

BAB V
HASIL ANALISIS

Di dalam Tugas Akhir ini penyusun akan membandingkan untuk mengontrol hasil luasan tulangan pada balok dan kolom yang didapat dari analisis struktur program SAPCON dengan hasil perencanaan dilapangan, sesuai gambar tulangan yang ada pada buku laporan Kerja Praktek penyusun, yaitu sebagai berikut :

A. Kolom

Kolom lantai 1

Hasil perencanaan dilapangan			Hasil SAPCON	
Kolom	601	(50 x 50)	0,50 x 0,50	RR - 5 - 5
Tulangan Pokok				
16 Ø 19		= 45,365 cm ²	A	= 45,365 cm ²
Tulangan Geser				
pada tumpuan	= Ø10 - 100	= 7,854 cm ²	Ag t	= 3,49 cm ²
pada lapangan	= Ø10 - 150	= 5,24 cm ²	Ag l	= 3,49 cm ²
Kolom	608	(50 x 50)	0,50 x 0,50	RR - 6 - 6
Tulangan Pokok				
20 Ø 19		= 56,71 cm ²	A	= 56,71 cm ²
Tulangan Geser				
pada tumpuan	= Ø10 - 100	= 7,854 cm ²	Ag t	= 1,49 cm ²
pada lapangan	= Ø10 - 150	= 5,24 cm ²	Ag l	= 1,49 cm ²
Kolom	617	(50 x 50)	0,50 x 0,50	RR - 4 - 4
Tulangan Pokok				
12 Ø 19		= 34,023 cm ²	A	= 34,023 cm ²
Tulangan Geser				
pada tumpuan	= Ø10 - 100	= 7,854 cm ²	Ag t	= 2,09 cm ²
pada lapangan	= Ø10 - 150	= 5,24 cm ²	Ag l	= 2,09 cm ²

Kolom lantai 2

Hasil perencanaan dilapangan	Hasil SAPCON
Kolom 637 (50 x 50) Tulangan Pokok 16 Ø 19 = 45,365 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,50 x 0,50 RR - 5 - 5 A = 45,365 cm ² Ag t = 5,03 cm ² Ag l = 5,03 cm ²
Kolom 631 (50 x 50) Tulangan Pokok 12 Ø 19 = 34,023 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,50 x 0,50 RR - 4 - 4 A = 34,023 cm ² Ag t = 6,67 cm ² Ag l = 6,67 cm ²
Kolom 600 (50 x 50) Tulangan Pokok 4 Ø 19 = 8,043 cm ² Tulangan Geser pada tumpuan = Ø 8 - 100 = 5,03 cm ² pada lapangan = Ø 8 - 150 = 3,35 cm ²	0,40 x 0,15 RR - 2 - 2 A = 8,043 cm ² Ag t = 1,42 cm ² Ag l = 1,42 cm ²

Kolom lantai 3

Hasil perencanaan dilapangan	Hasil SAPCON
Kolom 665 (40 x 40) Tulangan Pokok 16 Ø 19 = 45,365 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,40 x 0,40 RR - 5 - 5 A = 45,365 cm ² Ag t = 8,39 cm ² Ag l = 5,24 cm ²
Kolom 659 (40 x 40) Tulangan Pokok 12 Ø 19 = 34,023 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,40 x 0,40 RR - 4 - 4 A = 34,023 cm ² Ag t = 10,83 cm ² Ag l = 5,24 cm ²
Kolom 700 (15 x 40) Tulangan Pokok 4 Ø 16 = 8,043 cm ² Tulangan Geser pada tumpuan = Ø 8 - 100 = 5,03 cm ² pada lapangan = Ø 8 - 150 = 3,35 cm ²	0,40 x 0,15 RR - 2 - 2 A = 8,043 cm ² Ag t = 1,42 cm ² Ag l = 1,42 cm ²

