5	0.01	552.46	0.01257
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-136.85	-0.00044
P1	858.14	-204.89	0.00000
P2	576.23	-278.53	0.00103
P3	356.21	-315.51	0.00207
P4	47.02	-386.95	0.00507
P5	0.00	-375.03	0.00551
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



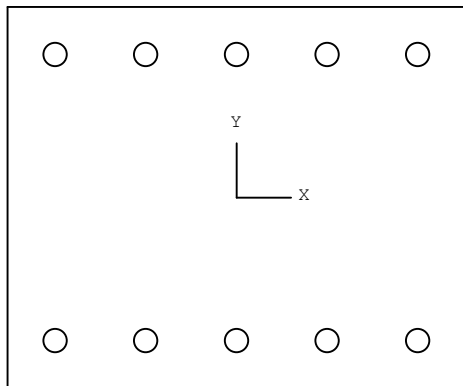
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#10_NX2_NY5_cc2.51



Section 234 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

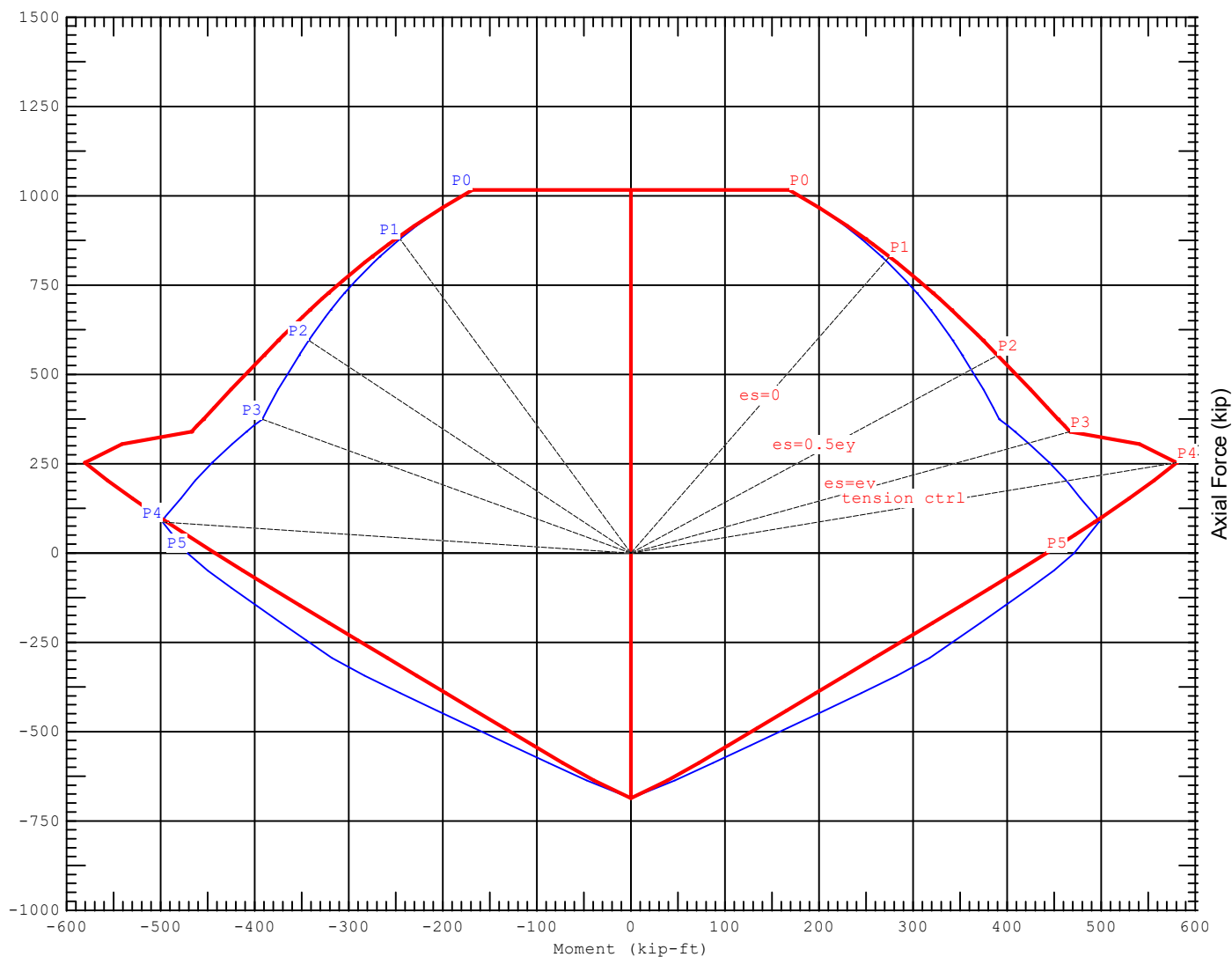
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	168.14	-0.00055
P1	828.51	274.50	0.00000
P2	553.05	389.20	0.00103
P3	339.48	465.94	0.00207
P4	252.26	579.07	0.00507
P5	0.00	441.08	0.01052
Pmin	-685.80	-0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-168.37	-0.00039
P1	878.04	-244.75	0.00000
P2	594.49	-341.69	0.00103
P3	374.30	-391.01	0.00207
P4	86.45	-496.72	0.00507
P5	0.00	-470.39	0.00592
Pmin	-685.80	0.00	0.20000

