Lampiran 9 Perhitungan Analisis Horizontal Tikungan 2 (Spiral-Spiral)

ALINYEMEN HORISONTAL			
Vr		km/jam	50,00000
e normal		x100 persen	2,00000
e maks		x100 persen	10,00000
β1		derajat	200,49819
β2		derajat	193,46146
ΔB		derajat	26,00000
A-B		m	19,55642
B-B'		m	140,46915
Rmin		m	80,00000
TRIAL & EROR			
Kaki Terpendek		m	19,55642
Rc		m	84,00000
e		x100 persen	0,09900
Ls	(θs*PI()*Rc)/90	m	60,00000
θs	0,5*Δ	derajat	13,00000
[redacted]			
Ltotal	Lc + 2*Ls	m	120,00000
1/2.Ltotal		m	60,00000	TIDAK OK
TITIK-TITIK POKOK			
Xc	Ls-(Ls^3/40Rc^2)	meter	59,23469
Yc	Ls^2/(6*Rc)		7,14286
P	Yc-Rc*(1-cos θs)		4,98994
k	Xc-Rc*(sin θs)		40,33881
TS	(Rc+P)*tan(Δ/2)+k		60,88375	TIDAK OK
Es	((Rc+P)/(cos(Δ/2)))-Rc		7,33074
STASIUN TITIK POKOK			
A	Awal	meter	153,88282
TS	A + (AB-TS)		112,55548
SC	TS + Ls		
CS	SC + Lc		
ST	CS + Ls		172,55548
B'	ST + (BB'-TS)		252,14088

KOORDINAT TITIK POKOK		
A	X	Y
	Koordinat Titik A	Koordinat Titik B
	1676,01890	1680,73280
B	X	Y
	XA + AB*sin β1	YA + AB*cos β1
	1669,17068	1662,41463
B'	X	Y
	XB + BC*sin β2	YB + BC*cos β2
	1636,47068	1525,80463
TS	X	Y
	XA + (AB-TS)*sin β1	YA + (AB-TS)*cos β1
	1690,49081	1719,44342
ST	X	Y
	XB + TS*sin β2	YB + TS*cos β2
	1654,99747	1603,20356
0	β BO = β2 - (180-(β2-β1))/2	286,97983
	X	Y
	XB + (Es+Rc)*sin β B0	YB + (Es+Rc)*cos β B0
	1581,82126	1689,08640
CS	ΔSC = (Δc/2) + (180-β B0)	106,97983
	X	Y
	X0 - Rc*sin ΔSC	Y0 + Rc*cos ΔSC
	1662,15950	1664,55547
11	ΔCS = (Δc/2) - (180-β B0)	-106,97983
	X	Y
	X0 + Rc*sin ΔCS	Y0 + Rc*cos ΔCS
	1662,15950	1664,55547

TITIK SPIRAL			KOORDINAT TITIK SPIRAL	
L	X	Y	XTS	YTS
			1690,49081	1719,44342
			X'	Y'
	L-(L/(40*Rc^2*Ls^2))	L^3/(6*Rc*Ls)	XTS + X1*sin β1 + Y1*cos β1	XTS + X1*cos β1 + Y1*sin β1
meter	meter	meter	meter	meter
20,00000	20,00000	0,26455	1683,23946	1700,61712
40,00000	40,00000	2,11640	1674,50131	1681,23498
60,00000	60,00000	7,14286	1662,78955	1660,74116