

Boosting Economic Growth Reducing Traffic Congestion



Gauteng Freeway Improvement Project

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GFIP Update



PROJECT APPROACH

- Integration of Transport initiatives and Promotion of Public Transport:
 - Modal Integration (park and ride)
 - Travel Demand Management (HOV lanes, ramp metering)
- Intelligent Transport Systems (ITS)
 - CCTV, VMS, etc
- Improved Incident Management
- Upgrading & expansion of infrastructure

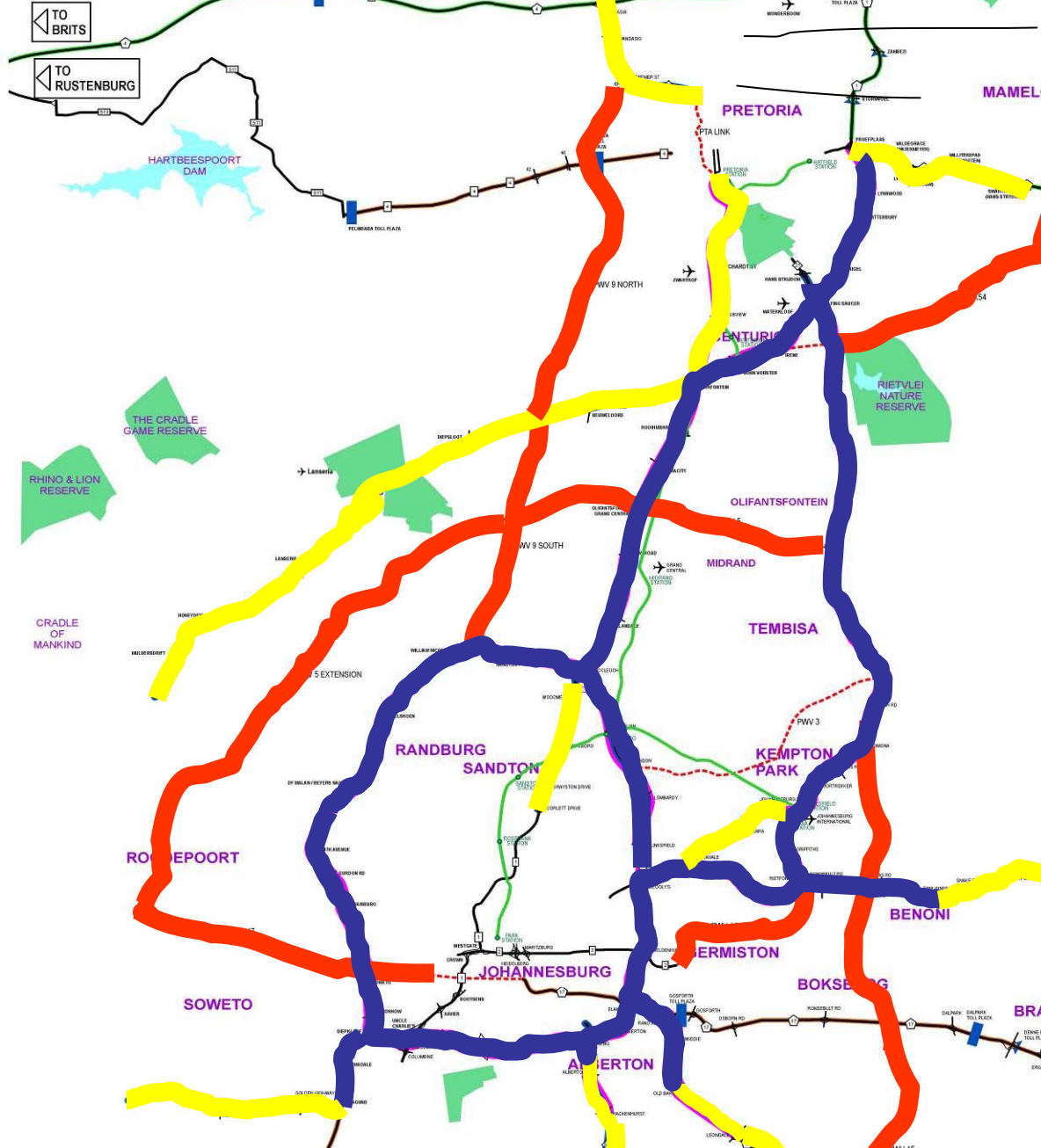
Project Extent:

PLANNED LANE ADDITIONS: 180 km (2010)

FUTURE UPGRADES: (223 KM)

PLANNED NEW ROUTES: 158 km

FINAL SCHEME: 561 KM



Project Progress

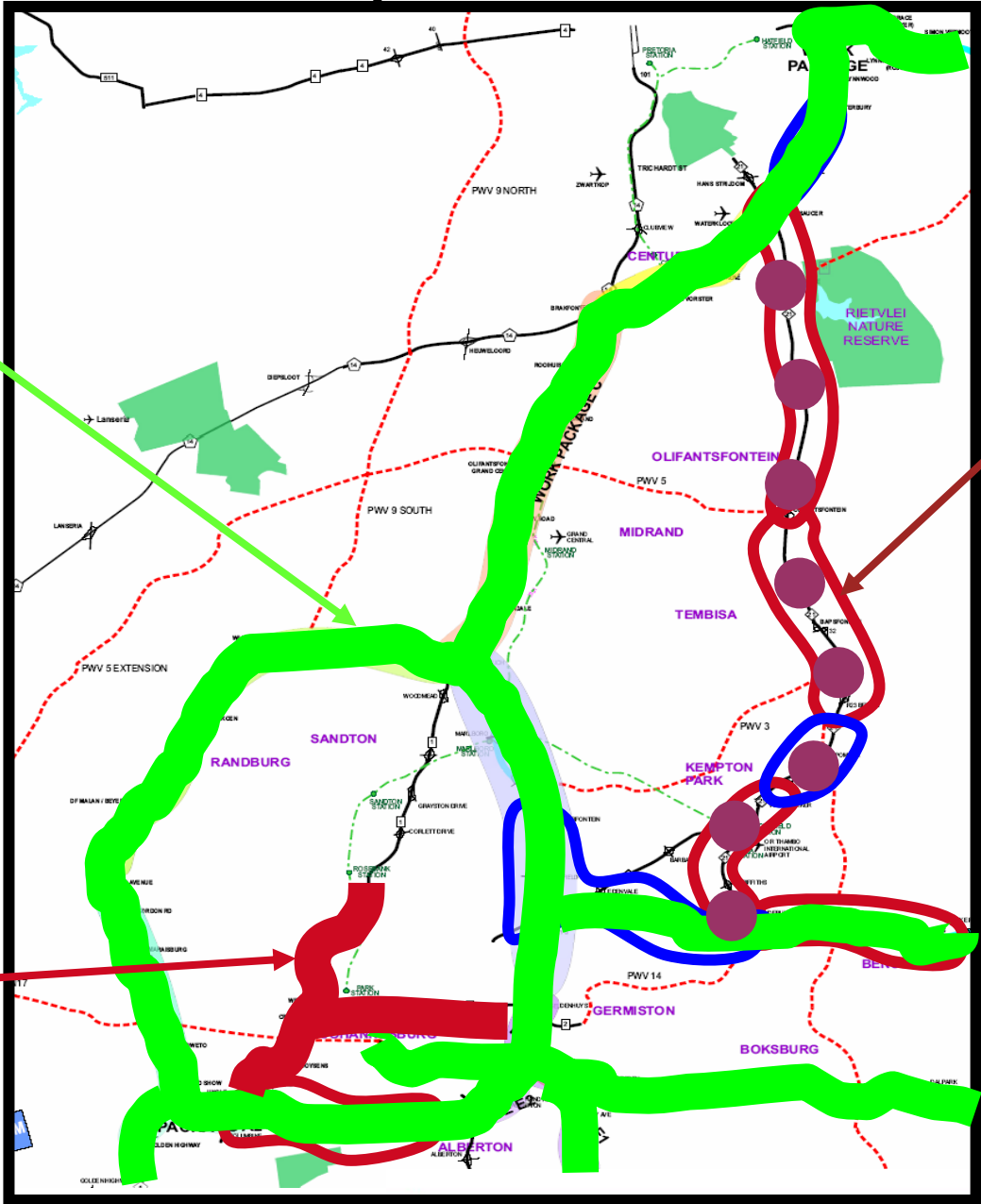
- Studies/designs commenced: Aug – Nov 06
- Political acceptance: July 07
- ROD: Jan 08
- Design completed: Jan 08
- Construction Tender: Feb 08
- SANRAL awarded tenders to the amount of R14,0 b (excl) up to Oct 08
- Construction commenced: June 08
- ITS for network completed: Aug 08

