

**CONTRACT NRA N.002-210-2016/1F
THE N2 WILD COAST TOLL HIGHWAY SECTION 21
BETWEEN THE MTENTU RIVER BRIDGE (KM 1.56)
AND KULUMBE VILLAGE (KM 21.50)**



**DESIGN COMMUNITY MEETINGS
DATE: 04 & 05 AUGUST 2021**



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1. INTRODUCTION

- Project location

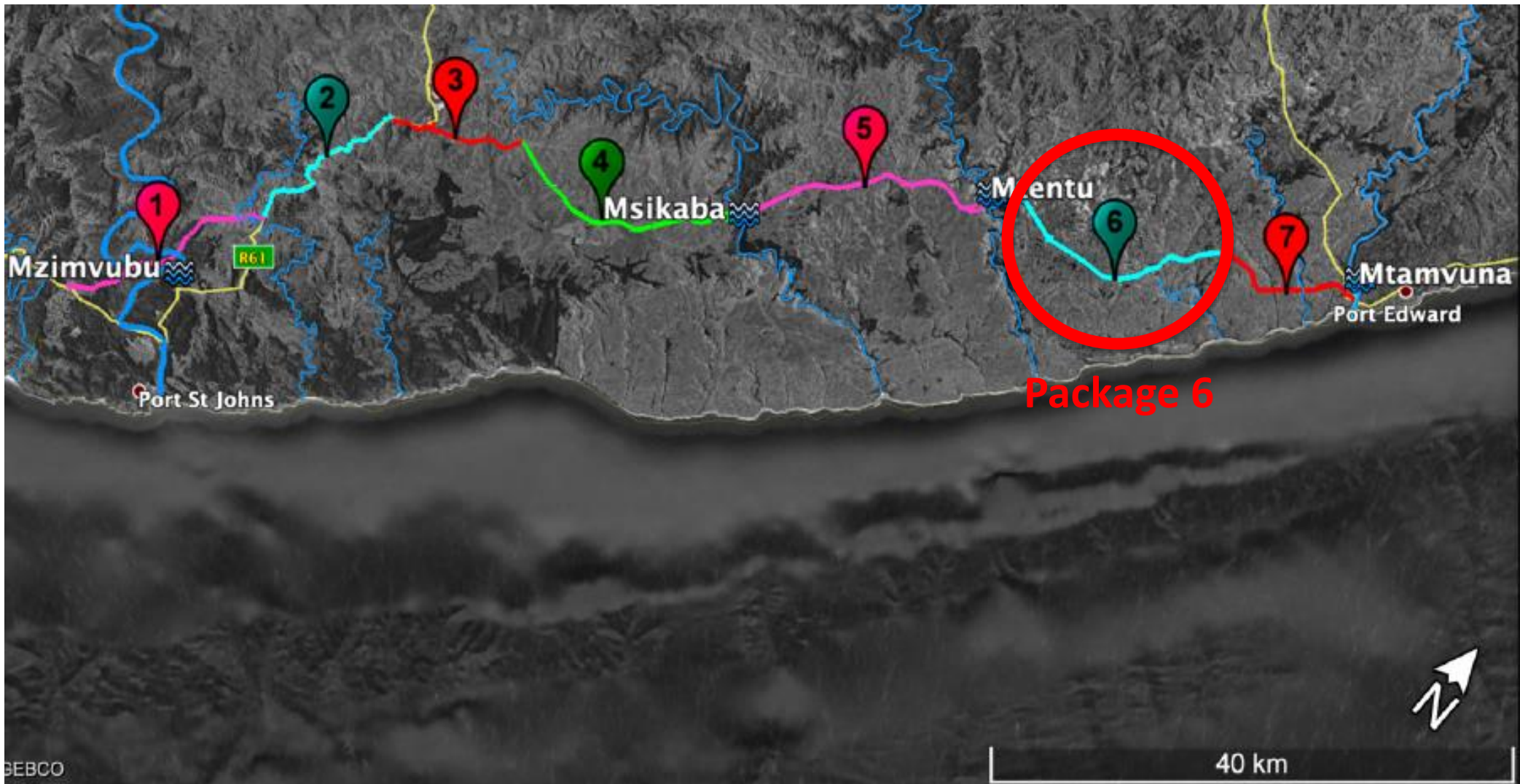
The project is located in the Mbizana Local Municipality in the Alfred Nzo District Municipality in the Eastern Cape Province where the Greenfields portion of the new N2 Wild Coast Highway, which falls within Section 21, will start at the Mtentu River Bridge (km 1.56) and end at Kulumbe Village (km 22.40). The total length of the Project is therefore 20.84km.