Kolom lantai 4

Hasil perencanaan dilapangan	Hasil SAPCON
Kolom 671 (40 x 40) Tulangan Pokok 16 Ø 19 = 45,365 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,40 x 0,40 RR - 5 - 5 A = 45,365 cm ² Ag t = 1,34 cm ² Ag l = 1,34 cm ²
Kolom 680 (40 x 40) Tulangan Pokok 12 Ø 19 = 34,023 cm ² Tulangan Geser pada tumpuan = Ø10 - 100 = 7,854 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	0,40 x 0,40 RR - 4 - 4 A = 34,023 cm ² Ag t = 1,81 cm ² Ag l = 1,81 cm ²

B. Balok

1. Arah memanjang

Balok lantai 1

Hasil perencanaan dilapangan	Hasil SAPCON
Balok 1,2,3 (40 x 60) Tulangan Pokok tumpuan atas = 4 Ø 19 = 11,34 cm ² bawah = 3 Ø 19 = 8,51 cm ² lapangan atas = 6 Ø 19 = 17,01 cm ² bawah = 12 Ø 19 = 34,02 cm ² Tulangan Geser pada tumpuan = 2 Ø10 - 100 = 15,71 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	1,2,3 As ta = 24,13 cm ² As tb = 9,67 cm ² As la = 9,67 cm ² As lb = 10,03 cm ² Ag t = 12,50 cm ² Ag l = 5,24 cm ²
Balok tengah 15,16,17 (30 x 60) Tulangan Pokok tumpuan atas = 8 Ø 19 = 22,68 cm ² bawah = 3 Ø 19 = 8,51 cm ² lapangan atas = 3 Ø 19 = 8,51 cm ² bawah = 8 Ø 19 = 22,68 cm ² Tulangan Geser pada tumpuan = 2 Ø10 - 100 = 15,71 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	15,16,17 As ta = 19,42 cm ² As tb = 7,25 cm ² As la = 7,25 cm ² As lb = 8,50 cm ² Ag t = 9,57 cm ² Ag l = 5,24 cm ²
Balok tepi 4 (30 x 60) Tulangan Pokok tumpuan atas = 6 Ø 19 = 17,01 cm ² bawah = 3 Ø 19 = 8,51 cm ² lapangan atas = 3 Ø 19 = 8,51 cm ² bawah = 4 Ø 19 = 11,34 cm ² Tulangan Geser pada tumpuan = 2 Ø10 - 100 = 15,71 cm ² pada lapangan = Ø10 - 150 = 5,24 cm ²	4 As ta = 10,72 cm ² As tb = 7,25 cm ² As la = 7,25 cm ² As lb = 7,25 cm ² Ag t = 4,80 cm ² Ag l = 2,48 cm ²

Balok lantai 1

Hasil perencanaan dilapangan		Hasil SAPCON	
Balok	8,9,10 (70 x 50)	8,9,10	
Tulangan Pokok			
tumpuan atas	= 6 Ø 16 = 12,064 cm ²	As ta	= 14,28 cm ²
bawah	= 6 Ø 16 = 12,064 cm ²	As tb	= 14,28 cm ²
lapangan atas	= 10 Ø 16 = 20,11 cm ²	As la	= 14,28 cm ²
bawah	= 12 Ø 19 = 42,223 cm ²	As lb	= 14,28 cm ²
Tulangan Geser			
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t	= 3,01 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l	= 2,37 cm ²
Balok	11 (30 x 50)	11	
Tulangan Pokok			
tumpuan atas	= 6 Ø 16 = 12,064 cm ²	As ta	= 9,82 cm ²
bawah	= 3 Ø 16 = 6,032 cm ²	As tb	= 5,93 cm ²
lapangan atas	= 3 Ø 16 = 6,032 cm ²	As la	= 5,93 cm ²
bawah	= 6 Ø 16 = 12,064 cm ²	As lb	= 5,93 cm ²
Tulangan Geser			
pada tumpuan	= 2 Ø10 - 100 = 10,472 cm ²	Ag t	= 3,51 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l	= 0,00 cm ²