Freeway ITS network

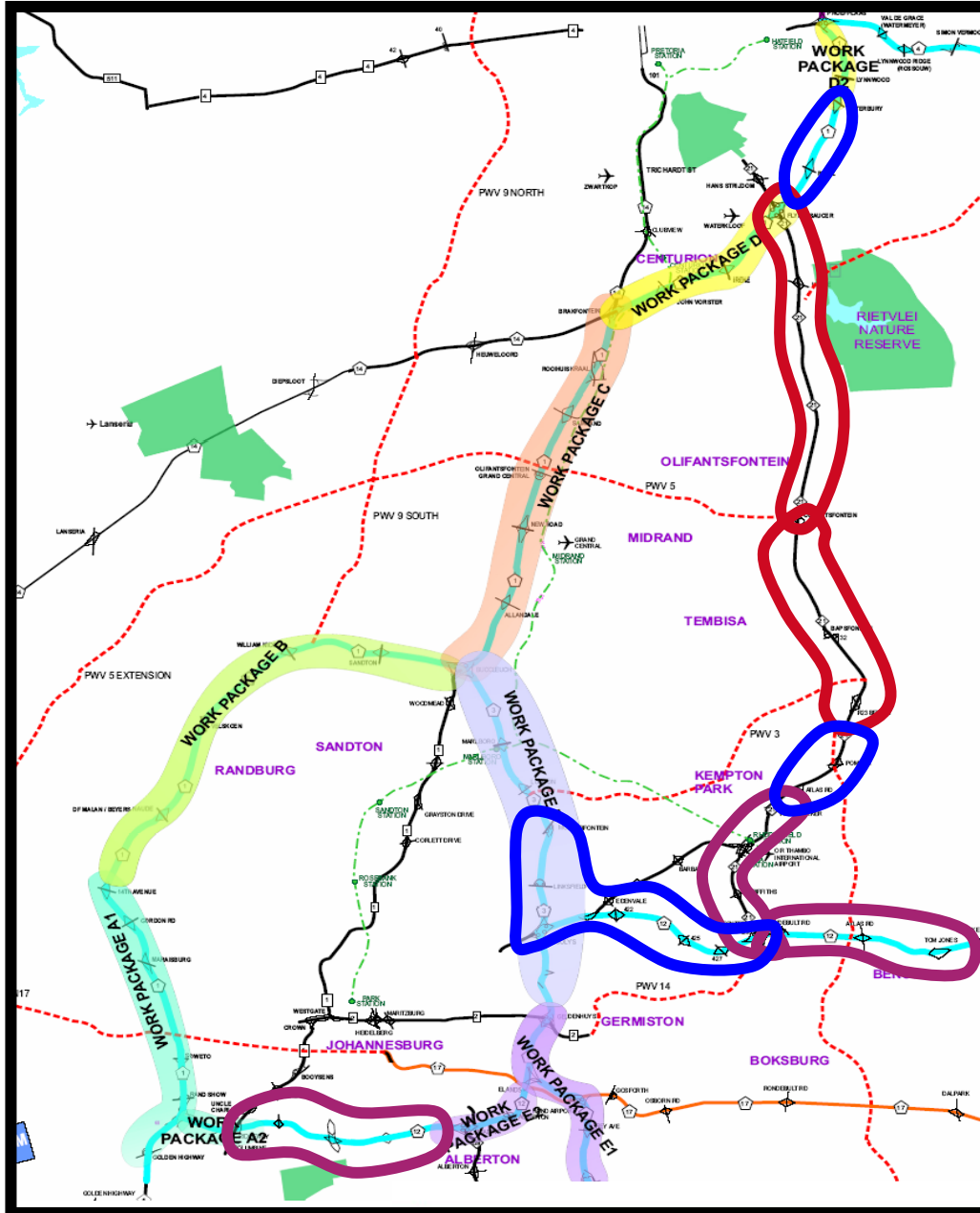
SANRAL ITS Network – Implemented (210 km)

Future

JRA ITS



GFIP Phase 1 – 185 km



TYPICAL CONSTRUCTION WORK



IMPLEMENTATION CHALLENGES

- Project implementation – 24 to 30 months per project
- Accommodation of Traffic:
 - Basic number of lanes available in peak hours
 - Working behind barriers – separate barrier contracts
 - Towing of vehicles – no shoulders
 - ITS – informed about conditions/incidents to react
 - Public relations – keep the public informed

PROPOSED ROAD IMPROVEMENTS

- In general, freeways will be upgraded to 4 lanes per direction
- Some sections, up to 6 lanes per direction
- Interchanges are improved:
 - ▶ 7 Systems Interchanges (additional lanes, directional ramps)
 - ▶ 21 Access Interchanges (Additional bridges, single points, ramp Additions, lane additions)
- Auxiliary lanes at on- and off-ramps
- Cross road improvements
- Median lighting is provided

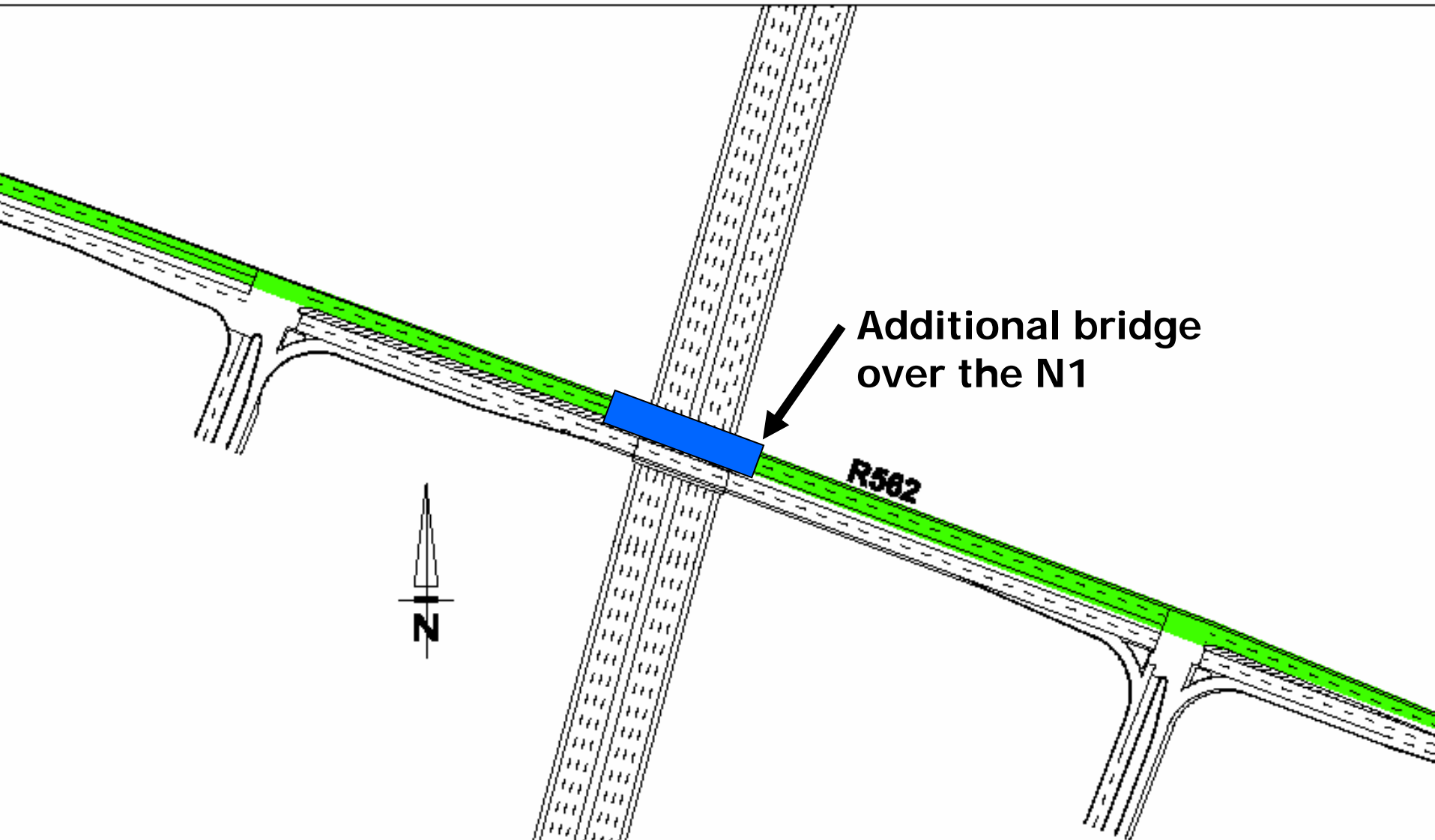
PROPOSED INTERCHANGE IMPROVEMENTS

- [project\RIVONIA PPT SLIDES.mpg](#)
- [project\WILLIAM NICOL PPT SLIDES.mpg](#)
- [project\ALLANDALE PPT SLIDES.mpg](#)
- [project\LYNWOOD PPT SLIDES.mpg](#)
- [project\ELANDS INTERCHANGE.mov](#)
- [project\GILLOOLYS PPT SLIDES.mpg](#)