P-Mx and P-My Interaction Diagram



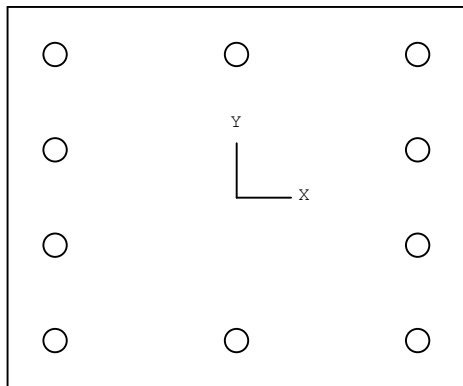
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#10_NX4_NY3_cc2.51



Section 235 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

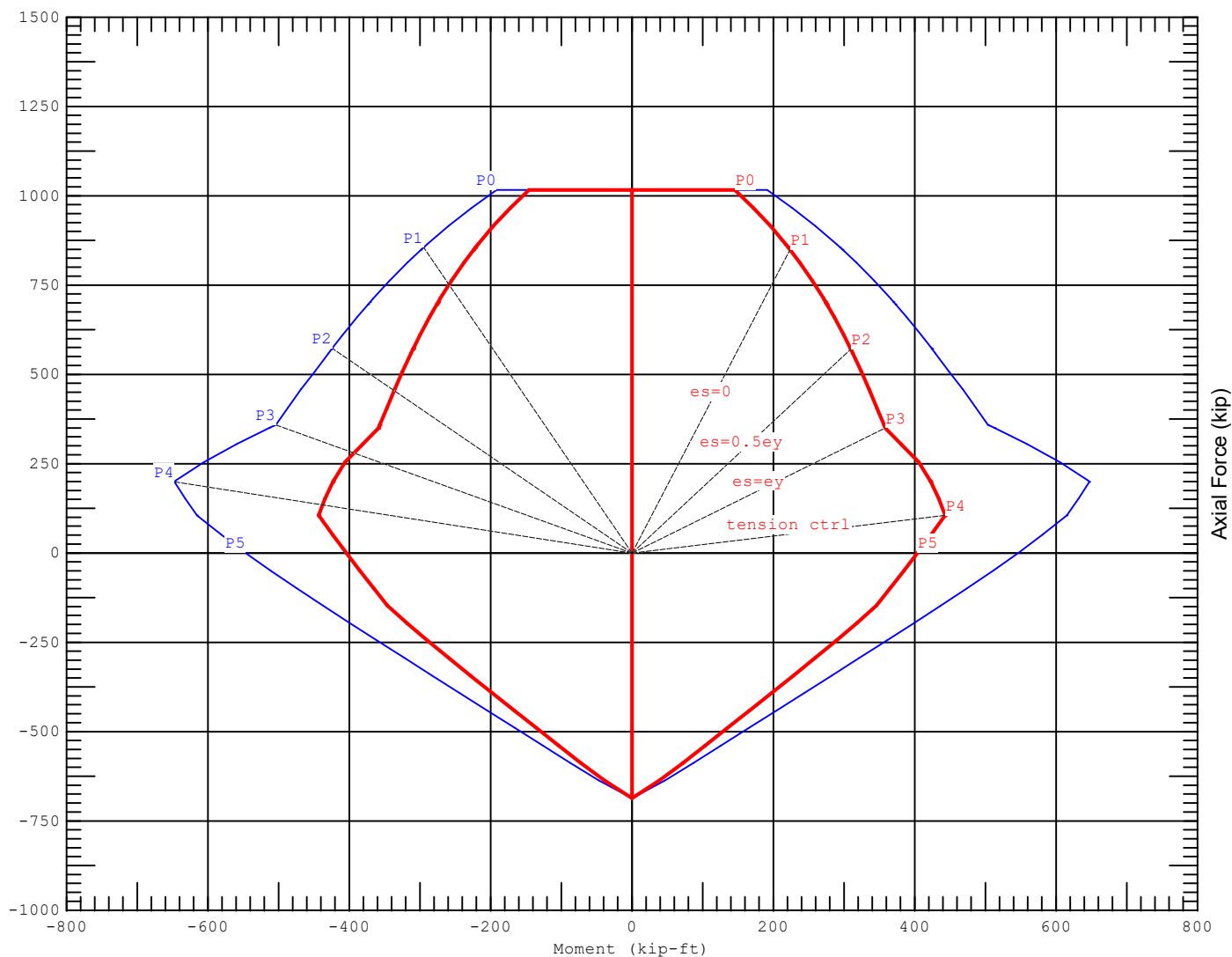
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 3.72 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	145.62	-0.00048
P1	848.27	223.83	0.00000
P2	569.91	309.68	0.00103
P3	349.23	358.45	0.00207
P4	105.37	443.05	0.00507
P5	0.01	403.77	0.00648
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-191.26	-0.00047
P1	854.45	-294.68	0.00000
P2	572.47	-423.80	0.00103
P3	358.07	-503.65	0.00207
P4	198.73	-646.98	0.00507
P5	0.00	-546.17	0.00895
Pmin	-685.80	-0.00	0.20000

P-Mx and P-My Interaction Diagram



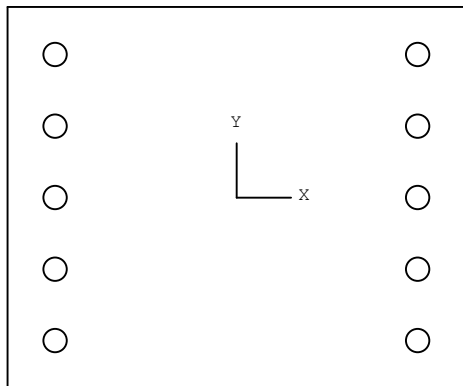
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#10_NX5_NY2_cc2.51



Section 236 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Biaxial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