- Purpose of Design Community Meeting

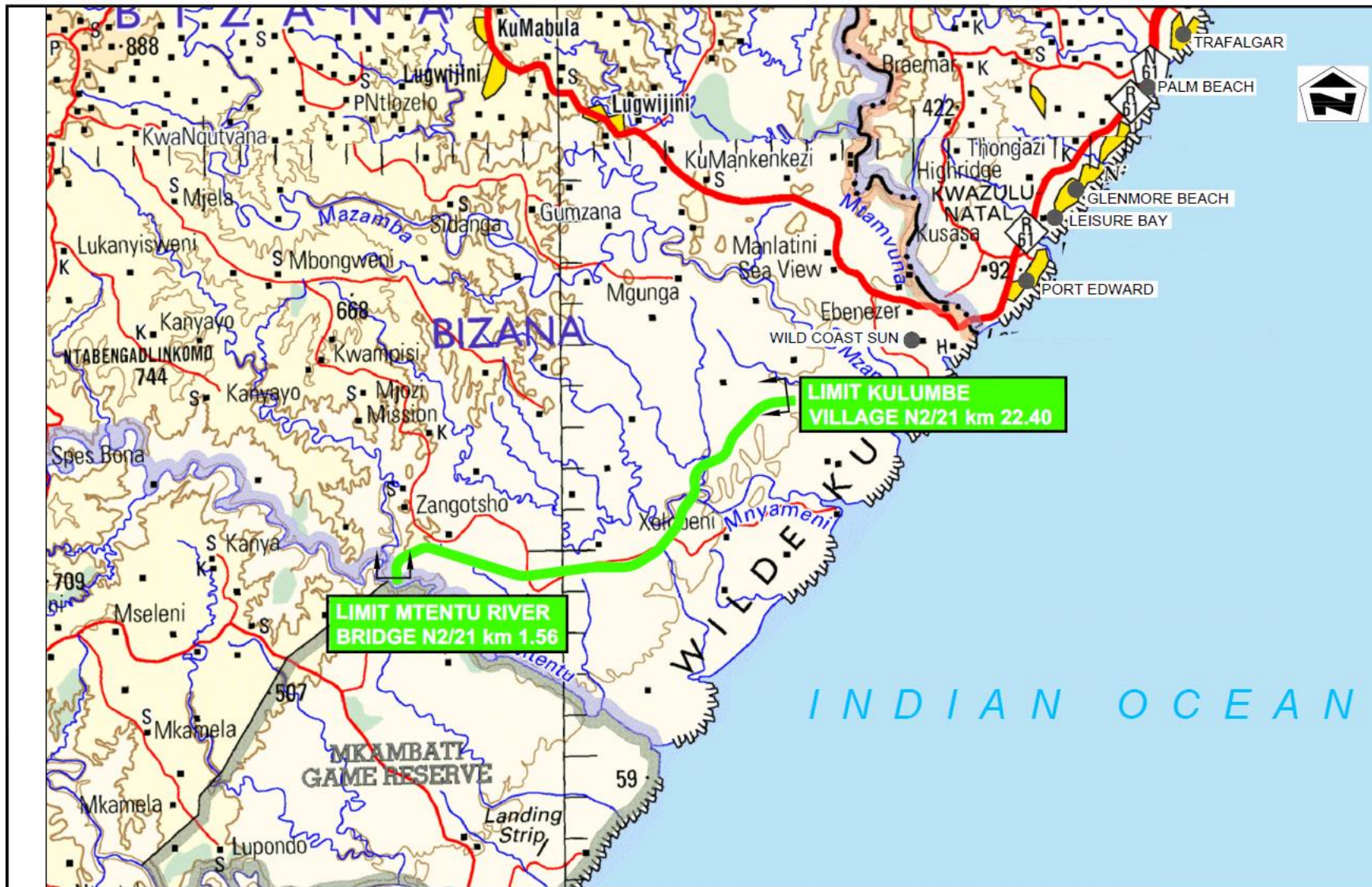
To present to the community the concept/preliminary designs undertaken for the Project to date.

