

Clarification Meeting:

**CONTRACT SANRAL : NRA 2025/0071
FOR THE UPGRADING OF NATIONAL ROAD R.573
SECTION 2: WORK PACKAGE B FROM KM 36.20 TO
KM 48.16**

MPUMALANGA PROVINCE

21-07-2025: 10h00

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THROUGH BETTER ROADS**

CONTENT

1. TENDER NOTICE AND INVITATION TO TENDER
2. COMPOSITION OF THE TENDER DOCUMENT
3. CONDITIONS OF TENDER
4. SUBMISSION REQUIREMENTS
5. RETURNABLE SCHEDULE
6. EVALUATION PROCESS
7. SITE INFORMATION

TENDER NOTICE AND INVITATION TO TENDER

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PART T1.1: TENDER NOTICE AND INVITATION TO TENDER

TENDER DOCUMENTS

Tender documents will be available from **03 July 2025** for free download (Home Page - eTenders Portal) and CIDB website, and from the SANRAL's website by the following link Sanral: Building South Africa through better roads: SanralTenders

A compulsory briefing session will be conducted Virtually on the **21 July 2025, at 10h00.**

Late arrivals (15 Minutes late) will not be allowed to participate in the meeting and their submissions shall be declared non-responsive. A tenderer's representative cannot represent more than one tenderer at the tender briefing meeting.

PART T1.1: TENDER NOTICE AND INVITATION TO TENDER

TENDERER'S MEETING

A tender clarification briefing presentation will be sent to all Bidders who attended the briefing session. It is the responsibility of the Bidder to ensure they receive the presentation.

CLARIFICATION MEETING PRESENTATION

The onus rests with the tenderer to ensure that the representative reading or viewing the clarification briefing presentation is appropriately qualified to understand all directives and clarifications given in the clarification briefing presentation.

COMPLETION AND DELIVERY OF TENDERS

The closing time for receipt of tenders is 12h00 on Monday, 08th September 2025 (SA Time). **ADDENDUM 2 will be issued addressing change of closing date no further extension will be allowed.**

Tenders must be placed inside the tender box at:

Closing Venue: SANRAL: 36 Assegaai, Wood Street, Rooihuiskraal, Centurion

Telegraphic, telephonic, telex, e-mail, facsimile and late tenders will not be accepted.

Tenders may only be submitted in the format as stated in the Tender Data.

Queries relating to issues arising from these documents may be addressed to:

e-mail: procurementho06@sanral.co.za

*** Please quote the project number in the subject line.***

COMPOSITION OF THE TENDER DOCUMENT

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COMPOSITION OF TENDER DOCUMENT

| Book 1 of 1 | |
|--|--------------------------------------|
| T1 TENDERING PROCEDURES | T2 RETURNABLE SCHEDULE |
| T.1.1 Tender Notice & Invitation to Tender (incorporating SBD1) | T2.1 List of Returnable Schedules |
| T1.2 Tender Data | T.2.2 Returnable Schedules |

CONDITIONS OF TENDER

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T1.2 TENDER DATA

Notes to tenderer:

The conditions of tender are the standard conditions of tender as contained in Annexure C of the CIDB STANDARD FOR UNIFORMITY IN ENGINEERING AND CONSTRUCTION WORKS CONTRACTS as per Government Notice No. 423 published in Government Gazette No. 42622 of 08 AUGUST 2019 and as amended from time to time. (see www.cidb.org.za).

<http://www.cidb.org.za/News/Documents/Standard%20for%20Uniformity%20August%202019.pdf>

Part T1.2: Tender Data

| Clause Number | Tender Data |
|---------------|---|
| C.1.4 | Communication and employer's agent The Employer's Agent during the tender period can be contacted at: <u>procurementHO06@sanral.co.za</u> |

Notes to Tenderer:

Kindly note communication must be in writing and only addressed to the email address provided. Any communication received in any other form or to any other email address will not be regarded as an official clarification query and therefore not responded to.

Part T1.2: Tender Data

| Clause Number | Tender Data |
|---------------|--|
| C.2.1 | Eligibility Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders |

Notes to Tenderer:

- Each Eligibility Criteria is discussed individually in detail
- Failure to satisfy all the eligibility criteria will result in a non-eligible tender
- Obligation is on tenderers to ensure compliance to eligibility criteria as no additional documents will be accepted after tender closing.

Part T1.2: Tender Data (continued ...)

| Clause No | Tender Data |
|-----------|--|
| C.2.8 | Seek clarification Enquiries will close at 17h00 on Wednesday, 27th August 2025. |
| | |

Part T1.2: Tender Data (continued ...)

| Clause No | Tender Data |
|-----------------|--|
| C.2.12.1 | Alternative Tender Offers Alternative tender offers will not be considered |
| C.2.13 | Submitting a tender offer |
| C.2.13.2 | The tenderer is required to submit all returnable schedule as printed copy and in .pdf format (saved on a flash drive) |
| | |

Part T1.2: Tender Data (continued ...)

| Clause No | Tender Data |
|-----------|---|
| C.2.15.1 | <p>The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:</p> <ul style="list-style-type: none">• Location of tender box: SANRAL COC Building (Reception Area)• Physical address: SANRAL: 36 Assegai, Wood Street, Rooihuiskraal, Centurion <p>Identification details: Place the completed, printed and bound hard copy and flash drive in a package marked with the tenderer's company name, the project number and description: NRA 2025/0071 FOR THE UPGRADING OF NATIONAL ROAD R.573 SECTION 2: WORK PACKAGE B FROM KM 36.20 TO KM 48.16.</p> <p>Tenders must be submitted during hours (09:00 to 16:00) Monday to Friday at the Employer's address.</p> <p>It is in the tenderer's interest to ensure that the delivery of the tender offer is recorded in the Employer's tenders received register and deposited in the tender box.</p> |

Notes to Tenderer:

Tenderers to allow sufficient time on the closing date to comply with access control and administration.

Part T1.2: Tender Data (continued ...)

| Clause No | Tender Data |
|---|---|
| C.3.9 C.3.9.1, C.3.9.3 and C.3.9.4 | <p>Arithmetical errors, omissions, discrepancies and imbalanced unit rates.</p> <p>Where there is a discrepancy between the amounts in figures and the amount in words, the amount appearing in the summary to the Pricing Schedule shall govern.</p> <p>Notify shortlisted tenderers of all errors, omissions or imbalanced rates that are identified in their tender offers and either confirm the tender offers as tendered or accept the corrected total prices.</p> |
| | |

Part T1.2: Tender Data (continued ...)

| Clause No | Tender Data |
|-----------|---|
| C.3.13 | <p>Acceptance of a tender offer</p> <p>The conditions stated in clauses C.3.13(a) to (f) of the Conditions of Tender as well as the following additional clauses C.3.13(g) to (l) shall be applied as objective criteria in terms of section 2(1)(f) of the Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000) and as compelling and justifiable reasons in terms of Conditions of Tender clause C.3.11:</p> |

SUBMISSION REQUIREMENTS

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COMPLETENESS

Ensure all tender returnables are duly signed and relevant proof is attached to the form where applicable.

| The tenderer must complete the following returnable documents: | <u>Completed (tick)</u> |
|--|------------------------------------|
| Form A1: SBD 1 | |
| Form A2: SBD 4: Declaration of Interest | |
| Form A3: SBD 6.1: Tenderer's BBBEE Verification certificate (Incorporated in SBD 6.1) | |
| Form A4: Declaration of tenderer's past supply chain management practices | |
| Form A5: Protection of Personal information (POPIA) | |
| Form A6: RFT Declarations and Breach of law | |
| Form A7: Certificate of Authority for Signatory | |
| Form A8: Certificate of Authority for Joint Ventures (where applicable) | |
| Form A9: Declaration of Tenderer's current status of any debt outstanding with SANRAL | |
| Form A10: Domestic Prominent Influential Persons (DPIP) OR Foreign Prominent Public Officials (FPPO) | |
| Form A11: Certificate of Fronting practices | |
| Form A12: Specific goals points claim form | |
| Form A13: Vendor Registration number on Central Supplier Database | |
| FORM A14: Declaration of Tenderer's Litigation history | |
| Form A15: Valid Tax Clearance Pin issued by the South African Revenue Services. | |
| Form A16: Schedule of Deviations or Qualifications by Tenderer | |

COMPLETENESS

Ensure all tender returnables are duly signed and relevant proof is attached to the form where applicable.

| | |
|---|--|
| Form B1.1: Tenderer's Experience | |
| Form B1.1 .1: Contactable Reference Template | |
| Form B1.2: Media Relations and Public Relations | |
| Form B1.3: Newsroom PR | |
| Form B2.1: Key Resources Experience in PR And Strategic Communications | |
| Form B2.2: Senior Media Relations Key Resources Experience | |
| Form B2.3: PR and Media Relations Team Leaders Key Resources Experience | |
| Form B2.4: Writing Team Key Resources Experience | |
| Form B.3: Interdisciplinary Agency Management Experience | |
| Form B4: Technical Experience in Comparable Projects | |
| Form B5: Experience in Reputation Management | |
| Form B6: Media Liaison and Management | |
| Form B7: Experience in Speech Writing | |
| Form B8: Media Training | |

PART T2: RETURNABLE SCHEDULES

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T2.1 LIST OF RETURNABLE SCHEDULES

| | |
|--|--|
| Administrative responsiveness check | |
| Bid received before closing date and Time | |
| Bidder has completed SECTION 1: SBD1 Form | |
| Bidder has submitted a Priced Offer | |
| Bidder has attended Non-Compulsory Briefing Session | |
| <p>Mandatory Technical Requirement</p> <p>Only those tenderers who satisfy the following criteria are eligible to submit tenders:</p> <p>Registered on National Treasury Central Supplier Database at the closing of tender.</p> <p>Tenderers, or in the event of a Joint Venture, each member of the Joint Venture or Designated group, shall be registered on the National Treasury Central Supplier Database at the closing date for tender submissions. If not registered as verified online at tender closing; the tender will be declared non-responsive.</p> | |

EVALUATION PROCESS

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C.2.1 ELIGIBILITY CRITERIA

| Item | Description | Required |
|------|-----------------------------|---|
| a) | <u>Joint venture</u> | <ul style="list-style-type: none">• Respondents who would wish to respond to this Tender as a Joint Venture [JV] or consortium with B-BBEE entities, must state their intention to do so in their Tender submission. Such Respondents must also submit a signed JV or consortium agreement between the parties clearly stating the percentage [%] split of business and the associated responsibilities of each party. If at the time of the bid submission such a JV or consortium agreement has not been concluded, the partners must submit confirmation in writing of their intention to enter into a JV or consortium agreement should they be awarded business by SANRAL through this Tender process. This written confirmation must clearly indicate the percentage [%] split of business and the responsibilities of each party. In such cases, award of business will only take place once a signed copy of a JV or consortium agreement is submitted to SANRAL.• Respondents are to note that for the purpose of Evaluation, a JV will be evaluated based on one consolidated B-BBEE score card (a consolidated B-BBEE Status Level verification certificate) Preference points will be awarded to a bidder for attaining the specific goals requirements in accordance with the table indicated in the specific goals Claim Form. |

C.2.1 ELIGIBILITY CRITERIA

| Item | Description | Required |
|------|-------------|---|
| | | <ul style="list-style-type: none">• No bid may be withdrawn after it has been submitted to SANRAL unless the Bidder so requests in writing and such request is received by SANRAL before the scheduled closing date. All bids received by SANRAL on or before the scheduled closing date and time shall be valid and binding for a period of 90 (ninety) working days calculated from the last scheduled closing date (“validity period”). During the validity period or any extensions to the validity period, bid prices shall remain firm save only for cost variations as are measurable by the permissible contract price adjustments as set out elsewhere in this document.• Properly motivated alternatives may be submitted but will only be considered if a compliant offer has been submitted. The alternative shall be approached and priced to the same detail as required by this RFP.• Bidders will be judged on the basis of the information submitted by the due date as well as additional information as may have been requested by SANRAL. A Bidder will be disqualified for the furnishing of, misleading or incorrect information, which SANRAL may rely upon in the selection of a preferred Bidder.• Bidders must ensure that their bids contain all documents as specified in this RFP. |

C.2.1 ELIGIBILITY CRITERIA

| Item | Description | Required |
|------|--|---|
| b) | Registered on National Treasury Central Supplier Database. (Form A3.4) | Provide your MAAA number in Form A3.4 Tenderers, or in the event of a Joint Venture or a Targeted Enterprise, each member of the Joint Venture or Targeted Enterprise, shall be registered on the National Treasury Central Supplier Database at the closing date for tender submissions. If not registered as verified online at tender closing, the tender will be declared non-responsive |

FAILURE TO SATISFY THE ELIGIBILITY CRITERIA SHALL RESULT IN A NON-ELIGIBLE TENDER.