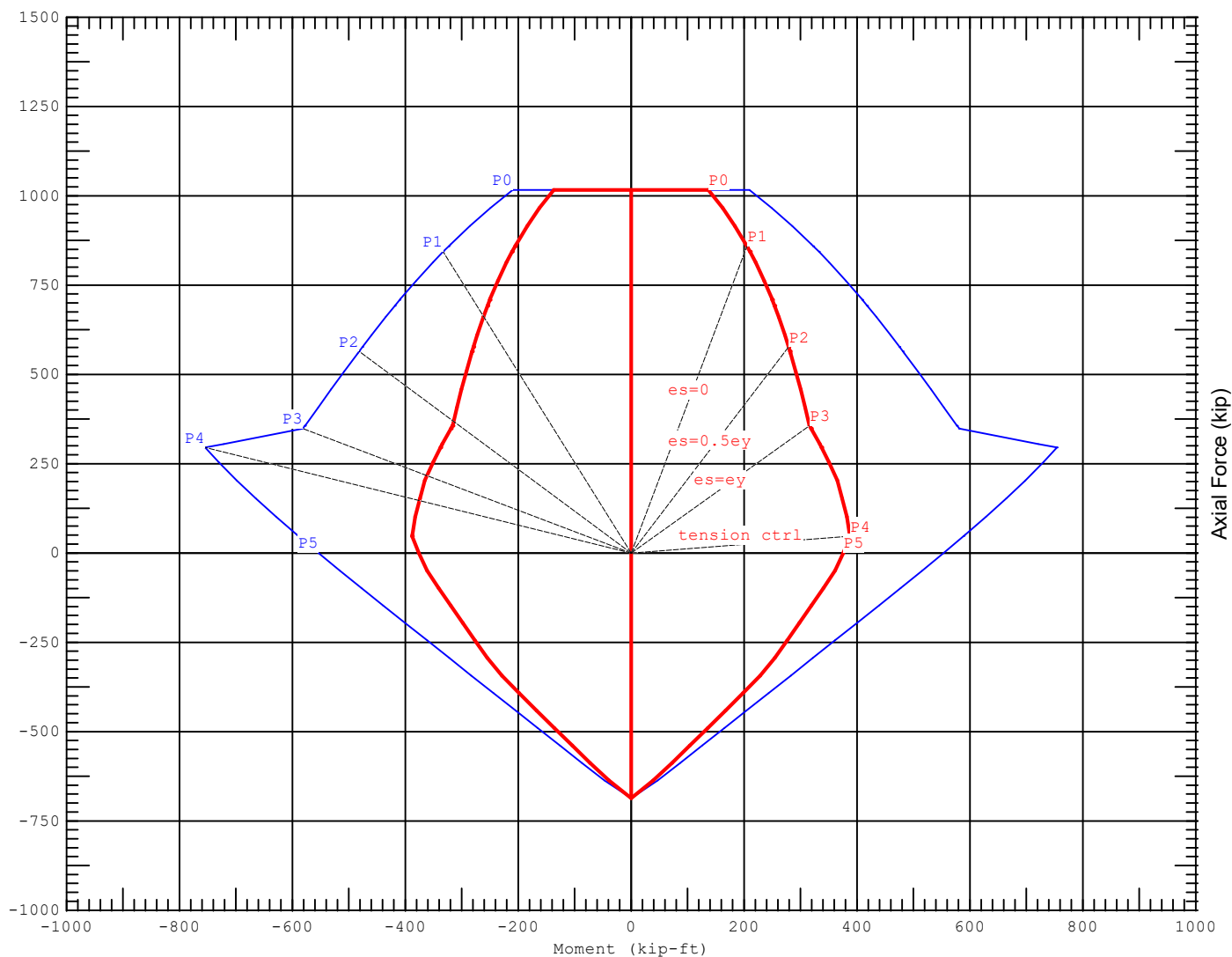
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.47 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	136.85	-0.00044
P1	858.14	204.89	0.00000
P2	576.23	278.53	0.00103
P3	356.21	315.51	0.00207
P4	47.02	386.95	0.00507
P5	0.00	375.03	0.00551
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.88	-209.22	-0.00051
P1	842.66	-332.19	0.00000
P2	563.57	-480.89	0.00103
P3	347.85	-580.32	0.00207
P4	295.26	-752.85	0.00507
P5	0.01	-552.46	0.01257
Pmin	-685.80	-0.00	0.20000

