



BPCC-2024/UG/HS18-HS20/001

## VOLUME 4 - OPTION 1

THE CONSTRUCTION OF THE DUAL CARRIAGEWAY OF THE N4-13  
BETWEEN BUFFELSPOORT N4-13 KM 2.800 AND THE P115-1 (R24)  
INTERCHANGE N4-13 KM 40.0 - AUXILIARY LANE DRAWINGS

AUGUST 2023

ISSUED BY :

PREPARED BY :



BAKWENA PLATINUM CORRIDOR  
CONCESSIONAIRE (Pty) Ltd

GROUND FLOOR, BUILDING A  
SOUTHDOWNS OFFICE PARK  
22 KAREE STREET  
IRENE, CENTURION

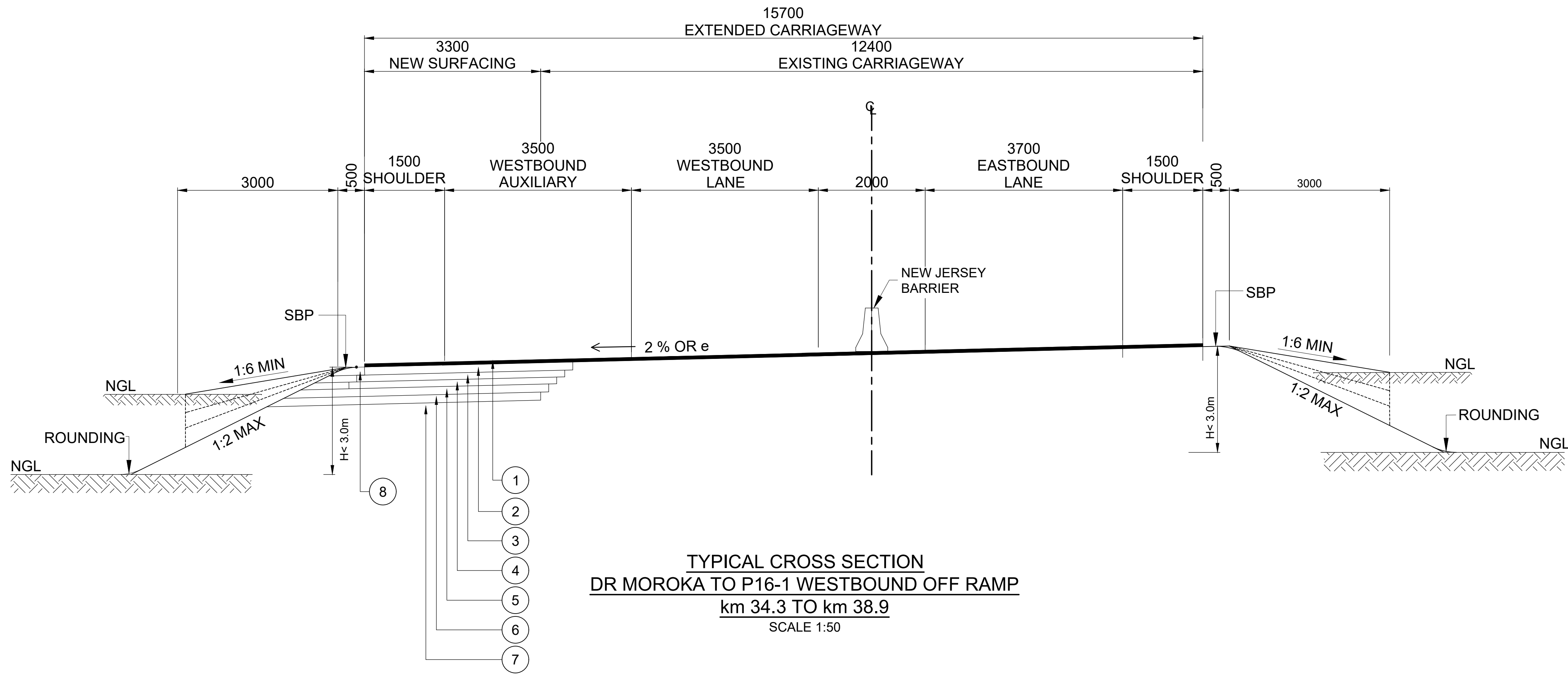
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JG AFRIKA (Pty) Ltd

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PELTIER DRIVE  
SUNNINGHILL

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TYPICAL CROSS SECTION  
DR MOROKA TO P16-1 WESTBOUND OFF RAMP  
km 34.3 TO km 38.9  
SCALE 1:50

PAVEMENT SPECIFICATIONS - N4 NEW EASTBOUND CARRIAGEWAY AND RAMPS

| LAYER NO. | COLTO MATERIAL CODE | LAYER           | THICKNESS (mm) | DESCRIPTION                                                                      | MINIMUM COMPACTION REQUIREMENT                                                                                             | MAX PI SPECIFICATION | MIN GM SPECIFICATION | CBR AT MOD AASHTO DENSITY | UCS AT 100% MOD AASHTO | MAX SWELL AT 100% MOD AASHTO |
|-----------|---------------------|-----------------|----------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|---------------------------|------------------------|------------------------------|
| 1         | --                  | SURFACING       | 40             | ASPHALT (CONTINUOUSLY GRADED (MEDIUM), A-EZ MODIFIED BINDER, 14 mm ROLLED-CHIPS) |                                                                                                                            |                      |                      |                           |                        |                              |
| 2         | G1                  | BASE            | 150            | CRUSHED STONE                                                                    | 88% APPARENT RELATIVE DENSITY                                                                                              | 4                    | --                   | --                        | --                     | --                           |
| 3         | C3                  | UPPER SUBBASE   | 125            | CEMENTED NATURAL GRAVEL                                                          | 97% MOD. AASHTO DENSITY                                                                                                    | 6                    | 1.5                  | 45 AT 95%                 | 1.5 - 3                | --                           |
| 4         | C3                  | LOWER SUBBASE   | 125            | CEMENTED NATURAL GRAVEL                                                          | 97% MOD. AASHTO DENSITY                                                                                                    | 6                    | 1.5                  | 45 AT 95%                 | 1.5 - 3                | --                           |
| 5         | G7                  | UPPER SELECTED  | 150            | GRAVEL / SOIL                                                                    | 95% MOD. AASHTO DENSITY                                                                                                    | 12 OR 3XGM + 10      | 0.75                 | 15 AT 93%                 | --                     | 1.5                          |
| 6         | G9                  | LOWER SELECTED  | 150            | GRAVEL / SOIL                                                                    | 93% MOD. AASHTO DENSITY                                                                                                    | 12 OR 3XGM + 10      | 0.75                 | 7 AT 93%                  | --                     | 1.5                          |
| 7         | G10                 | FILL            | VARIES         | GRAVEL / SOIL                                                                    | 90% MOD. AASHTO DENSITY                                                                                                    | 20                   | 0.5                  | 3 AT 90%                  | --                     | 1.5                          |
| 8         | G6                  | GRAVEL SHOULDER | 190            | NATURAL GRAVEL                                                                   | 95% MOD. AASHTO DENSITY                                                                                                    | 12                   | 1.2                  | 25 AT 93%                 | --                     | 1                            |
| 9         | --                  | PIONEER LAYER   | 500            | DUMP ROCK WITH FINES                                                             | DUMP ROCK: 300 mm MAXIMUM STONE SIZE. FINES: SUFFICIENT FINES TO FILL ALL VOIDS IN BETWEEN DUMP ROCK. MAX PI OF FINES = 12 |                      |                      |                           |                        |                              |
| 10        | G9                  | SELECTED FILL   | 150 - 200      | GRAVEL / SOIL                                                                    | 93% MOD. AASHTO DENSITY                                                                                                    | 12 OR 3XGM + 10      | 0.75                 | 7 AT 90%                  | --                     | 1.5                          |