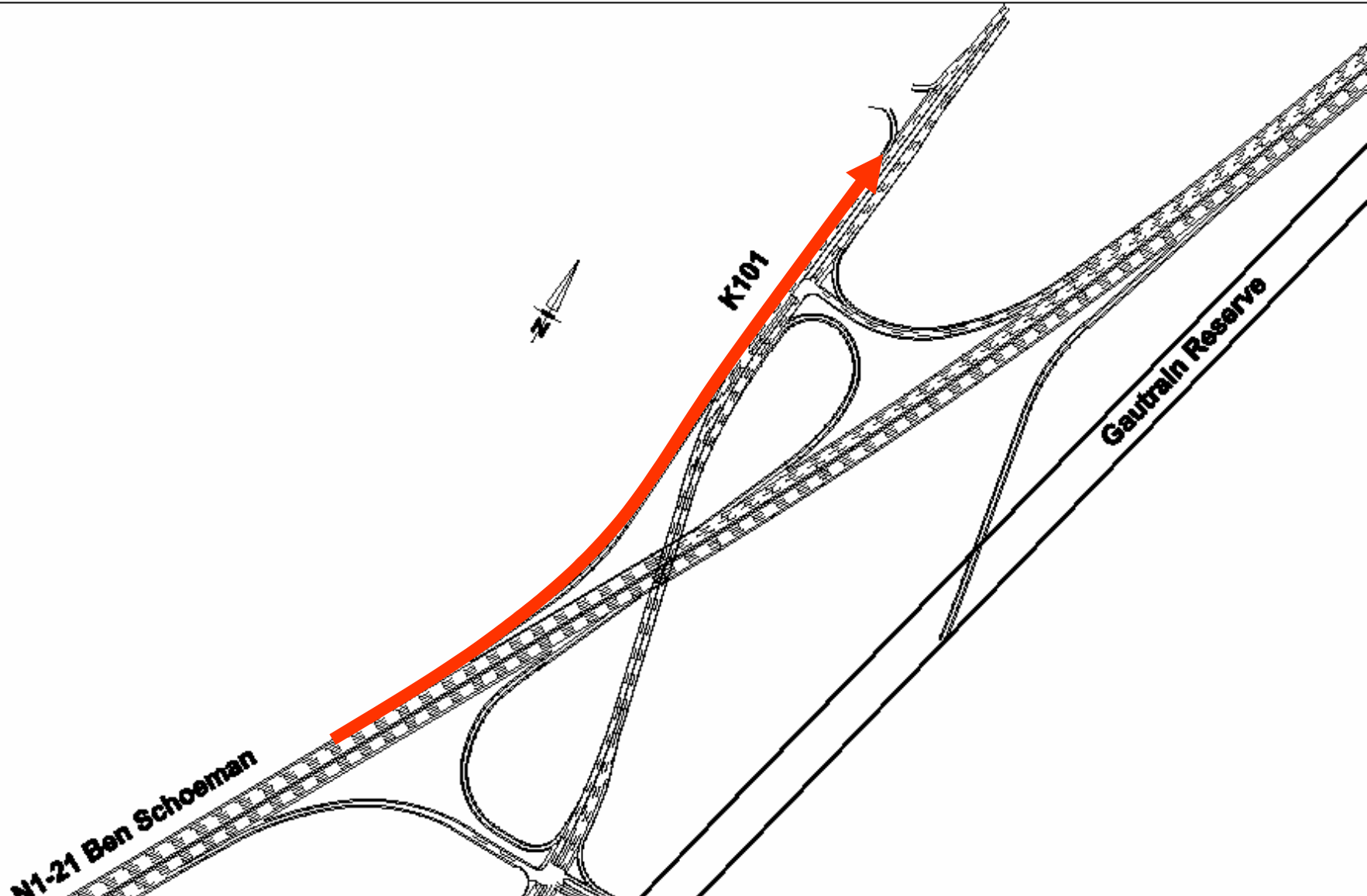
N1: Maraisburg Interchange



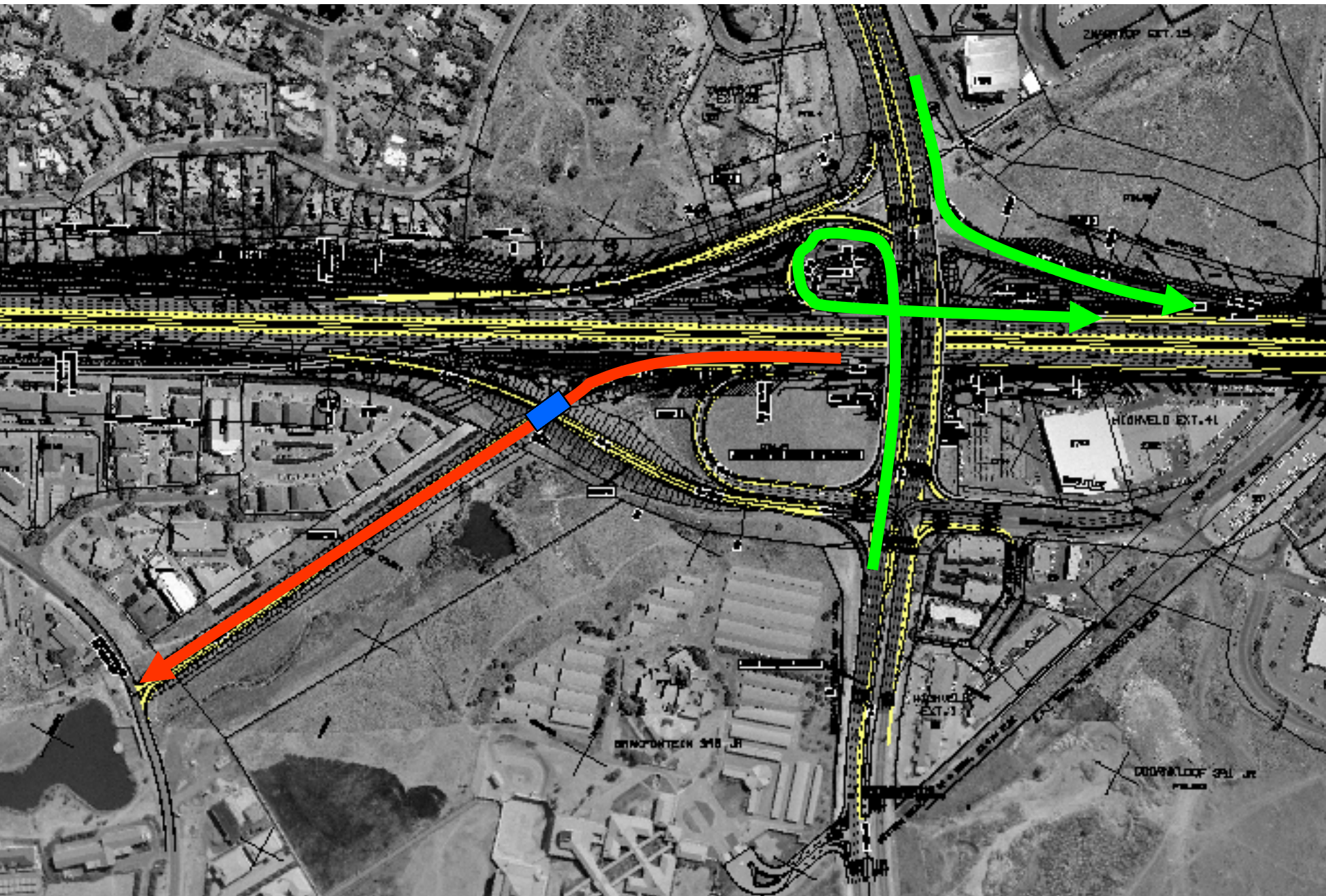
N1: Olifantsfontein



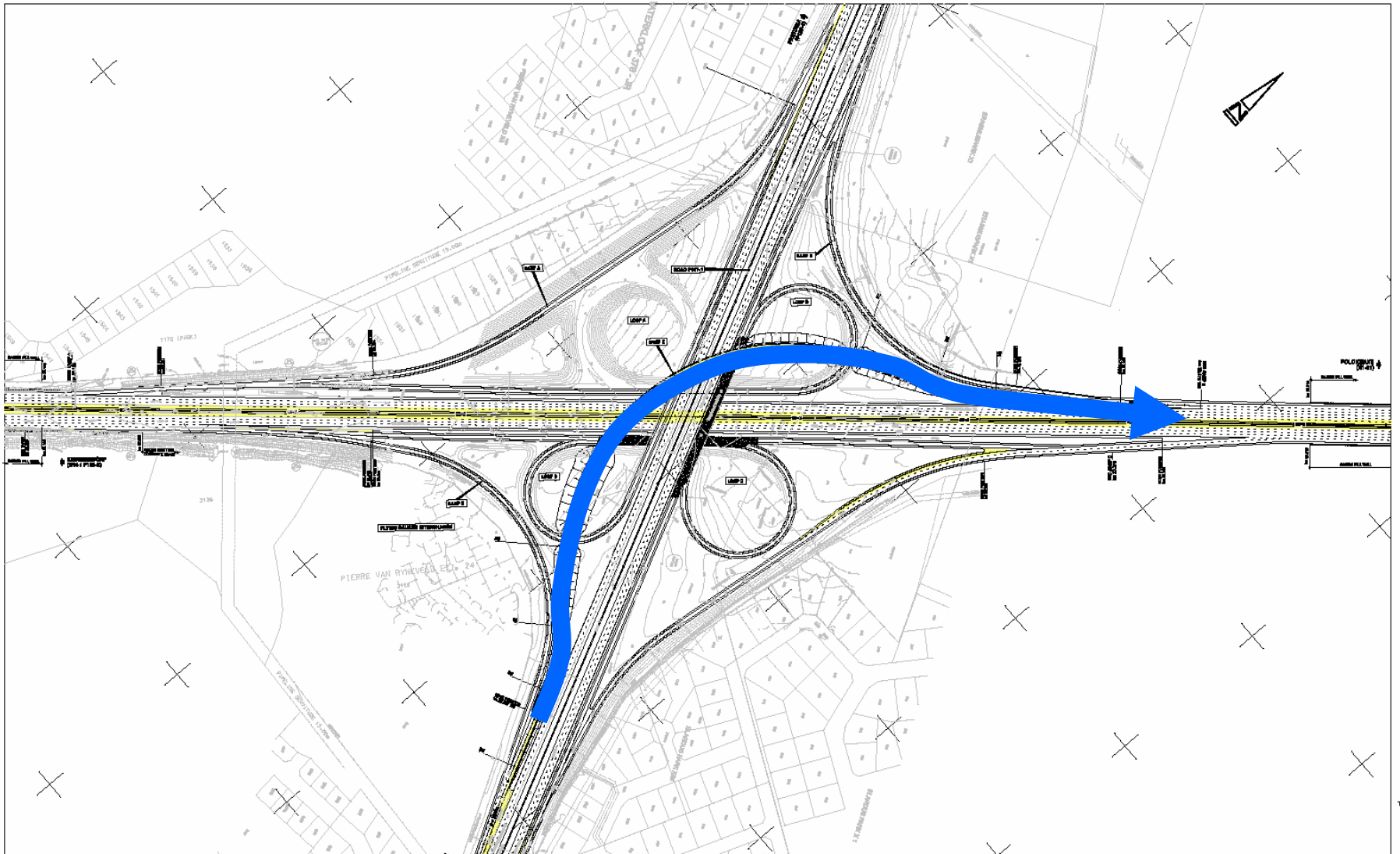
N1: Rooihuiskraal Interchange



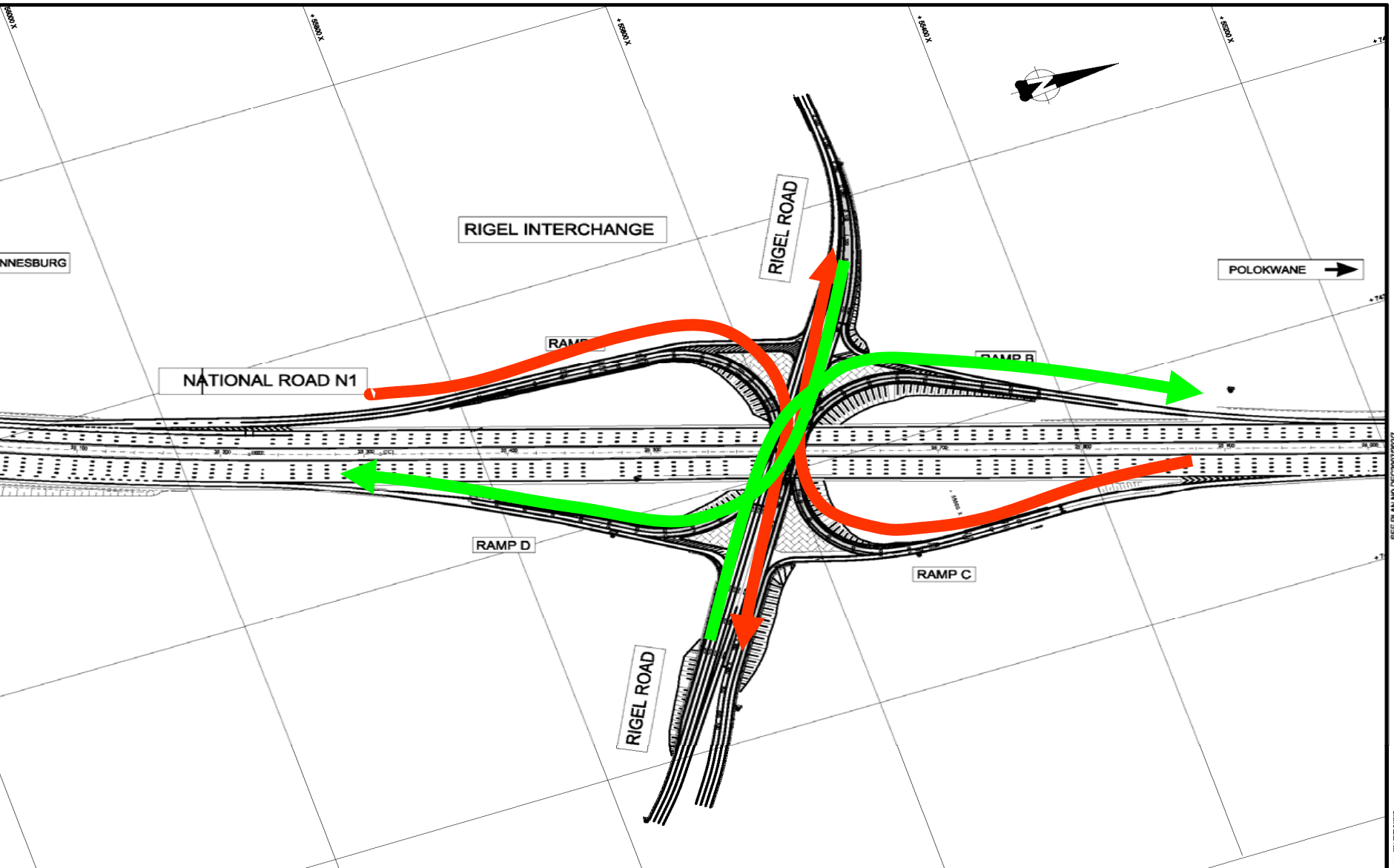