COMPLIANCE EVALUATION

| Item | Description | Required |
|------|-----------------------|---|
| 1 | Compliance Evaluation | <ul style="list-style-type: none">• The tenderer must complete, sign, attach supporting documents and comply with the requirements of Returnable Schedules Part T2 of the tender document.• Tenderers must complete all declarations and complete correct information and sign. Failure to declare the correct information on declaration forms will render the tenderer non-responsive. |

PRICE AND PREFERENCE

Tenderers who meet the Eligibility and Compliance, Technical and Financial requirements shall be evaluated for Price and Preference.

- ❖ IN ORDER TO SCORE THE POINTS FOR PRICE THE PRICING SCHEDULE MUST BE COMPLETED IN FULL**
- ❖ COMPLETE PRICING SCHEDULE ON EXCEL SHEET PROVIDED**
- ❖ SUMMARY SCHEDULE MUST BE COMPLETED AND SIGNED**
- ❖ Tendering ZERO RATES may pose a risk to the employer and your tender may be regarded as an unacceptable tender.**

C.3.11 Evaluating price and preference. (Form C1.2/SBD6.1)

SCORING PREFERENCE (SPECIFIC GOALS):

Points for specific goals will be awarded according to the table below:

| Specific goals | Criteria | 10 points | | 20 points | |
|----------------|---------------------------|------------------|----------------|------------------|----------------|
| | | Point allocation | Maximum points | Point allocation | Maximum points |
| | Level 1 | 10.00 | 10.00 | 20.00 | 20.00 |
| | Level 2 | 9.00 | | 18.00 | |
| | Level 3 | 6.00 | | 14.00 | |
| | Level 4 | 5.00 | | 12.00 | |
| | Level 5 | 4.00 | | 8.00 | |
| | Level 6 | 3.00 | | 6.00 | |
| | Level 7 | 2.00 | | 4.00 | |
| | Level 8 | 1.00 | | 2.00 | |
| | Non-compliant contributor | 0.00 | | 0.00 | |

A valid B-BBEE verification certificate or A valid Sworn Affidavit must be submitted.

TIPS FOR SUBMITTING YOUR TENDER DOCUMENTS SUCCESSFULLY

- ❖ Please ensure that whosoever delivers your tender documents at SANRAL, comply with the access control requirements.
- ❖ When using a courier company, ensure that the delivery to SANRAL is before the specified closing time.
- ❖ The courier **MUST** complete the correct register using your company name and not their courier company name.
- ❖ Tender documents **MUST** be submitted on a printed and bound hard copy and flash drive. This is required to be labelled clearly and correctly.
- ❖ Clearly mark all the envelopes legibly, using the correct Tender number.
- ❖ For multiple tenders closing at the same time, ensure that the correct tender submission match the project number and description of the envelope.

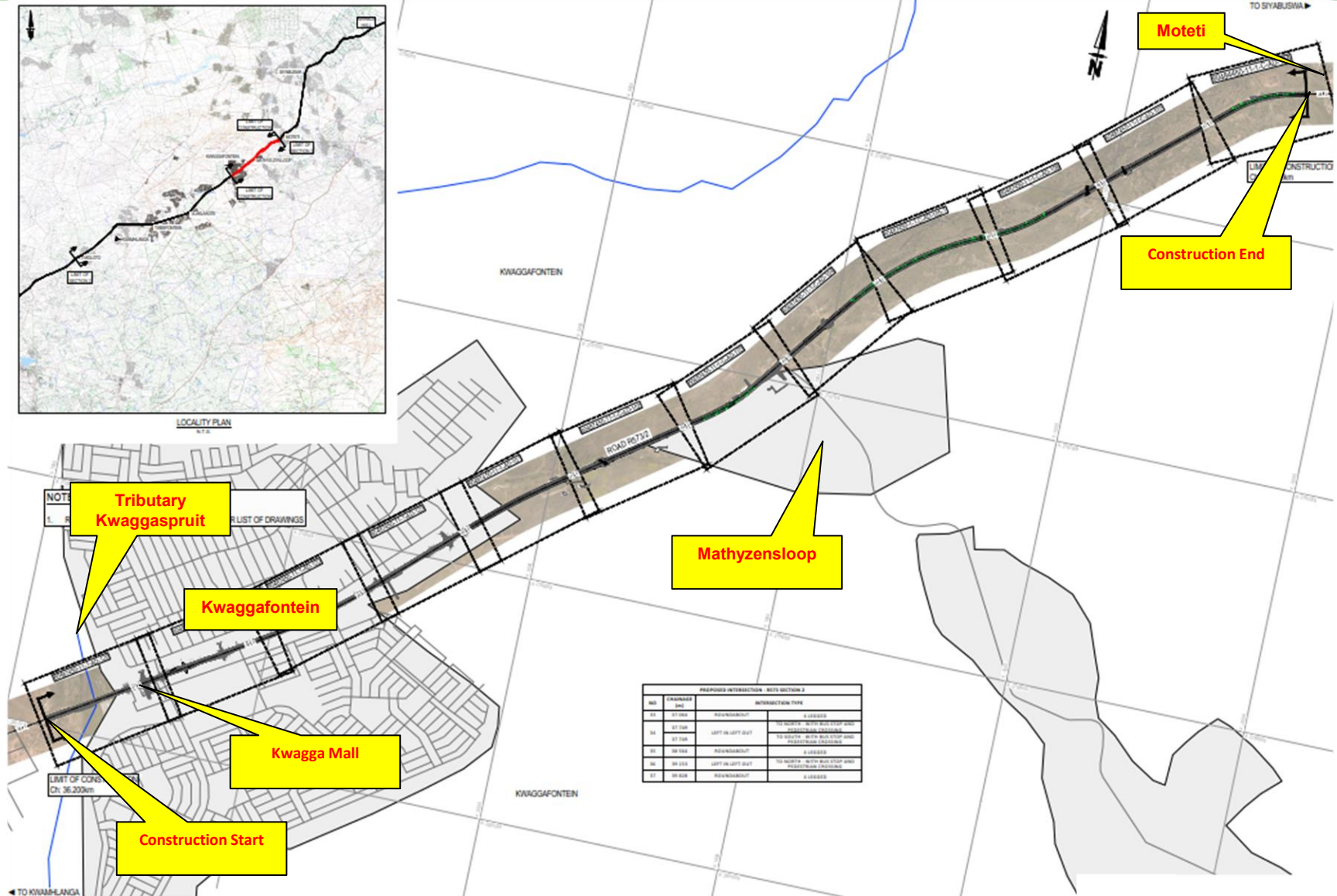
PART C4: SITE INFORMATION

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LOCALITY MAP



DESCRIPTION OF WORK

The overall objective of the project is to improve mobility and safety along this section of the R573.

The project entails the upgrading of the existing road to a four-lane single carriageway road, comprising of a 3.4m wide fast lane, a 3.6m wide slow lane, a 2.5m wide surfaced outer shoulder, divided by a 0.8m wide concrete median barrier, with a 1.0m wide inner shoulder.

The roadworks also includes the construction of formalised intersections i.e. roundabouts and left-in-left-out's & NMT and Public Transport associated infrastructure.

Street-lighting will also need to be installed over the full length of the Works.

Works also entails the construction of a bulk stormwater concrete lined drainage channel, including a related culvert crossing and outlet structure.

The structural works includes the following:

- Demolish existing river bridge and construct a new river bridge crossing.
- Construction of a new pedestrian bridge.
- Demolish three existing culvert crossings and construct new major culvert crossings.
- Construction of a new agricultural underpass.
- Median barriers and fencing.

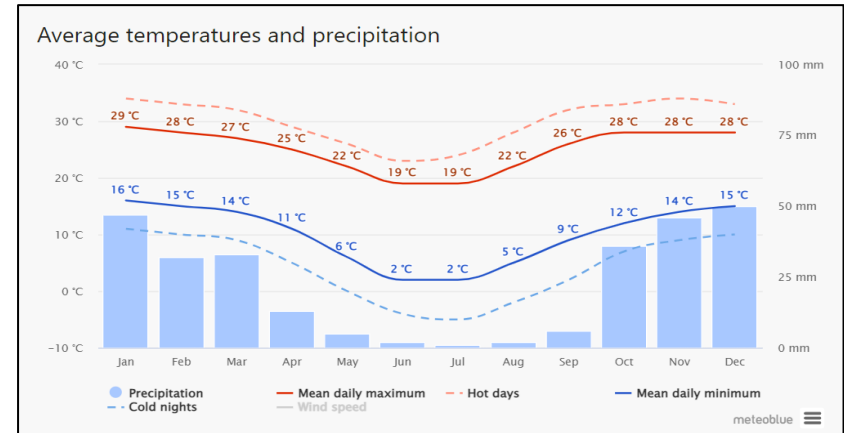
DESCRIPTION OF WORK contd.

| Route Section | Description of Section | Aprox. Start (km) | Approx. End (km) | Approx. Length (km) | Description of Works |
|----------------|------------------------|-------------------|------------------|---------------------|---|
| R573 Section 2 | Rural | 36.200 | 36.660 | 0.46 | Transition (dependent on status of adjacent contract) from existing two lane single carriageway to new four lane single carriageway. Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. Demolish and replace existing river bridge. |
| R573 Section 2 | Urban | 36.660 | 37.900 | 1.24 | Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. 1 x roundabout 2 x major left-in left out 1 x pedestrian bridge New bulk stormwater channel |
| R573 Section 2 | Peri-urban | 37.900 | 40.000 | 2.10 | Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. 2 x roundabout 1 x major left-in left out |
| R573 Section 2 | Rural | 40.000 | 41.660 | 1.66 | Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. 1 x major culvert |
| R573 Section 2 | Peri-urban | 41.660 | 43.100 | 1.44 | Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. 1 x butterfly (already constructed as part of a prior contract) |
| R573 Section 2 | Rural | 43.100 | 47.860 | 4.76 | Road upgrade to a new four lane single carriageway, divided by a concrete median barrier, with bus laybys at intersections. Transition (dependent on status of adjacent contract) from existing two lane single carriageway to new four lane single carriageway. 1 x butterfly (already constructed as part of a prior contract) 2 x major culvert 1 x agricultural underpass |

SITE INFORMATION contd.

• Climate

- ❖ Summer rainfall region
- ❖ Low temperatures from April to August may have an influence on construction activities.
- ❖ Rainfall and temperatures are for Tweefontein.