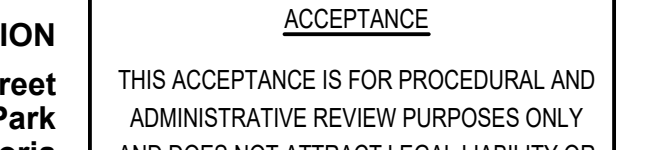
NOTES

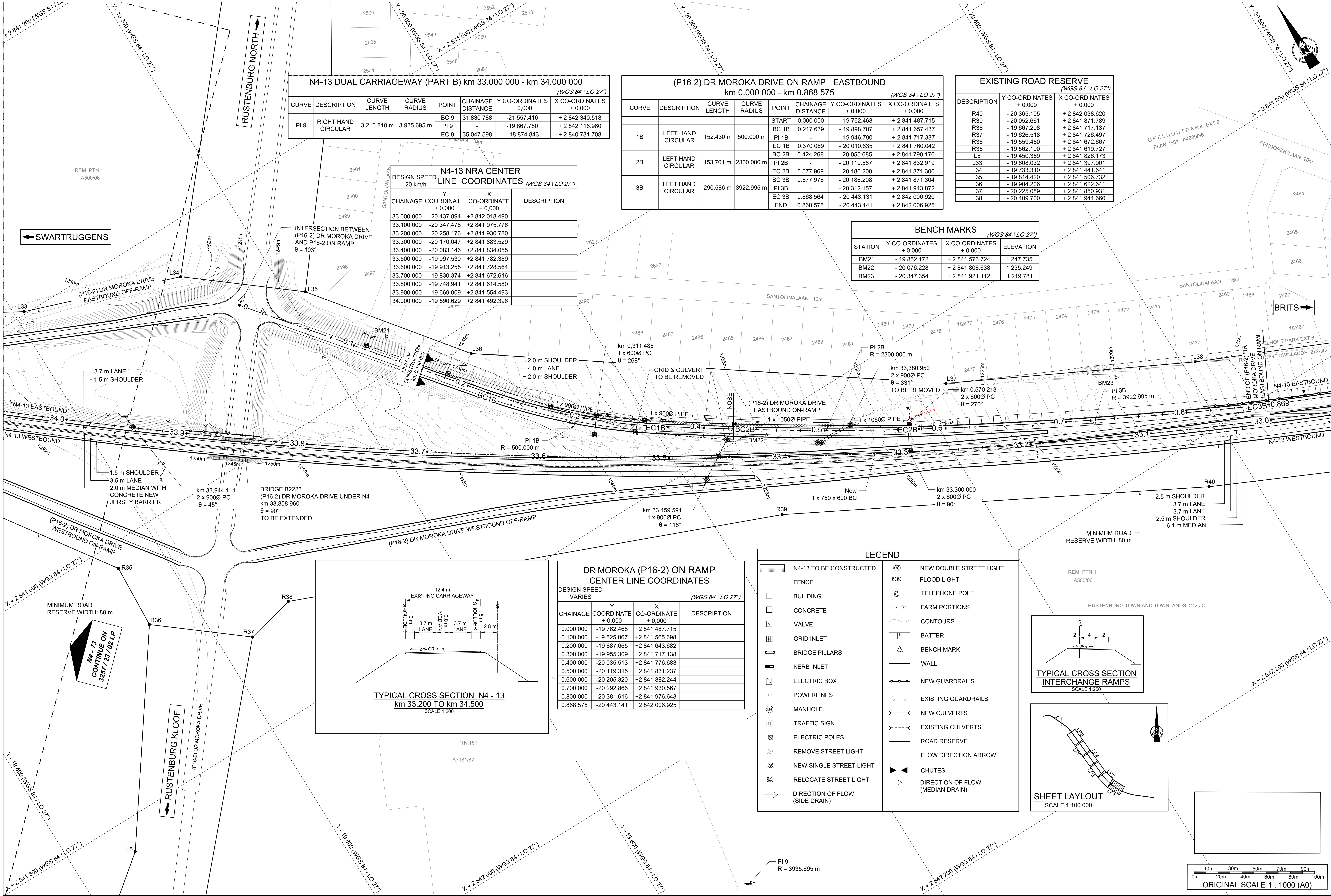
- FOR DETAILS REGARDING SUB-GRADE TREATMENT FOR AREAS WITH EXPANSIVE CLAYS REFER TO DRAWING 3257/13/04 TCS
- FOR BENCHING DETAILS SEE BELOW
- 75 mm OF TOP SOIL TO BE ADDED TO ALL CUTS, FILLS AND MEDIAN AREAS. FOR EARTH LINED SURFACES, FINAL LEVEL INDICATED IS TOP OF TOP SOIL

LEGEND

- MBP: MEDIAN BREAK POINT
- SBP: SHOULDER BREAK POINT
- \*: LIMIT OF STABILIZATION

| NEW PAVING                                                               |  | EXISTING PAVING   | NOTES                                                                |
|--------------------------------------------------------------------------|--|-------------------|----------------------------------------------------------------------|
| ASPHALT SURFACING (1)                                                    |  | EDGE OF SURFACING | 1. TRANSVERSE JOINT STEPS 500 mm AND LONGITUDINAL JOINT STEPS 300 mm |
| BASE (2)                                                                 |  | (SEE NOTE 1)      | 2. MATERIAL AS SPECIFIED IN THE TABLE                                |
| UPPER SUBBASE (3)                                                        |  | (SEE NOTE 1)      |                                                                      |
| LOWER SUBBASE (4)                                                        |  | (SEE NOTE 1)      |                                                                      |
| UPPER SELECTED (5)                                                       |  | (SEE NOTE 1)      |                                                                      |
| LOWER SELECTED (6)                                                       |  | (SEE NOTE 1)      |                                                                      |
| TYPICAL DETAIL - TRANSVERSE JOINT ONTO EXISTING PAVEMENT<br>NOT TO SCALE |  |                   |                                                                      |