N1: John Vorster Interchange



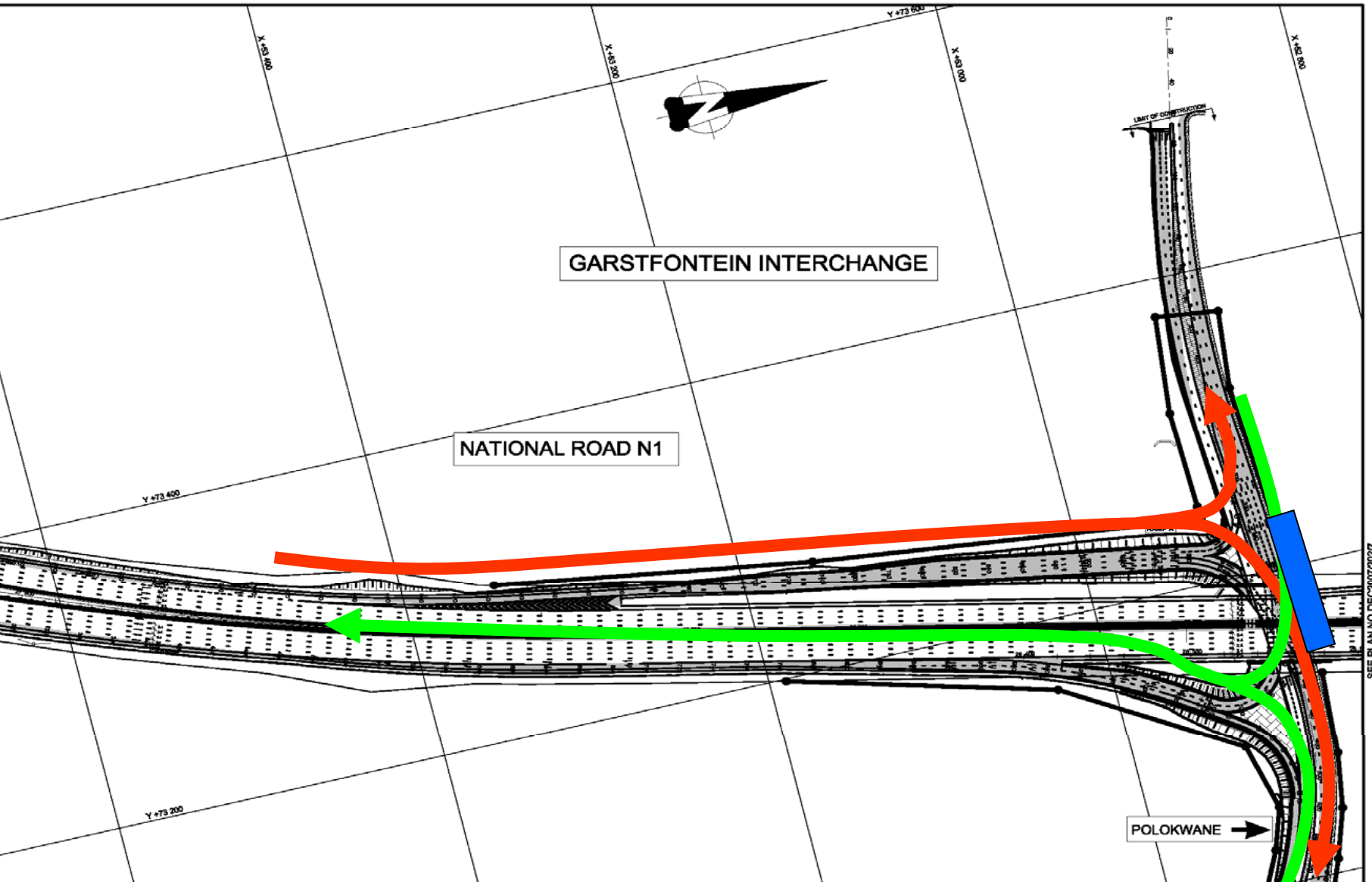
N1/R21 Interchange



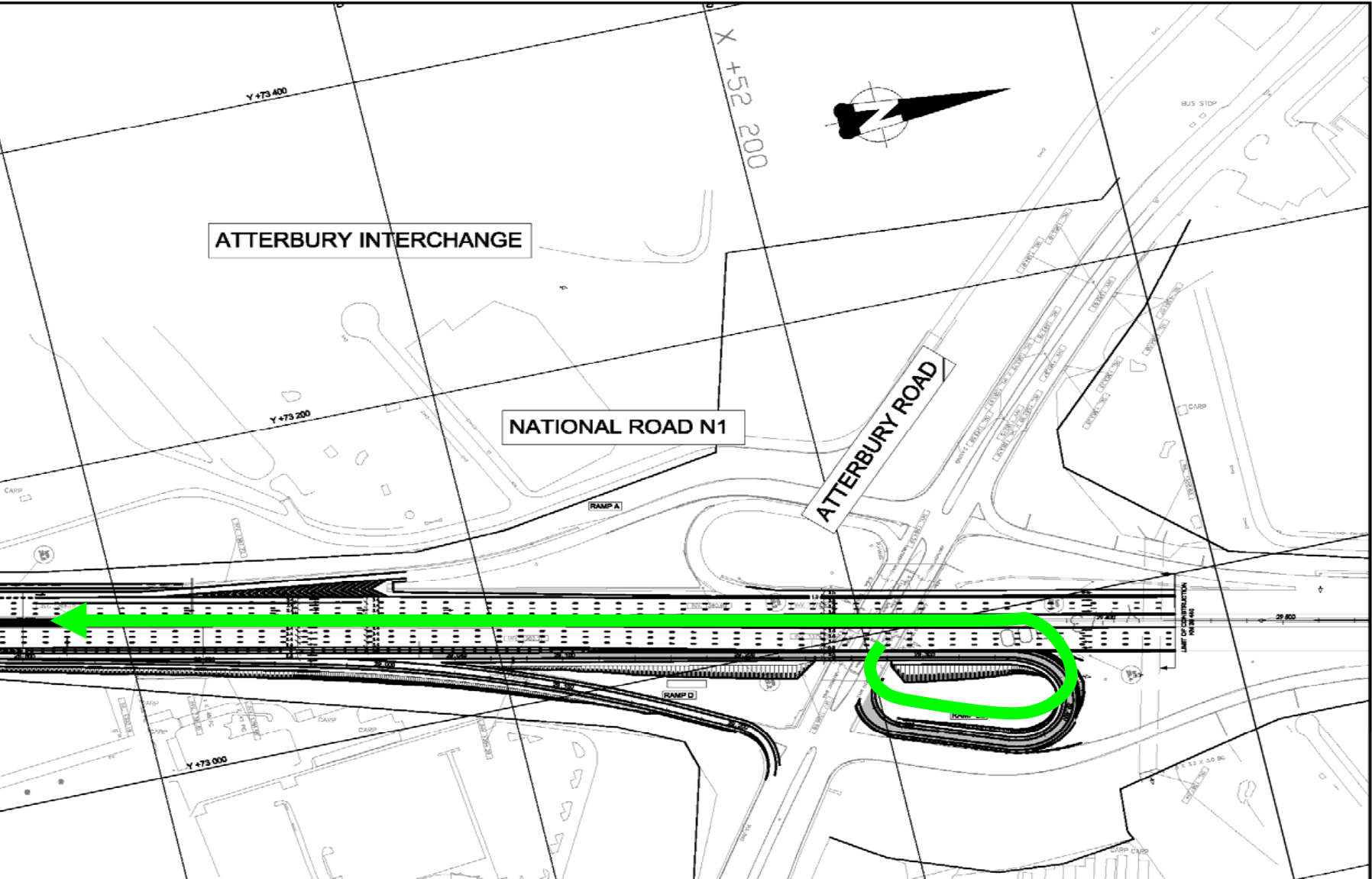
N1: Rigel Interchange



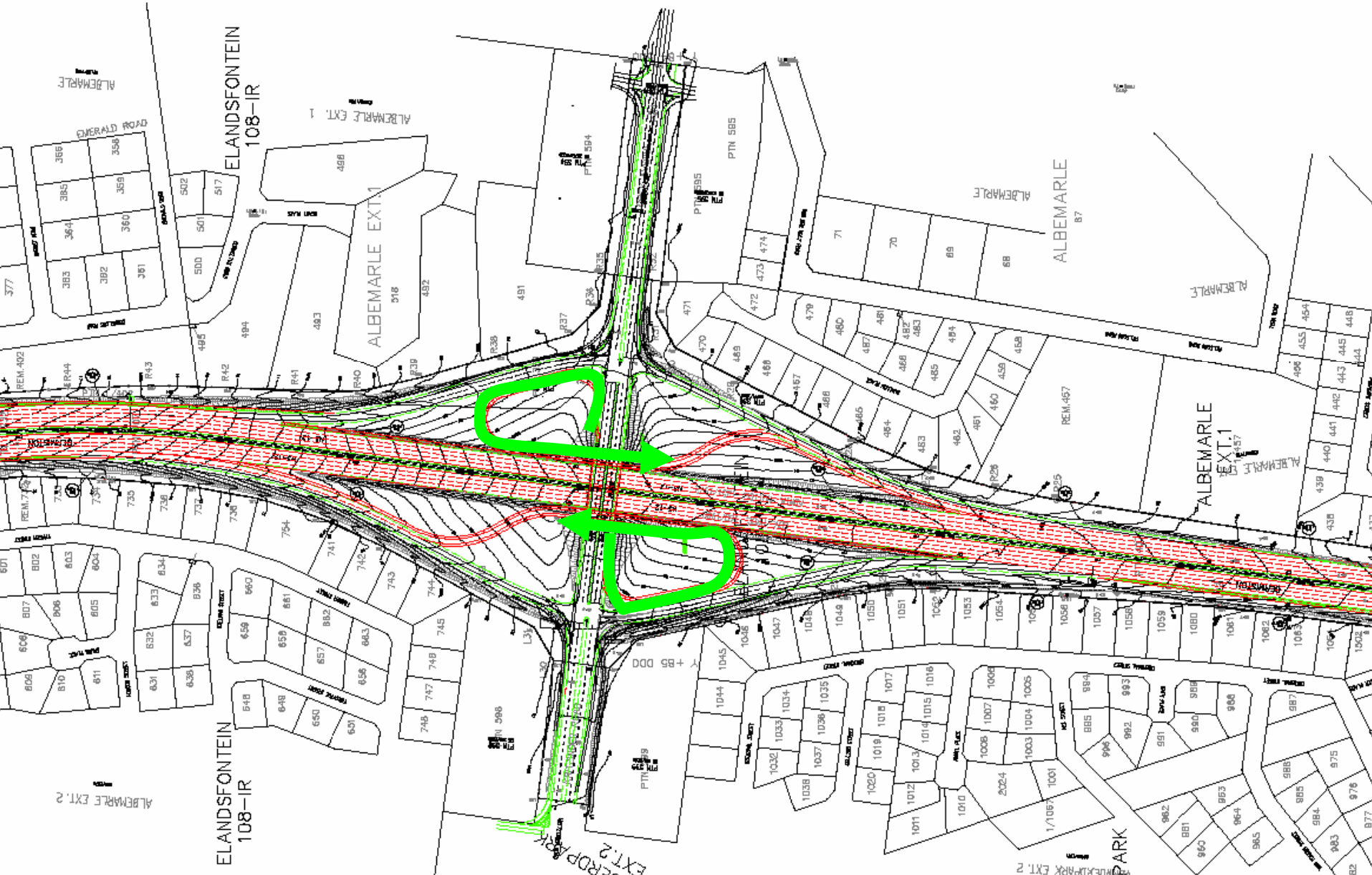
