**MANGANORE - FERRUM**

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| Preferred Route Alignment (48.89 km) | | |
| * Starting point of the activity   (Manganore Substation) | 23° 6' 10.24" E | 28° 7' 49.83" S |
| * Additional point of the activity | 23° 3' 45.109" E | 27° 55' 9.102" S |
| * Ferrum Substation | 23° 3' 24.95" E | 27° 43' 52.41" S |

Preferred Route One Alignment - 250m coordinates (48.89 km)

|  |  |  |
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| **ID** | **X** | **Y** |
| 1 | 23° 6' 4.74" E | 28° 7' 37.93" S |
| 2 | 23° 6' 0.62" E | 28° 7' 30.68" S |
| 3 | 23° 5' 56.50" E | 28° 7' 23.43" S |
| 4 | 23° 5' 52.38" E | 28° 7' 16.18" S |
| 5 | 23° 5' 48.26" E | 28° 7' 8.92" S |
| 6 | 23° 5' 44.14" E | 28° 7' 1.67" S |
| 7 | 23° 5' 40.89" E | 28° 6' 54.16" S |
| 8 | 23° 5' 39.38" E | 28° 6' 46.15" S |
| 9 | 23° 5' 37.86" E | 28° 6' 38.14" S |
| 10 | 23° 5' 36.35" E | 28° 6' 30.13" S |
| 11 | 23° 5' 34.83" E | 28° 6' 22.12" S |
| 12 | 23° 5' 33.31" E | 28° 6' 14.11" S |
| 13 | 23° 5' 31.80" E | 28° 6' 6.11" S |
| 14 | 23° 5' 30.28" E | 28° 5' 58.10" S |
| 15 | 23° 5' 28.76" E | 28° 5' 50.09" S |
| 16 | 23° 5' 27.25" E | 28° 5' 42.08" S |
| 17 | 23° 5' 25.73" E | 28° 5' 34.07" S |
| 18 | 23° 5' 24.22" E | 28° 5' 26.06" S |
| 19 | 23° 5' 22.70" E | 28° 5' 18.05" S |
| 20 | 23° 5' 21.18" E | 28° 5' 10.04" S |
| 21 | 23° 5' 19.67" E | 28° 5' 2.03" S |
| 22 | 23° 5' 18.15" E | 28° 4' 54.02" S |
| 23 | 23° 5' 16.64" E | 28° 4' 46.01" S |
| 24 | 23° 5' 15.12" E | 28° 4' 38.00" S |
| 25 | 23° 5' 13.61" E | 28° 4' 30.00" S |
| 26 | 23° 5' 12.09" E | 28° 4' 21.99" S |
| 27 | 23° 5' 10.58" E | 28° 4' 13.98" S |
| 28 | 23° 5' 9.06" E | 28° 4' 5.97" S |
| 29 | 23° 5' 7.55" E | 28° 3' 57.96" S |
| 30 | 23° 5' 6.03" E | 28° 3' 49.95" S |
| 31 | 23° 5' 4.52" E | 28° 3' 41.94" S |
| 32 | 23° 5' 3.00" E | 28° 3' 33.93" S |
| 33 | 23° 5' 1.49" E | 28° 3' 25.92" S |
| 34 | 23° 4' 59.97" E | 28° 3' 17.91" S |
| 35 | 23° 4' 58.46" E | 28° 3' 9.90" S |
| 36 | 23° 4' 56.94" E | 28° 3' 1.89" S |
| 37 | 23° 4' 55.43" E | 28° 2' 53.88" S |
| 38 | 23° 4' 53.91" E | 28° 2' 45.87" S |
| 39 | 23° 4' 52.40" E | 28° 2' 37.87" S |
| 40 | 23° 4' 50.88" E | 28° 2' 29.86" S |
| 41 | 23° 4' 49.37" E | 28° 2' 21.85" S |