|                                            |  |  |  |                                                |  |                                                                                                                              |                                                                                                                                             |                                                                                                                                           |  |                                                                                                                                                                |  |                                                                                                                                           |                                                                                                                                                                                          |                                                                                                                                        |                                                                                                                                                                                |                       |                                                                                                                        |                |                                                                                                                                    |                   |                                                       |                         |                            |           |  |
|--------------------------------------------|--|--|--|------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------|-------------------------|----------------------------|-----------|--|
|                                            |  |  |  | CONSTRUCTION RECORD<br>WORKS CONTRACT ENGINEER |  | CONSULTANT<br><div><br/>JG AFRICA</div> | CONCESSIONAIRE<br><div><br/>Bakwena<br/>NT14 101</div> | DESIGNED BY                                                                                                                               |  | CONSULTANT APPROVAL                                                                                                                                            |  | HEAD OFFICE<br>48 Tamboe Avenue<br>Val de Grace<br>Pretoria<br>0184<br>PO Box 415<br>Pretoria 0001<br>South Africa<br>Tel: (012) 844 8000 | <div><br/>THE SOUTH AFRICAN NATIONAL<br/>ROADS AGENCY<br/>SANCOR<br/>Reg. No. 1998/0039584/00</div> | NORTHERN REGION<br>38 Ida Street<br>Menlo Park<br>Pretoria<br>0081<br>Private Bag X17<br>Lynnwood Ridge<br>0040<br>Tel: (012) 426 6200 | ACCEPTANCE                                                                                                                                                                     |                       | PROJECT DESCRIPTION<br>AUXILIARY LANE - DR MOROKA TO P16-1                                                             |                | PROJECT NUMBER<br>3257                                                                                                             |                   |                                                       |                         |                            |           |  |
|                                            |  |  |  | Name :<br>Prof. Reg. No. :<br>Date :           |  |                                                                                                                              |                                                                                                                                             | NAME<br>EF DAY<br>Prof. Reg. No.: 20130622<br>CHECKED BY<br>NAME<br>PL NGQUMSHE<br>Prof. Reg. No.: 20080112<br>DRAWN BY<br>NAME<br>EF DAY |  | Name : PL NGQUMSHE<br>Prof. Reg. No.: 20080112<br>Date: 20/06/2023                                                                                             |  |                                                                                                                                           |                                                                                                                                                                                          |                                                                                                                                        | THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATEVER CAUSE OR HOWEVER ARISING |                       | DRAWING DESCRIPTION<br>TYPICAL CROSS SECTION<br>SINGLE CARRIAGEWAY WITH CONCRETE NEW JERSEY BARRIER AND AUXILIARY LANE |                | DRAWING LOCATION DATA<br>ROUTE<br>SECTION<br>DRAWING km DISTANCE<br>DRAWING TYPE<br>BRIDGE/STRUCTURE No.<br>CONSULTANT DRAWING No. |                   | START<br>N 4<br>13<br>34.300<br>ROADS - TYPICAL<br>NA |                         | END<br>N 4<br>13<br>38.900 |           |  |
| VO 29/06/2023 ORIGINAL VERSION PL NGQUMSHE |  |  |  | CONSULT. ENG.                                  |  | Name :<br>Prof. Reg. No. :<br>Date :                                                                                         |                                                                                                                                             | P. O. Box 1109<br>Sunninghill<br>2157<br>Tel: +27 11 231-2200<br>Fax: +27 11 897-1607<br>e-mail: johannesburg@jgafrika.com                |  | Southdowns Ridge Office park<br>2nd Floor Unit 1A<br>Cnr John Vorster & Nellmapius Drive<br>Isipingo<br>Centurion<br>Tel: +27 11 519-0400 Fax: +27 11 519-0414 |  |                                                                                                                                           |                                                                                                                                                                                          | for CEO: SA NATIONAL ROADS AGENCY LTD.<br>Date:                                                                                        |                                                                                                                                                                                | SCALE : AS SHOWN (A0) |                                                                                                                        | SHEET 01 OF 01 |                                                                                                                                    | SANRAL DOCUMENT # |                                                       | FA 3257 / 23 / 01 TCS-1 |                            | VER<br>V0 |  |



| N4-13 DUAL CARRIAGEWAY (PART B) km 33.000 000 - km 34.000 000 |                     |              |              |       |                   |                        |                        |
|---------------------------------------------------------------|---------------------|--------------|--------------|-------|-------------------|------------------------|------------------------|
| (WGS 84   LO 27°)                                             |                     |              |              |       |                   |                        |                        |
| CURVE                                                         | DESCRIPTION         | CURVE LENGTH | CURVE RADIUS | POINT | CHAINAGE DISTANCE | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 |
| PI 9                                                          | RIGHT HAND CIRCULAR | 3 216.810 m  | 3 935.695 m  | BC 9  | 31 830 788        | -21 557.416            | +2 842 340.518         |
|                                                               |                     |              |              | PI 9  | -                 | -19 867.780            | +2 842 116.960         |
|                                                               |                     |              |              | EC 9  | 35 047.598        | -18 874.843            | +2 840 731.708         |

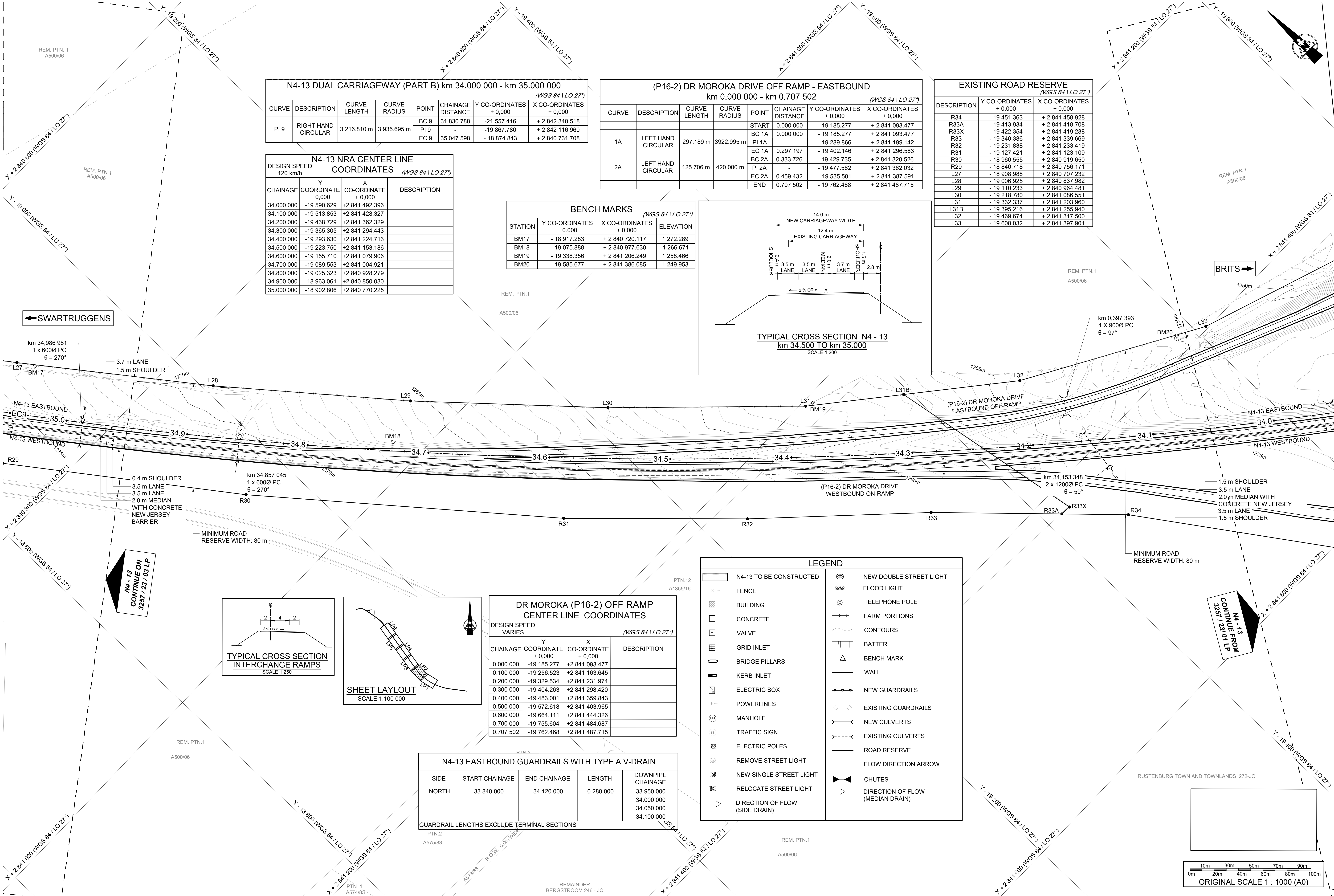
| N4-13 NRA CENTER LINE COORDINATES (WGS 84   LO 27°) |                       |                       |             |
|-----------------------------------------------------|-----------------------|-----------------------|-------------|
| CHAINAGE                                            | Y CO-ORDINATE + 0,000 | X CO-ORDINATE + 0,000 | DESCRIPTION |
| 33.000 000                                          | -20 437.894           | +2 842 018.490        |             |
| 33.100 000                                          | -20 347.478           | +2 841 975.776        |             |
| 33.200 000                                          | -20 258.176           | +2 841 930.780        |             |
| 33.300 000                                          | -20 170.047           | +2 841 883.529        |             |
| 33.400 000                                          | -20 083.146           | +2 841 834.055        |             |
| 33.500 000                                          | -19 997.530           | +2 841 782.389        |             |
| 33.600 000                                          | -19 913.255           | +2 841 728.564        |             |
| 33.700 000                                          | -19 830.374           | +2 841 672.616        |             |
| 33.800 000                                          | -19 748.941           | +2 841 614.580        |             |
| 33.900 000                                          | -19 669.009           | +2 841 554.493        |             |
| 34.000 000                                          | -19 590.629           | +2 841 492.396        |             |