P-Mx and P-My Interaction Diagram



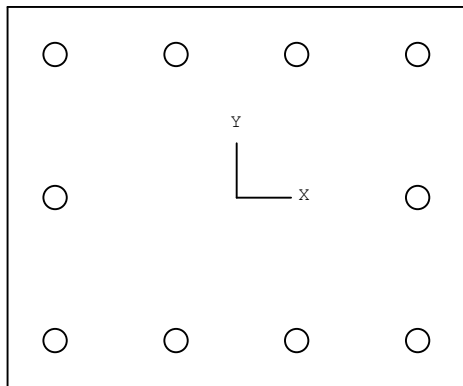
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect24x20_fc3_fy60_10#10_NX3_NY4_cc2.51



Section 237 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

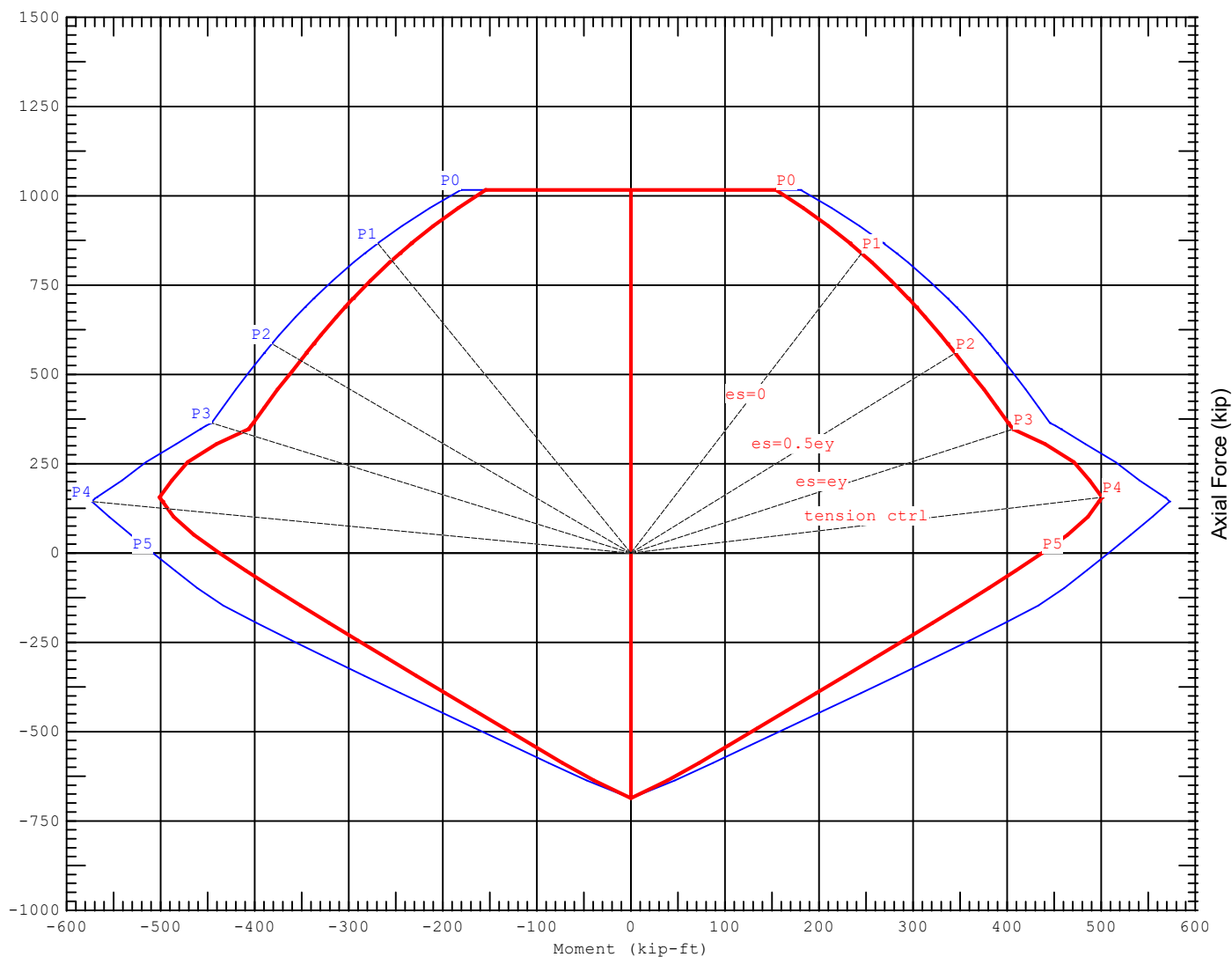
b x h: 24 x 20 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.51 in
Bars: 10 # 10
Confinement: Tied
Ag: 480.00 in²
As: 12.70 in²
Roh: 2.65%
Ix: 16000 in⁴
Iy: 23040 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 5.06 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1015.88	153.98	-0.00051
P1	838.39	244.90	0.00000
P2	559.37	344.14	0.00103
P3	346.46	405.42	0.00207
P4	155.73	499.97	0.00507
P5	-0.01	436.24	0.00772
Pmin	-685.80	0.00	0.20000