Balok lantai 2

Hasil perencanaan dilapangan	Hasil SAPCON
<p>Balok 42,43,44 (30 x 70)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $7 \text{ } \varnothing 19 = 19,85 \text{ cm}^2$</p> <p>bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>bawah = $7 \text{ } \varnothing 19 = 19,85 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>42,43,44</p> <p>As ta = $20,70 \text{ cm}^2$</p> <p>As tb = $8,57 \text{ cm}^2$</p> <p>As la = $8,57 \text{ cm}^2$</p> <p>As lb = $10,51 \text{ cm}^2$</p> <p>Ag t = $10,62 \text{ cm}^2$</p> <p>Ag l = $5,38 \text{ cm}^2$</p>
<p>Balok 55,56,57 (30 x 60)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $7 \text{ } \varnothing 19 = 19,85 \text{ cm}^2$</p> <p>bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>bawah = $7 \text{ } \varnothing 19 = 19,85 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>55,56,57</p> <p>As ta = $19,09 \text{ cm}^2$</p> <p>As tb = $7,25 \text{ cm}^2$</p> <p>As la = $7,25 \text{ cm}^2$</p> <p>As lb = $11,22 \text{ cm}^2$</p> <p>Ag t = $9,48 \text{ cm}^2$</p> <p>Ag l = $5,2 \text{ cm}^2$</p>
<p>Balok tepi 45 (30 x 60)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $4 \text{ } \varnothing 19 = 11,34 \text{ cm}^2$</p> <p>bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>bawah = $4 \text{ } \varnothing 19 = 11,34 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>45</p> <p>As ta = $11,13 \text{ cm}^2$</p> <p>As tb = $7,25 \text{ cm}^2$</p> <p>As la = $7,25 \text{ cm}^2$</p> <p>As lb = $7,25 \text{ cm}^2$</p> <p>Ag t = $4,68 \text{ cm}^2$</p> <p>Ag l = $2,63 \text{ cm}^2$</p>

Balok lantai 2

Hasil perencanaan dilapangan	Hasil SAPCON
Balok tepi 58 (30 x 60)	58
Tulangan Pokok	
tumpuan atas = $5 \varnothing 19 = 14,18 \text{ cm}^2$	As ta = $14,03 \text{ cm}^2$
bawah = $3 \varnothing 19 = 8,51 \text{ cm}^2$	As tb = $7,25 \text{ cm}^2$
lapangan atas = $3 \varnothing 19 = 8,51 \text{ cm}^2$	As la = $7,25 \text{ cm}^2$
bawah = $5 \varnothing 19 = 14,18 \text{ cm}^2$	As lb = $7,25 \text{ cm}^2$
Tulangan Geser	
pada tumpuan = $2 \varnothing 10 - 100 = 15,71 \text{ cm}^2$	Ag t = $4,48 \text{ cm}^2$
pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	Ag l = $2,68 \text{ cm}^2$
Balok tepi 69 (30 x 50)	69
Tulangan Pokok	
tumpuan atas = $6 \varnothing 16 = 12,074 \text{ cm}^2$	As ta = $9,53 \text{ cm}^2$
bawah = $3 \varnothing 16 = 6,032 \text{ cm}^2$	As tb = $5,93 \text{ cm}^2$
lapangan atas = $3 \varnothing 16 = 6,032 \text{ cm}^2$	As la = $5,93 \text{ cm}^2$
bawah = $6 \varnothing 16 = 12,074 \text{ cm}^2$	As lb = $5,93 \text{ cm}^2$
Tulangan Geser	
pada tumpuan = $2 \varnothing 10 - 100 = 15,71 \text{ cm}^2$	Ag t = $4,12 \text{ cm}^2$
pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	Ag l = $2,02 \text{ cm}^2$

