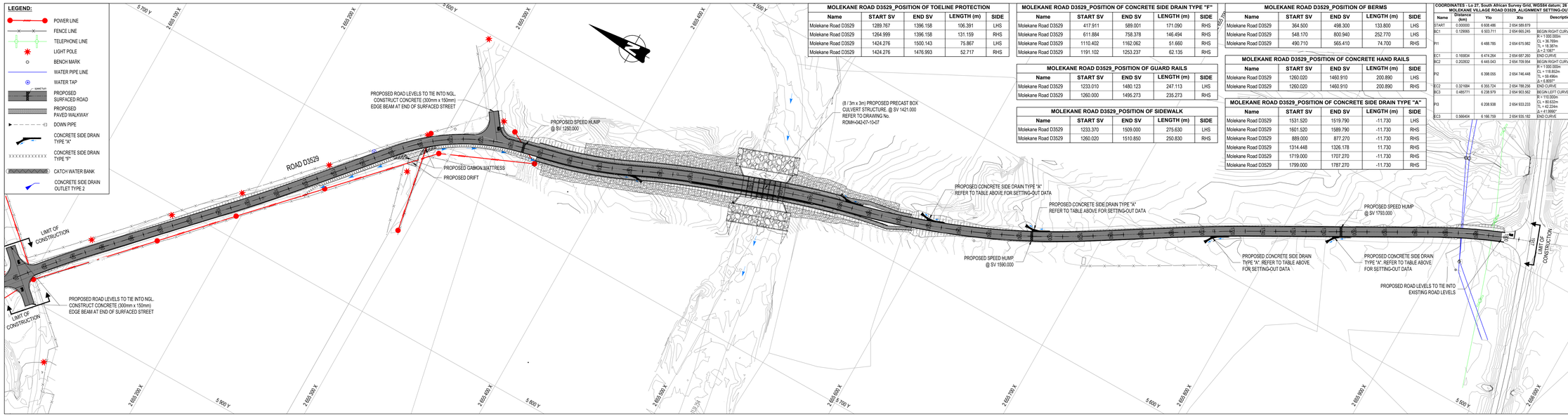
**LEGEND:**

- POWER LINE
- FENCE LINE
- TELEPHONE LINE
- LIGHT POLE
- BENCH MARK
- WATER PIPE LINE
- WATER TAP
- PROPOSED SURFACED ROAD
- PROPOSED PAVED WALKWAY
- DOWN PIPE
- CONCRETE SIDE DRAIN TYPE "A"
- CONCRETE SIDE DRAIN TYPE "E"
- CATCH WATER BANK
- CONCRETE SIDE DRAIN OUTLET TYPE 2




**MOLEKANE ROAD D3529_POSITION OF TOELINE PROTECTION**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 1289.767 | 1396.158 | 106.391 | LHS |
| Molekane Road D3529 | 1264.999 | 1396.158 | 131.159 | RHS |
| Molekane Road D3529 | 1424.276 | 1500.143 | 75.867 | LHS |
| Molekane Road D3529 | 1424.276 | 1476.993 | 52.717 | RHS |

**MOLEKANE ROAD D3529_POSITION OF CONCRETE SIDE DRAIN TYPE "F"**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 417.911 | 589.001 | 171.090 | RHS |
| Molekane Road D3529 | 611.884 | 758.378 | 146.494 | RHS |
| Molekane Road D3529 | 1110.402 | 1162.062 | 51.660 | RHS |
| Molekane Road D3529 | 1191.102 | 1253.237 | 62.135 | RHS |

**MOLEKANE ROAD D3529_POSITION OF GUARD RAILS**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 1233.010 | 1480.123 | 247.113 | LHS |
| Molekane Road D3529 | 1260.000 | 1495.273 | 235.273 | RHS |

**MOLEKANE ROAD D3529_POSITION OF SIDEWALK**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 1233.370 | 1509.000 | 275.630 | LHS |
| Molekane Road D3529 | 1260.020 | 1510.850 | 250.830 | RHS |