• Geology

- ❖ Area investigated – the route and general area mainly underlain by rocks and residual soils of the Bushveld Igneous Complex (BIC) & Rooiberg Group.
- ❖ Dolerite/Diabase in the form of intruded sills and sykes are known to occur in the area.
- ❖ Minor occurrence of rocks of the Eccra Group, Karoo Supergroup possible just south of the R573

SITE INFORMATION contd.

- **Ground Water**

- ❖ Generally, groundwater in boreholes, particularly at existing structures was encountered from surface to 1.7m below existing ground level – however subject to seasonal fluctuations.

- **Problem Soils**

- ❖ Heaving Clays: Laboratory tests conducted on the soils generally indicates low to medium expansion potential.

- **Traffic**

- ❖ Average Daily Traffic (2016) – ~7 500 v.p.d (two-way)
- ❖ Percentage Heavy Vehicles (2016) – ~10.2%
- ❖ Typical Traffic Growth rate assumes – 2% (low) to 4% (high)

ROADWORKS

- Clearing and grubbing.
- Construction of temporary widening.
- Relocation and protection of existing services.
- Accommodation of traffic.
- Road upgrade to a four-lane single carriageway, divided by a concrete median barrier.
- Sourcing of road building material from borrow-pits, quarries and/or commercial sources.
- Breaking up existing pavement layers by milling (asphalt surfacing)
- Breaking up existing pavement layers by excavation and crush for reuse (waterbound macadam base) – *new upper selected layer*.

ROADWORKS contd.

- Construction of roadbed for widening.
- Installation of new pipe and box culverts, including inlet and outlet structures.
- Lengthening of existing pipe and box culverts, including new inlet and outlet structures.
- Construction of subsoil drains where required.
- Construction of selected layers utilising material obtained from existing pavement (asphalt surfacing and waterbound macadam), mixed with natural gravel.
- Construction of new C3 subbase layer over the full cross-sectional width (widening and existing road)

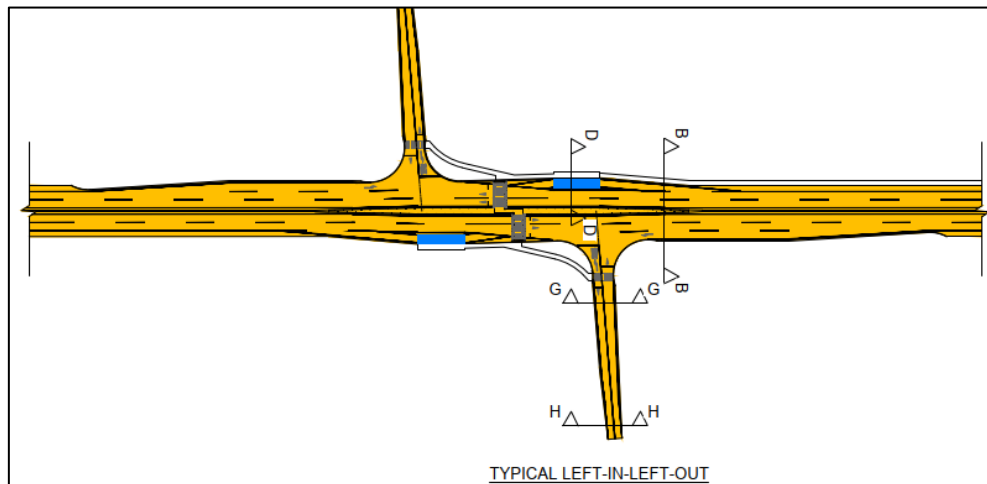
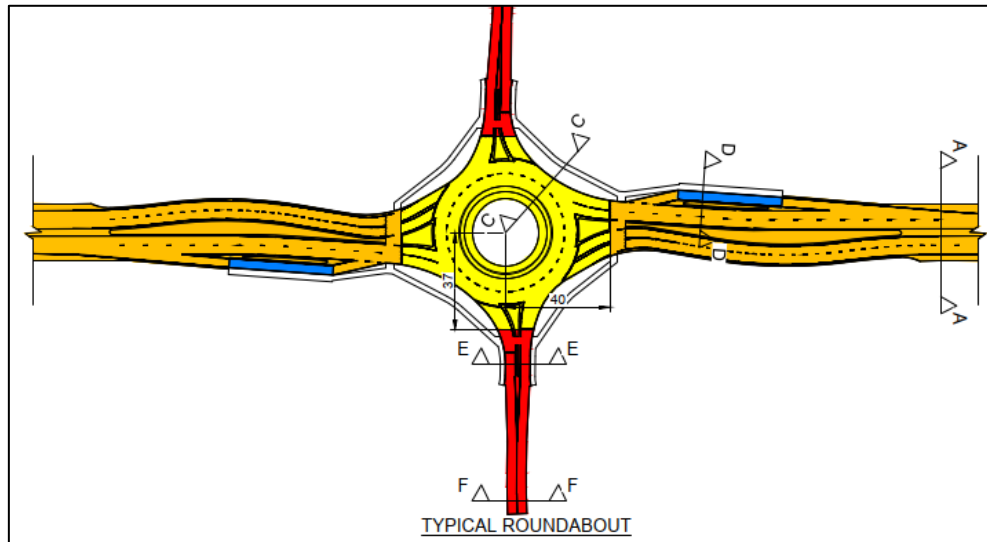
ROADWORKS contd.

- Construction of new G1 crushed stone base over the full cross-sectional width (widening and existing road)
- Construction of concrete lined side drains, down-chutes and concrete kerbing.
- Application of prime coat to base layer prior to surfacing.
- Asphalt base (PG64E-16(EMB)) penetration grade bitumen continuously graded, placed in two equal layers (roundabouts)
- Asphalt surfacing using continuously graded coarse asphalt (PG64E-16EMB)), as a final surfacing.
- Construction of median barriers and fencing.

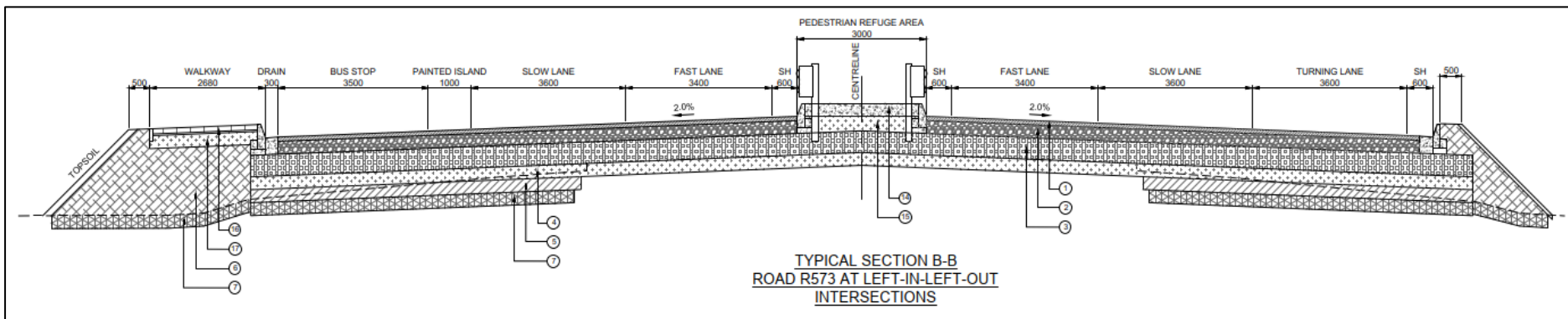
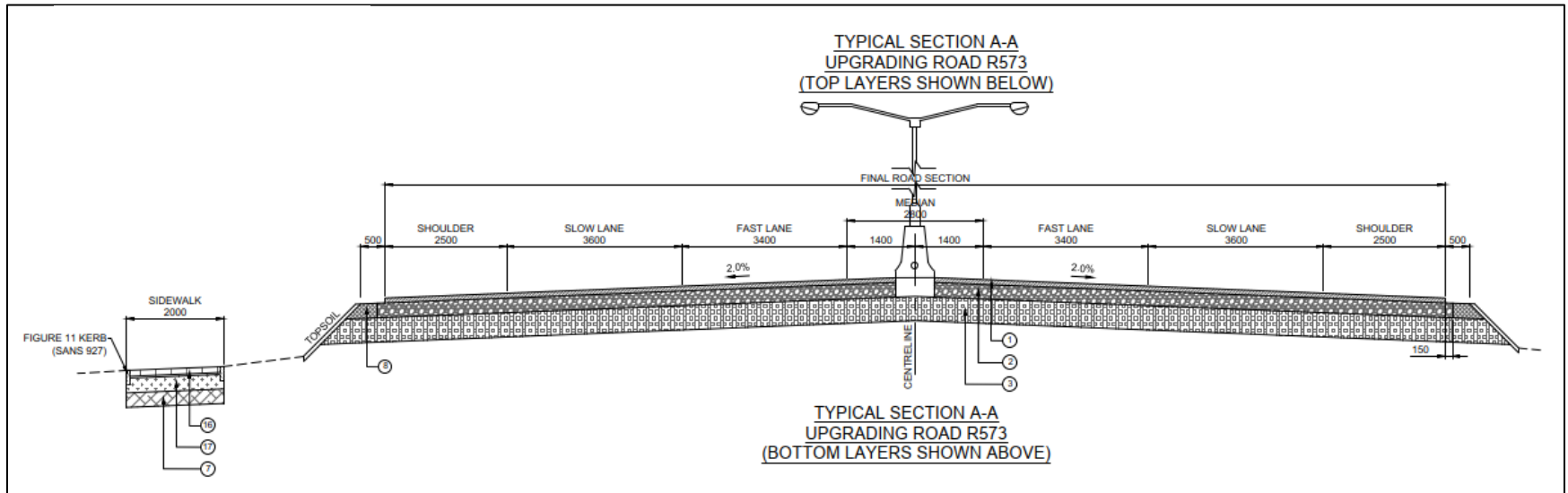
ROADWORKS contd.

- Road-marking using water-based paint and thermo-plastic paint, including temporary and permanent line marking.
- Construction of stone pitching in areas identified where drainage improvements/erosion protection is required.
- Construction of paved pedestrian walkways.
- Construction of new guardrails.
- Replacement/new fencing where required.
- Replacement/new road signage, including kilometre posts.
- Installation of street lighting and associated works.