Balok lantai 3

Hasil perencanaan dilapangan	Hasil SAPCON
Balok 97 (30 x 60) Tulangan Pokok tumpuan atas = $6 \text{ } \varnothing 19 = 17,01 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ bawah = $6 \text{ } \varnothing 19 = 17,01 \text{ cm}^2$ Tulangan Geser pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	97 As ta = $15,43 \text{ cm}^2$ As tb = $7,25 \text{ cm}^2$ As la = $7,25 \text{ cm}^2$ As lb = $7,25 \text{ cm}^2$ Ag t = $3,60 \text{ cm}^2$ Ag l = $1,54 \text{ cm}^2$
Balok 81 (30 x 60) Tulangan Pokok tumpuan atas = $6 \text{ } \varnothing 19 = 17,01 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ bawah = $5 \text{ } \varnothing 19 = 14,18 \text{ cm}^2$ Tulangan Geser pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	81 As ta = $10,35 \text{ cm}^2$ As tb = $7,25 \text{ cm}^2$ As la = $7,25 \text{ cm}^2$ As lb = $7,25 \text{ cm}^2$ Ag t = $3,60 \text{ cm}^2$ Ag l = $1,54 \text{ cm}^2$
Balok tepi 94 (30 x 50) Tulangan Pokok tumpuan atas = $6 \text{ } \varnothing 19 = 12,074 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 19 = 6,032 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 19 = 6,032 \text{ cm}^2$ bawah = $6 \text{ } \varnothing 19 = 12,074 \text{ cm}^2$ Tulangan Geser pada tumpuan = $2 \text{ } \varnothing 10 - 100 = 15,71 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	94 As ta = $9,49 \text{ cm}^2$ As tb = $5,93 \text{ cm}^2$ As la = $5,93 \text{ cm}^2$ As lb = $6,60 \text{ cm}^2$ Ag t = $4,79 \text{ cm}^2$ Ag l = $2,69 \text{ cm}^2$

Balok lantai 4 (atap)

Hasil perencanaan dilapangan		Hasil SAPCON	
Balok	131 (30 x 60)	131	
Tulangan Pokok	tumpuan atas = 3 Ø 19 = 8,51 cm ²	As ta = 7,78 cm ²	
	bawah = 3 Ø 19 = 8,51 cm ²	As tb = 7,25 cm ²	
	lapangan atas = 3 Ø 19 = 8,51 cm ²	As la = 7,25 cm ²	
	bawah = 3 Ø 19 = 8,51 cm ²	As lb = 7,25 cm ²	
Tulangan Geser	pada tumpuan = Ø 10 - 100 = 7,584 cm ²	Ag t = 3,62 cm ²	
	pada lapangan = Ø 10 - 150 = 5,24 cm ²	Ag l = 1,81 cm ²	
Balok	130 (30 x 50)	130	
Tulangan Pokok	tumpuan atas = 7 Ø 19 = 19,85 cm ²	As ta = 5,93 cm ²	
	bawah = 3 Ø 19 = 8,51 cm ²	As tb = 5,93 cm ²	
	lapangan atas = 3 Ø 19 = 8,51 cm ²	As la = 5,93 cm ²	
	bawah = 7 Ø 19 = 19,35 cm ²	As lb = 8,92 cm ²	
Tulangan Geser	pada tumpuan = 2 Ø 10 - 100 = 10,48 cm ²	Ag t = 3,26 cm ²	
	pada lapangan = Ø 10 - 150 = 5,24 cm ²	Ag l = 1,26 cm ²	
Balok tepi	135 (30 x 50)	135	
Tulangan Pokok	tumpuan atas = 3 Ø 16 = 6,032 cm ²	As ta = 5,93 cm ²	
	bawah = 3 Ø 16 = 6,032 cm ²	As tb = 5,93 cm ²	
	lapangan atas = 3 Ø 16 = 6,032 cm ²	As la = 5,93 cm ²	
	bawah = 6 Ø 16 = 12,064 cm ²	As lb = 8,65 cm ²	
Tulangan Geser	pada tumpuan = Ø 8 - 150 = 3,351 cm ²	Ag t = 3,63 cm ²	
	pada lapangan = Ø 8 - 150 = 3,351 cm ²	Ag l = 1,37 cm ²	

Balok lantai 4 (atap)

