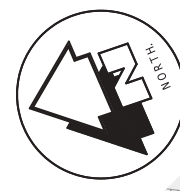
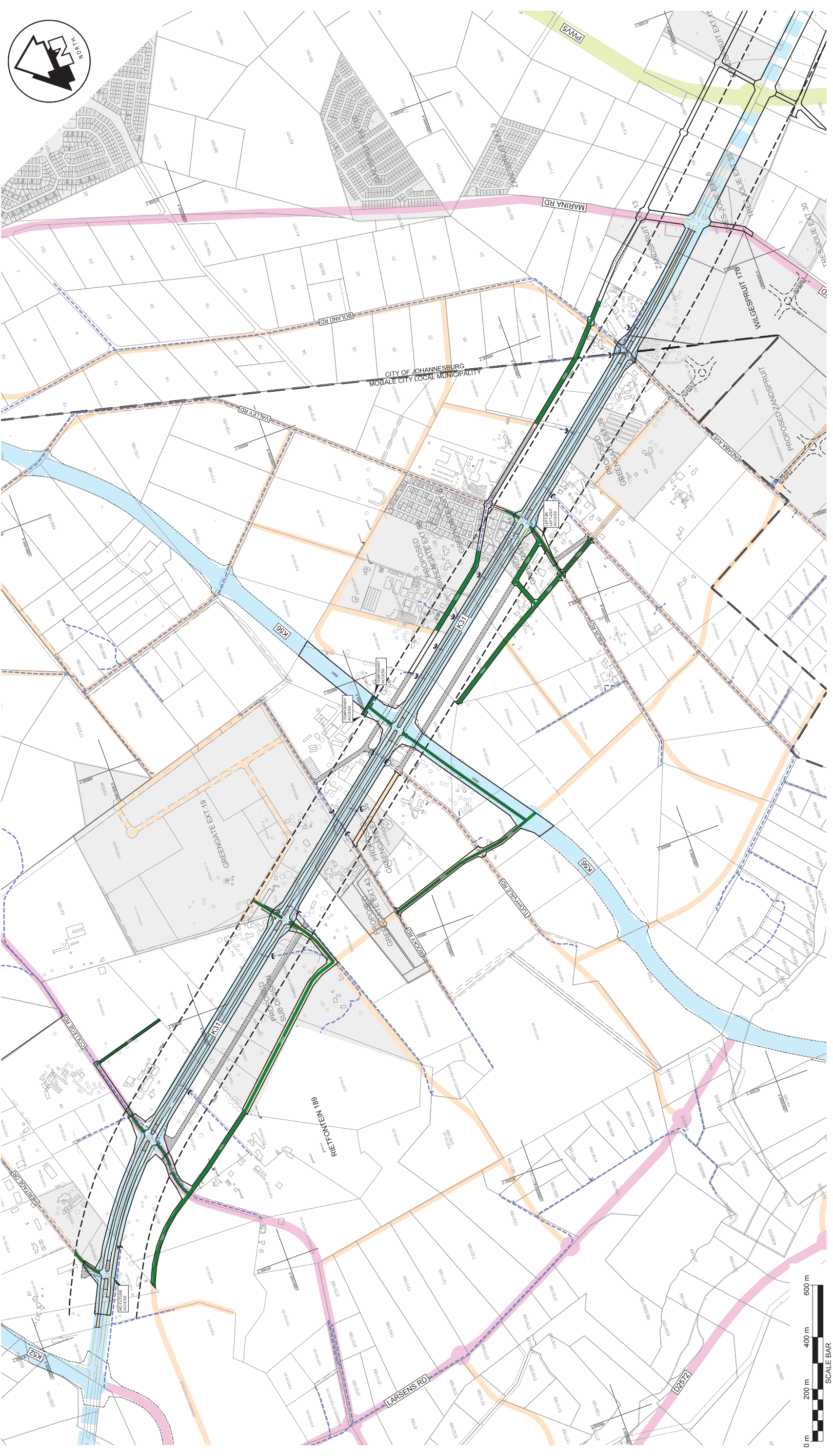