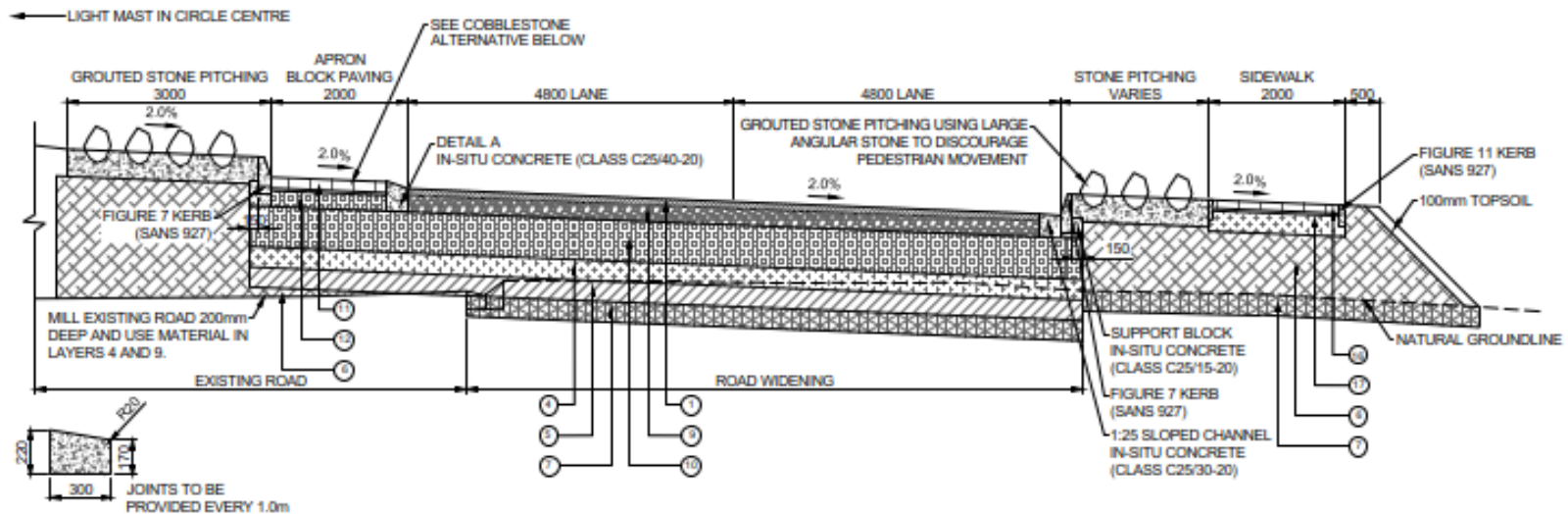
INTERSECTIONS



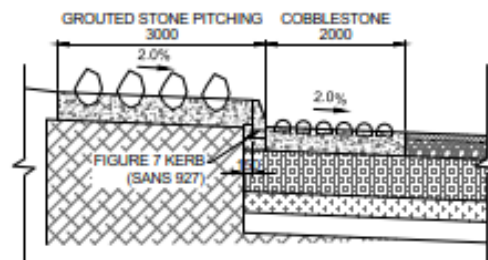
ROAD CROSS-SECTIONS



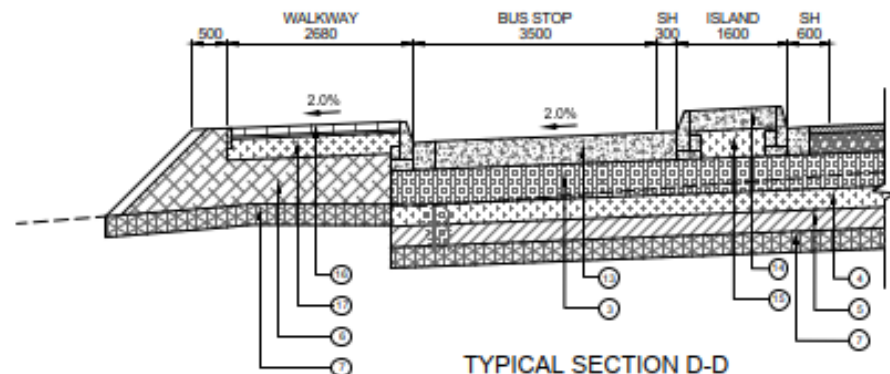
ROAD CROSS-SECTIONS contd.