N1: Garstfontein Interchange



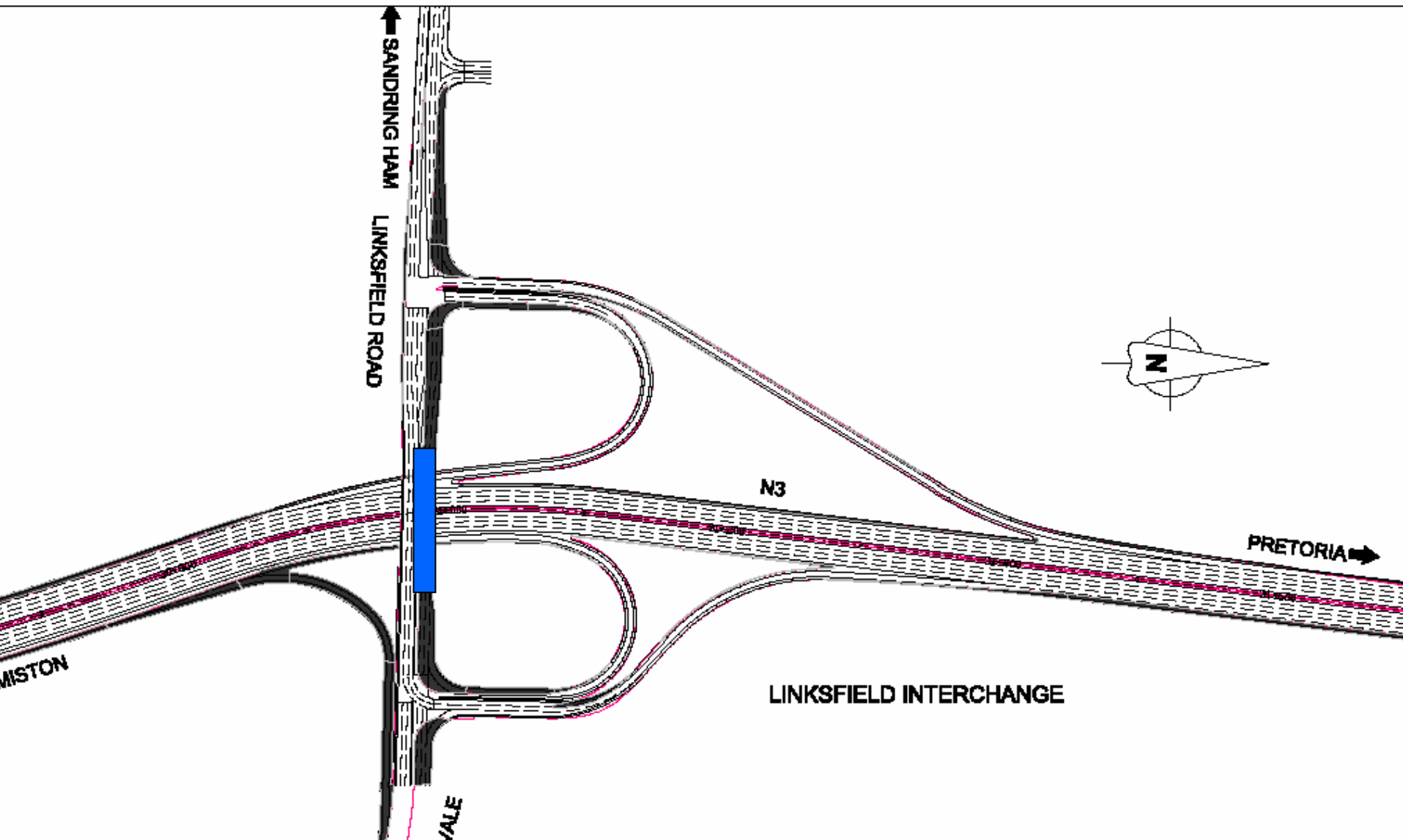
N1: Atterbury Interchange



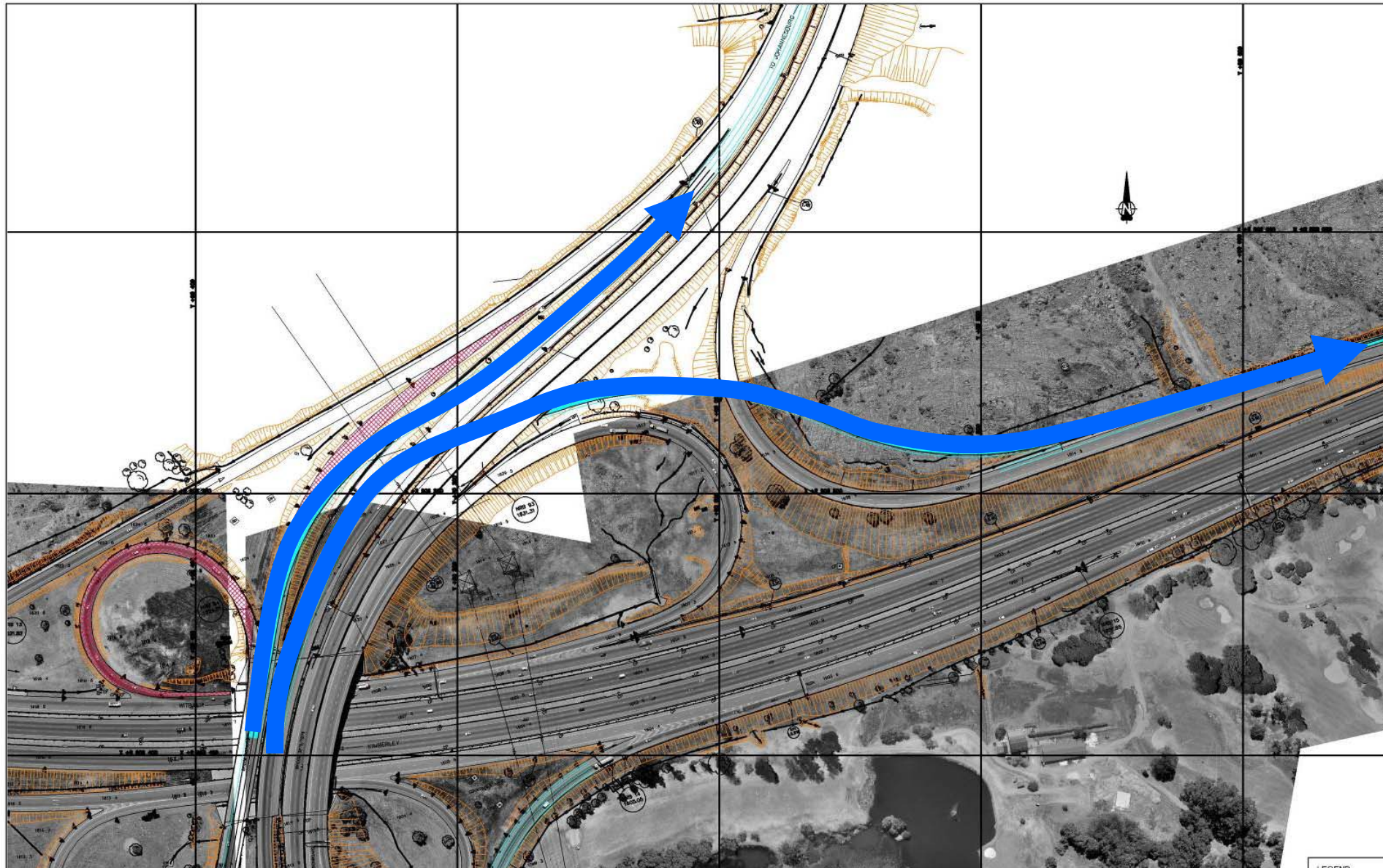
N3: Grey Ave. Interchange



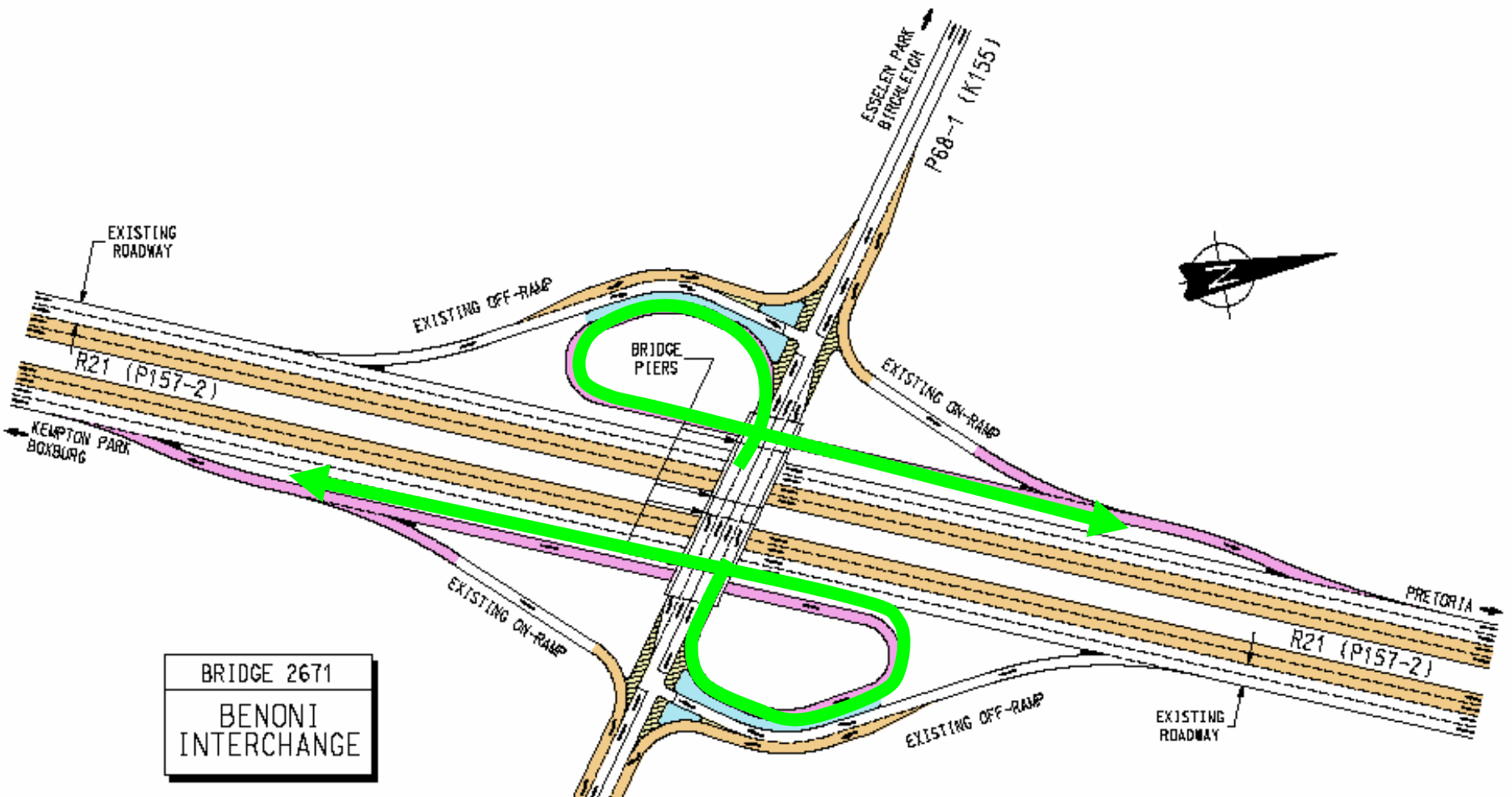
N3: Linksfield Interchange



N12: Reading Interchange



R21: Benoni Interchange



Travel Demand Management & Public Transport

- Require integration between transport initiatives (GFIP, HOV, BRT, Gautrain, Metrorail)
- [project\INTEGRATION PPT SLIDES.mpg](#)