# APPENDICES



*Appendix D: Beyers Naude Drive & Supporting Network Construction Plans – ILIFA AFRICA*



**NOTES**

GENERAL:  
 1) ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE PRIOR TO ORDERING OR FABRICATION OF MATERIAL. ANY DISCREPANCIES TO BE REPORTED.  
 2) DRAWINGS ARE NOT TO BE SCALED.  
 3) IF IN DOUBT, CONSULT THE ENGINEER.  
 4) ALL CONSTRUCTION ACTIVITIES MUST COMPLY TO THE DIS ACT REGULATIONS.

**LEGEND**

|            |                        |
|------------|------------------------|
| (EXISTING) | FUTURE CLASS 1 ROAD    |
| (60m)      | FUTURE CLASS 2 ROAD    |
| (60m)      | FUTURE CLASS 3 ROAD    |
| (20m/10m)  | FUTURE CLASS 4 ROAD    |
| - - -      | EXISTING ACCESS ROAD   |
| - - -      | ACCESS TO BE CLOSED    |
| - - -      | PROPOSED GRAVEL ROAD   |
| - - -      | PROPOSED ASPHALT ROAD  |
| - - -      | REDUNDANT ROAD RESERVE |
| - - -      | PROPOSED ROAD RESERVE  |

**REVISIONS**

| No. | Date     | By | Description  |
|-----|----------|----|--|
| 01  | JUN 2016 | JM | ISSUE FOR APPROVAL   |
| 02  | JUN 2016 | JM | GREENGATE EXT.19 REMOVED, ACCESS TO PFM19 PROVIDED OVER PFM14.                             |
| 03  | JUN 2016 | JM | VALLEY ROAD IN PHASE CHANGED TO PROPOSED GRAVEL ROAD AND PROPOSED MUNICIPAL ROADS REVISED. |
| 04  | JUN 2016 | JM | FOR APPROVAL BY GAUTENG AND MCM NEW APPROVED PROPORTION REVISED.                           |
| 05  | JUL 2016 | JM | NEW APPROVED PROPORTION REVISED.   |
| 06  | JUL 2016 | JM | NEW APPROVED PROPORTION REVISED.   |
| 07  | JUL 2016 | JM | NEW APPROVED PROPORTION REVISED.   |
| 08  | NOV 2016 | JM | NEW & FUTURE ROADS REVISED.  |

**FOR APPROVAL**

**CLIENT**



GAUTENG PROVINCIAL GOVERNMENT



MOGALE CITY LOCAL MUNICIPALITY

Project Name: \_\_\_\_\_  
 Client Approval: \_\_\_\_\_  
 Date: \_\_\_\_\_



**ILIFA Africa Engineers (Pty) Ltd**

PRETORIA: 012 541 1516  
 HARERSBURG: 016 522 1220  
 SASOLBURG: 016 575 0850  
 VANDERBIJLPARK: 016 961 0991  
 KRUGERSDORP: 011 955 5354  
 NEWCASTLE: 017 634 8895  
 SECUNDA: 017 634 8895  
 WESTGATE: 034 312 6464

ISO 9001:2008

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Designed: A.B. MBELE, P.Eng (2001/04)  
 Drawn: J.V.S. MOUTON, P.Eng (2013/08)  
 Checked: A.B. MBELE, P.Eng (2001/04)