| 42 | 23° 4' 47.85" E | 28° 2' 13.84" S |
| 43 | 23° 4' 46.34" E | 28° 2' 5.83" S |
| 44 | 23° 4' 44.82" E | 28° 1' 57.82" S |
| 45 | 23° 4' 43.31" E | 28° 1' 49.81" S |
| 46 | 23° 4' 41.80" E | 28° 1' 41.80" S |
| 47 | 23° 4' 40.51" E | 28° 1' 33.76" S |
| 48 | 23° 4' 39.38" E | 28° 1' 25.70" S |
| 49 | 23° 4' 38.24" E | 28° 1' 17.64" S |
| 50 | 23° 4' 37.11" E | 28° 1' 9.58" S |
| 51 | 23° 4' 35.98" E | 28° 1' 1.53" S |
| 52 | 23° 4' 34.85" E | 28° 0' 53.47" S |
| 53 | 23° 4' 33.71" E | 28° 0' 45.41" S |
| 54 | 23° 4' 32.58" E | 28° 0' 37.35" S |
| 55 | 23° 4' 31.45" E | 28° 0' 29.29" S |
| 56 | 23° 4' 30.32" E | 28° 0' 21.23" S |
| 57 | 23° 4' 29.18" E | 28° 0' 13.17" S |
| 58 | 23° 4' 28.05" E | 28° 0' 5.11" S |
| 59 | 23° 4' 26.92" E | 27° 59' 57.06" S |
| 60 | 23° 4' 25.79" E | 27° 59' 49.00" S |
| 61 | 23° 4' 24.65" E | 27° 59' 40.94" S |
| 62 | 23° 4' 23.52" E | 27° 59' 32.88" S |
| 63 | 23° 4' 22.39" E | 27° 59' 24.82" S |
| 64 | 23° 4' 21.26" E | 27° 59' 16.76" S |
| 65 | 23° 4' 20.12" E | 27° 59' 8.70" S |
| 66 | 23° 4' 18.99" E | 27° 59' 0.64" S |
| 67 | 23° 4' 17.86" E | 27° 58' 52.58" S |
| 68 | 23° 4' 16.73" E | 27° 58' 44.52" S |
| 69 | 23° 4' 15.60" E | 27° 58' 36.47" S |
| 70 | 23° 4' 14.47" E | 27° 58' 28.41" S |
| 71 | 23° 4' 13.33" E | 27° 58' 20.35" S |
| 72 | 23° 4' 12.20" E | 27° 58' 12.29" S |
| 73 | 23° 4' 11.07" E | 27° 58' 4.23" S |
| 74 | 23° 4' 9.94" E | 27° 57' 56.17" S |
| 75 | 23° 4' 8.81" E | 27° 57' 48.11" S |
| 76 | 23° 4' 7.67" E | 27° 57' 40.05" S |
| 77 | 23° 4' 6.54" E | 27° 57' 31.99" S |
| 78 | 23° 4' 5.41" E | 27° 57' 23.94" S |
| 79 | 23° 4' 4.28" E | 27° 57' 15.88" S |
| 80 | 23° 4' 3.15" E | 27° 57' 7.82" S |
| 81 | 23° 4' 2.02" E | 27° 56' 59.76" S |
| 82 | 23° 4' 0.89" E | 27° 56' 51.70" S |
| 83 | 23° 3' 59.75" E | 27° 56' 43.64" S |
| 84 | 23° 3' 58.62" E | 27° 56' 35.58" S |
| 85 | 23° 3' 57.49" E | 27° 56' 27.52" S |
| 86 | 23° 3' 56.36" E | 27° 56' 19.46" S |
| 87 | 23° 3' 55.23" E | 27° 56' 11.40" S |
| 88 | 23° 3' 54.10" E | 27° 56' 3.35" S |
| 89 | 23° 3' 52.97" E | 27° 55' 55.29" S |
| 90 | 23° 3' 51.84" E | 27° 55' 47.23" S |
| 91 | 23° 3' 50.71" E | 27° 55' 39.17" S |
| 92 | 23° 3' 49.58" E | 27° 55' 31.11" S |
| 93 | 23° 3' 48.44" E | 27° 55' 23.05" S |
| 94 | 23° 3' 47.31" E | 27° 55' 14.99" S |