- Design Stage

The Project is currently within its Preliminary Design Stage (i.e. designs could change as the designs are refined and more information becomes available).



BEBCO



LOCALITY PLAN

N2/21 MTENTU RIVER (km 1.56) TO KULUMBE VILLAGE (km 22.40)

NRA N.002-210-2016/1F

1. INTRODUCTION

- Project team
 - Employer: South African National Roads Agency SOC Limited
 - Consulting Engineer: KBK Engineers (Pty) Ltd
 - Targeted Enterprise: KES Africa (Pty) Ltd
 - Local Targeted Enterprise: Ziinzame Consulting Engineers (Pty) Ltd

2. TRAFFIC

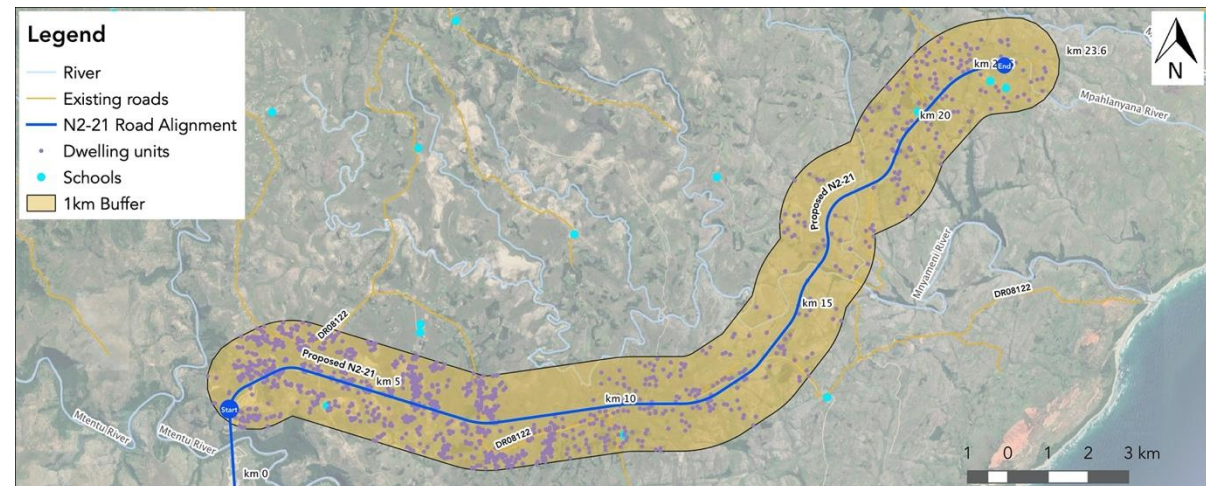
- Public transport facilities:
 - It is likely that public transport facilities may be required at the proposed quarter link intersection at km 21.66, as well as the proposed quarter link intersections at km 7.46 and km 17.10.

2. TRAFFIC

- Non-Motorised Transport (NMT) facilities Recommended:
 - The provision of safe crossing facilities according to NMT desire lines at under/overpass locations;
 - The provision of NMT pathways to connect under/overpasses to NMT attracters such as farms and schools.