Hasil perencanaan dilapangan	Hasil SAPCON
Balok 130 / 135 (30 x 50) Tulangan Pokok tumpuan atas = $5 \text{ } \varnothing 16 = 10,053 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ bawah = $5 \text{ } \varnothing 16 = 10,053 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 200 = 3,93 \text{ cm}^2$	130 / 135 As ta = $5,93 \text{ cm}^2$ As tb = $5,93 \text{ cm}^2$ As la = $5,93 \text{ cm}^2$ As lb = $8,92 \text{ cm}^2$ Ag t = $3,63 \text{ cm}^2$ Ag l = $1,37 \text{ cm}^2$
Balok 118 (20 x 30) Tulangan Pokok tumpuan atas = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 16 = 6,032 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 8 - 150 = 3,351 \text{ cm}^2$ pada lapangan = $\varnothing 8 - 150 = 3,351 \text{ cm}^2$	118 As ta = $3,43 \text{ cm}^2$ As tb = $2,20 \text{ cm}^2$ As la = $2,20 \text{ cm}^2$ As lb = $2,20 \text{ cm}^2$ Ag t = $1,10 \text{ cm}^2$ Ag l = $1,10 \text{ cm}^2$
Balok tepi 131 (30 x 60) Tulangan Pokok tumpuan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 200 = 3,93 \text{ cm}^2$	131 As ta = $7,25 \text{ cm}^2$ As tb = $7,25 \text{ cm}^2$ As la = $7,25 \text{ cm}^2$ As lb = $7,25 \text{ cm}^2$ Ag t = $3,62 \text{ cm}^2$ Ag l = $1,81 \text{ cm}^2$

2. Arah melintang

Balok lantai 1

Hasil perencanaan dilapangan	Hasil SAPCON
<p>Balok 203 & 211 (100 x 20)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = 10 Ø 16 = 20,11 cm²</p> <p>bawah = 10 Ø 16 = 20,11 cm²</p> <p>lapangan atas = 10 Ø 16 = 20,11 cm²</p> <p>bawah = 10 Ø 16 = 20,11 cm²</p> <p>Tulangan Geser</p> <p>pada tumpuan = Ø10 - 100 = 7,854 cm²</p> <p>pada lapangan = Ø10 - 100 = 7,854 cm²</p>	<p>203 & 211</p> <p>As ta = 8,35 cm²</p> <p>As tb = 8,35 cm²</p> <p>As la = 8,35 cm²</p> <p>As lb = 8,35 cm²</p> <p>Ag t = 2,36 cm²</p> <p>Ag l = 2,36 cm²</p>
<p>Balok tengah 204 & 212 (70 x 60)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = 8 Ø 19 = 22,68 cm²</p> <p>bawah = 4 Ø 19 = 11,34 cm²</p> <p>lapangan atas = 5 Ø 19 = 14,18 cm²</p> <p>bawah = 11 Ø 19 = 31,19 cm²</p> <p>Tulangan Geser</p> <p>pada tumpuan = 2 Ø10 - 100 = 15,71 cm²</p> <p>pada lapangan = Ø10 - 150 = 5,24 cm²</p>	<p>204 & 212</p> <p>As ta = 17,14 cm²</p> <p>As tb = 17,4 cm²</p> <p>As la = 17,4 cm²</p> <p>As lb = 33,16 cm²</p> <p>Ag t = 12,57 cm²</p> <p>Ag l = 4,33 cm²</p>
<p>Balok tepi 201 & 209 (50 x 60)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = 7 Ø 19 = 19,85 cm²</p> <p>bawah = 3 Ø 19 = 8,51 cm²</p> <p>lapangan atas = 8 Ø 19 = 22,68 cm²</p> <p>bawah = 17 Ø 19 = 48,20 cm²</p> <p>Tulangan Geser</p> <p>pada tumpuan = 2 Ø10 - 100 = 15,71 cm²</p> <p>pada lapangan = Ø10 - 150 = 5,24 cm²</p>	<p>201 & 209</p> <p>As ta = 12,34 cm²</p> <p>As tb = 12,08 cm²</p> <p>As la = 12,08 cm²</p> <p>As lb = 34,89 cm²</p> <p>Ag t = 12,18 cm²</p> <p>Ag l = 5,10 cm²</p>