| 95 | 23° 3' 46.18" E | 27° 55' 6.93" S |
| 96 | 23° 3' 45.05" E | 27° 54' 58.87" S |
| 97 | 23° 3' 43.92" E | 27° 54' 50.81" S |
| 98 | 23° 3' 42.79" E | 27° 54' 42.75" S |
| 99 | 23° 3' 41.66" E | 27° 54' 34.70" S |
| 100 | 23° 3' 40.53" E | 27° 54' 26.64" S |
| 101 | 23° 3' 43.85" E | 27° 54' 20.86" S |
| 102 | 23° 3' 52.26" E | 27° 54' 17.69" S |
| 103 | 23° 4' 0.68" E | 27° 54' 14.52" S |
| 104 | 23° 4' 9.10" E | 27° 54' 11.34" S |
| 105 | 23° 4' 17.51" E | 27° 54' 8.17" S |
| 106 | 23° 4' 25.93" E | 27° 54' 5.00" S |
| 107 | 23° 4' 34.35" E | 27° 54' 1.83" S |
| 108 | 23° 4' 42.76" E | 27° 53' 58.66" S |
| 109 | 23° 4' 51.18" E | 27° 53' 55.49" S |
| 110 | 23° 4' 59.59" E | 27° 53' 52.32" S |
| 111 | 23° 5' 8.01" E | 27° 53' 49.15" S |
| 112 | 23° 5' 16.42" E | 27° 53' 45.98" S |
| 113 | 23° 5' 24.84" E | 27° 53' 42.81" S |
| 114 | 23° 5' 33.25" E | 27° 53' 39.63" S |
| 115 | 23° 5' 41.67" E | 27° 53' 36.46" S |
| 116 | 23° 5' 50.08" E | 27° 53' 33.29" S |
| 117 | 23° 5' 51.30" E | 27° 53' 26.94" S |
| 118 | 23° 5' 49.07" E | 27° 53' 19.06" S |
| 119 | 23° 5' 46.84" E | 27° 53' 11.19" S |
| 120 | 23° 5' 44.61" E | 27° 53' 3.31" S |
| 121 | 23° 5' 42.38" E | 27° 52' 55.44" S |
| 122 | 23° 5' 40.15" E | 27° 52' 47.56" S |
| 123 | 23° 5' 37.92" E | 27° 52' 39.68" S |
| 124 | 23° 5' 35.69" E | 27° 52' 31.81" S |
| 125 | 23° 5' 33.46" E | 27° 52' 23.93" S |
| 126 | 23° 5' 31.23" E | 27° 52' 16.06" S |
| 127 | 23° 5' 29.00" E | 27° 52' 8.18" S |
| 128 | 23° 5' 26.77" E | 27° 52' 0.30" S |
| 129 | 23° 5' 24.54" E | 27° 51' 52.43" S |
| 130 | 23° 5' 22.31" E | 27° 51' 44.55" S |
| 131 | 23° 5' 20.08" E | 27° 51' 36.68" S |
| 132 | 23° 5' 17.85" E | 27° 51' 28.80" S |
| 133 | 23° 5' 15.62" E | 27° 51' 20.93" S |
| 134 | 23° 5' 13.39" E | 27° 51' 13.05" S |
| 135 | 23° 5' 11.16" E | 27° 51' 5.17" S |
| 136 | 23° 5' 8.93" E | 27° 50' 57.30" S |
| 137 | 23° 5' 6.70" E | 27° 50' 49.42" S |
| 138 | 23° 5' 4.47" E | 27° 50' 41.54" S |
| 139 | 23° 5' 7.51" E | 27° 50' 33.98" S |
| 140 | 23° 5' 10.89" E | 27° 50' 26.43" S |
| 141 | 23° 5' 14.26" E | 27° 50' 18.89" S |
| 142 | 23° 5' 17.64" E | 27° 50' 11.34" S |
| 143 | 23° 5' 13.12" E | 27° 50' 5.54" S |
| 144 | 23° 5' 6.16" E | 27° 50' 0.29" S |
| 145 | 23° 4' 59.19" E | 27° 49' 55.03" S |