| (P16-2) DR MOROKA DRIVE ON RAMP - EASTBOUND |                    |              |              |       |                   |                        |                        |
|---------------------------------------------|--------------------|--------------|--------------|-------|-------------------|------------------------|------------------------|
| km 0.000 000 - km 0.868 575                 |                    |              |              |       |                   |                        |                        |
| (WGS 84   LO 27°)                           |                    |              |              |       |                   |                        |                        |
| CURVE                                       | DESCRIPTION        | CURVE LENGTH | CURVE RADIUS | POINT | CHAINAGE DISTANCE | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 |
|                                             |                    |              |              | START | 0.000 000         | -19 762.468            | +2 841 487.715         |
|                                             |                    |              |              | BC 1B | 0.217 639         | -19 898.707            | +2 841 657.437         |
| 1B                                          | LEFT HAND CIRCULAR | 152.430 m    | 500.000 m    | PI 1B | -                 | -19 946.790            | +2 841 717.337         |
|                                             |                    |              |              | EC 1B | 0.370 069         | -20 010.635            | +2 841 760.042         |
|                                             |                    |              |              | BC 2B | 0.424 268         | -20 055.685            | +2 841 790.176         |
| 2B                                          | LEFT HAND CIRCULAR | 153.701 m    | 2300.000 m   | PI 2B | -                 | -20 119.587            | +2 841 832.919         |
|                                             |                    |              |              | EC 2B | 0.577 969         | -20 186.200            | +2 841 871.300         |
|                                             |                    |              |              | BC 3B | 0.577 978         | -20 186.208            | +2 841 871.304         |
| 3B                                          | LEFT HAND CIRCULAR | 290.586 m    | 3922.995 m   | PI 3B | -                 | -20 312.157            | +2 841 943.872         |
|                                             |                    |              |              | EC 3B | 0.868 564         | -20 443.131            | +2 842 006.920         |
|                                             |                    |              |              | END   | 0.868 575         | -20 443.141            | +2 842 006.925         |

| EXISTING ROAD RESERVE |                        |                        |
|-----------------------|------------------------|------------------------|
| (WGS 84   LO 27°)     |                        |                        |
| DESCRIPTION           | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 |
| R40                   | -20 365.105            | +2 842 038.620         |
| R39                   | -20 052.661            | +2 841 871.789         |
| R38                   | -19 667.298            | +2 841 717.137         |
| R37                   | -19 626.518            | +2 841 726.497         |
| R36                   | -19 559.450            | +2 841 672.667         |
| R35                   | -19 562.190            | +2 841 619.727         |
| L5                    | -19 450.359            | +2 841 826.173         |
| L33                   | -19 608.032            | +2 841 397.901         |
| L34                   | -19 733.310            | +2 841 441.641         |
| L35                   | -19 814.420            | +2 841 506.732         |
| L36                   | -19 904.206            | +2 841 622.641         |
| L37                   | -20 225.089            | +2 841 850.931         |
| L38                   | -20 409.700            | +2 841 944.660         |

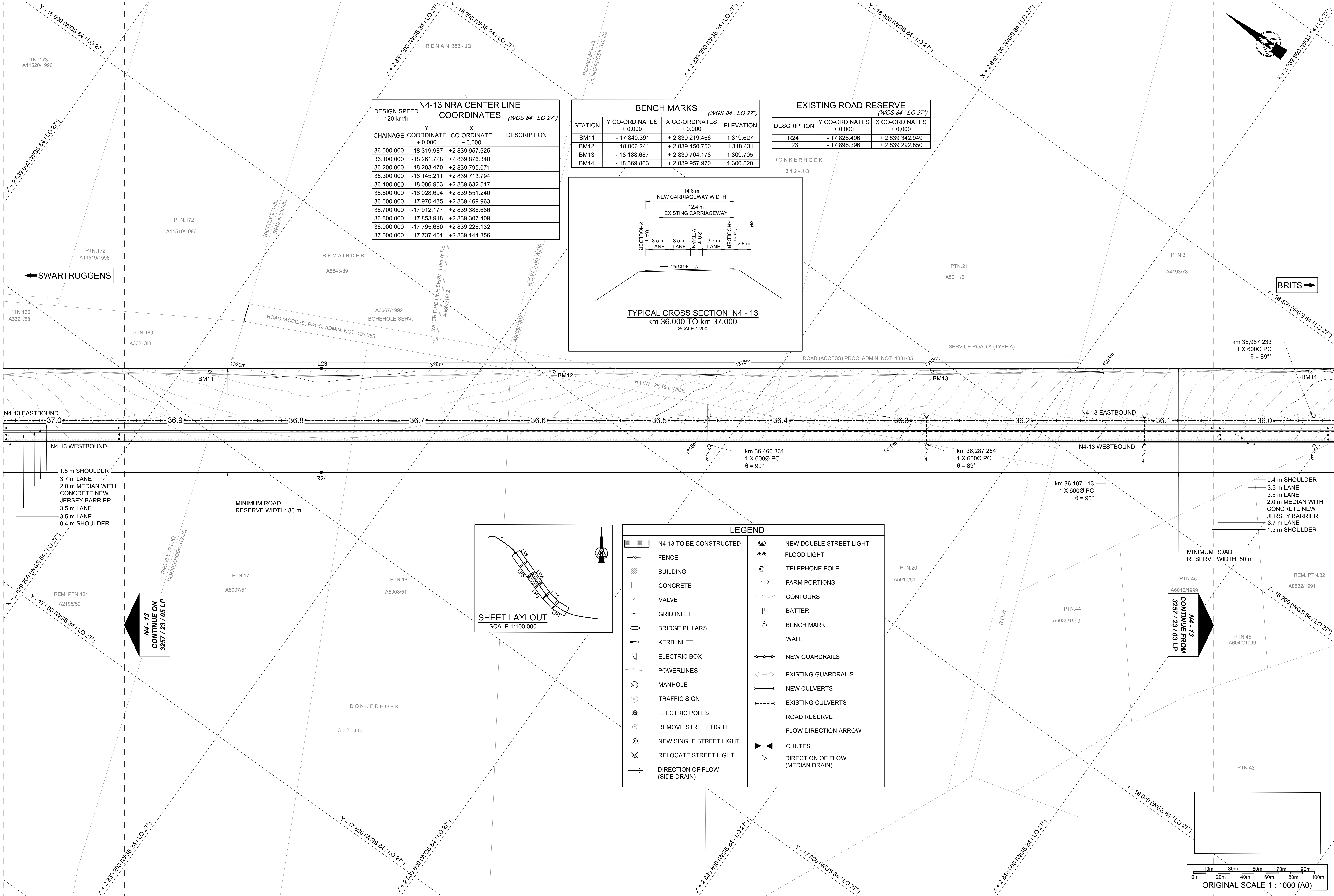
| BENCH MARKS (WGS 84   LO 27°) |                        |                        |           |
|-------------------------------|------------------------|------------------------|-----------|
| STATION                       | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 | ELEVATION |
| BM21                          | -19 852.172            | +2 841 573.724         | 1 247.735 |
| BM22                          | -20 076.228            | +2 841 808.638         | 1 235.249 |
| BM23                          | -20 347.354            | +2 841 921.112         | 1 219.781 |

