# Lampiran 8 Perhitungan Analisis Horizontal Tikungan 1 (Spiral-Circle-Spiral)

| ALINYEMEN HORISONTAL | | | |
|---|---|---|---|
| Vr | | km/jam | 50,00000 |
| e normal | | x100 persen | 0,02000 |
| e maks | | x100 persen | 0,10000 |
| β1 | | derajat | 159,29794 |
| β2 | | derajat | 200,49819 |
| ΔB | | derajat | 54,00000 |
| A-B | | m | 142,37283 |
| B-B' | | m | 19,55642 |
| Rmin | | m | 80,00000 |

| TRIAL & ERROR | | | | |
|---|---|---|---|---|
| Kaki Terpendek | | m | 19,55642 | |
| Rc | | m | 84,00000 | |
| e | | x100 persen | 0,09900 | |
| Ls | | m | 60,00000 | |
| θs | 28.648 * (Ls/Rc) | derajat | 20,46286 | |
| Δc | Δ - 2*θs | derajat | 13,07429 | |
| Lc | Δc*2*pi()*Rc)/360 | m | 19,16790 | |
| Ltotal | Lc + 2*Ls | m | 139,16790 | |
| 1/2.Ltotal | | m | 69,58395 | 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) | | 1,84237 | |
| k | Xc-Rc*(sin θs) | | 29,86829 | |
| TS | (Rc+P)*tan(Δ/2)+k | | 73,60716 | TIDAK OK |
| Es | ((Rc+P)/(cos(Δ/2)))-Rc | | 12,34315 | |

| STASIUN TITIK POKOK | | | |
|---|---|---|---|
| A | Awal | meter | 0,00000 |
| TS | A + (AB-TS) | | 68,76566 |
| SC | TS + Ls | | 128,76566 |
| CS | SC + Lc | | 147,93357 |
| ST | CS + Ls | | 207,93357 |
| B' | ST + (BB'-TS) | | 153,88282 |

| 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 |
| | 1726,34890 | 1547,55280 |
| B' | X | Y |
| | XB + BC*sin β2 | YB + BC*cos β2 |
| | 1719,50068 | 1529,23463 |
| TS | X | Y |
| | XA + (AB-TS)*sin β1 | YA + (AB-TS)*cos β1 |
| | 1700,32815 | 1616,40724 |
| ST | X | Y |
| | XB + TS*sin β2 | YB + TS*cos β2 |
| | 1700,57331 | 1478,60621 |
| 0 | β BO = β2 - (180-(β2-β1))/2 | 269,89806 |
| | X | Y |
| | XB + (Es+Rc)*sin β B0 | YB + (Es+Rc)*cos β B0 |
| | 1630,00590 | 1547,38140 |
| CS | ΔSC = (Δc/2) + (180-β B0) | 96,43521 |
| | X | Y |
| | X0 - Rc*sin ΔSC | Y0 + Rc*cos ΔSC |
| | 1713,47664 | 1537,96671 |
| 11 | ΔCS = (Δc/2) - (180-β B0) | -83,36092 |
| | X | Y |
| | X0 + Rc*sin ΔCS | Y0 + Rc*cos ΔCS |
| | 1713,44261 | 1557,09303 |

| TITIK SPIRAL | | | KOORDINAT TITIK SPIRAL | |
|---|---|---|---|---|
| L | X | Y | XTS | YTS |
| | | | 1700,32815 | 1616,40724 |
| | | | 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 |
| 5,00000 | 5,00000 | 0,00413 | 1702,09182 | 1611,73155 |
| 10,00000 | 10,00000 | 0,03307 | 1703,83230 | 1607,06462 |
| 15,00000 | 15,00000 | 0,11161 | 1705,52637 | 1602,41523 |
| 20,00000 | 20,00000 | 0,26455 | 1707,15085 | 1597,79214 |
| 25,00000 | 25,00000 | 0,51670 | 1708,68252 | 1593,20412 |
| 30,00000 | 30,00000 | 0,89286 | 1710,09819 | 1588,65994 |
| 35,00000 | 35,00000 | 1,41782 | 1711,37466 | 1584,16836 |
| 40,00000 | 40,00000 | 2,11640 | 1712,48874 | 1579,73816 |