| 146 | 23° 4' 52.23" E | 27° 49' 49.78" S |
| 147 | 23° 4' 45.26" E | 27° 49' 44.52" S |
| 148 | 23° 4' 38.30" E | 27° 49' 39.27" S |
| 149 | 23° 4' 31.33" E | 27° 49' 34.01" S |
| 150 | 23° 4' 24.37" E | 27° 49' 28.75" S |
| 151 | 23° 4' 17.40" E | 27° 49' 23.50" S |
| 152 | 23° 4' 10.44" E | 27° 49' 18.24" S |
| 153 | 23° 4' 3.48" E | 27° 49' 12.99" S |
| 154 | 23° 3' 58.41" E | 27° 49' 7.00" S |
| 155 | 23° 3' 58.90" E | 27° 48' 58.89" S |
| 156 | 23° 3' 59.39" E | 27° 48' 50.78" S |
| 157 | 23° 3' 59.88" E | 27° 48' 42.67" S |
| 158 | 23° 4' 0.37" E | 27° 48' 34.56" S |
| 159 | 23° 4' 0.86" E | 27° 48' 26.45" S |
| 160 | 23° 4' 1.35" E | 27° 48' 18.34" S |
| 161 | 23° 4' 1.84" E | 27° 48' 10.23" S |
| 162 | 23° 4' 2.33" E | 27° 48' 2.12" S |
| 163 | 23° 4' 2.82" E | 27° 47' 54.01" S |
| 164 | 23° 4' 3.31" E | 27° 47' 45.90" S |
| 165 | 23° 4' 3.80" E | 27° 47' 37.79" S |
| 166 | 23° 4' 4.28" E | 27° 47' 29.68" S |
| 167 | 23° 4' 4.77" E | 27° 47' 21.57" S |
| 168 | 23° 4' 5.26" E | 27° 47' 13.46" S |
| 169 | 23° 4' 5.75" E | 27° 47' 5.35" S |
| 170 | 23° 4' 6.24" E | 27° 46' 57.24" S |
| 171 | 23° 4' 6.73" E | 27° 46' 49.13" S |
| 172 | 23° 4' 7.22" E | 27° 46' 41.02" S |
| 173 | 23° 4' 7.71" E | 27° 46' 32.91" S |
| 174 | 23° 4' 8.20" E | 27° 46' 24.80" S |
| 175 | 23° 4' 8.69" E | 27° 46' 16.69" S |
| 176 | 23° 4' 9.17" E | 27° 46' 8.58" S |
| 177 | 23° 4' 9.66" E | 27° 46' 0.47" S |
| 178 | 23° 4' 10.15" E | 27° 45' 52.36" S |
| 179 | 23° 4' 10.64" E | 27° 45' 44.25" S |
| 180 | 23° 4' 11.13" E | 27° 45' 36.14" S |
| 181 | 23° 4' 11.62" E | 27° 45' 28.03" S |
| 182 | 23° 4' 12.11" E | 27° 45' 19.92" S |
| 183 | 23° 4' 12.60" E | 27° 45' 11.81" S |
| 184 | 23° 4' 13.09" E | 27° 45' 3.70" S |
| 185 | 23° 4' 13.57" E | 27° 44' 55.59" S |
| 186 | 23° 4' 14.06" E | 27° 44' 47.48" S |
| 187 | 23° 4' 14.55" E | 27° 44' 39.37" S |
| 188 | 23° 4' 12.63" E | 27° 44' 32.32" S |
| 189 | 23° 4' 5.11" E | 27° 44' 27.73" S |
| 190 | 23° 3' 57.58" E | 27° 44' 23.13" S |
| 191 | 23° 3' 50.05" E | 27° 44' 18.54" S |
| 192 | 23° 3' 42.53" E | 27° 44' 13.94" S |
| 193 | 23° 3' 35.00" E | 27° 44' 9.34" S |
| 194 | 23° 3' 27.48" E | 27° 44' 4.75" S |
| 195 | 23° 3' 25.83" E | 27° 43' 57.32" S |
| 196 | 23° 3' 25.70" E | 27° 43' 52.61" S |