4 Way Track crossing scenario

 **I have ignored the track going LEFT on P1 as no polarity switch**

 **Not sure Polarity but say Polarity + is High and Polarity – is Low.**

**1/ If Track 1 (P1) is Live going RIGHT**

 **Then Tracks 3 (P2), 5 (P3), 7 (P4), 9 (P5) can be available going RIGHT**

 **But no Tracks to LEFT side are available**

**2/ If Track 2 (P2) is Live going LEFT**

**Then Tracks (3 error) 5 (P3), 7 (P4), 9 (P5) are available going RIGHT or Tracks 4 (P3), 6 (P4), 8 (P5), available LEFT**

**3/ If Track 3 (P2) is Live going RIGHT**

**Then Tracks P1 LEFT no polarity switch, or ( (2 error) and 5 (P3), 7 (P4), 9 (P5) available going RIGHT no other LEFT**

**4/ If Track 4 (P3) is Live going LEFT**

**Then Tracks 2 (P2), 6 (P4), 8 (P5) available LEFT and (5 error), 7 (P4), 9 (P5) available RIGHT**

**5/ If Track 5 (P3) is live going RIGHT**

**Then Tracks 1 (P1), 3 (P2), 7 (P4), 9 (P5) available RIGHT or 2 (P2) available LEFT and *7 (P4), 9 (P5) available going RIGHT***

**6/ If Track 6 (P4) is Live going LEFT**

**Then Tracks 2 (P2), 4 (P3), 8 (P5), available LEFT and *( 7 error ) 9 error (P5), available RIGHT***

**7/ If Track 7 (P4) is Live going RIGHT**

**Then 1 (P1), 3 (P2), 5 (P3), 9 (P5), are available RIGHT or Tracks 2 (P2), 4 (P3), *( 6 error (P4)) available LEFT***

**8/ If Track 8 (P5) is Live going LEFT**

**Then Tracks 2 (P2), 4 (P3), 6 (P4), is only available going LEFT**

Track Polarity that is switched

1. **Track 1 (P1) Right**
2. **Polarity + at top .. 1A 1B 1C 1D… HIGH**
3. **Then Tracks as follows :=**
4. **Track 3(P2) Right**
5. **Polarity + at Top … 2A 2B 2C… HIGH**
6. **Track 5 (P3) Right**
7. **Polarity + at Top … 3A 3B… HIGH**
8. **Track 7 (P4) Right**
9. **Polarity + at Top … 4A HIGH**
10. **Track 9 (P5)**
11. **Polarity is not required**
12. **Track 2 (P2) Left**
13. **Polarity – at Top … 1A LOW (conflict with 1A above)**
14. **Track Polarity if selected with (P3 P4 or P5) Right**
15. **Polarity + at Top HIGH**
16. **Track 5 (P3) … 3A 3B**
17. **Track 7 (P4) … 4A**
18. **Track 9 (P5) polarity not required**
19. **Track Polarity if selected with (P3 P4 or P5) Left**
20. **Polarity – at top LOW**
21. **Track 4 (P3) … 2A 1B**
22. **Track 6 (P4) … 3A 2B 1C (Conflict with 3A above)**
23. **Track 8 (P5) … 4A 3B 2C 1D (Conflict with 2B above)**
24. **Track 3 (P2) Right**
25. **Polarity + at top … 2A 2B 2C HIGH**
26. **Track polarity if selected with (P3 P4 or P5) Right**
27. **Polarity + at Top HIGH**
28. **Track 5 (P3) … 3A 3B**
29. **Track 7 (P4) … 4A**
30. **Track 9 (P5) polarity not required**
31. **Track 4 (P3) Left**
32. **Polarity – at top … 2A 1B LOW**
33. **Track polarity if selected with (P2 P4 or P5 ) Left**
34. **Polarity - at top LOW**
35. **Track 2 (P2) … 1A**
36. **Track 6 (P4) … 3A 2B 1C**
37. **Track 8 (P5) … 4A 3B 2C 1D**
38. **IF**
39. **Track polarity if selected with (P4 P5) Right**
40. **Polarity + at top HIGH**
41. **Track 7 (P4) …4A (Conflict with above)**
42. **Track 9 (P5) polarity not required**
43. **Track 5 (P3) Right**
44. **Polarity + at Top … 3A 3B**
45. **Track polarity if selected with ( P1 P2 P4 or P5) Right**
46. **Polarity + at top**
47. **Track 1 (P1) … 1A 1B 1C 1D**
48. **Track 3 (P2) … 2A 2B 2C**
49. **Track 7 (P4) … 4A**
50. **Track 9 polarity not required**
51. **IF**
52. **Track polarity if selected (P2 ) Left**
53. **Track - at Top**
54. **Track 2 (P2) … 1A ( conflict with Track 1 (P1)**
55. **Track polarity if selected with (7 (P4) 9 (P5))**
56. **Polarity + at top**
57. **Track 7 (P4) … 4A**
58. **Track 9 (P5) polarity not required (Think already done above)**
59. **Track 6 (P4) Left**
60. **Polarity – at Top … 3A 2B 1C**
61. **Track polarity if selected with (P2 P3 P5) Left**
62. **Polarity – at Top**
63. **Track 2 (P2) … 1A**
64. **Track 4 (P3) … 2A 1B**
65. **Track 8 (P5) … 4A 3B 2C 1D**
66. **Track 7 and 9 not available**
67. **Track 7 (P4) Right**
68. **Polarity + at Top … 4A**
69. **Track polarity if selected with (P1 P2 P3 P5) Right**
70. **Track + at Top**
71. **Track 2 (P2) … 1A 1B 1C 1D**
72. **Track 3 (P2) … 2A 2B 2C**
73. **Track 5 (P3) … 3A 3B**
74. **Track 9 (P5) polarity not required**
75. **IF**
76. **Track polarity if selected with (P2 P3) Left**
77. **Polarity – at Top**
78. **Track 2 (P2) … 1A (conflict with above)**
79. **Track 4 (P3) … 2A 1B (conflict with above)**
80. **Track 8 (P5) Left**
81. **Polarity – at Top … 4A 3B 2C 1D**
82. **Track polarity if selected with (P2 P3 P4) Left**
83. **Polarity – at Top**
84. **Track 2 (P2) … 1A**
85. **Track 4 (P3) … 2A 1B**
86. **Track 6 (P4) … 3A 2B 1C**

**The main problem is when you look through this polarity switching scenario is if points are selected in a certain manner if a point that will cause a conflict with polarity cannot be selected…**

**I’ve not gone through all Point (P) settings but there looks to be a number of conflicts depending on which point is selected to a particular direction so it could be a nightmare or your sketch finds the conflicts and selects the correct method I will see..**