Balok lantai 1

Hasil perencanaan dilapangan		Hasil SAPCON	
Balok	213 & 214 (30 x 60)	213 & 214	
Tulangan Pokok			
tumpuan atas	= 8 Ø 19 = 22,682 cm ²	As ta	= 25,01 cm ²
bawah	= 4 Ø 19 = 11,341 cm ²	As tb	= 7,25 cm ²
lapangan atas	= 4 Ø 19 = 11,341 cm ²	As la	= 7,25 cm ²
bawah	= 8 Ø 19 = 22,682 cm ²	As lb	= 9,75 cm ²
Tulangan Geser			
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t	= 9,07 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l	= 5,39 cm ²
Balok	217 & 222 (30 x 60)	217 & 222	
Tulangan Pokok			
tumpuan atas	= 7 Ø 19 = 19,85 cm ²	As ta	= 19,55 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb	= 7,25 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la	= 7,25 cm ²
bawah	= 7 Ø 19 = 19,85 cm ²	As lb	= 7,25 cm ²
Tulangan Geser			
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t	= 6,87 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l	= 4,17 cm ²

Balok lantai 2

Hasil perencanaan dilapangan	Hasil SAPCON
Balok 260 & 261 (30 x 65) Tulangan Pokok tumpuan atas = $8 \varnothing 19 = 22,682 \text{ cm}^2$ bawah = $4 \varnothing 19 = 11,341 \text{ cm}^2$ lapangan atas = $4 \varnothing 19 = 11,341 \text{ cm}^2$ bawah = $8 \varnothing 19 = 22,682 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	260 & 261 As ta = $28,55 \text{ cm}^2$ As tb = $7,91 \text{ cm}^2$ As la = $7,91 \text{ cm}^2$ As lb = $11,41 \text{ cm}^2$ Ag t = $9,50 \text{ cm}^2$ Ag l = $5,18 \text{ cm}^2$
Balok 248 & 249 (30 x 65) Tulangan Pokok tumpuan atas = $6 \varnothing 19 = 17,01 \text{ cm}^2$ bawah = $3 \varnothing 19 = 8,51 \text{ cm}^2$ lapangan atas = $3 \varnothing 19 = 8,51 \text{ cm}^2$ bawah = $6 \varnothing 19 = 17,01 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	248 & 249 As ta = $7,91 \text{ cm}^2$ As tb = $7,91 \text{ cm}^2$ As la = $7,91 \text{ cm}^2$ As lb = $7,91 \text{ cm}^2$ Ag t = $1,98 \text{ cm}^2$ Ag l = $1,05 \text{ cm}^2$
Balok tepi 269 (30 x 60) Tulangan Pokok tumpuan atas = $8 \varnothing 19 = 22,68 \text{ cm}^2$ bawah = $4 \varnothing 19 = 11,34 \text{ cm}^2$ lapangan atas = $4 \varnothing 19 = 11,34 \text{ cm}^2$ bawah = $8 \varnothing 19 = 22,68 \text{ cm}^2$ Tulangan Geser pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$ pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$	269 As ta = $19,27 \text{ cm}^2$ As tb = $7,25 \text{ cm}^2$ As la = $7,25 \text{ cm}^2$ As lb = $7,25 \text{ cm}^2$ Ag t = $7,76 \text{ cm}^2$ Ag l = $5,10 \text{ cm}^2$

Balok lantai 2

Hasil perencanaan dilapangan		Hasil SAPCON	
Balok tepi	246 (30 x 60)	246	
Tulangan Pokok			
tumpuan atas	= 6 Ø 19 = 17,02 cm ²	As ta	= 15,57 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb	= 7,25 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la	= 7,25 cm ²
bawah	= 6 Ø 19 = 17,02 cm ²	As lb	= 8,04 cm ²
Tulangan Geser			
pada tumpuan	= Ø 10 - 100 = 7,854 cm ²	Ag t	= 6,51 cm ²
pada lapangan	= Ø 10 - 150 = 5,24 cm ²	Ag l	= 3,85 cm ²
Balok tepi	253 (30 x 50)	253	
Tulangan Pokok			
tumpuan atas	= 6 Ø 16 = 12,074 cm ²	As ta	= 5,93 cm ²
bawah	= 3 Ø 16 = 6,032 cm ²	As tb	= 5,93 cm ²
lapangan atas	= 3 Ø 16 = 6,032 cm ²	As la	= 5,93 cm ²
bawah	= 6 Ø 16 = 12,074 cm ²	As lb	= 5,93 cm ²
Tulangan Geser			
pada tumpuan	= Ø 8 - 100 = 5,03 cm ²	Ag t	= 0,93 cm ²
pada lapangan	= Ø 8 - 150 = 3,351 cm ²	Ag l	= 0,93 cm ²
Balok tepi	266 (20 x 50)	266	
Tulangan Pokok			
tumpuan atas	= 5 Ø 16 = 10,053 cm ²	As ta	= 8,58 cm ²
bawah	= 3 Ø 16 = 6,032 cm ²	As tb	= 3,95 cm ²
lapangan atas	= 3 Ø 16 = 6,032 cm ²	As la	= 3,95 cm ²
bawah	= 5 Ø 16 = 10,053 cm ²	As lb	= 6,93 cm ²
Tulangan Geser			
pada tumpuan	= Ø 8 - 100 = 5,03 cm ²	Ag t	= 2,52 cm ²
pada lapangan	= Ø 8 - 150 = 3,351 cm ²	Ag l	= 1,60 cm ²