|                                                |  |  |                                       |  |                                                                                 |  |                                      |  |                                      |  |                                                        |  |                                                 |  |                                           |  |                                                     |  |                |  |                       |  |                                          |  |                 |  |                      |  |                         |  |                   |  |
|------------------------------------------------|--|--|---------------------------------------|--|---------------------------------------------------------------------------------|--|--------------------------------------|--|--------------------------------------|--|--------------------------------------------------------|--|-------------------------------------------------|--|-------------------------------------------|--|-----------------------------------------------------|--|----------------|--|-----------------------|--|------------------------------------------|--|-----------------|--|----------------------|--|-------------------------|--|-------------------|--|
| CONSTRUCTION RECORD<br>WORKS CONTRACT ENGINEER |  |  | CONSULTANT                            |  | CONCESSIONAIRE                                                                  |  | DESIGNED BY                          |  | CONSULTANT APPROVAL                  |  | HEAD OFFICE                                            |  | NORTHERN REGION                                 |  | ACCEPTANCE                                |  | PROJECT DESCRIPTION                                 |  | PROJECT NUMBER |  | DRAWING LOCATION DATA |  | DRAWING DESCRIPTION                      |  | DRAWING TYPE    |  | BRIDGE/STRUCTURE No. |  | CONSULTANT DRAWING No.  |  | SANRAL DOCUMENT # |  |
| Name :<br>Prof. Reg. No. :<br>Date :           |  |  | Name :<br>Prof. Reg. No. :<br>Date :  |  | Name :<br>Prof. Reg. No. :<br>Date :                                            |  | Name :<br>Prof. Reg. No. :<br>Date : |  | Name :<br>Prof. Reg. No. :<br>Date : |  | Name :<br>Prof. Reg. No. :<br>Date :                   |  | Name :<br>Prof. Reg. No. :<br>Date :            |  | Name :<br>Prof. Reg. No. :<br>Date :      |  | N4 - 13 - AUXILIARY LANE BETWEEN DR MOROKA AND R104 |  | 3257           |  | ROUTE<br>SECTION      |  | LAYOUT N4-13<br>FROM km 33.000 TO 34.000 |  | ROADS - LAYOUTS |  | NA                   |  | FA 3257 / 23 / 01 LP -1 |  | --                |  |
| ORIGINAL VERSION                               |  |  | P. O. Box 1109<br>Sunninghill<br>2157 |  | Tel: +27 11 231-2200<br>Fax: +27 11 807-1807<br>e-mail: johannesburg@gafika.com |  | PL NGQUMSHE<br>2008112               |  | PL NGQUMSHE<br>2008112               |  | 48 Tambotie Avenue<br>Val de Grace<br>Pretoria<br>0184 |  | 38 Ida Street<br>Menlo Park<br>Pretoria<br>0081 |  | Private Bag X17<br>Lynnwood Ridge<br>0040 |  | N4 - 13 - AUXILIARY LANE BETWEEN DR MOROKA AND R104 |  | SECTION 13     |  | km 33.000             |  | km 34.000                                |  | ROADS - LAYOUTS |  | NA                   |  | FA 3257 / 23 / 01 LP -1 |  | --                |  |
| REVISION                                       |  |  | Tel: +27 11 519-0414                  |  | Tel: +27 11 519-0414                                                            |  | PL NGQUMSHE<br>2008112               |  | PL NGQUMSHE<br>2008112               |  | Tel: (012) 844 8000                                    |  | Tel: (012) 426 6200                             |  | for CEO: SA NATIONAL ROADS AGENCY LTD.    |  | SCALE : 1 : 1000 (A0)                               |  | SHEET 01 OF 06 |  | VER                   |  | V0                                       |  |                 |  |                      |  |                         |  |                   |  |



|                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <div>CONSTRUCTION RECORD</div> <div>WORKS CONTRACT ENGINEER</div> <div>Name: _____</div> <div>Prof. Reg. No.: _____</div> <div>Date: _____</div> <div>SANRAL PROJECT MANAGER</div> <div>Name: _____</div> <div>Prof. Reg. No.: _____</div> <div>Date: _____</div> <div>V0 07/07/2023 ORIGINAL VERSION PL NGQUMSHE CONSULT. ENG.</div> | <div>CONSULTANT</div> <div>Unauthorised - All Sanral drawings, documents and materials are the property of SANRAL</div> <div>P. O. Box 1109 Sunninghill 2157</div> <div>Tel: +27 11 231-2200 Fax: +27 11 807-1607</div> <div>e-mail: johannesburg@jgafrika.com</div> | <div>CONCESSIONAIRE</div> <div> <b>Bakwena</b><br/>N114 IOL</div> <div>Southdowns Ridge Office park 2nd Floor Unit 1A Cnr John Vorster &amp; Nelmapius Drive Irene Centurion</div> <div>Tel: +27 11 519-0400 Fax: +27 11 519-0414</div> | <div>DESIGNED BY</div> <div>NAME: EF DAY</div> <div>Prof. Reg. No.: 20130622</div> <div>CHECKED BY</div> <div>NAME: PL NGQUMSHE</div> <div>Prof. Reg. No.: 20080112</div> <div>DRAWN BY</div> <div>NAME: EF DAY</div> | <div>CONSULTANT APPROVAL</div> <div>Name: PL NGQUMSHE</div> <div>Prof. Reg. No.: 20080112</div> <div>Date: 07/07/2023</div> <div>HEAD OFFICE</div> <div>48 Tambotie Avenue Val de Grace Pretoria 0184</div> <div>PO Box 415 Pretoria 0001 South Africa</div> <div>Tel: (012) 844 8000</div> <div> <b>THE SOUTH AFRICAN NATIONAL ROADS AGENCY</b><br/>SACRO LTD</div> <div>Reg. No. 1998/095842/30</div> <div>NORTHERN REGION</div> <div>38 Ida Street Menlo Park Pretoria 0081</div> <div>Private Bag X17 Lynnwood Ridge 0140</div> <div>Tel: (012) 426 6200</div> | <div>ACCEPTANCE</div> <div>THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING</div> <div>for CEO: SA NATIONAL ROADS AGENCY LTD.</div> <div>Date: _____</div> | <div>PROJECT DESCRIPTION</div> <div>N4-13 - AUXILIARY LANE BETWEEN DR MOROKA AND R104</div> <div><div>DRAWING DESCRIPTION</div><div>LAYOUT N4-13</div><div>FROM km 34.000 TO 35.000</div></div> <div>SCALE : 1 : 1000 (A0)</div> | <div>PROJECT NUMBER</div> <div>3257</div> <div><div>DRAWING LOCATION DATA</div><div>ROUTE</div><div>SECTION</div><div>DRAWING TYPE</div><div>BRIDGE/STRUCTURE No.</div><div>CONSULTANT DRAWING No.</div><div>SANRAL DOCUMENT #</div></div> <div><div>START</div><div>N 4</div><div>SECTION 13</div><div>ROADS - LAYOUTS</div><div>NA</div><div>FA</div><div>3257 / 23 / 02 LP-1</div><div>--</div></div> <div><div>END</div><div>N 4</div><div>SECTION 13</div><div>km 35.000</div><div>VER</div><div>V0</div></div> |
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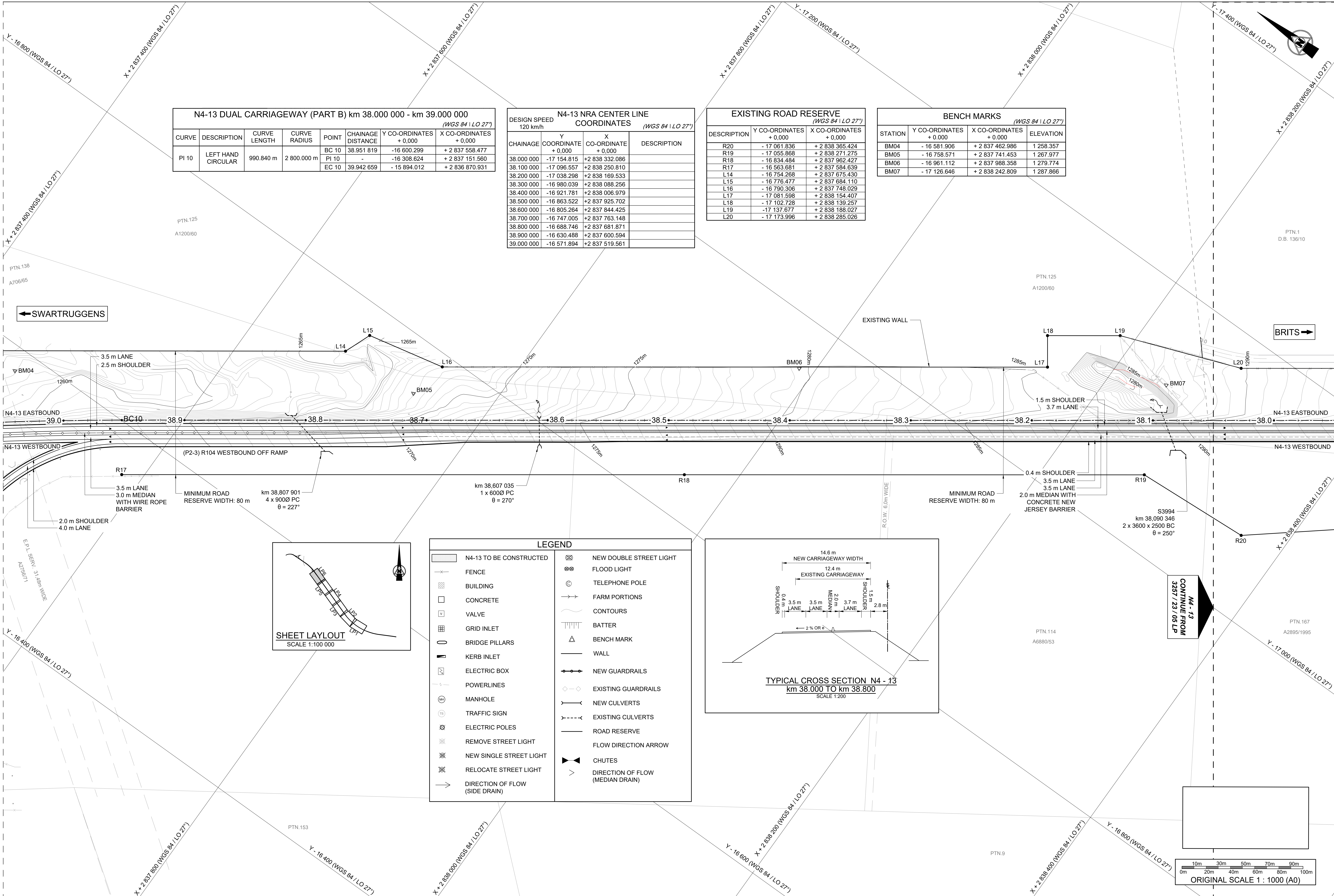