TYPICAL SECTION C-C
SECTION THROUGH ROUNDABOUT

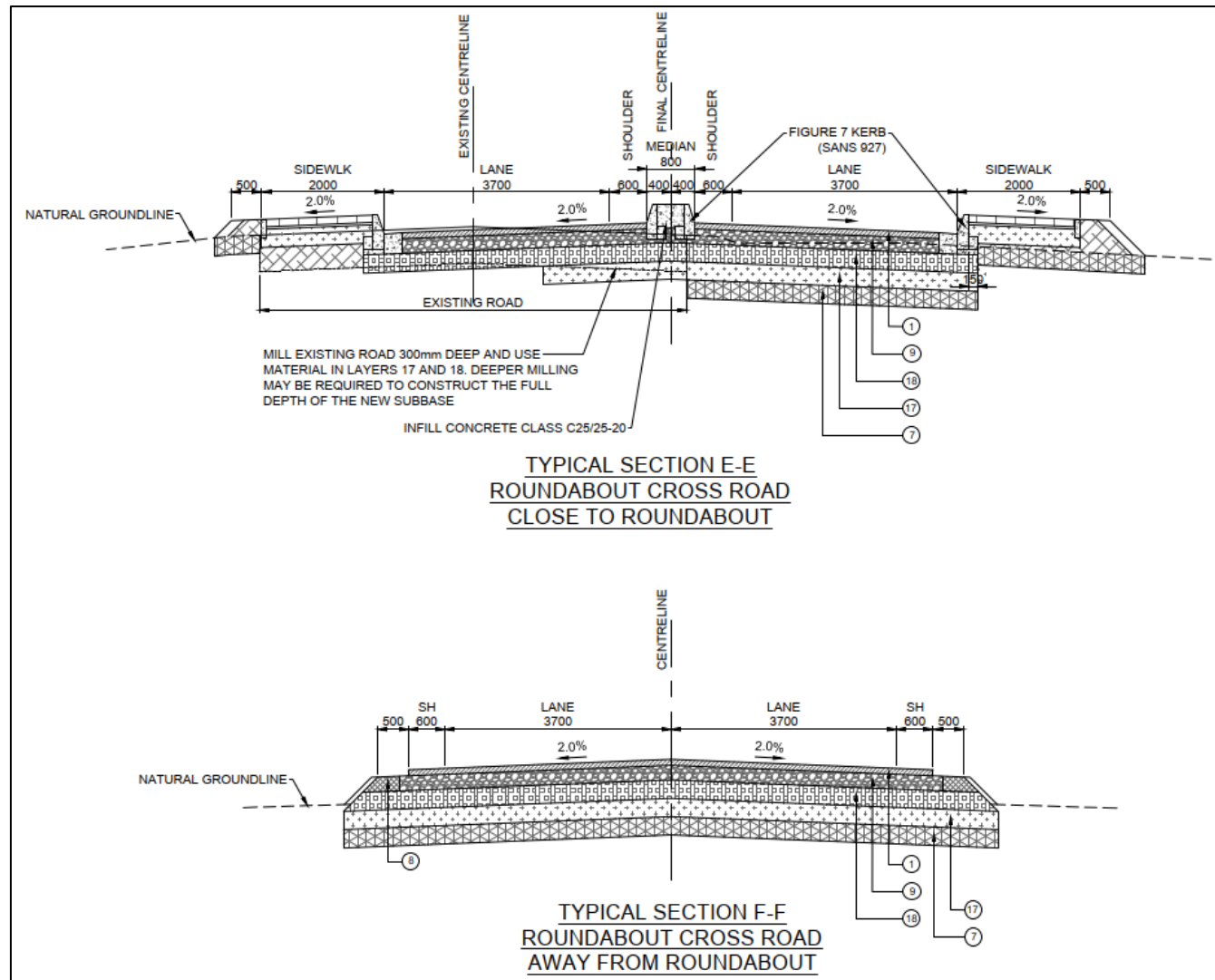


COBBLESTONE ALTERNATIVE
TO ARPON

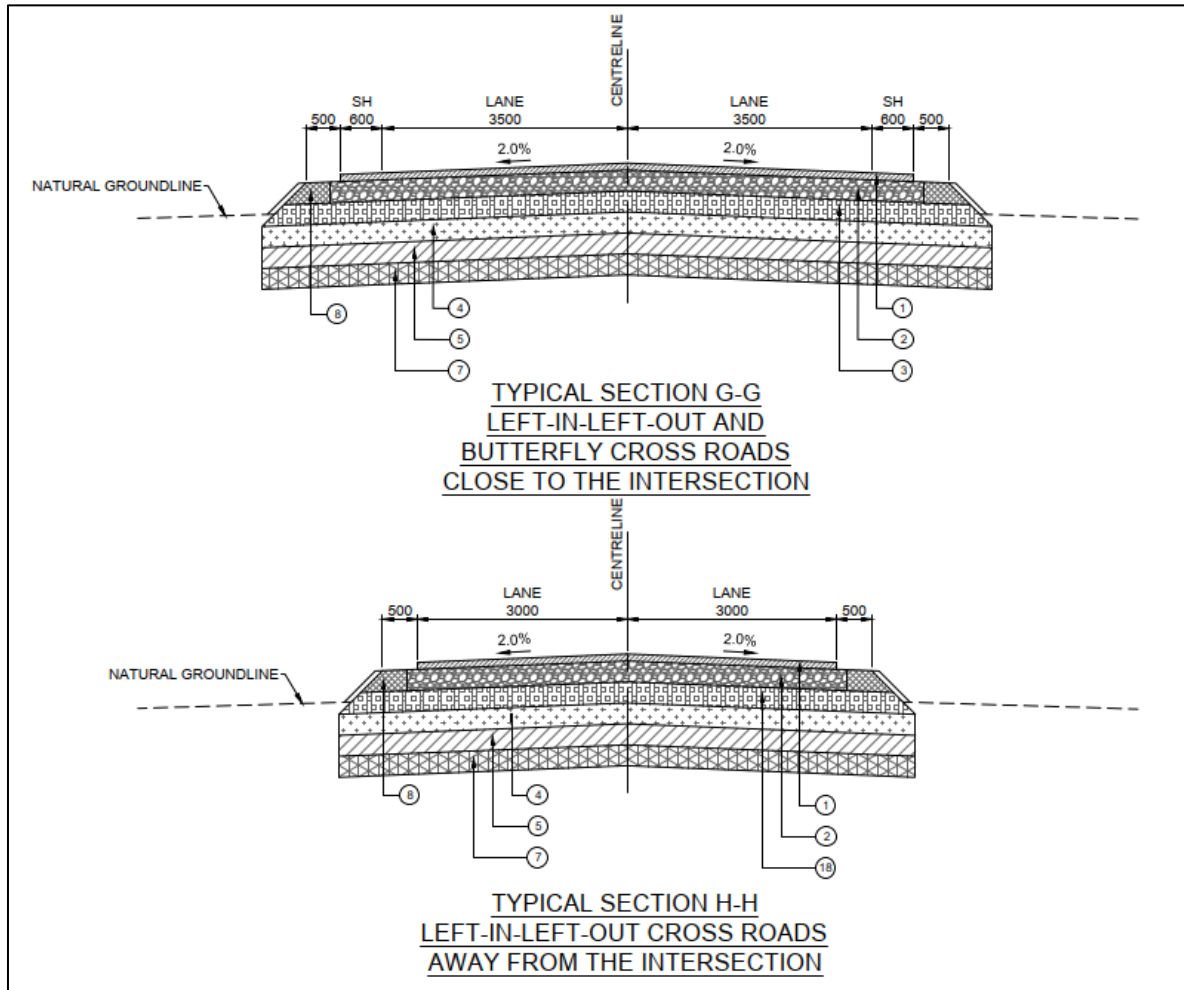


TYPICAL SECTION D-D CONCRETE PAVEMENTS

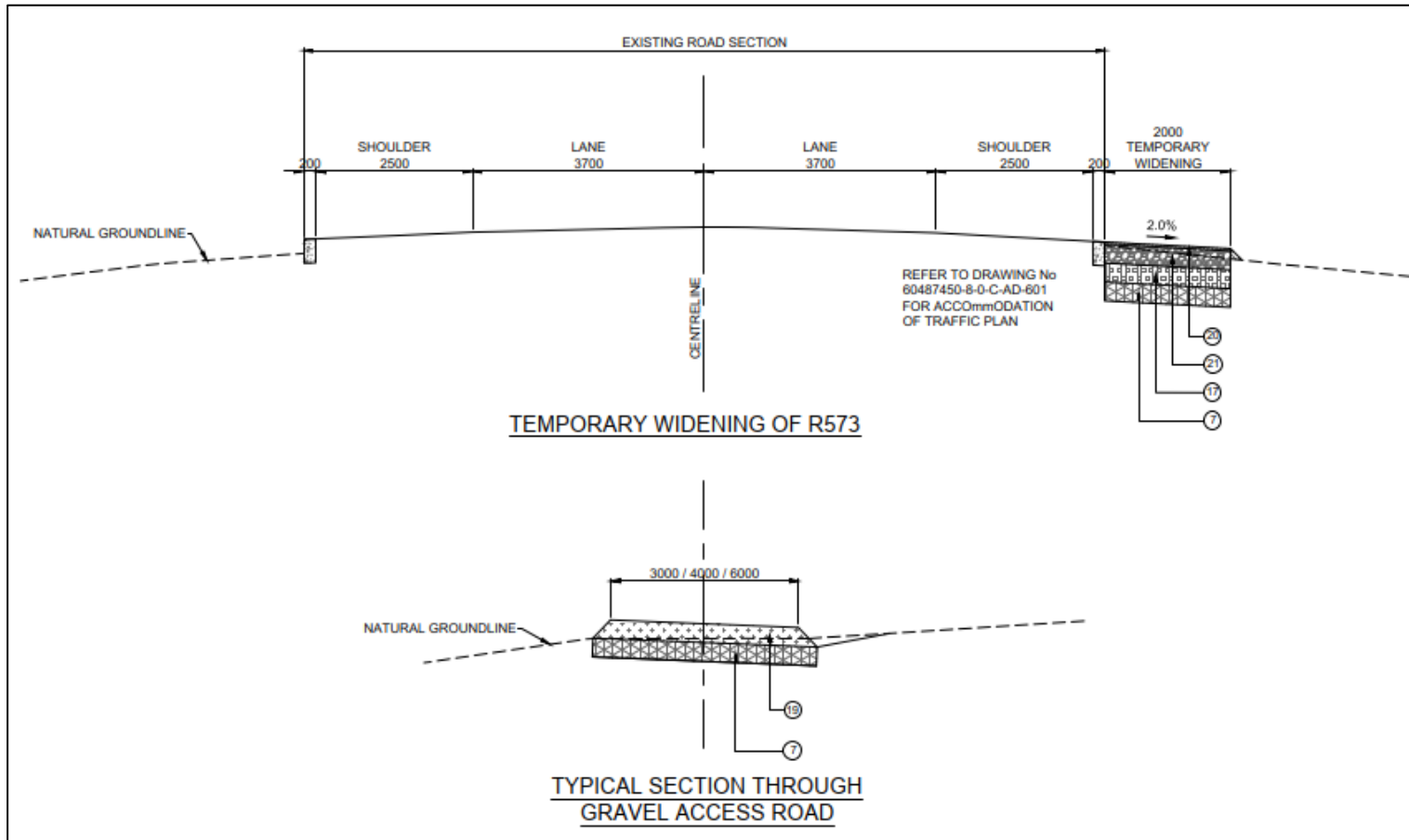
ROAD CROSS-SECTIONS contd.



ROAD CROSS-SECTIONS contd.



ROAD CROSS-SECTIONS contd.



PAVEMENT

| PAVEMENT DESIGN | | |
|-----------------|----------------------|---|
| No | LAYER | DESCRIPTION |
| 1 | 50mm ASPHALT | CONTINUOUSLY GRADED SURFACING (SAND SKELETAL, PG64E-16(EMB), PAVER PLACED WITH A MATERIAL TRANSFER VEHICLE) WITH A SURFACE TEXTURE OF 0.8mm |
| 2 | 150mm G1 BASE | G1 CRUSHED STONE BASE LAYER (150mm) COMPACTED TO 88 % OF ARD |
| 3 | 250mm C3 SUBBASE | C3 SUBBASE CEMENT STABILISED COMPACTED TO 97% OF MDD |
| 4 | 150mm G7 U-SSG | UPPER SELECTED LAYER (MINIMUM G7) COMPACTED TO 95% MDD (EXISTING AND NEW MATERIAL) |
| 5 | 150mm G9 L-SSG | LOWER SELECTED LAYER (MINIMUM G9) COMPACTED TO 93% OF MDD (NEW MATERIAL) |
| 6 | FILL | FILL (MINIMUM G9) COMPACTED TO 93% OF MDD |
| 7 | 150mm ROADBED | ROADBED (MINIMUM G10), SCARIFY AND COMPACTED TO 93% OF MDD |
| 8 | 150mm SHOULDER | GRAVEL SHOULDER MATERIAL TO BE IN ACCORDANCE WITH COTO TABLE A4.1.5-10 COMPACTED TO 95% OF MDD |
| 9 | 120mm ASPHALT BASE | CONTINUOUSLY GRADED BASE (SAND SKELETAL, PG64E-16(EMB), LEVEL II DESIGN, PAVER PLACED) |
| 10 | 300mm C3 SUBBASE | C3 SUBBASE CEMENT STABILISED COMPACTED TO 97% OF MDD |
| 11 | 80mm BLOCK PAVING | INTERLOCKING CONCRETE BLOCK PAVING CLASS 40/2.8 (TYPE S-A) ON 20mm BEDDING SAND LAID IN A HERRINGBONE PATTERN |
| 12 | 120mm C4 SUBBASE | C4 SUBBASE CEMENT STABILISED COMPACTED TO 97% OF MDD |
| 13 | 200mm CONCRETE | JOINTED CONCRETE PAVEMENT 4.5 MPa FLEXURAL STRENGTH (AT 28 DAYS) WITH DOWELED EXPANSION JOINTS EVERY 4.0m |
| 14 | 150mm CONCRETE | CONCRETE C20/25-20 CONCRETE WITH EXPANSION JOINTS EVERY 1.5m |
| 15 | 190mm G7 SELECTED | G7 UPPER SELECTED SUBGRADE LAYER (190mm) COMPACTED TO 95% OF MDD |
| 16 | 60mm BLOCK PAVING | INTERLOCKING CONCRETE BLOCK PAVING CLASS 30/2.0 (TYPE S-A) ON 20mm BEDDING SAND LAID IN A HERRINGBONE PATTERN |
| 17 | 150mm G7 SELECTED | G7 SELECTED GRAVEL LAYER COMPACTED TO 95% OF MDD |
| 18 | 150mm C3 SUBBASE | C3 SUBBASE CEMENT STABILISED COMPACTED TO 97% OF MDD |
| 19 | 150mm WEARING COURSE | GRAVEL WEARING COURSE LAYER (150mm) IN ACCORDANCE WITH COTO TABLE A4.1.5-11 COMPACTED TO 95% MDD |
| 20 | 30mm ASPHALT | CONTINUOUSLY GRADED SURFACING (SAND SKELETAL, PG64S-16, LEVEL IB DESIGN, PAVER PLACED) |
| 21 | 150mm C4 BASE | C4 BASE CEMENT STABILISED COMPACTED TO 97% OF MDD |
| 22 | 150mm G9 SELECTED | G9 SELECTED LAYER COMPACTED TO 93% OF MDD (DEPENDING ON THE QUALITY OF THE IN SITU MATERIAL, THIS LAYER MAY NOT BE REQUIRED) |

Asphalt Mix Designs :

- Sand skeletal continuously graded

Mix Design Requirements:

Asphalt Surfacing and Bridge Deck:

- ❖ Design level II
- ❖ 14mm nominal maximum particle size
- ❖ Temperature zone: > 58°C
- ❖ Traffic speed: < 20km/h; 20km/h – 80km/h; > 80km/h
- ❖ E80 axles: 10 – 30 MESA
- ❖ PG Binder: PG64E-16(EMB)

Asphalt Base:

- ❖ Design level II
- ❖ 20mm nominal maximum particle size
- ❖ PG Binder: PG64E-16(EMB)

Asphalt Surfacing (Temporary Widening)

- ❖ Design level IB
- ❖ 7.1mm nominal maximum particle size
- ❖ PG Binder: PG64S-16

PAVEMENT contd.

***NB:** Layer nos. indicated below represent position from top layer(1) to bottom layer – not aligned to pavement design table.*

R573 Road Pavement Design

| Layer No. | Description of Layer |
|-----------|--|
| 1 | 50mm asphalt, continuously graded surfacing (Sand skeletal, PG64E-16(EMB), 14mm NMPS, surface texture of 0.8mm, Level II design, paver placed with Material Transfer Vehicle |
| 2 | 150mm G1 graded crushed stone base layer, compacted to 88% of apparent density |
| 3 | 250mm C3 upper subbase stabilised layer, compacted to 97% of MDD |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 5 | 150mm G9 lower selected subgrade layer, compacted to 93% of MDD |
| 6 | 150mm G10 fill/roadbed preparation, compacted to 93% of MDD |

Pedestrian Refuge Area within Carriageway

| Layer No. | Description of Layer |
|-----------|--|
| 1 | 150mm concrete C20/25-20 concrete with expansion joints every 1.5m |
| 2 | 190mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 3 | 250mm C3 upper subbase stabilised layer, compacted to 97% of MDD |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |

Surfaced Shoulders

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 50mm asphalt, graded surfacing (Sand skeletal, PG64E-16(EMB), 14mm NMPS, surface texture of 0.8mm, Level II design, paver placed with Material Transfer Vehicle |
| 2 | 150mm G1 graded crushed stone base layer, compacted to 88% of apparent density |
| 3 | 250mm C3 upper subbase stabilised layer, compacted to 97% of MDD |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 5 | 150mm G9 lower selected subgrade layer, compacted to 93% of MDD |
| 6 | 150mm G10 fill/roadbed preparation, compacted to 93% of MDD |

Roundabout Pavement Design

| Layer No. | Description of Layer |
|-----------|--|
| 1 | 50mm asphalt, continuously graded surfacing (Sand skeletal, PG64E-16(EMB), 14mm NMPS, with surface texture of 0.8mm, Level II design, paver placed |
| 2 | 120mm asphalt continuously graded base (Sand skeletal, PG64E-16(EMB), 20mm NMPS, Level II design, Paver placed in 2 x 60mm layers) |
| 3 | 300mm C3 upper subbase stabilised layer, compacted to 97% of MDD (construct in one layer) |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 5 | 150mm G9 lower selected subgrade layer, compacted to 93% of MDD |
| 6 | 150mm G10 fill/roadbed preparation, compacted to 93% of MDD |

Apron Block Paving within Roundabouts

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 80mm concrete block paving Type S-A (Class 40/2.6 SANS 1058) laid in herringbone pattern on 20mm bedding sand |
| 2 | 120mm C4 upper subbase stabilised layer, compacted to 97% of MDD |
| 3 | 300mm C3 lower subbase stabilised layer, compacted to 97% of MDD |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 5 | 150mm G9 lower selected subgrade layer, compacted to 93% of MDD |
| 6 | 150mm G10 fill/roadbed preparation, compacted to 93% of MDD |

Cross-roads at Roundabouts

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 50mm asphalt, continuously graded surfacing (Sand skeletal, PG64E-16(EMB), 14mm NMPS, with surface texture of 0.8mm, Level II design, paver placed with Material Transfer Vehicle |
| 2 | 120mm asphalt continuously graded base (Sand skeletal, PG64E-16(EMB), 20mm NMPS, Level II design, Paver placed in 60mm layers) |
| 3 | 150mm C3 upper subbase stabilised layer, compacted to 97% of MDD |
| 4 | 150mm – 210mm G7 levelling layer, compacted to 95% of MDD |

PAVEMENT contd.