Balok lantai 3

Hasil perencanaan dilapangan		Hasil SAPCON
Balok	279 (30 x 60)	279
Tulangan Pokok		
tumpuan atas	= 6 Ø 19 = 17,01 cm ²	As ta = 19,07 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb = 7,25 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la = 7,25 cm ²
bawah	= 6 Ø 19 = 17,01 cm ²	As lb = 7,25 cm ²
Tulangan Geser		
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t = 6,99 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l = 4,94 cm ²
Balok	285 (30 x 60)	285
Tulangan Pokok		
tumpuan atas	= 5 Ø 19 = 14,18 cm ²	As ta = 13,01 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb = 7,25 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la = 7,25 cm ²
bawah	= 5 Ø 19 = 14,18 cm ²	As lb = 7,96 cm ²
Tulangan Geser		
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t = 5,39 cm ²
pada lapangan	= Ø10 - 150 = 5,24 cm ²	Ag l = 2,86 cm ²
Balok tepi	303 (30 x 50)	303
Tulangan Pokok		
tumpuan atas	= 4 Ø 16 = 8,042 cm ²	As ta = 5,93 cm ²
bawah	= 3 Ø 16 = 6,032 cm ²	As tb = 5,93 cm ²
lapangan atas	= 3 Ø 16 = 6,032 cm ²	As la = 5,93 cm ²
bawah	= 4 Ø 16 = 8,042 cm ²	As lb = 5,93 cm ²
Tulangan Geser		
pada tumpuan	= Ø 8 - 100 = 5,03 cm ²	Ag t = 0,07 cm ²
pada lapangan	= Ø 8 - 150 = 3,351 cm ²	Ag l = 0,07 cm ²

Balok lantai 4 (atap)

Hasil perencanaan dilapangan		Hasil SAPCON
Balok	337 (30 x 60)	337
Tulangan Pokok		
tumpuan atas	= 4 Ø 19 = 11,341 cm ²	As ta = 7,25 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb = 7,25 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la = 7,25 cm ²
bawah	= 4 Ø 19 = 11,341 cm ²	As lb = 7,25 cm ²
Tulangan Geser		
pada tumpuan	= Ø 10 - 100 = 7,854 cm ²	Ag t = 4,01 cm ²
pada lapangan	= Ø 10 - 150 = 5,24 cm ²	Ag l = 3,12 cm ²
Balok	306 (20 x 50)	306
Tulangan Pokok		
tumpuan atas	= 2 Ø 16 = 4,02 cm ²	As ta = 3,95 cm ²
bawah	= 2 Ø 16 = 4,02 cm ²	As tb = 3,95 cm ²
lapangan atas	= 2 Ø 16 = 4,02 cm ²	As la = 3,95 cm ²
bawah	= 2 Ø 16 = 4,02 cm ²	As lb = 3,95 cm ²
Tulangan Geser		
pada tumpuan	= Ø 8 - 150 = 3,351 cm ²	Ag t = 0,08 cm ²
pada lapangan	= Ø 8 - 150 = 3,351 cm ²	Ag l = 0,08 cm ²
Balok tepi	308 (20 x 30)	308
Tulangan Pokok		
tumpuan atas	= 4 Ø 16 = 8,042 cm ²	As ta = 2,20 cm ²
bawah	= 3 Ø 16 = 6,032 cm ²	As tb = 2,20 cm ²
lapangan atas	= 3 Ø 16 = 6,032 cm ²	As la = 2,20 cm ²
bawah	= 4 Ø 16 = 8,042 cm ²	As lb = 2,20 cm ²
Tulangan Geser		
pada tumpuan	= Ø 10 - 150 = 5,24 cm ²	Ag t = 0,39 cm ²
pada lapangan	= Ø 10 - 150 = 5,24 cm ²	Ag l = 0,39 cm ²