|  |  |                                                   |                                                |                          |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|--|--|---------------------------------------------------|------------------------------------------------|--------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|---------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|----------------|--|
|  |  |                                                   | CONSTRUCTION RECORD<br>WORKS CONTRACT ENGINEER |                          | CONSULTANT | <div>CONCESSIONAIRE</div> <div></div> <div>N1144 toll</div> | DESIGNED BY |  | CONSULTANT APPROVAL |  | <div>HEAD OFFICE</div> <div>38 Ida Street<br/>Menlo Park<br/>Pretoria<br/>0184</div> <div>PO Box 415<br/>Pretoria 0001<br/>South Africa</div> <div>Tel: (012) 844 8000</div> | <div>NORTHERN REGION</div> <div>38 Ida Street<br/>Menlo Park<br/>Pretoria<br/>0081</div> <div>Private Bag X17<br/>Lynnwood Ridge<br/>0140</div> <div>Tel: (012) 426 6200</div> | <div>ACCEPTANCE</div> <div>THIS ACCEPTANCE IS FOR PROCEDURAL AND<br/>ADMINISTRATIVE REVIEW PURPOSES ONLY<br/>AND DOES NOT ATTRACT LEGAL LIABILITY OR<br/>LIABILITY OF ANY KIND FROM WHATSOEVER<br/>CAUSE OR HOWEVER ARISING</div> <div>for CEO: SA NATIONAL ROADS AGENCY LTD.<br/>Date:</div> | PROJECT DESCRIPTION |  | PROJECT NUMBER |  |
|  |  |                                                   |                                                | 3257                     |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  | N4-13 - AUXILIARY LANE BETWEEN DR MOROKA AND R104 |                                                | DRAWING LOCATION DATA    |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | START                    |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | END                      |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | ROUTE                    |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | SECTION                  |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | SECTION 13               |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | SECTION 13               |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | DRAWING km DISTANCE      |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | km 36.000                |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | km 37.000                |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | DRAWING TYPE             |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | LAYOUT N4-13             |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | FROM km 36.000 TO 37.000 |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | DRAWING TYPE             |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | BRIDGE/STRUCTURE No.     |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | CONSULTANT DRAWING No.   |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | SANRAL DOCUMENT #        |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | FA                       |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | 3257 / 23 / 04 LP -1     |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | VER                      |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |
|  |  |                                                   |                                                | V0                       |            |                                                                                                                                                 |             |  |                     |  |                                                                                                                                                                              |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |                     |  |                |  |

|      |  |            |  |                                  |  |                      |  |
|------|--|------------|--|----------------------------------|--|----------------------|--|
| No.  |  | 07/07/2023 |  | ORIGINAL VERSION                 |  | PL NGQUMSHE          |  |
| DATE |  | REVISION   |  | CONSULT.<br>ENG.                 |  | CONSULTANT           |  |
|      |  |            |  | Name                             |  | P. O. Box 1109       |  |
|      |  |            |  | Prof. Reg. No.                   |  | Sunninghill          |  |
|      |  |            |  | Date                             |  | 2157                 |  |
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|      |  |            |  |                                  |  | Tel: +27 11 519-0400 |  |
|      |  |            |  |                                  |  | Fax: +27 11 519-0414 |  |
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|      |  |            |  |                                  |  | Fax: +27 11 519-0414 |  |
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|      |  |            |  |                                  |  | Fax: +27 11 519-0414 |  |
|      |  |            |  |                                  |  | Tel: +27 11 519-0400 |  |
|      |  |            |  |                                  |  | Fax: +27 11 519-0414 |  |
|      |  |            |  |                                  |  | Tel: +27 11 519-0400 |  |
|      |  |            |  |                                  |  | Fax: +27 11 519-0414 |  |
|      |  |            |  |                                  |  | Tel: +27 11 519-0400 |  |
|      |  |            |  |                                  |  | Fax: +27 1           |  |

SANRAL DOCUMENT NUMBER :