Cross-roads at Left-In-Left-Out

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 50mm asphalt, continuously graded surfacing (Sand skeletal, PG64E-16(EMB), 14mm NMPS, with surface texture of 0.8mm, Level II design, paver placed with Material Transfer Vehicle |
| 2 | 150mm G1 graded crushed stone base layer, compacted to 88% of apparent density |
| 3 | 250mm C3 upper subbase stabilised layer, compacted to 97% of MDD (construct in one layer) |
| 4 | 150mm G7 upper selected subgrade layer, compacted to 95% of MDD |
| 5 | 150mm G9 lower selected subgrade layer, compacted to 93% of MDD |
| 6 | 150mm G10 fill/roadbed preparation, compacted to 93% of MDD |

Temporary Accommodation of Traffic Widening

| Layer No. | Description of Layer |
|-----------|--|
| 1 | 30mm asphalt, continuously graded surfacing (Sand skeletal, PG64S-16, 7.1mm NMPS, Level IB design, Paver placed) |
| 2 | 150mm C4 stabilised base layer, compacted to 97% of MDD |
| 4 | 150mm gravel subbase/fill/roadbed preparation (minimum G10), compacted to 93% of MDD |

3.0m wide Gravel Roads

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 150mm gravel wearing course, compacted to 95% of MDD, in accordance with COTO Table A4.1.5-11 |
| 4 | 150mm roadbed preparation layer (minimum G10), compacted to 93% of MDD |

Pedestrian Walkways

| Layer No. | Description of Layer |
|-----------|---|
| 1 | 60mm concrete block paving Type S-A (Class 30/2.0 SANS 1058) laid in herringbone pattern on 20mm bedding sand |
| 2 | 150mm G7 gravel base layer, compacted to 95% of MDD |
| 3 | 150mm roadbed preparation layer, compacted to 93% of MDD |

Bus Layby:

- ❖ 200mm jointed concrete pavement
- ❖ 4.5MPa flexural strength (28 days)
- ❖ 250mm C3 subbase
- ❖ Expansion joints at 4.0m centres
- ❖ 25mmØ mild steel dowels, 450mm in length at 300mm centres
(Transverse expansion joints)

MATERIALS

- **Hard Rock Sources:**

- ❖ SANRAL identified: Quarry 3 – GEMS 1.
- ❖ Approximately 6km south-west of Vlaklaagte from KM 24.00.
- ❖ Hard rock granite / quartzite – suitable for G1/G2.
- ❖ Multi-stage screening & crushing – G5A material.
- ❖ Source may not be operational when construction commences influenced by the land acquisition process, presently underway.

- **Gravel Material Sources:**

- ❖ SANRAL identified borrow-pits: None available.
- ❖ Licensed borrow-pits available locally (G5-G9)

- **Commercial Sources:**

- ❖ Afrimat in Marble Hall, Geyser (west of Groblersdal).
- ❖ Ferro Quarry in Pretoria.

ROADSIDE DRAINAGE

- No closed stormwater system is currently in place.
- Stormwater drainage upgraded in line with a Class 2 road, with stormwater dealt above ground (open-system).
- Road drainage – earth/concrete side-drains and minor pipe culverts as indicated on drawings.

TRAFFIC ACCOMODATION

- **Accommodation of traffic**
 - ❖ Contractor responsible for the safe and easy passage of public.
 - ❖ Accommodation of traffic shall comply with section 1.5 of COTO Standard Specifications for Road and Bridge Works and the COTO project specifications.
 - ❖ A detailed accommodation of traffic plan has been devised. The accommodation of traffic plan takes place in 3 phases.
 - ❖ Provision of temporary concrete median barriers. Half-width construction is allowed. No restrictions in terms of the maximum length of work area, at any given time. Allows flexibility in terms of programming the works.

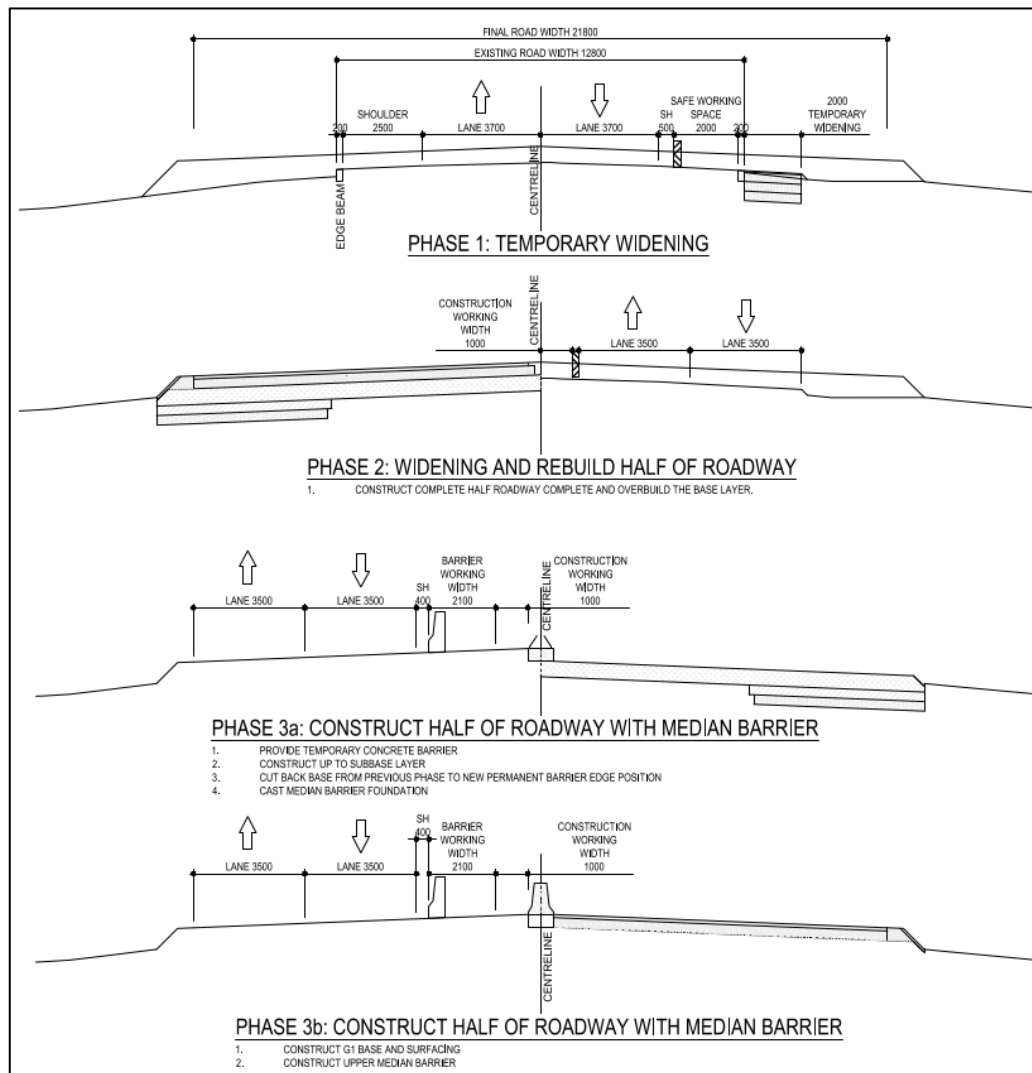
TRAFFIC ACCOMMODATION contd.

- ❖ **Phase 1:** The existing road is to be widened temporarily by 2m on the one side (it is suggested that this undertaken on the northern side). The temporary widening of 2m is anticipated to be undertaken all at one time, in order to be able to complete the temporary surfacing (30mm asphalt) with one single establishment from the required team.
- ❖ **Phase 2:** The construction of the one half of the new carriageway (southern side of the carriageway) will be undertaken while accommodating the traffic on the existing carriageway with the temporary widening been constructed (northern side). This will provide a surfaced width of 8.2m, accommodating the traffic in two 3.5m lanes with a safe working space of 1.0m - 1.2m to the centre of the road. Traffic will need to be accommodated around future roundabouts by incremental construction of the roundabout layer-works and safely shifting traffic across, as necessary, until the complete roundabout has been constructed.

TRAFFIC ACCOMMODATION contd.

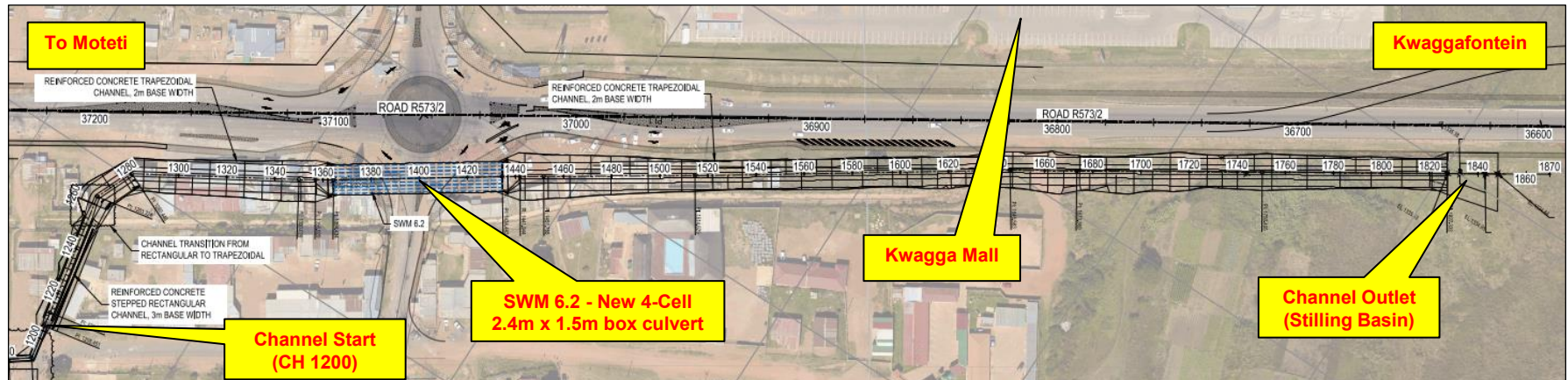
- ❖ **Phase 3:** Traffic will be accommodated on the newly constructed road (Phase 2 – southern side) while the remainder of the carriageway is constructed (northern side). This will provide a surfaced width of 10.5m, accommodating the traffic in two 3.5m lanes, a 0.4m shoulder before the placement of a temporary concrete barrier. The temporary concrete barrier provides a safe working space of 2.1m to the work zone where the construction of the permanent median barrier will be undertaken. Road-marking in this phase shall consist of temporary road studs.

TRAFFIC ACCOMMODATION contd.



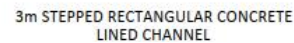
BULK STORMWATER DRAINAGE

- **New Concrete Lined Channel**
 - ❖ Adjacent, running parallel to the R573 between KM 36.60 and KM 37.18.



- ❖ 670m in length, incorporates stepped rectangular channel (3m base width) that transitions into a trapezoidal channel with 2m base width), cast in-situ 4-cell 2.4m x 1.5m box culvert & 800mm thick stilling basin at the outlet.