**MOLEKANE ROAD D3529_POSITION OF BERMS**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 364.500 | 498.300 | 133.800 | LHS |
| Molekane Road D3529 | 548.170 | 800.940 | 252.770 | LHS |
| Molekane Road D3529 | 490.710 | 565.410 | 74.700 | RHS |

**MOLEKANE ROAD D3529_POSITION OF CONCRETE HAND RAILS**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 1260.020 | 1460.910 | 200.890 | LHS |
| Molekane Road D3529 | 1260.020 | 1460.910 | 200.890 | RHS |

**MOLEKANE ROAD D3529_POSITION OF CONCRETE SIDE DRAIN TYPE "A"**

| Name | START SV | END SV | LENGTH (m) | SIDE |
|---|---|---|---|---|
| Molekane Road D3529 | 1531.520 | 1519.790 | -11.730 | LHS |
| Molekane Road D3529 | 1601.520 | 1589.790 | -11.730 | RHS |
| Molekane Road D3529 | 889.000 | 877.270 | -11.730 | RHS |
| Molekane Road D3529 | 1314.448 | 1326.178 | 11.730 | RHS |
| Molekane Road D3529 | 1719.000 | 1707.270 | -11.730 | RHS |
| Molekane Road D3529 | 1799.000 | 1787.270 | -11.730 | RHS |

**COORDINATES - Lo 27, South African Survey Grid, WGS84 datum; 26 to 28d E**
**MOLEKANE VILLAGE ROAD D3529_ALIGNMENT SETTING-OUT**

| Name | Distance (km) | Ylo | Xlo | Description |
|---|---|---|---|---|
| START | 0.000000 | 6 608.486 | 2 654 589.879 | |
| EC1 | 0.126063 | 6 503.711 | 2 654 662.245 | BEGIN RIGHT CURVE |
| PI1 | | 6 488.785 | 2 654 676.962 | R = 1 000.000m<br>CL = 36.769m<br>TL = 18.387m<br>Δ = 2.1063° |
| EC1 | 0.165834 | 6 474.264 | 2 654 687.260 | END CURVE |
| EC2 | 0.202832 | 6 445.043 | 2 654 709.954 | BEGIN RIGHT CURVE |
| PI2 | | 6 398.055 | 2 654 746.448 | R = 1 000.000m<br>CL = 118.852m<br>TL = 59.496m<br>Δ = 6.8097° |
| EC2 | 0.321684 | 6 355.724 | 2 654 788.256 | END CURVE |
| EC3 | 0.485771 | 6 238.979 | 2 654 903.562 | BEGIN LEFT CURVE |
| PI3 | | 6 208.938 | 2 654 933.233 | R = 110.000m<br>CL = 60.632m<br>TL = 42.224m<br>Δ = 41.9990° |
| EC3 | 0.566454 | 6 166.759 | 2 654 935.182 | END CURVE |

**COORDINATES - Lo 27, South African Survey Grid, WGS84 datum; 26 to 28d E**
**MOLEKANE VILLAGE ROAD D3529_ALIGNMENT SETTING-OUT**