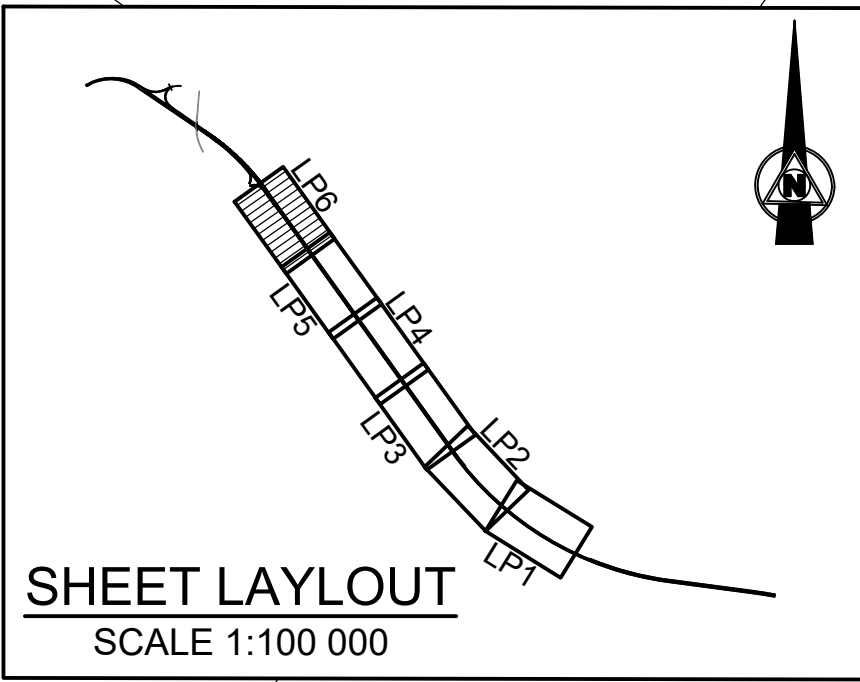


| N4-13 DUAL CARRIAGEWAY (PART B) km 38.000 000 - km 39.000 000 |                    |              |              |       |                   |                        |
|---------------------------------------------------------------|--------------------|--------------|--------------|-------|-------------------|------------------------|
| (WGS 84   LO 27°)                                             |                    |              |              |       |                   |                        |
| CURVE                                                         | DESCRIPTION        | CURVE LENGTH | CURVE RADIUS | POINT | CHAINAGE DISTANCE | Y CO-ORDINATES + 0,000 |
| PI 10                                                         | LEFT HAND CIRCULAR | 990.840 m    | 2 800.000 m  | BC 10 | 38.951 819        | -16 600.299            |
|                                                               |                    |              |              | PI 10 | -                 | -16 308.624            |
|                                                               |                    |              |              | EC 10 | 39.942 659        | -15 894.012            |
|                                                               |                    |              |              |       |                   | + 2 837 558.477        |
|                                                               |                    |              |              |       |                   | + 2 837 151.560        |
|                                                               |                    |              |              |       |                   | + 2 836 870.931        |

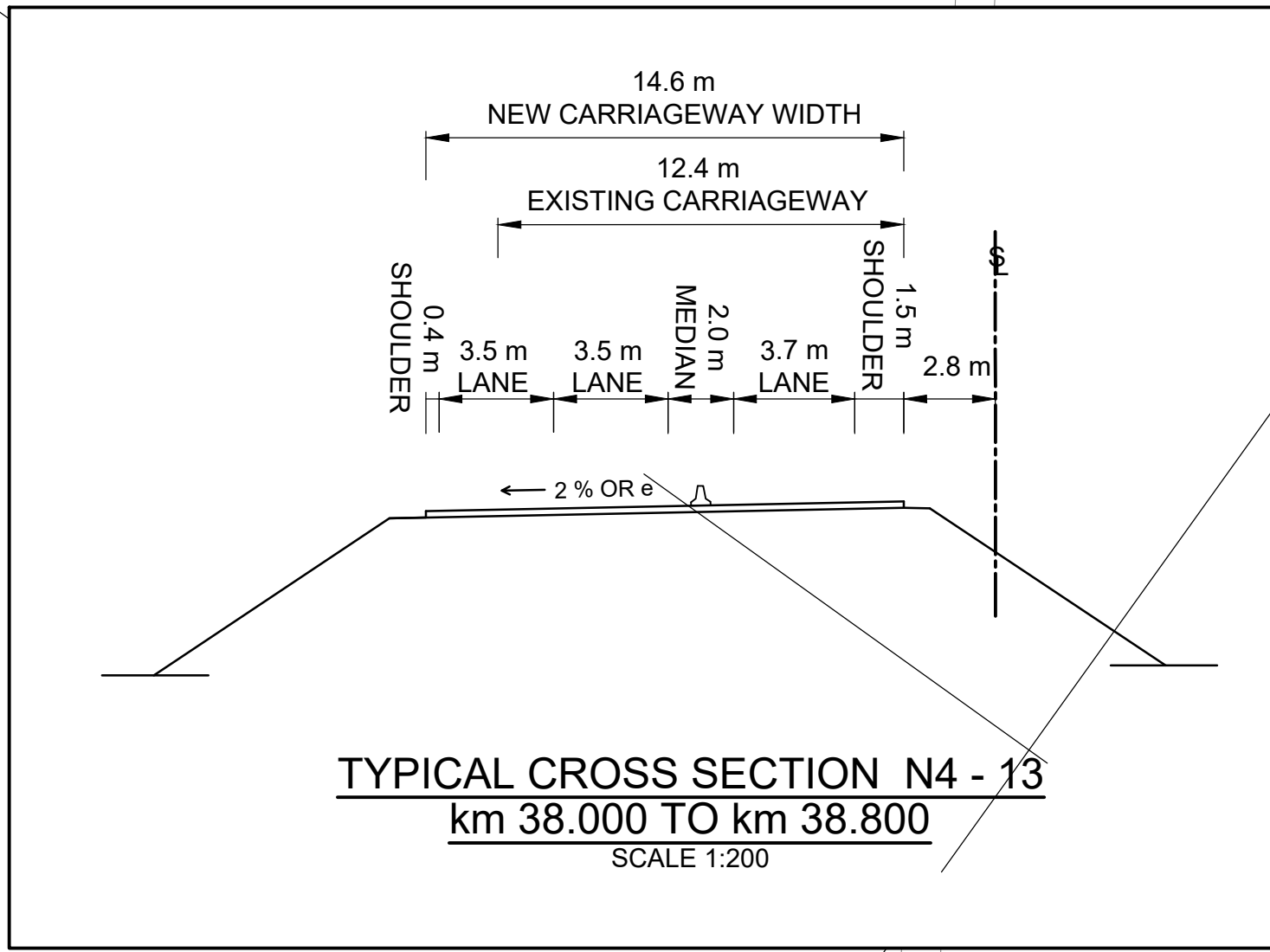
| N4-13 NRA CENTER LINE COORDINATES |                    |                     |             |
|-----------------------------------|--------------------|---------------------|-------------|
| (WGS 84   LO 27°)                 |                    |                     |             |
| CHAINAGE                          | Y                  | X                   | DESCRIPTION |
|                                   | COORDINATE + 0,000 | CO-ORDINATE + 0,000 |             |
| 38.000 000                        | -17 154.815        | +2 838 332.086      |             |
| 38.100 000                        | -17 096.557        | +2 838 250.810      |             |
| 38.200 000                        | -17 038.298        | +2 838 169.533      |             |
| 38.300 000                        | -16 980.039        | +2 838 088.256      |             |
| 38.400 000                        | -16 921.781        | +2 838 006.979      |             |
| 38.500 000                        | -16 863.522        | +2 837 925.702      |             |
| 38.600 000                        | -16 805.264        | +2 837 844.425      |             |
| 38.700 000                        | -16 747.005        | +2 837 763.148      |             |
| 38.800 000                        | -16 688.746        | +2 837 681.871      |             |
| 38.900 000                        | -16 630.488        | +2 837 600.594      |             |
| 39.000 000                        | -16 571.894        | +2 837 519.561      |             |

| EXISTING ROAD RESERVE |                        |                        |
|-----------------------|------------------------|------------------------|
| (WGS 84   LO 27°)     |                        |                        |
| DESCRIPTION           | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 |
| R20                   | -17 061.836            | +2 838 365.424         |
| R19                   | -17 055.868            | +2 838 271.275         |
| R18                   | -16 834.484            | +2 837 962.427         |
| R17                   | -16 563.681            | +2 837 584.639         |
| L14                   | -16 754.268            | +2 837 675.430         |
| L15                   | -16 776.477            | +2 837 684.110         |
| L16                   | -16 790.306            | +2 837 748.029         |
| L17                   | -17 081.598            | +2 838 154.407         |
| L18                   | -17 102.728            | +2 838 139.257         |
| L19                   | -17 137.677            | +2 838 188.027         |
| L20                   | -17 173.996            | +2 838 285.026         |