Funding Sources for Roads

- Road/project financing –
 - Must be sustainable, in order to do long term planning and implementation
 - SANRAL projects evaluated over 30 year analysis period, similar to PPP's
 - In terms of current legislation, can not commit Government expenditure over extended periods

Funding Sources for Roads

Options currently available:

- **Fuel Taxes**
- **Vehicle registration/license fees and traffic fines**
- **Development impact fees**
- **Shadow Tolling**
- **Tolling**
 - In South Africa two options:
 - Through State Toll Roads (Government Guarantee/SANRAL credit rating)
 - PPP's (BOT projects)
 - Advantages – sustainable & ring fenced
 - Can be done conventionally (toll plazas) or open road (ETC)

PROJECT FINANCING & IMPLEMENTATION

- User pay principle will be used to finance project
- Open road/gantry tolling (ORT)
- Provides a mechanism for accelerated financing of infrastructure

PROJECT FINANCING & IMPLEMENTATION

- Gantries spaced at approximately 10km
- As part of project – distribute on board unit (OBU) – e-tag
- One tag, one account, central clearing – means full interoperability between all toll roads in South Africa
- Challenge to effectively distribute tags – user friendly
- Effective revenue collection and violation processing essential
- 3 000 000 electronic transactions per day

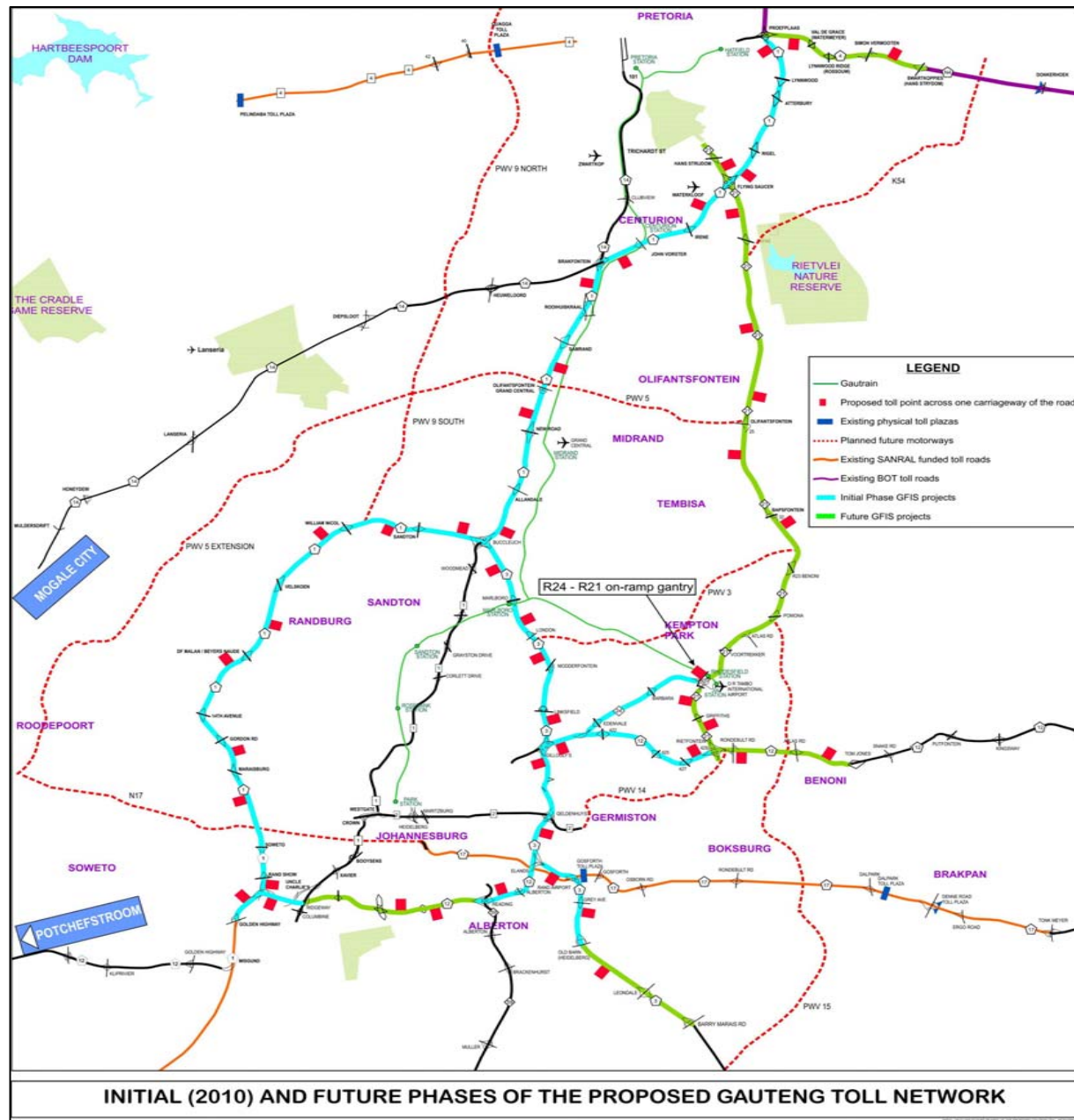
OPEN ROAD TOLLING

Electronic Toll Collection = no physical plazas = no delay

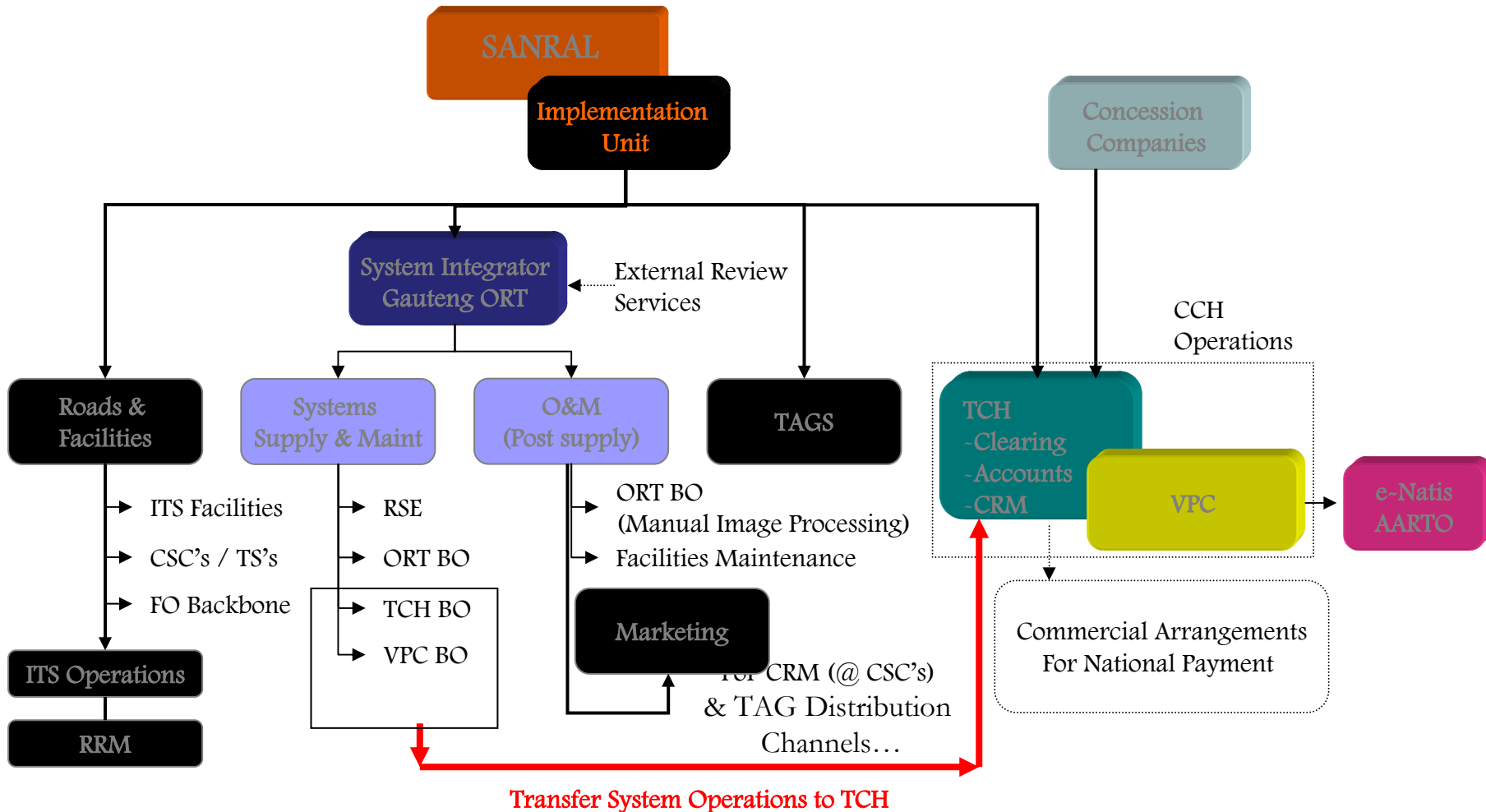


Open Road Tolling:

- 1 000 000 ETC tags
- 42 gantry positions for 2010 phase
- ANPR at all ORT gantries



Gauteng ORT – Proposed Project Structure...