**PROJECT TITLE**  
 BEYERS NAUDE DRIVE  
 UPGRADE

**DRAWING TITLE**  
 SERVICE ROADS AND MASTERPLAN

DATE: JUNE 2016  
 SCALE: 1:500  
 PLAN No: K16-010-002

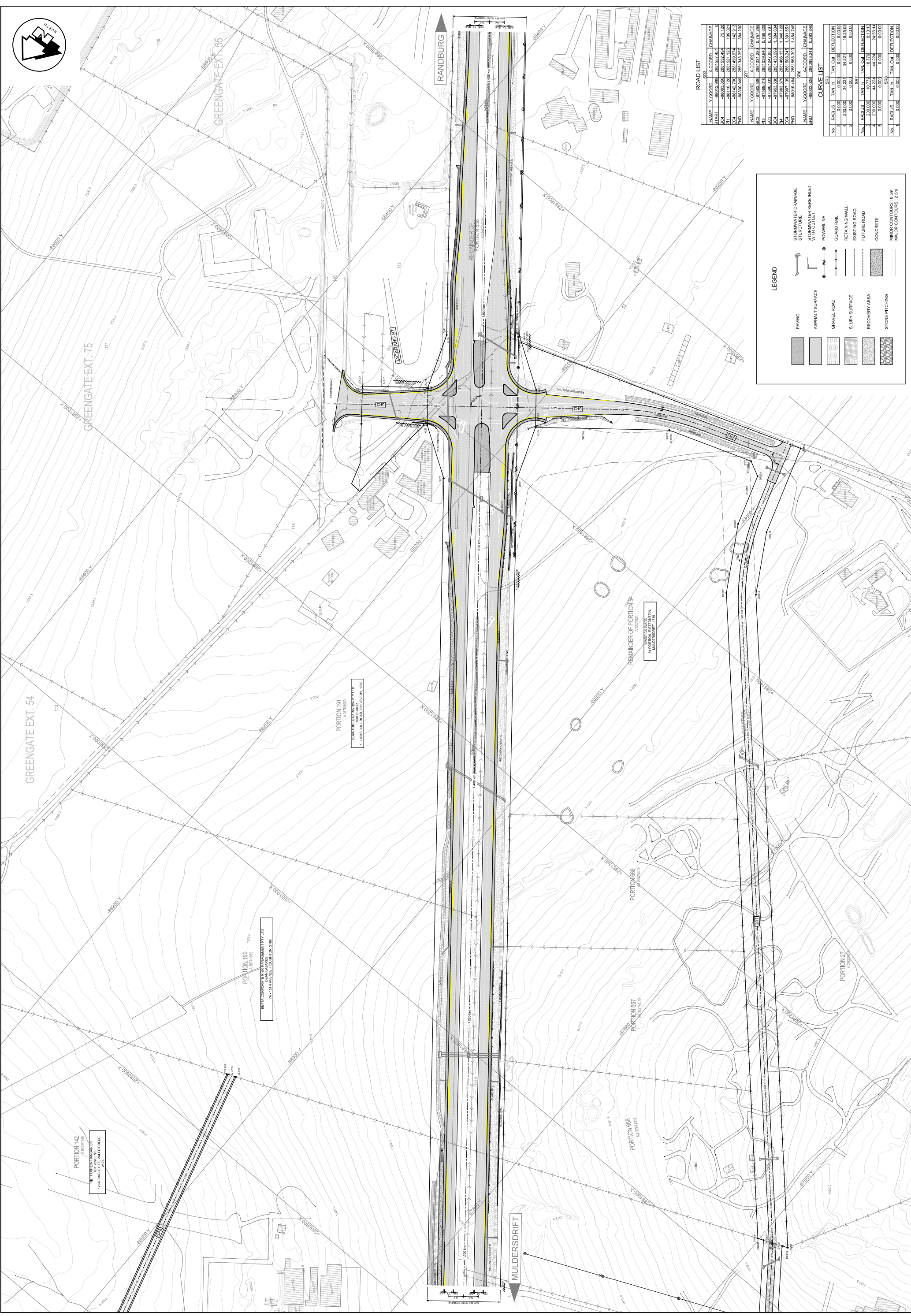
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Task: 08