- **New Concrete Lined Channel**



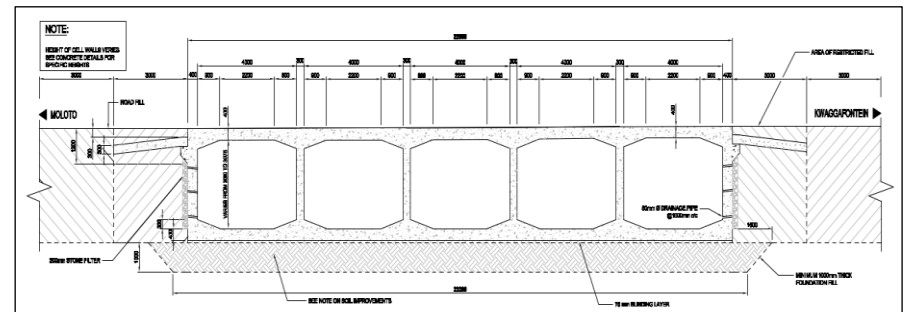
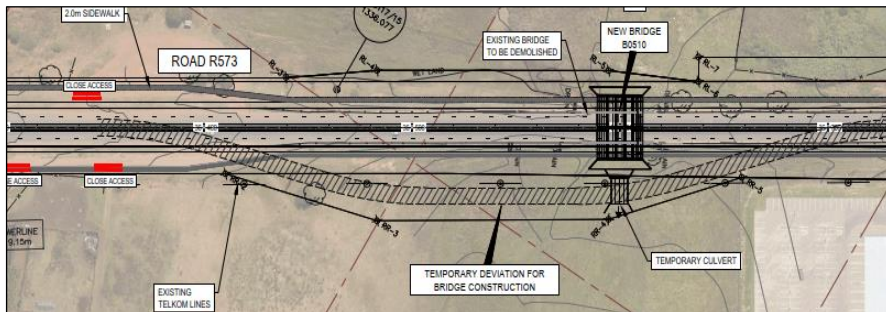
STRUCTURES

- **New River Bridge (KM 36.60)**

- ❖ Existing river bridge (B4370) to be demolished and replaced with a new structure (B0510), due to widened cross-section and lifting of the existing road vertical alignment.
- ❖ Need to construction a temporary bypass downstream to accommodate traffic, during construction of the new structure.
- ❖ New structure to comprise (in cross-section) of 2.5m wide surfaced outer shoulders, 3.6m wide outer lanes, 3.4m wide inner lanes and 1m wide surfaced inner shoulders. Carriageway divided by an 800mm wide, 1m high F-shape median, with 2m wide pedestrian walkways on either side, protected by an 850mm high pedestrian barrier.

STRUCTURES contd.

- **New River Bridge (KM 36.70)**
 - ❖ New structure – Five-cell, 4.0m x 3.0m in-situ culvert type bridge.
 - ❖ Geotech – Transported alluvium material varying in depth between 3.44m to 7.99m. Residual granite encountered below this, in depths varying between 5.04m to 8.38m. Granite bedrock of medium hard rock below the residual granite. Groundwater levels encountered between 0.00m to 1.00m below existing ground level.
 - ❖ Foundation – soil improvement, comprising of dump-rock and stabilised fill material.

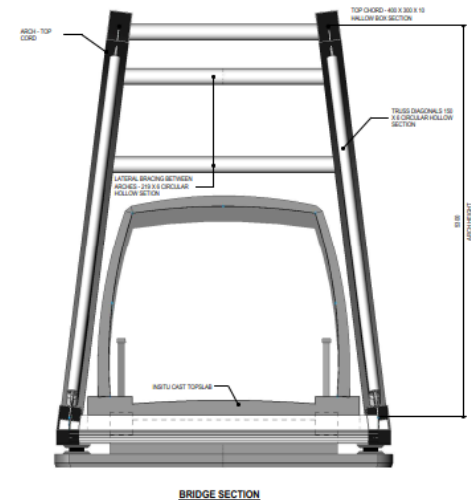
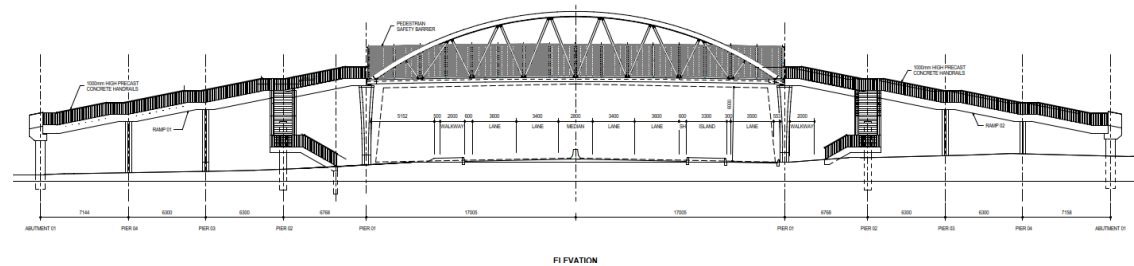
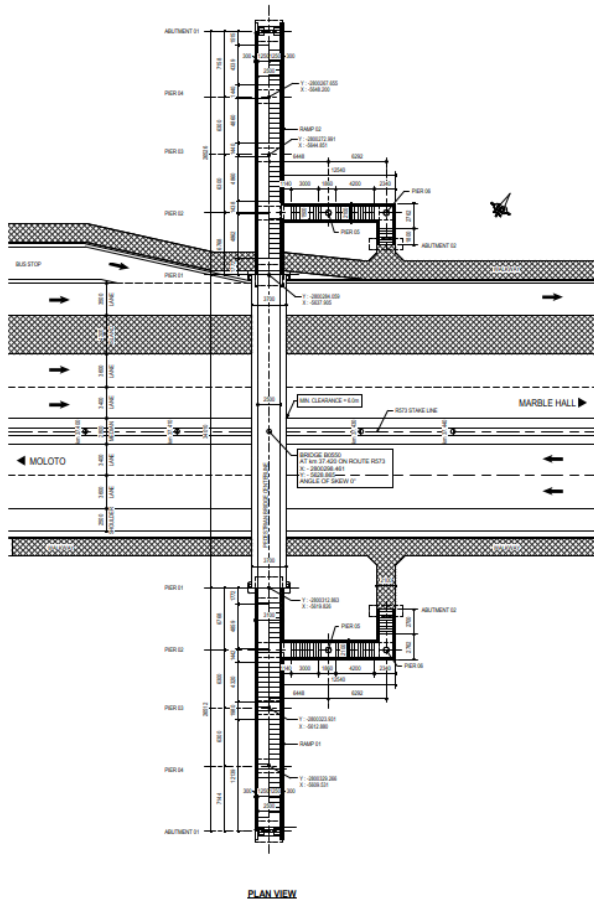


STRUCTURES contd.

- **New Pedestrian Bridge (KM 37.42)**
 - ❖ Bow String Tied Arch Walkthrough Steel Girder bridge with access ramps, and stairs down to the R573.
 - ❖ Walkway width of 2.5m, enclosed with a pedestrian safety barrier.
 - ❖ Soft rock encountered at a depth of approximately 4.5m below NGL, underlain by medium to hard rock. Water seepage observed at a depth of 1.7m. Founding on auger piles in medium to hard rock.

STRUCTURES contd.

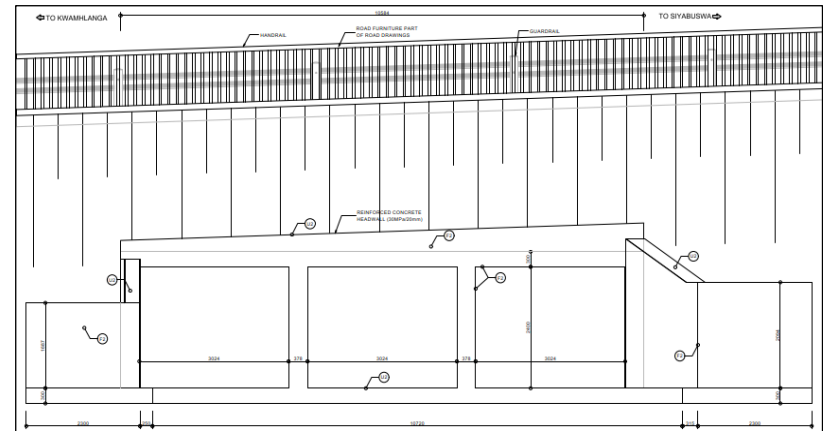
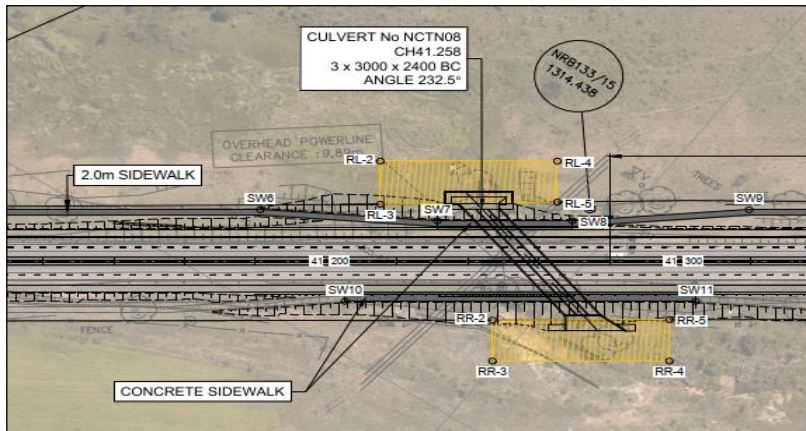
- New Pedestrian Bridge (KM 37.420)**



STRUCTURES contd.

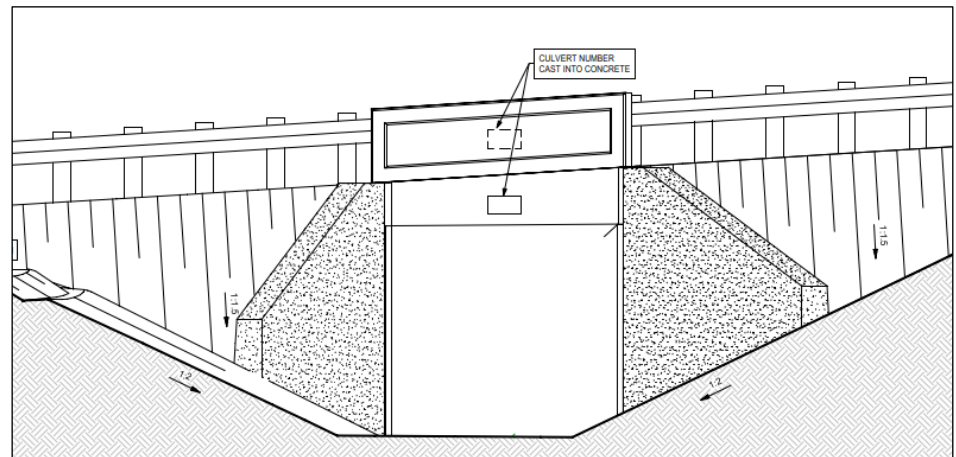
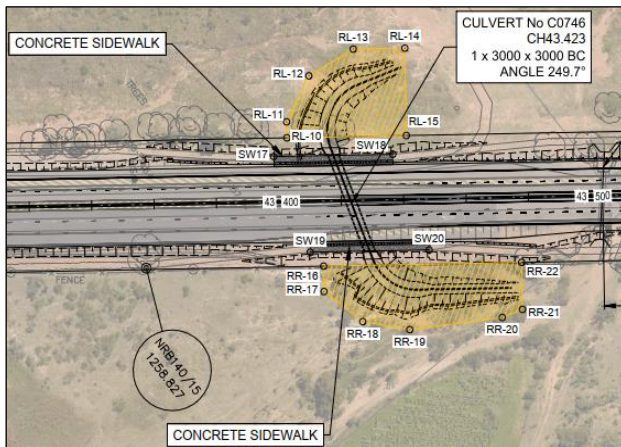
- **Major Culvert C0728 (KM 41.26)**

- ❖ Existing structure – single cell 3.0m x 2.5m box culvert to be demolished and replaced with a new structure comprising of three-cell, 2.4m x 2.4m cast in-situ box culverts at a skew angle of 37.474° (to align with the natural watercourse).
- ❖ Shallow granophyre rock outcrops encountered across the site – culvert to be constructed on strip footings.