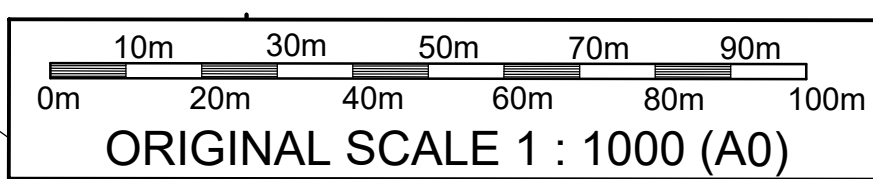
| BENCH MARKS       |                        |                        |           |
|-------------------|------------------------|------------------------|-----------|
| (WGS 84   LO 27°) |                        |                        |           |
| STATION           | Y CO-ORDINATES + 0,000 | X CO-ORDINATES + 0,000 | ELEVATION |
| BM04              | -16 581.906            | +2 837 462.986         | 1 258.357 |
| BM05              | -16 758.571            | +2 837 741.453         | 1 267.977 |
| BM06              | -16 961.112            | +2 837 988.358         | 1 279.774 |
| BM07              | -17 126.646            | +2 838 242.809         | 1 287.866 |



| LEGEND |                                  |
|--------|----------------------------------|
|        | N4-13 TO BE CONSTRUCTED          |
|        | FENCE                            |
|        | BUILDING                         |
|        | CONCRETE                         |
|        | VALVE                            |
|        | GRID INLET                       |
|        | KERB INLET                       |
|        | ELECTRIC BOX                     |
|        | POWERLINES                       |
|        | MANHOLE                          |
|        | TRAFFIC SIGN                     |
|        | ELECTRIC POLES                   |
|        | REMOVE STREET LIGHT              |
|        | NEW SINGLE STREET LIGHT          |
|        | RELOCATE STREET LIGHT            |
|        | DIRECTION OF FLOW (SIDE DRAIN)   |
|        | NEW DOUBLE STREET LIGHT          |
|        | FLOOD LIGHT                      |
|        | TELEPHONE POLE                   |
|        | FARM PORTIONS                    |
|        | CONTOURS                         |
|        | BATTER                           |
|        | BENCH MARK                       |
|        | WALL                             |
|        | NEW GUARDRAILS                   |
|        | EXISTING GUARDRAILS              |
|        | NEW CULVERTS                     |
|        | EXISTING CULVERTS                |
|        | ROAD RESERVE                     |
|        | FLOW DIRECTION ARROW             |
|        | CHUTES                           |
|        | DIRECTION OF FLOW (MEDIAN DRAIN) |



N4-13  
CONTINUE FROM  
3257 / 23 / 05 LP



|               |  |                                   |  |                        |  |                                       |                                                                                  |                                                                                  |  |                                                                        |  |                                                                       |                                                        |                                                                    |                                                                                                                                                                                              |                                                                 |  |                                                |  |
|---------------|--|-----------------------------------|--|------------------------|--|---------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--|------------------------------------------------------------------------|--|-----------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--|------------------------------------------------|--|
|               |  |                                   |  | CONSTRUCTION RECORD    |  | CONSULTANT                            | CONCESSIONAIRE                                                                   | DESIGNED BY                                                                      |  | CONSULTANT APPROVAL                                                    |  | HEAD OFFICE<br>48 Tambotie Avenue<br>Vla de Grace<br>Pretoria<br>0184 | THE SOUTH AFRICAN NATIONAL<br>ROADS AGENCY<br>SAC 1976 | NORTHERN REGION<br>38 Ida Street<br>Menlo Park<br>Pretoria<br>0081 | THIS ACCEPTANCE IS FOR PROCEDURAL AND<br>ADMINISTRATIVE REVIEW PURPOSES ONLY<br>AND DOES NOT ATTRACT LEGAL LIABILITY OR<br>LIABILITY OF ANY KIND FROM WHATSOEVER<br>CAUSE OR HOWEVER ARISING | PROJECT DESCRIPTION                                             |  | PROJECT NUMBER<br>3257                         |  |
|               |  | WORKS CONTRACT ENGINEER           |  |                        |  |                                       |                                                                                  | NAME<br>EF DAY<br>Prof. Reg. No. 20130622                                        |  | NAME<br>PL NGQUMSHE<br>Prof. Reg. No. 20080112<br>Date: 13 / 12 / 2019 |  |                                                                       |                                                        |                                                                    |                                                                                                                                                                                              | DRAWING LOCATION DATA                                           |  | START<br>N 4                                   |  |
|               |  | Name<br>Prof. Reg. No. :<br>Date: |  | SANRAL PROJECT MANAGER |  | P. O. Box 1109<br>Sunninghill<br>2157 | Tel: +27 11 231-2200<br>Fax: +27 11 807-1807<br>e-mail: johannesburg@gafrika.com | NAME<br>PL NGQUMSHE<br>Prof. Reg. No. 20080112                                   |  | NAME<br>DRAWN BY<br>NAME<br>EF DAY                                     |  | PO Box 415<br>Pretoria 0001<br>South Africa<br>Tel: (012) 844 8000    |                                                        | Private Bag X17<br>Lynnwood Ridge<br>0040<br>Tel: (012) 426 6200   |                                                                                                                                                                                              | DRAWING DESCRIPTION<br>LAYOUT N4-13<br>FROM km 38.000 TO 39.000 |  | DRAWING DISTANCE<br>km 38.000<br>km 39.000     |  |
| V0 07/07/2023 |  | ORIGINAL VERSION                  |  | CONSULT. ENG.          |  |                                       |                                                                                  | Tel: +27 11 231-2200<br>Fax: +27 11 807-1807<br>e-mail: johannesburg@gafrika.com |  | NAME<br>DRAWN BY<br>NAME<br>EF DAY                                     |  | NAME<br>DRAWN BY<br>NAME<br>EF DAY                                    |                                                        | Tel: (012) 844 8000                                                |                                                                                                                                                                                              | Tel: (012) 426 6200                                             |  | BRIDGE/STRUCTURE No.<br>CONSULTANT DRAWING No. |  |
| NO. DATE      |  | REVISION                          |  | CONSULT. ENG.          |  | P. O. Box 1109<br>Sunninghill<br>2157 |                                                                                  | NAME<br>DRAWN BY<br>NAME<br>EF DAY                                               |  | NAME<br>DRAWN BY<br>NAME<br>EF DAY                                     |  | Tel: (012) 844 8000                                                   |                                                        | Tel: (012) 426 6200                                                |                                                                                                                                                                                              | SCALE : 1 : 1000 (A0)                                           |  | VER V0                                         |  |
|               |  |                                   |  |                        |  |                                       |                                                                                  |                                                                                  |  |                                                                        |  |                                                                       |                                                        |                                                                    |                                                                                                                                                                                              |                                                                 |  |                                                |  |