Proposed Location of NMT Crossing Locations

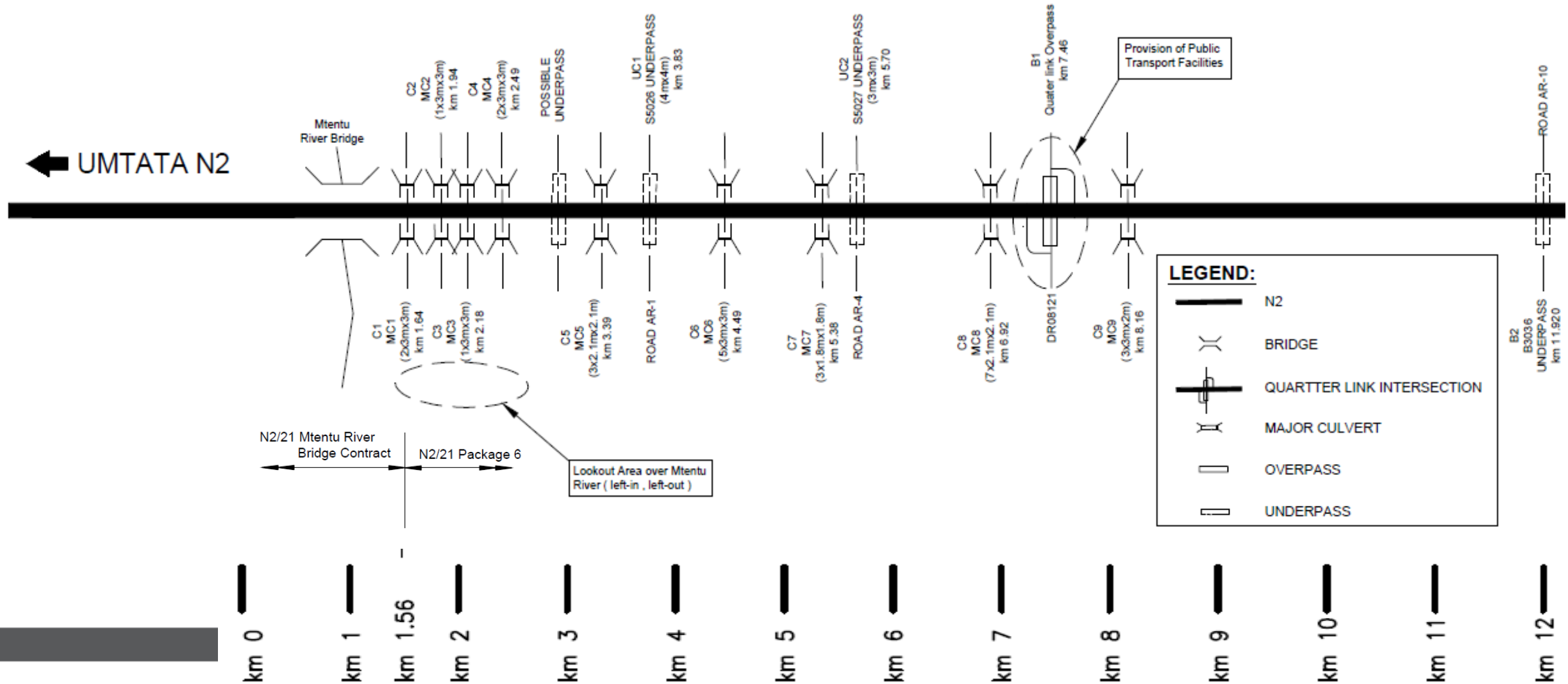
No.	Chainage	Type
1	±km 3.8	Underpass or Overpass
3	±km 6.16	At an access road ¹²
4	±km 7.64	Interchange
5	±km 11.9	Underpass or Overpass
6	±km 19.1	Underpass (access rad proposed at this location) ¹
7	±km 20.3	Overpass or Underpass
8	±km 21.6	Interchange