PRE QUALIFICATION

- Closed 29 September 2008
- Pre qualification packages:
 - Main Contractor (System Integrator/Operator)
 - Road Side System
 - ORT back office operations
 - Transaction Clearing House System
 - Violation Processing System
- Final Tender – only for Main Contractor
- Toll System and Operations – 8 years
- TCH and VPC operations – 5 years

VIOLATION PROCESSING

- SANRAL Act allows for open road tolling
- Must have ability in terms of legislation to effectively collect revenue
- Therefore:
 - Non payment of toll must become an offence in terms of the National Traffic Act
 - Non payment of toll should be handled within Administrative Adjudication of Road Traffic Offences (AARTO) Act
- Amendment bills prepared for:
 - SANRAL Act
 - National Traffic Act
 - AARTO

ITS

- ITS network well developed
- System integration and operating network to be further developed or revisited
- ITS – SANRAL’s interaction with public (VMS, web page, etc)
- ITS implemented as separate system (not part of ORT system)
- ITS operations – separate

IMS

- Committed as part of GFIP to improved IMS
- Not SANRAL's intention to take over IMS function from emergency services
- However, in order to provide effective service to road users (customers), must take IMS to improved level of efficiency:
 - Quick reaction to low impact incidents such as broken down vehicles, bumper bashings, to prevent secondary (serious) incidents, and to allow traffic flow to be reinstated
 - Medical attention – golden hour

IMS: Requirements

- Incident response vehicles - Quick response to incidents – make it safe – cones, basic assistance equipment
- Quick response for medical attention – medics on bikes – two per zone – must be able to reach accidents within short space of time to provide medical assistance – service can be contracted out to specialists (ER 24, Netcare, etc)
- Towing of vehicles – provides customer service, prevents secondary incidents, reduce delays – light vehicle and heavy vehicle services – contract out to service providers such as the AA
- Continuous patrolling of routes required – RTMC to provide service, alternatively the Province (already part of construction)
- Alternatively, all the above services part of operational tender for ITS/IMS

IMS: Requirements (cont.)

Under consideration:

- Policing role
- Road Agency Traffic Officers
- Road Stewards
- Incident Support Units
- Recovery Services



CHALLENGES

- Public Acceptance
- Reconcile affordability and financial viability
- Tag penetration
- Balance in tariff setting per vehicle class and different payment options to optimise revenue
- To establish practical regulations to instill payment discipline for ORT users

CHALLENGES cont ...

- Accommodate Concessionaire in Central Clearing System
- Time constraints
- Traffic management

PROJECT PROGRAMME

- Construction freeway widening milestone: May 2010
- Temporary FIFA World Cup suspension
6 weeks: end May 2010 until mid July
- Substantial construction completion date: Oct/Nov 2010

PROJECT PROGRAMME

- ORT Pre qualification: Aug 2008
- ORT Pre qualification award: Nov 2008
- ORT Tender: Jan 2009
- ORT Tender Award: May 2009

PROGRESS TO DATE

- Package B: N1: 14th ave – Buccleuch
 - Various structures under construction
 - Median widening well underway
- Package C: N1: Buccleuch – Brakfontein
 - Allandale interchange
 - Nelmapius and Olifantsfontein bridges
 - Jukskei river bridge
 - Median infill

PROGRESS TO DATE (cont.)

- Package D1: N1: Brakfontein to R21
 - R21 directional ramp:
Fill and platform for incremental launch bridge well underway
 - Other two bridges busy with piers
 - Median widening well underway
- Package D2: N1: Atterbury to N4
 - Lynnwood interchange
 - Retaining walls between Atterbury and Lynnwood
 - Median widening well underway

PROGRESS TO DATE (cont.)

Package D1:



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PROGRESS TO DATE (cont.)

Package D1

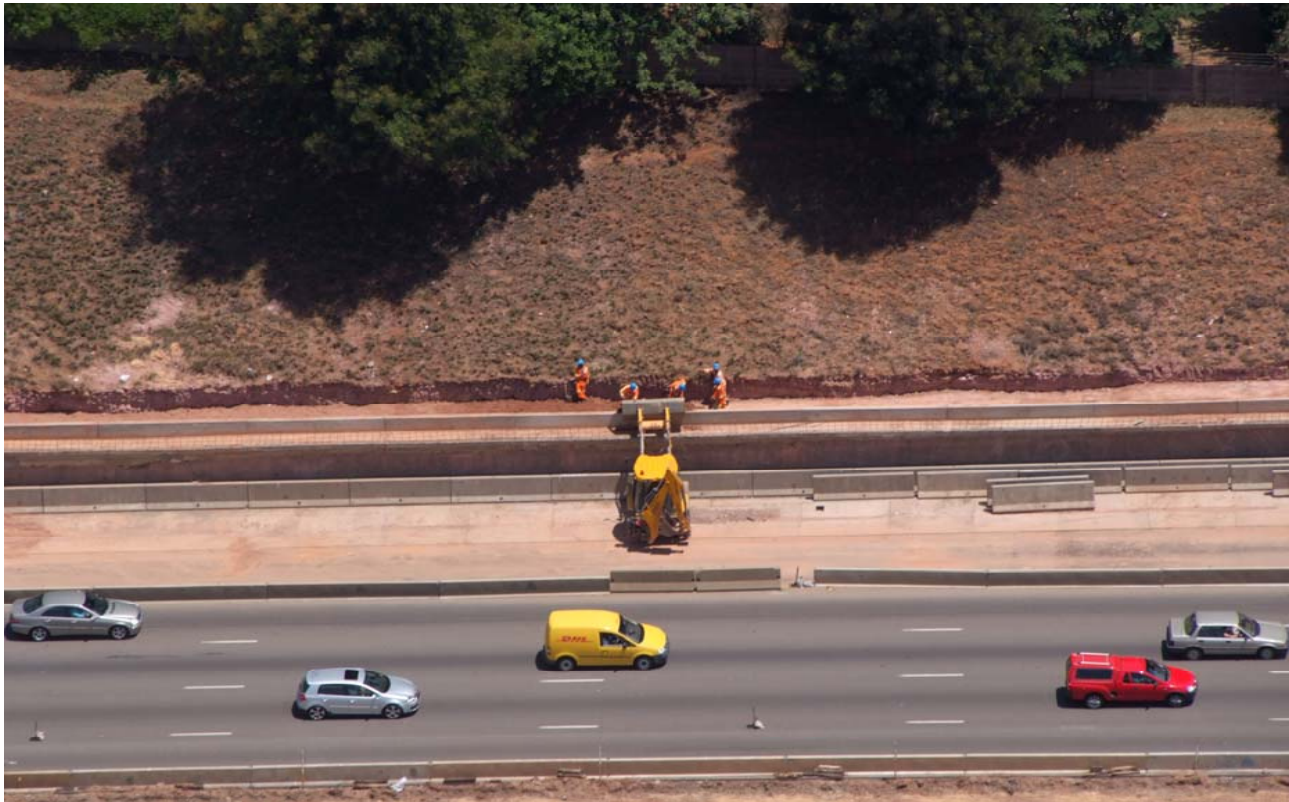


PROGRESS TO DATE (cont.)

- Package D3: N1: R21 to Atterbury
 - Started earlier
 - To be completed in July 2009
 - Outside widenings complete
 - Structures almost complete
 - Busy with median widening
 - UTFC to be done
- Package E1 & E2: N3 Heidelberg road to Geldenhuys and N12: Reading to Elands
 - Work has just started

PROGRESS TO DATE (cont.)

Package D3:



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PROGRESS TO DATE (cont.)

Package D3:



Gauteng Freeway Improvement Project

PROGRESS TO DATE (cont.)

Package D3:



PROGRESS TO DATE (cont.)

Package D3:



Gauteng Freeway Improvement Project

PROGRESS TO DATE (cont.)

- Package F: N3: Geldenhuys to Buccleuch
 - Various structures under construction
 - Median widening well underway
- Package G & H: R21: Benoni to Hans Strijdom
 - Work has just started
- Package I: N12: Gilloolys to R21
 - Work has just started

THANK YOU

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