PT	P	My (-)	max es
P0	1015.87	-180.29	-0.00042
P1	866.25	-268.32	0.00000
P2	585.58	-380.59	0.00103
P3	364.08	-444.70	0.00207
P4	143.61	-571.71	0.00507
P5	-0.00	-506.76	0.00713
Pmin	-685.80	-0.00	0.20000

P-Mx and P-My Interaction Diagram



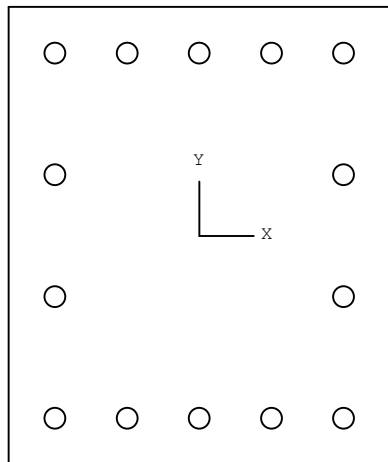
Project/Job:

Engineer:

Date & Time: 06/19/2023 10:27

cColumn v10
(C) Computations & Graphics, Inc.

Rect20x24_fc3_fy60_14#9_NX4_NY5_cc2.439



Section 238 of 238

Code: ACI 318-19
Strength reduction: Auto
Neutral axis steps: 250
Bi-axial angle steps: 16
Axial capacity steps: 20
Excl. displ'd concrete: Yes

b x h: 20 x 24 in
fc: 3.00 kip/in²
fy: 60.00 kip/in²
Cover (t.c): 2.439 in
Bars: 14 # 9
Confinement: Tied
Ag: 480.00 in²
As: 14.00 in²
Roh: 2.92%
Ix: 23040 in⁴
Iy: 16000 in⁴
X0: 0.00 in
Y0: 0.00 in
Clear spacing: 2.65 in

Control Points (kip, kip-ft)

PT	P	Mx (+)	max es
P0	1054.71	196.40	-0.00045
P1	887.92	301.25	0.00000
P2	594.55	432.75	0.00103
P3	361.44	515.32	0.00207
P4	177.72	669.61	0.00507
P5	0.00	582.80	0.00784
Pmin	-756.00	0.00	0.20000

PT	P	My (-)	max es
P0	1054.72	-151.66	-0.00049
P1	879.30	-234.97	0.00000
P2	585.74	-326.60	0.00103
P3	354.32	-380.78	0.00207
P4	92.88	-474.35	0.00507
P5	0.00	-445.40	0.00609
Pmin	-756.00	-0.00	0.20000

P-Mx and P-My Interaction Diagram