| Name | Distance (km) | Ylo | Xlo | Description |
|---|---|---|---|---|
| BC8 | 1.163552 | 5 697.920 | 2 655 266.442 | BEGIN RIGHT CURVE |
| PI8 | | 5 665.572 | 2 655 294.433 | R = 1 200.000m<br>CL = 92.852m<br>TL = 42.777m<br>Δ = 35.1636° |
| EC8 | 1.246404 | 5 655.248 | 2 655 335.946 | END CURVE |
| BC9 | 1.273059 | 5 648.815 | 2 655 361.813 | BEGIN LEFT CURVE |
| PI9 | | 5 642.957 | 2 655 385.369 | R = 360.000m<br>CL = 48.407m<br>TL = 24.274m<br>Δ = 10.6872° |
| EC9 | 1.321466 | 5 632.840 | 2 655 407.434 | END CURVE |
| BC10 | 1.332531 | 5 628.228 | 2 655 417.492 | BEGIN RIGHT CURVE |
| PI10 | | 5 619.623 | 2 655 436.257 | R = 500.000m<br>CL = 41.266m<br>TL = 20.644m<br>Δ = 4.7286° |
| EC10 | 1.373795 | 5 612.595 | 2 655 455.668 | END CURVE |
| BC11 | 1.412723 | 5 599.342 | 2 655 482.270 | BEGIN RIGHT CURVE |
| PI11 | | 5 591.212 | 2 655 514.723 | R = 500.000m<br>CL = 47.723m<br>TL = 23.879m<br>Δ = 5.4688° |
| EC11 | 1.460446 | 5 585.259 | 2 655 537.848 | END CURVE |
| BC12 | 1.476604 | 5 581.230 | 2 655 553.497 | BEGIN LEFT CURVE |
| PI12 | | 5 562.226 | 2 655 627.319 | R = 500.000m<br>CL = 151.294m<br>TL = 76.229m<br>Δ = 17.3370° |
| EC12 | 1.627898 | 5 523.087 | 2 655 692.125 | END CURVE |
| BC13 | 1.685482 | 5 491.766 | 2 655 741.079 | BEGIN RIGHT CURVE |
| PI13 | | 5 479.346 | 2 655 761.133 | R = 1 000.000m<br>CL = 47.168m<br>TL = 23.589m<br>Δ = 2.7006° |
| EC13 | 1.732650 | 5 467.884 | 2 655 781.750 | END CURVE |
| BC14 | 1.854020 | 5 408.670 | 2 655 886.267 | BEGIN RIGHT CURVE |
| PI14 | | 5 395.660 | 2 655 911.669 | R = 350.000m<br>CL = 53.445m<br>TL = 26.775m<br>Δ = 8.7480° |
| EC14 | 1.907966 | 5 386.362 | 2 655 936.778 | END CURVE |
| BC4 | 0.647707 | 6 085.542 | 2 654 938.934 | BEGIN RIGHT CURVE |
| PI4 | | 6 023.482 | 2 654 941.802 | R = 140.000m<br>CL = 118.943m<br>TL = 62.126m<br>Δ = 67.8084° |
| EC4 | 0.764650 | 5 983.969 | 2 654 989.744 | END CURVE |
| BC5 | 0.855430 | 5 926.232 | 2 655 059.797 | BEGIN LEFT CURVE |
| PI5 | | 5 917.625 | 2 655 070.239 | R = 150.000m<br>CL = 26.973m<br>TL = 13.531m<br>Δ = 11.4470° |
| EC5 | 0.882403 | 5 907.118 | 2 655 078.765 | END CURVE |
| BC6 | 0.906885 | 5 886.554 | 2 655 095.452 | BEGIN RIGHT CURVE |
| PI6 | | 5 868.114 | 2 655 110.415 | R = 600.000m<br>CL = 47.417m<br>TL = 23.748m<br>Δ = 4.5331° |
| EC6 | 0.956356 | 5 850.913 | 2 655 126.789 | END CURVE |
| BC7 | 1.048348 | 5 784.285 | 2 655 190.217 | BEGIN LEFT CURVE |
| PI7 | | 5 767.090 | 2 655 206.587 | R = 1 000.000m<br>CL = 47.473m<br>TL = 23.741m<br>Δ = 2.7200° |
| EC7 | 1.095821 | 5 749.137 | 2 655 222.122 | END CURVE |
| END | 1.917431 | 5 383.075 | 2 655 945.654 | |

**COORDINATES - Lo 27, South African Survey Grid, WGS84 datum; 26 to 28d E**
**BENCH MARKS**

| Name | Ylo | Xlo | Z | Description |
|---|---|---|---|---|
| BM1 | 5 416.965 | 2 655 911.535 | 1144.992 | BENCH MARK |
| BM2 | 5 726.996 | 2 655 234.327 | 1139.155 | BENCH MARK |
| BM10 | 5 423.449 | 2 655 912.348 | 1145.252 | BENCH MARK |