# APPENDICES

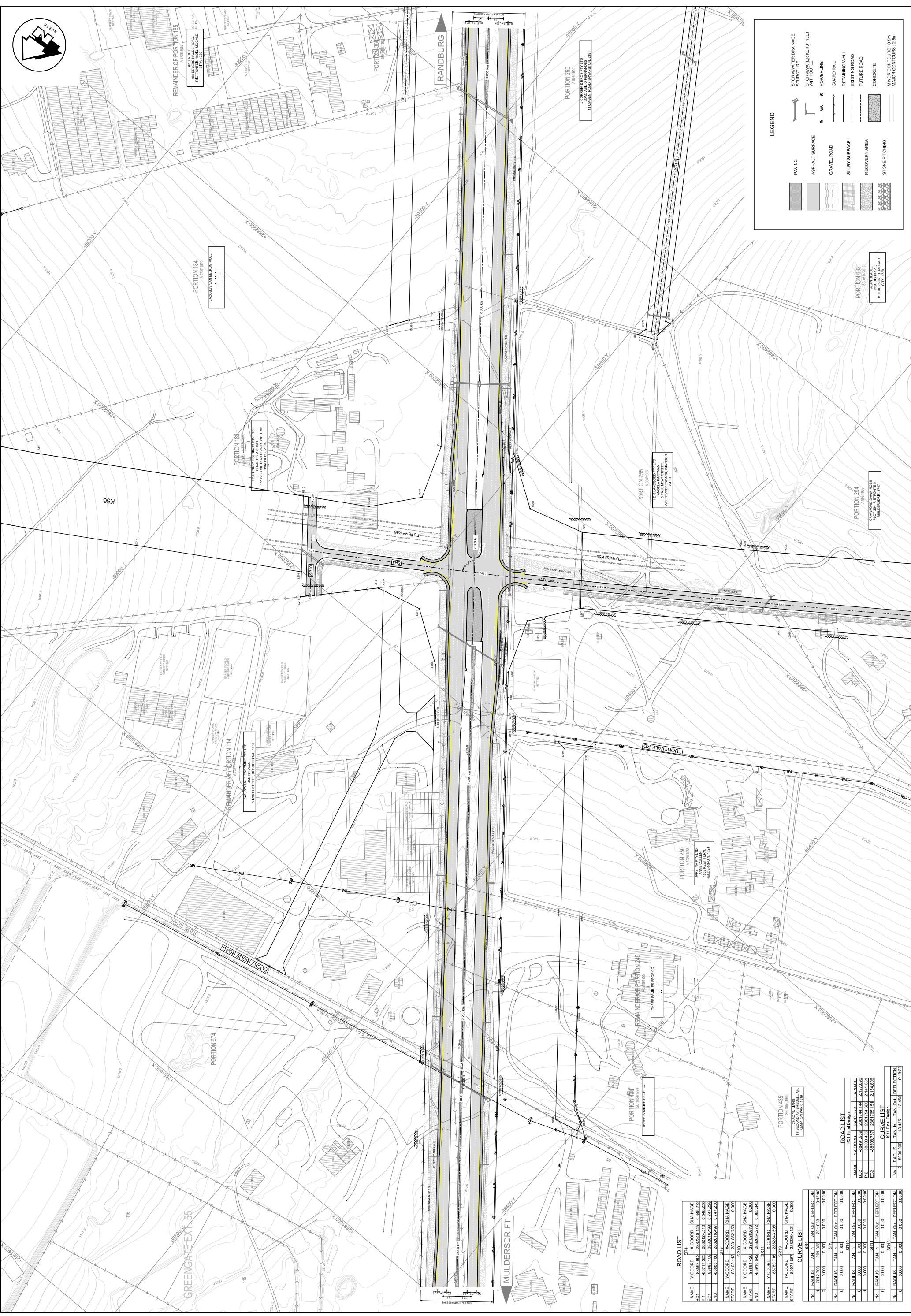


*Appendix E: Route K31 (Beyers Naude Drive) Detail Design*



**ROAD LIST**

| NAME   | X-COORD    | Y-COORD     | CHANGING |
|--------|------------|-------------|----------|
| START  | -88012.892 | 2881552.451 | 0        |
| E-C1   | -88082.850 | 2881552.451 | 75.128   |
| E-C2   | -88152.808 | 2881552.451 | 142.815  |
| E-C3   | -88222.766 | 2881552.451 | 210.502  |
| E-C4   | -88292.724 | 2881552.451 | 278.189  |
| E-C5   | -88362.682 | 2881552.451 | 345.876  |
| E-C6   | -88432.640 | 2881552.451 | 413.563  |
| E-C7   | -88502.598 | 2881552.451 | 481.250  |
| E-C8   | -88572.556 | 2881552.451 | 548.937  |
| E-C9   | -88642.514 | 2881552.451 | 616.624  |
| E-C10  | -88712.472 | 2881552.451 | 684.311  |
| E-C11  | -88782.430 | 2881552.451 | 751.998  |
| E-C12  | -88852.388 | 2881552.451 | 819.685  |
| E-C13  | -88922.346 | 2881552.451 | 887.372  |
| E-C14  | -88992.304 | 2881552.451 | 955.059  |
| E-C15  | -89062.262 | 2881552.451 | 1022.746 |
| E-C16  | -89132.220 | 2881552.451 | 1090.433 |
| E-C17  | -89202.178 | 2881552.451 | 1158.120 |
| E-C18  | -89272.136 | 2881552.451 | 1225.807 |
| E-C19  | -89342.094 | 2881552.451 | 1293.494 |
| E-C20  | -89412.052 | 2881552.451 | 1361.181 |
| E-C21  | -89482.010 | 2881552.451 | 1428.868 |
| E-C22  | -89551.968 | 2881552.451 | 1496.555 |
| E-C23  | -89621.926 | 2881552.451 | 1564.242 |
| E-C24  | -89691.884 | 2881552.451 | 1631.929 |
| E-C25  | -89761.842 | 2881552.451 | 1700.000 |
| E-C26  | -89831.800 | 2881552.451 | 1768.071 |
| E-C27  | -89901.758 | 2881552.451 | 1836.142 |
| E-C28  | -89971.716 | 2881552.451 | 1904.213 |
| E-C29  | -90041.674 | 2881552.451 | 1972.284 |
| E-C30  | -90111.632 | 2881552.451 | 2040.355 |
| E-C31  | -90181.590 | 2881552.451 | 2108.426 |
| E-C32  | -90251.548 | 2881552.451 | 2176.497 |
| E-C33  | -90321.506 | 2881552.451 | 2244.568 |
| E-C34  | -90391.464 | 2881552.451 | 2312.639 |
| E-C35  | -90461.422 | 2881552.451 | 2380.710 |
| E-C36  | -90531.380 | 2881552.451 | 2448.781 |
| E-C37  | -90601.338 | 2881552.451 | 2516.852 |
| E-C38  | -90671.296 | 2881552.451 | 2584.923 |