STRUCTURES contd.

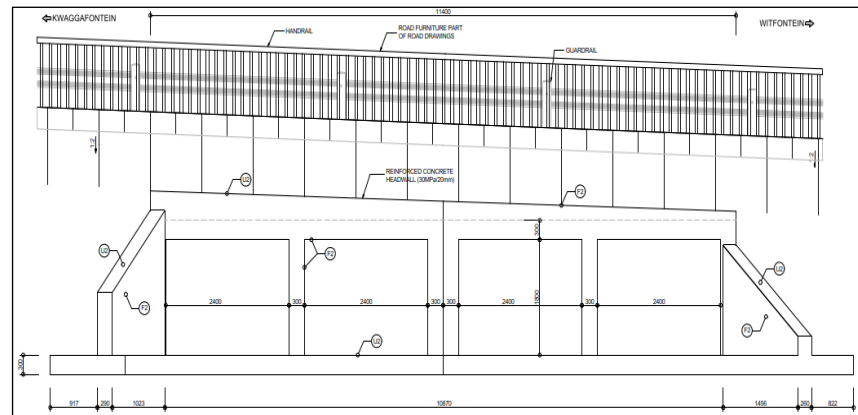
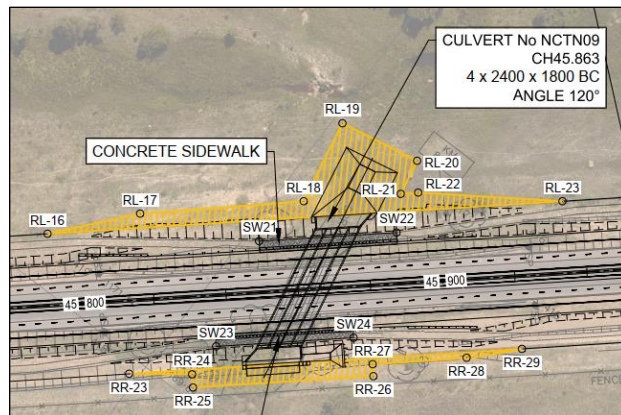
- **Agricultural Underpass C0746 (KM 43.42)**
 - ❖ New structure – single cell 3.0m x 3.0m cast in-situ box culvert, at a skew angle of 69.7°
 - ❖ Fill and colluvium layer varying in depth of 0.2m to 2.7m below NGL, underlain by reworked residual granite and residual granite. No groundwater seepage observed. Soil improvement to founding material may be required – tbc post excavation.



STRUCTURES contd.

- **Major Culvert C0707 (KM 45.86)**

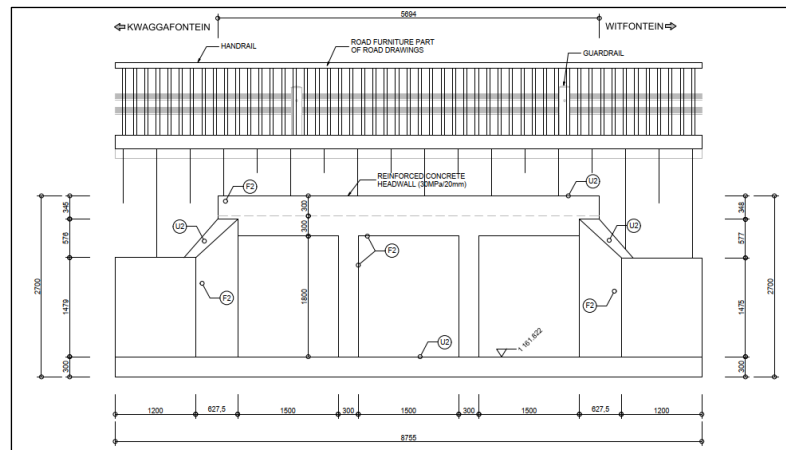
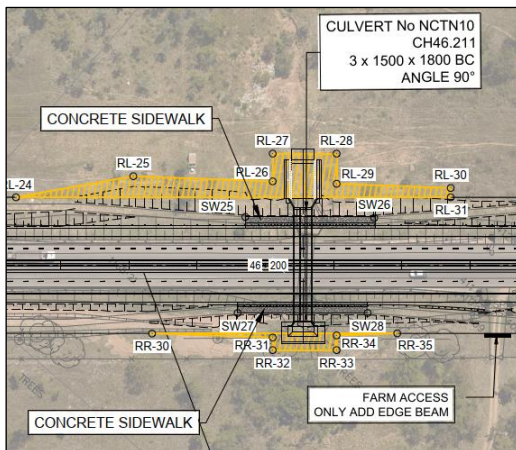
- ❖ Existing structure – Six cells of 1.3m dia. concrete pipes to be demolished and replaced with a new structure comprising of four-cell, 2.4m x 1.8m cast in-situ box culverts at a skew angle of 30° (to align with the natural watercourse).
- ❖ Fill and alluvium layer varying in depth of 0.9m to 2.1m below NGL, underlain by residual granite rock. Groundwater encountered at between 1.0m to 1.6m below NGL. Soil improvement to founding material may be required – tbc post excavation.



STRUCTURES contd.

- **Major Culvert C0708 (KM 46.21)**

- ❖ Existing structure – Three cells of 1.5m x 1.2m to be demolished and replaced with a new structure comprising of three-cell, 1.5mm x 1.8m cast in-situ box culverts.
- ❖ Fill and alluvium layer was encountered at depths varying between 0.4m to 2.1m below NGL. Underlain by residual granite rock. No groundwater seepage observed. Soil improvement to founding material may be required – tbc post excavation.



MISCELLANEOUS WORKS

Miscellaneous works

- Clearing and grubbing
- Temporary road widening
- The removal of fences and the erection of new/removal of existing structures
- Concrete edge beams
- Stone-pitching
- Paved sidewalks
- Bus layby facilities
- The erection of guardrails
- Finishing off of the road reserve
- Roadmarking and road signs
- Installation of street-lighting and associated works

EXISTING SERVICES

- **Eskom :**
 - ❖ Relocation of Overhead Eskom Services.
- **Telkom :**
 - ❖ Relocation of Overhead telephone lines.

Contractor to acquaint themselves with the position of all the services on the site before commencement of the Works. Contractor to liaise with the relevant service owners well in advance to acquire from them the lead times required to make the necessary arrangements for the protection, removal or relocation of services that may / will be affected by the Works. SANRAL will not be responsible for any claims or delays in the relocation of services.

CONSTRUCTION MANAGEMENT

- **Security**
 - ❖ Contractor to provide security for the duration of the contract.
- **Camp establishment, power supply and other services**
 - ❖ Contractor to make own arrangements for a suitable camp site.
 - ❖ Contractor to make his own arrangements for supply of electrical power and all other services.
 - ❖ Contractor shall provide a stand-by generator which must be able to supply 24-hour electricity to the site laboratory.
 - ❖ Topographical surveys and setting out the works
- **Management of the Environment**
 - ❖ The contractor will be responsible for construction according to an Environmental Management Plan in terms of the Contract Specifications.
- **Health and Safety Obligations**
 - ❖ The contractor will be responsible for conducting his work in accordance with the general OHS requirements stated in the Contract Specifications.

CONSTRUCTION PROGRAMME

The **Contractors Programme** shall make allowance for the following (but not limited to):

- All special non-working days defined in the Contract Data.
- Relocation of Services (Eskom, Telkom etc.)
- The expected delays defined in COTO clause A1.2.3.4: Extension of time for delays caused by rainfall.
- The following embargo hours and days:
 - ❖ All designated public holidays.
 - ❖ Annual shutdown period between December and January.
 - ❖ Day before Easter weekend.
 - ❖ Day of State school term closure and day prior to State school term start (Mpumalanga Province).
 - ❖ Sundays.
 - ❖ Between sunset and sunrise.
- Curing times, material requirements and other conditions as stated in the Project and Standard Specifications.
- The effect of low temperatures from April to August on construction activities such as stabilisation, surfacing / sealing and pouring of concrete.

CONSTRUCTION PROGRAMME contd.

- The time needed for preparation and approval of the various mix designs and trial sections specified in the relevant construction sections of the Scope of Works.
- Mobilisation period.
- Tender procedure and appointment of targeted enterprises (sub-contractors)
- Meeting the requirements of the Environmental Management Plan (EMP)
- Access to Site:
 - **Section A** – KM 36.20 to KM 48.16 (excluding KM 36.90 to KM 37.50) – post conclusion of the mobilisation period i.e. commencement of construction period
 - **Section B** – KM 36.90 to KM 37.50 – 12 months after the commencement of the construction period
- Fencing on existing median barriers – **KM 24.70 to KM 36.20**

The Contractor will be able to plan the work over the full length of the route (were there is no immediate restriction to access to site i.e. Section B – KM 36.90 to KM 37.50), however traffic must be always accommodated during construction, such that there is at least one lane in each direction, with appropriate access positions provided along the route, as required.

GENERAL ITEMS

Laboratory:

The laboratory shall be a combined Engineer's / Contractor's laboratory

- A provisional sum has been provided in the Pricing Schedule to cover the running cost
- A negative rate is to be entered in the Pricing Schedule as the tenderer's contribution to the laboratory
- The Engineer will manage the laboratory
- Engineer will complete all acceptance control testing
- Contractor responsible for process control

Routine Road Maintenance:

The Contractor will be responsible for all routine road maintenance of the route from the date of Access to Site

GENERAL ITEMS contd.

Environmental Issues

- Environmental Management Plan (EMP) included in Volume 3 of the project documents (Section C)
- Environmental Management Plan report (EMPr) included as Volume 7 of the project documents
- Contractor to appoint a Designated Environmental Officer
- Consultant to appoint an Environmental Control Officer to monitor the implementation of the requirements of the EMP and EMPr
- Overall environmental impacts of the project are low

Community Participation and Labour (refer to Section D of Volume 3)

- A public liaison committee is to be established as a communication structure that interacts with all parties involved with the project
- Provision has been made in the Engineer's contract with the Employer for the appointment of a Public Liaison Officer in this regard
- Where feasible and practical, work opportunities should be provided for local labour
- Tenders will need to be advertised for Targeted Enterprise contracts

GENERAL ITEMS contd.

Training (refer to Section D of Volume 3)

- The contractor is to undertake a skills analysis of his employees and those of his subcontractors to determine existing qualifications and education received
- The contractor is to submit a training programme for approval
- Provision has been made in the Project Document for Accredited NQF, Accredited Generic Skills and Community Skills training

Health and Safety Requirements (refer to Section E of Volume 3)

- Occupational Health and Safety (OH&S) Plan to be submitted and approved by the Engineer prior to construction work starting
- The contractor is to conduct risk assessments for all work-related items and these must be included in the OH&S Plan
- Section E of Volume 3 contains a Baseline Risk Assessment as per the requirements of the Construction Regulations

GENERAL ITEMS contd.

Community Participation and Labour

The following list the targets set for local labour and Targeted Enterprises:

| Labour | Targeted Enterprise |
|-----------------------------------|---|
| 8% of final contract value | 30% of final contract value (FCV) minimum |
| 30% of target for black youth | 5% of FCV for youth owned |
| 0.5% of target for black disabled | 5% of FCV for women owned |
| 30% of target for black women | 1% of FCV for military veteran owned |
| | 0.5% of FCV for disabled owned |
| | 1% Public transport operators |
| | 1% of FCV for CIDB 1 & 2 owned |
| | 1% of FCV for CIDB 3 & 4 owned |



SANRAL

*Baie Dankie
Thank You
Enkosi*

BUILDING SOUTH AFRICA
THROUGH BETTER ROADS

QUESTIONS ?????