## MOLEKANE VILLAGE ROAD D3529_ PROPOSED ROAD LAYOUT PLAN

SCALE 1:1000

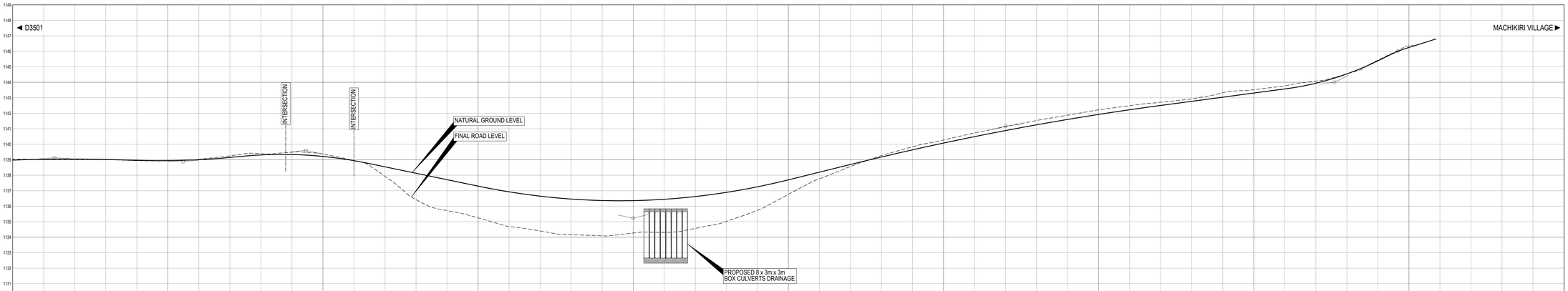
-10m 0m 10 25 50 75 100m

1 : 1 000 ON A1
1 : 2 000 ON A3

DESIGN SPEED:
50 km/h

SCALES:
Horizontal 1:1000
Vertical 1:100

DATUM 1129.00




| | | | |
|---|---|---|---|
| C/L/ PEG LEVELS | | | |
| VERTICAL ALIGNMENT | DESIGN ROAD LEVELS | LEFT EDGE (HL) | 1139.033 1139.017 1139.007 1139.002 1138.940 1138.936 1139.027 1139.250 1139.388 1139.486 1139.367 1139.940 1137.920 1136.427 1135.717 1135.248 1134.892 1134.599 1134.163 1134.087 1134.269 1134.312 1134.569 1135.019 1135.731 1136.766 1137.765 1138.761 1139.269 1139.837 1140.274 1140.731 1141.138 1141.631 1141.876 1142.224 1142.488 1142.710 1142.893 1143.323 1143.521 1143.766 1144.073 1144.546 1145.431 1146.350 1146.797 |
| | | CENTRE LINE | 1139.026 1139.000 1139.045 1139.019 1138.962 1138.943 1139.005 1139.148 1139.310 1139.337 1139.214 1138.942 1138.542 1138.128 1137.713 1137.298 1136.909 1136.659 1136.463 1136.367 1136.362 1136.448 1136.625 1136.883 1137.251 1137.702 1138.197 1138.693 1139.177 1139.638 1140.076 1140.492 1140.884 1141.254 1141.601 1141.925 1142.226 1142.505 1142.772 1143.039 1143.306 1143.573 1143.837 1144.541 1145.384 1146.246 1146.797 |
| | | RIGHT EDGE (HR) | 1138.916 1138.970 1138.985 1138.969 1138.992 1138.993 1138.945 1139.089 1139.250 1139.277 1139.155 1138.880 1138.482 1138.068 1137.653 1137.238 1136.889 1136.590 1136.403 1136.307 1136.302 1136.388 1136.564 1136.913 1137.312 1137.782 1138.257 1138.752 1139.237 1139.698 1140.136 1140.552 1140.944 1141.314 1141.661 1141.985 1142.167 1142.445 1142.712 1142.979 1143.246 1143.513 1143.877 1144.480 1145.325 1146.191 1146.815 |
| | GRADES | | 1027.000 1139.120 · 0.503 % · 1110.000 1138.872 · -0.299 % · 1189.000 1139.600 · 0.922 % · 1400.000 1135.224 · -2.074 % · 1640.000 1141.170 · 2.478 % · 1852.000 1144.000 · 1.335 % · 1893.000 1146.025 · 4.939 % · 3.160 % |
| | VERTICAL CURVES | | 80.000m VC K = 99.714 · 1067.000 B.V.C. · 1107.000 E.V.C. · 60.000m VC K = 49.168 · 1140.000 B.V.C. · 1148.000 E.V.C. · 80.000m VC K = 26.707 · 1225.000 E.V.C. · 200.000m VC K = 43.942 · 1500.000 E.V.C. · 200.000m VC K = 175.040 · 1740.000 E.V.C. · 60.000m VC K = 16.648 · 1852.000 B.V.C. · 1898.000 B.V.C. · 10.000m VC K = 5.676 · 1898.000 B.V.C. |