Balok lantai 4 (atap)

Hasil perencanaan dilapangan		Hasil SAPCON	
Balok	311 (25 x 40)	311	
Tulangan Pokok			
tumpuan atas	= 3 Ø 19 = 8,51 cm ²	As ta	= 9,85 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As tb	= 3,85 cm ²
lapangan atas	= 3 Ø 19 = 8,51 cm ²	As la	= 3,85 cm ²
bawah	= 3 Ø 19 = 8,51 cm ²	As lb	= 3,85 cm ²
Tulangan Geser			
pada tumpuan	= Ø10 - 100 = 7,854 cm ²	Ag t	= 1,67 cm ²
pada lapangan	= Ø10 - 100 = 7,854 cm ²	Ag l	= 1,67 cm ²

Balok lantai 2

Hasil perencanaan dilapangan	Hasil SAPCON
<p>Balok 260 & 261 (30 x 65)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $8 \text{ } \varnothing 19 = 22,682 \text{ cm}^2$</p> <p>bawah = $4 \text{ } \varnothing 19 = 11,341 \text{ cm}^2$</p> <p>lapangan atas = $4 \text{ } \varnothing 19 = 11,341 \text{ cm}^2$</p> <p>bawah = $8 \text{ } \varnothing 19 = 22,682 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>260 & 261</p> <p>As ta = $28,55 \text{ cm}^2$</p> <p>As tb = $7,91 \text{ cm}^2$</p> <p>As la = $7,91 \text{ cm}^2$</p> <p>As lb = $11,41 \text{ cm}^2$</p> <p>Ag t = $9,50 \text{ cm}^2$</p> <p>Ag l = $5,18 \text{ cm}^2$</p>
<p>Balok tengah 248 & 249 (30 x 65)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $6 \text{ } \varnothing 19 = 17,01 \text{ cm}^2$</p> <p>bawah = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>lapangan atas = $3 \text{ } \varnothing 19 = 8,51 \text{ cm}^2$</p> <p>bawah = $3 \text{ } \varnothing 16 = 17,01 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>248 & 249</p> <p>As ta = $7,91 \text{ cm}^2$</p> <p>As tb = $7,91 \text{ cm}^2$</p> <p>As la = $7,91 \text{ cm}^2$</p> <p>As lb = $7,91 \text{ cm}^2$</p> <p>Ag t = $1,98 \text{ cm}^2$</p> <p>Ag l = $1,05 \text{ cm}^2$</p>
<p>Balok tepi 269 (30 x 60)</p> <p>Tulangan Pokok</p> <p>tumpuan atas = $8 \text{ } \varnothing 19 = 22,68 \text{ cm}^2$</p> <p>bawah = $4 \text{ } \varnothing 19 = 11,34 \text{ cm}^2$</p> <p>lapangan atas = $4 \text{ } \varnothing 19 = 11,34 \text{ cm}^2$</p> <p>bawah = $8 \text{ } \varnothing 19 = 22,68 \text{ cm}^2$</p> <p>Tulangan Geser</p> <p>pada tumpuan = $\varnothing 10 - 100 = 7,854 \text{ cm}^2$</p> <p>pada lapangan = $\varnothing 10 - 150 = 5,24 \text{ cm}^2$</p>	<p>269</p> <p>As ta = $19,27 \text{ cm}^2$</p> <p>As tb = $7,25 \text{ cm}^2$</p> <p>As la = $7,25 \text{ cm}^2$</p> <p>As lb = $7,25 \text{ cm}^2$</p> <p>Ag t = $7,76 \text{ cm}^2$</p> <p>Ag l = $5,10 \text{ cm}^2$</p>