| E-C39  | -90741.254 | 2881552.451 | 2652.994 |
| E-C40  | -90811.212 | 2881552.451 | 2721.065 |
| E-C41  | -90881.170 | 2881552.451 | 2789.136 |
| E-C42  | -90951.128 | 2881552.451 | 2857.207 |
| E-C43  | -91021.086 | 2881552.451 | 2925.278 |
| E-C44  | -91091.044 | 2881552.451 | 2993.349 |
| E-C45  | -91161.002 | 2881552.451 | 3061.420 |
| E-C46  | -91230.960 | 2881552.451 | 3129.491 |
| E-C47  | -91300.918 | 2881552.451 | 3197.562 |
| E-C48  | -91370.876 | 2881552.451 | 3265.633 |
| E-C49  | -91440.834 | 2881552.451 | 3333.704 |
| E-C50  | -91510.792 | 2881552.451 | 3401.775 |
| E-C51  | -91580.750 | 2881552.451 | 3469.846 |
| E-C52  | -91650.708 | 2881552.451 | 3537.917 |
| E-C53  | -91720.666 | 2881552.451 | 3605.988 |
| E-C54  | -91790.624 | 2881552.451 | 3674.059 |
| E-C55  | -91860.582 | 2881552.451 | 3742.130 |
| E-C56  | -91930.540 | 2881552.451 | 3810.201 |
| E-C57  | -92000.498 | 2881552.451 | 3878.272 |
| E-C58  | -92070.456 | 2881552.451 | 3946.343 |
| E-C59  | -92140.414 | 2881552.451 | 4014.414 |
| E-C60  | -92210.372 | 2881552.451 | 4082.485 |
| E-C61  | -92280.330 | 2881552.451 | 4150.556 |
| E-C62  | -92350.288 | 2881552.451 | 4218.627 |
| E-C63  | -92420.246 | 2881552.451 | 4286.698 |
| E-C64  | -92490.204 | 2881552.451 | 4354.769 |
| E-C65  | -92560.162 | 2881552.451 | 4422.840 |
| E-C66  | -92630.120 | 2881552.451 | 4490.911 |
| E-C67  | -92700.078 | 2881552.451 | 4558.982 |
| E-C68  | -92770.036 | 2881552.451 | 4627.053 |
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| E-C70  | -92910.000 | 2881552.451 | 4763.195 |
| E-C71  | -92980.000 | 2881552.451 | 4831.266 |
| E-C72  | -93050.000 | 2881552.451 | 4899.337 |
| E-C73  | -93120.000 | 2881552.451 | 4967.408 |
| E-C74  | -93190.000 | 2881552.451 | 5035.479 |
| E-C75  | -93260.000 | 2881552.451 | 5103.550 |
| E-C76  | -93330.000 | 2881552.451 | 5171.621 |
| E-C77  | -93400.000 | 2881552.451 | 5239.692 |
| E-C78  | -93470.000 | 2881552.451 | 5307.763 |
| E-C79  | -93540.000 | 2881552.451 | 5375.834 |
| E-C80  | -93610.000 | 2881552.451 | 5443.905 |
| E-C81  | -93680.000 | 2881552.451 | 5511.976 |
| E-C82  | -93750.000 | 2881552.451 | 5580.047 |