| SUPERELEVATION | LHS / RHS | | 2.000 / -2.000 |
| HORIZONTAL CURVES | | | Direction 313.35.26 · 1040.349 BCC · Curve 7 Left Radius=1000.000 l= 2.43.12 · ECC 1095.823 · Direction 310.32.14 · 1163.563 BCC · Curve 8 Right Radius=135.000 l= 35.09.49 · ECC 1249.405 · Direction 346.02.03 · 1277.060 BCC · Curve 9 Left Radius=260.000 l= 10.40.02 · ECC 1537.497 · Direction 356.22.51 · 1329.232 BCC · Curve 10 Right Radius=500.000 l= 4.43.43 · ECC 1373.796 · Direction 340.05.43 · 1417.725 BCC · Curve 11 Right Radius=500.000 l= 5.28.07 · ECC 1462.946 · Direction 349.33.50 · 1476.685 BCC · Curve 12 Left Radius=500.000 l= 17.20.13 · ECC 1827.899 · Direction 328.13.37 · 1885.483 BCC · Curve 13 Right Radius=1000.000 l= 2.42.09 · ECC 1774.652 · Direction 330.55.47 · 1854.321 BCC · Curve 14 Right Radius=350.000 l= 8.44.58 · ECC 1907.968 · Direction 330.40.44 |
| CHAINAGES | | | 1000 1020 1040 1060 1080 1100 1120 1140 1160 1180 1200 1220 1240 1260 1280 1300 1320 1340 1360 1380 1400 1420 1440 1460 1480 1500 1520 1540 1560 1580 1600 1620 1640 1660 1680 1700 1720 1740 1760 1780 1800 1820 1840 1860 1880 1900 1917.433 |

**FOR TENDER**

CLIENT:

MOGALAKWENA MUNICIPALITY

54 Retief Street
Mokopane
0601

TEL: (015) 491 9600
FAX: (015) 491 9638

PROJECT:

**CONTRACT No. :**

UPGRADING OF GRAVEL ROADS AND STORMWATER IN MOORDKOPPIE CLUSTER MOLEKANE VILLAGE

DESIGN COORDINATOR APPROVAL:

SIGNATURE DATE

PROJECT MANAGER APPROVAL:

SIGNATURE DATE

CLIENT APPROVAL:

SIGNATURE DATE

| REV | DATE | DESCRIPTION | DRAWN |
|---|---|---|---|
| A | SEP. 2020 | ISSUED FOR TENDER PURPOSE ONLY | MLM |

REVISIONS

DRAWN: ML. MATHEGA | CHECKED: S. SITHOLE | DESIGNED: A. JUBA

SCALES: AS SHOWN | DATE: SEPTEMBER 2020

DRAWING TITLE:
MOLEKANE VILLAGE:
ROAD D3529_LAYOUT PLAN AND LONGITUDINAL SECTION, SHEET 2 OF 2

SIZE: A0 | PROJECT No.

REV No. A | DRAWING No. ROMH-042-07-01-02

CONSULTANTS:

ROMH HOUSE
WHITGY MANOR OFFICE PARK
167 14 ROAD, NOORDWYK
MIDRAND

Tel: (010) 035 1460
Email: info@romh.co.za
Web: www.romh.co.za