

Lampiran 16 Perhitungan Analisis Horizontal Trase Baru

ALINYEMEN HORIZONTAL			
Vr	km/jam	80,00000	
e normal	x100 persen	2,00000	
e maks	x100 persen	10,00000	
β_1	derajat	25,55026	
β_2	derajat	13,54454	
ΔB	derajat	12,00571	
A-B	m	144,66409	
B-B'	m	92,32227	
Rmin	m	76,00000	
TRIAL & EROR			
Kaki Terpendek	m	92,32227	
Rc	m	406,00000	
e	x100 persen	0,07600	
Ls	m	70,00000	
0_s	$28,648 * (Ls/Rc)$	4,93931	
Δc	$\Delta - 2^*0_s$	2,12709	
Lc	$\Delta c + 2^*pi(Rc)/360$	15,07266	
Ltotal	$Lc + 2^*Ls$	155,07266	
1/2 Ltotal	m	77,53633	OK
TITIK-TITIK POKOK			
Xc	$Ls - (Ls^3/40Rc^2)$	69,94798	
Yc	$Ls^2/(6^*Rc)$	2,01149	
P	$Yc - Rc^*(1 - \cos 0_s)$	0,50380	
k	$Xc - Rc^*(\sin 0_s)$	34,99118	
TS	$(Rc + P) * \tan(\Delta/2) + k$	77,73695	OK
Es	$((Rc + P) / (\cos(\Delta/2))) - Rc$	2,74508	
STASIUN TITIK POKOK			
A	Awal		0,00000
TS	A + (AB-TS)		66,92714
SC	TS + Ls		136,92714
CS	SC + Lc		151,99981
ST	CS + Ls		221,99981
B'	ST + (BB'-TS)		236,58513
KOORDINAT TITIK POKOK			
A	X	Y	
	Koordinat Titik A	Koordinat Titik B	
	441851,96900	9146920,28900	
B	X	Y	
	$XA + AB^*\sin \beta_1$	$YA + AB^*\cos \beta_1$	
	441914,36300	9147050,80600	
B'	X	Y	
	$XB + BC^*\sin \beta_2$	$YB + BC^*\cos \beta_2$	
	441935,98499	9147140,56062	
TS	X	Y	
	$XA + (AB-TS)^*\sin \beta_1$	$YA + (AB-TS)^*\cos \beta_1$	
	441880,83485	9146980,67116	
ST	X	Y	
	$XB + TS^*\sin \beta_2$	$YB + TS^*\cos \beta_2$	
	441932,56909	9147126,38094	
0	$\beta BO = \beta_2 - (180 - (\beta_2 - \beta_1)) / 2$	109,54740	
	X	Y	
	$XB + (Es + Rc)^*\sin \beta BO$	$YB + (Es + Rc)^*\cos \beta BO$	
	442299,55006	9146914,04539	
CS	X	Y	
	$\Delta SC = (\Delta c / 2) + (180 - \beta BO)$	-69,38905	
	$X_0 - Rc^*\sin \Delta SC$	$Y_0 + Rc^*\cos \Delta SC$	
	441919,53719	9147056,96570	
11	X	Y	
	$\Delta CS = (\Delta c / 2) - (180 - \beta BO)$	71,51615	
	$X_0 + Rc^*\sin \Delta CS$	$Y_0 + Rc^*\cos \Delta CS$	
	441914,49437	9147042,76256	
TITIK SPIRAL		KOORDINAT TITIK SPIRAL	
L	X	Y	XTS
	5,00000	0,00073	441880,83485
meter	$L - (L / (40^*Rc^2 * Ls^2))$	$L^3 / (6^*Rc^2 * Ls)$	YTS
	10,00000	0,00586	9146980,67116
15,00000	15,00000	0,01979	X'
	20,00000	0,04692	Y
25,00000	25,00000	0,09163	XTS + X1^*sin β_1 + Y1^*cos β_1
	30,00000	0,15834	XTS + X1^*cos β_1 + Y1^*sin β_1
35,00000	35,00000	0,25144	meter
	40,00000	0,37532	441898,42558
			9146985,18251
			9146989,69576
			9146994,21281
			9146998,73554
			9147003,26586
			9147007,80567
			9147012,35686
			9147016,92133