| E-C83  | -93820.000 | 2881552.451 | 5648.118 |
| E-C84  | -93890.000 | 2881552.451 | 5716.189 |
| E-C85  | -93960.000 | 2881552.451 | 5784.260 |
| E-C86  | -94030.000 | 2881552.451 | 5852.331 |
| E-C87  | -94100.000 | 2881552.451 | 5920.402 |
| E-C88  | -94170.000 | 2881552.451 | 5988.473 |
| E-C89  | -94240.000 | 2881552.451 | 6056.544 |
| E-C90  | -94310.000 | 2881552.451 | 6124.615 |
| E-C91  | -94380.000 | 2881552.451 | 6192.686 |
| E-C92  | -94450.000 | 2881552.451 | 6260.757 |
| E-C93  | -94520.000 | 2881552.451 | 6328.828 |
| E-C94  | -94590.000 | 2881552.451 | 6396.899 |
| E-C95  | -94660.000 | 2881552.451 | 6464.970 |
| E-C96  | -94730.000 | 2881552.451 | 6533.041 |
| E-C97  | -94800.000 | 2881552.451 | 6601.112 |
| E-C98  | -94870.000 | 2881552.451 | 6669.183 |
| E-C99  | -94940.000 | 2881552.451 | 6737.254 |
| E-C100 | -95010.000 | 2881552.451 | 6805.325 |
| E-C101 | -95080.000 | 2881552.451 | 6873.396 |
| E-C102 | -95150.000 | 2881552.451 | 6941.467 |
| E-C103 | -95220.000 | 2881552.451 | 7009.538 |
| E-C104 | -95290.000 | 2881552.451 | 7077.609 |
| E-C105 | -95360.000 | 2881552.451 | 7145.680 |
| E-C106 | -95430.000 | 2881552.451 | 7213.751 |
| E-C107 | -95500.000 | 2881552.451 | 7281.822 |
| E-C108 | -95570.000 | 2881552.451 | 7349.893 |
| E-C109 | -95640.000 | 2881552.451 | 7417.964 |
| E-C110 | -95710.000 | 2881552.451 | 7486.035 |
| E-C111 | -95780.000 | 2881552.451 | 7554.106 |
| E-C112 | -95850.000 | 2881552.451 | 7622.177 |
| E-C113 | -95920.000 | 2881552.451 | 7690.248 |
| E-C114 | -95990.000 | 2881552.451 | 7758.319 |
| E-C115 | -96060.000 | 2881552.451 | 7826.390 |
| E-C116 | -96130.000 | 2881552.451 | 7894.461 |
| E-C117 | -96200.000 | 2881552.451 | 7962.532 |
| E-C118 | -96270.000 | 2881552.451 | 8030.603 |
| E-C119 | -96340.000 | 2881552.451 | 8098.674 |
| E-C120 | -96410.000 | 2881552.451 | 8166.745 |
| E-C121 | -96480.000 | 2881552.451 | 8234.816 |
| E-C122 | -96550.000 | 2881552.451 | 8302.887 |
| E-C123 | -96620.000 | 2881552.451 | 8370.958 |
| E-C124 | -96690.000 | 2881552.451 | 8439.029 |
| E-C125 | -96760.000 | 2881552.451 | 8507.100 |
|        |            |             |          |



