



Company: MSD Co.

Project: Sample Project

Title: Sample Column

Section Name: RCol-Sample

**1- Input Data**

1-1- Existing Section Properties & Materials:

Name:

$t_3$	$t_2$	$C_c$	Longitudinal Bars	$f'_c$	$f_y$	$E_c$	$E_s$
mm	mm	mm	-	Mpa	Mpa	Mpa	Mpa
600	600	70	20T20	20	400	21019.039	200000

1-2- FRP Jacket Properties:

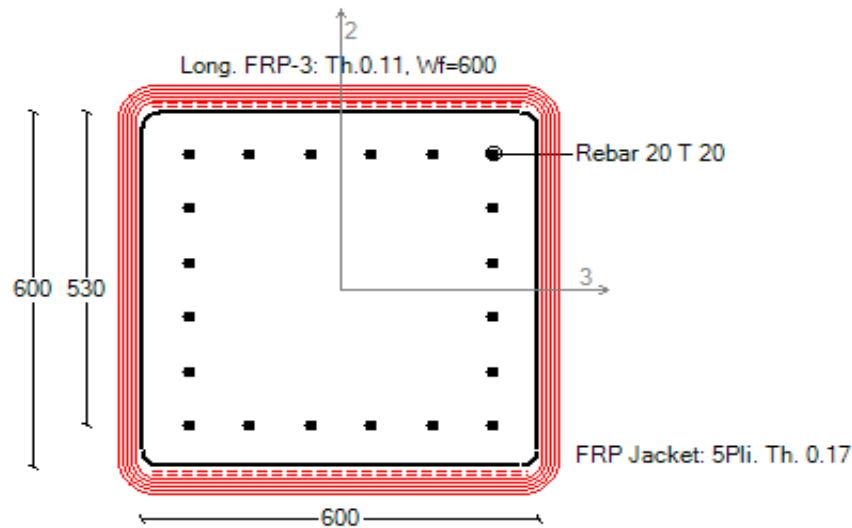
Ultimate Tensile Strength ( $f_{fu}^*$ )	Modulus of Elasticity ( $E_f$ )	$C_E$	$t_f$	$n$	$r_c$	$\Psi_f$
Mpa	Mpa	-	mm	-	mm	-
3800	230000	0.95	0.17	5	25	0.95

1-3- Longitudinal FRP Properties:

FRP Material Properties			
Ultimate Tensile Strength ( $f_{fu}^*$ )	Modulus of Elasticity ( $E_f$ )	$C_E$	$\Psi_f$
Mpa	Mpa	-	-
3800	230000	0.95	0.85

Longitudinal FRP Properties					
FRP along 2-Dir. Face			FRP along 3-Dir. Face		
$t_f$	$n$	$W_f$	$t_f$	$n$	$W_f$
mm	-	mm	mm	-	mm
-	-	-	0.11	600	2





Company: MSD Co.

Project: Sample Project

Title: Sample Column

Section Name: RCol-Sample

**3- Acceptance Criteria Check (1)**

Load Combination Name: **Combo1**

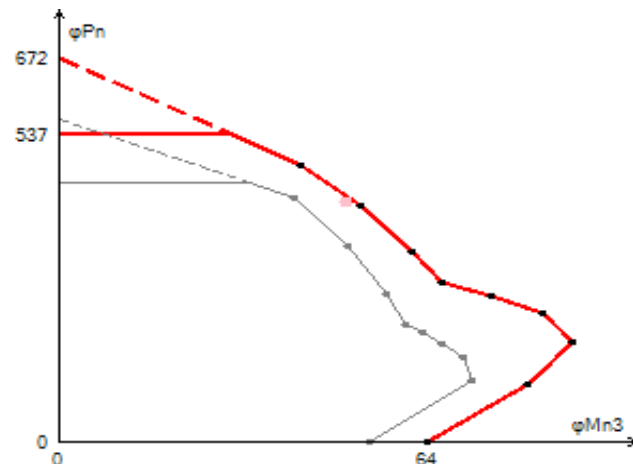
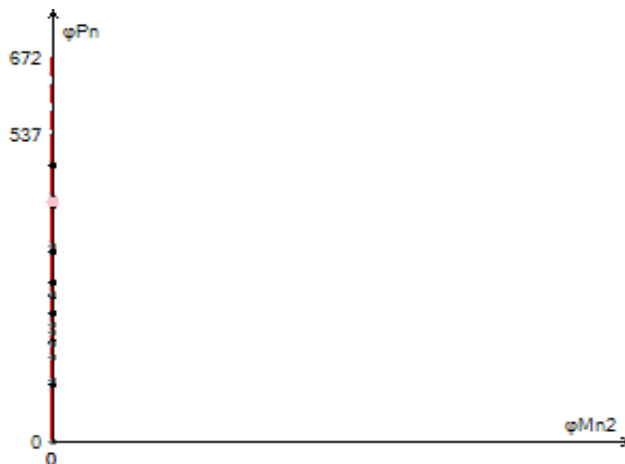
3.a- Demands:

$P_u$	$M_{u2}$	$M_{u3}$
Ton	T-m	T-m
420	0	50

3.b- P-M2-M3 Interaction Diagram:

Reinforced Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
537.4	0.0	0.0
537.4	0.0	30.3
413.2	0.0	52.5
331.2	0.0	61.5
277.5	0.0	66.6
255.0	0.0	75.1
225.3	0.0	84.3
174.1	0.0	89.4
99.5	0.0	81.7
0.0	0.0	64.1

Exsiting Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
452.0	0.0	0.0
452.0	0.0	33.2
344.0	0.0	50.4
258.6	0.0	57.0
205.1	0.0	60.2
189.8	0.0	63.3
170.1	0.0	66.8
148.4	0.0	70.4
107.3	0.0	71.9
0.0	0.0	54.1



3.c- Acceptance Ratio:

Acc	Section Condition
0.97	OK



Company: MSD Co.

Project: Sample Project

Title: Sample Column

Section Name: RCol-Sample

**3- Acceptance Criteria Check (2)**

Load Combination Name: **Combo2**

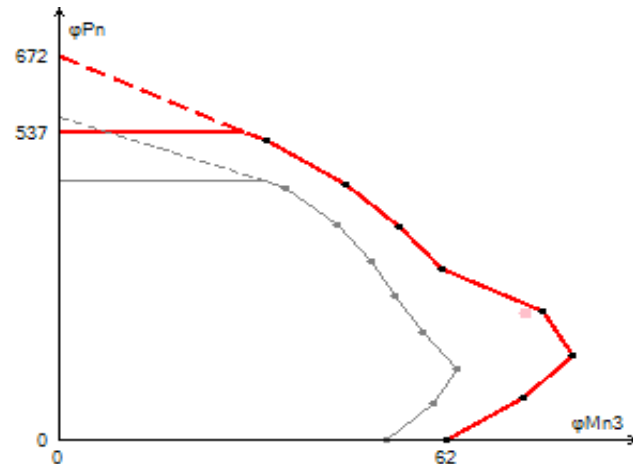
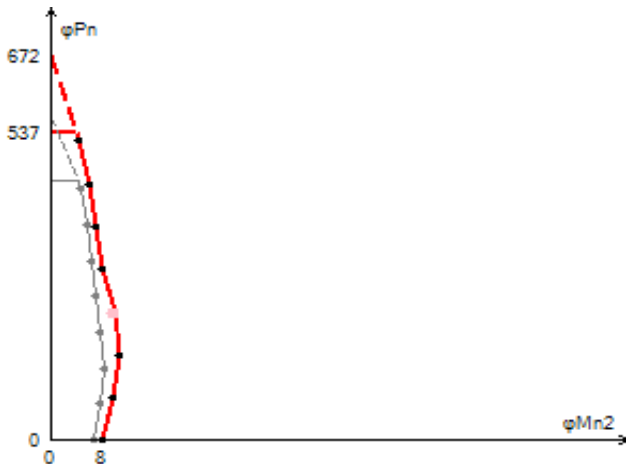
3.a- Demands:

$P_u$	$M_{u2}$	$M_{u3}$
Ton	T-m	T-m
220	10	75

3.b- P-M2-M3 Intraction Diagram:

Reinforced Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
537.4	0.0	0.0
537.4	4.0	30.0
522.5	4.4	33.3
447.8	6.1	45.9
373.2	7.3	54.5
298.6	8.2	61.5
223.9	10.4	77.7
149.3	11.0	82.4
74.6	9.9	74.5
0.0	8.3	62.1

Exsiting Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
452.0	0.0	0.0
452.0	4.4	32.8
439.4	4.8	36.3
376.6	6.0	44.8
313.9	6.7	50.0
251.1	7.2	54.0
188.3	7.8	58.3
125.5	8.5	64.0
62.8	8.0	60.1
0.0	7.0	52.6



3.c- Acceptance Ratio:

Acc	Section Condition
0.96	OK



Company: MSD Co.

Project: Sample Project

Title: Sample Column

Section Name: RCol-Sample

**3- Acceptance Criteria Check (3)**

Load Combination Name: **Combo3**

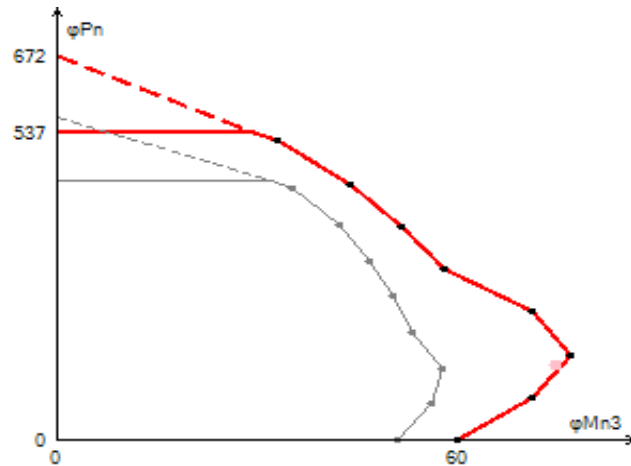
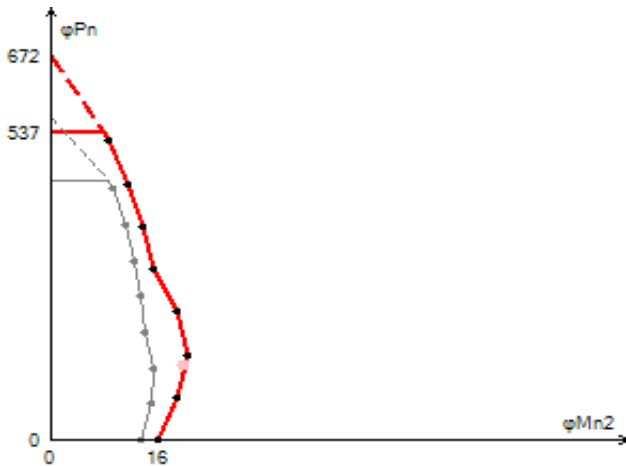
3.a- Demands:

$P_u$	$M_{u2}$	$M_{u3}$
Ton	T-m	T-m
130	20	75

3.b- P-M2-M3 Intraction Diagram:

Reinforced Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
537.4	0.0	0.0
537.4	7.9	29.7
522.5	8.8	33.0
447.8	11.7	44.0
373.2	13.9	52.0
298.6	15.5	58.1
223.9	19.0	71.4
149.3	20.6	77.2
74.6	19.1	71.6
0.0	16.0	60.2

Exsiting Section		
$\phi P_n$	$\phi M_{n2}$	$\phi M_{n3}$
Ton	T-m	T-m
452.0	0.0	0.0
452.0	8.6	32.3
439.4	9.5	35.5
376.6	11.4	42.6
313.9	12.5	47.1
251.1	13.5	50.6
188.3	14.3	53.5
125.5	15.4	57.9
62.8	15.0	56.2
0.0	13.6	51.1



3.c- Acceptance Ratio:

Acc	Section Condition
0.99	OK