**LEGEND**

- PAVING
- ASPHALT SURFACE
- GRAVEL ROAD
- SLURRY SURFACE
- RECOVERY AREA
- STONE PITCHING
- STORMWATER DRAINAGE STRUCTURE
- STORMWATER KERB INLET WITH OUTLET
- POWERLINE
- GUARD RAIL
- RETAINING WALL
- EXISTING ROAD
- FUTURE ROAD
- CONCRETE
- MINOR CONTOURS: 0.5m
- MAJOR CONTOURS: 2.5m

**ROAD LIST**

| SR#  | NAME             | Y-COORD    | X-COORD    | CHANGE    |
|------|------------------|------------|------------|-----------|
| S1   | ROOY BRIDGE ROAD | -8871.351  | 288212.416 | 0.546.250 |
| S2   | LUWYALE RD       | -8888.158  | 288218.458 | 0.747.228 |
| S3   | MULDRSDRIFT      | -8888.158  | 288218.457 | 0.747.228 |
| S4   | MULDRSDRIFT      | -88108.111 | 288182.715 | 0.000     |
| S5   | MULDRSDRIFT      | -88767.857 | 288284.121 | 0.000     |
| S6   | MULDRSDRIFT      | -88767.857 | 288284.121 | 0.000     |
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| S8   | MULDRSDRIFT      | -88767.857 | 288284.121 | 0.000     |
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| S100 | MULDRSDRIFT      | -88767.857 | 288284.121 | 0.000     |

**GAUTENG DEPARTMENT OF ROADS AND TRANSPORT**  
K31 (ROAD 374)  
LAYOUT: km DISTANCE 2,000 - 3,000

**DATE:** 12/28/2016  
**SCALE:** 1:1000  
**DISTRICT:** KRUGERSDORP  
**FILE NO.:** 2111/31/K31  
**PLAN NO.:** GRP 16/35/ 3 DLY

**DESIGNED BY:** ILIQA Africa Engineers (Pty) Ltd  
**APPROVED BY:** [Signature]

**DATE:** 12/28/2016  
**SCALE:** 1:1000  
**DISTRICT:** KRUGERSDORP  
**FILE NO.:** 2111/31/K31  
**PLAN NO.:** GRP 16/35/ 3 DLY