Schools adjacent to the N2/21

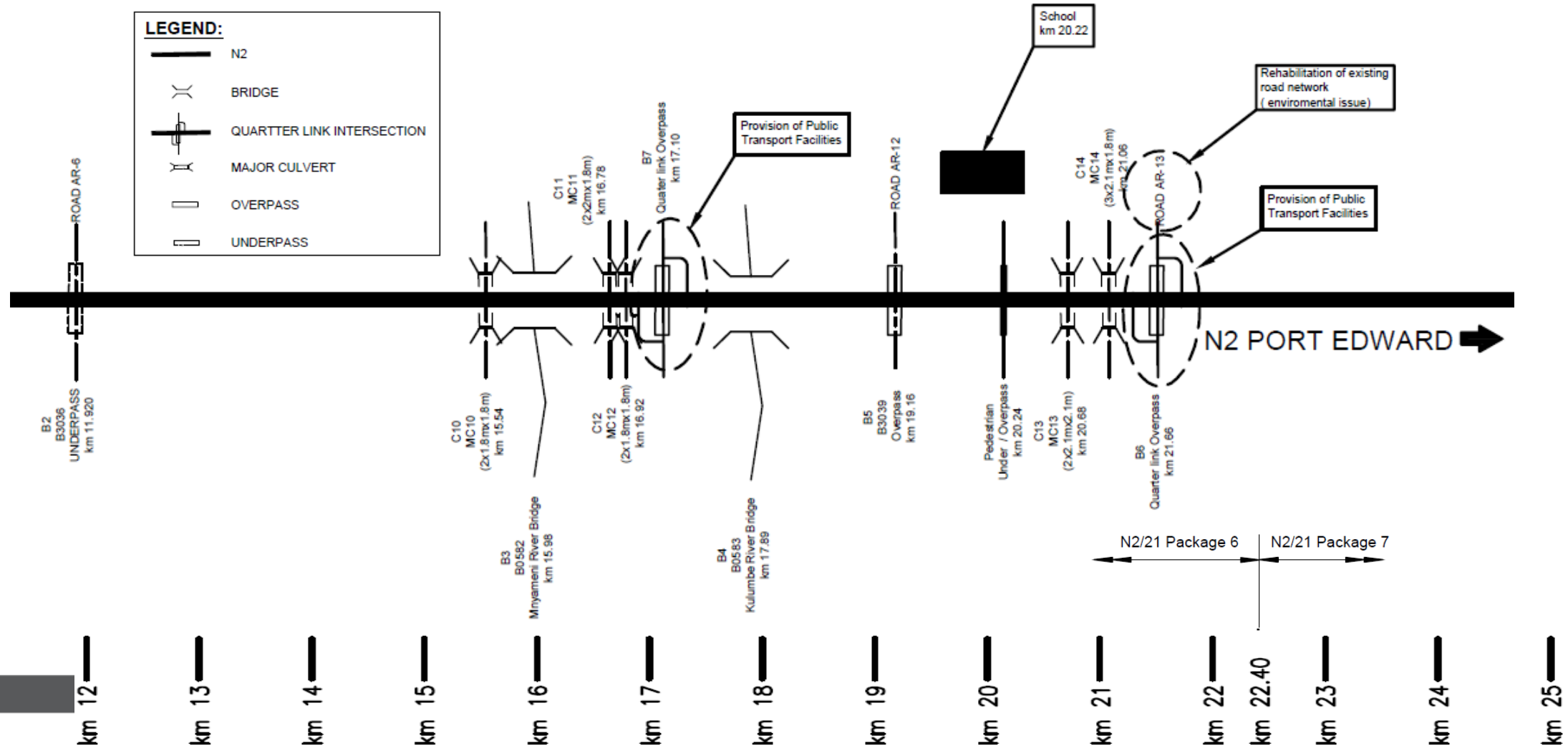
2. TRAFFIC

- Line diagram indicating structures, access roads, NMT, public transport facilities (km 1.56 – km 12.00)



2. TRAFFIC

- Line diagram indicating structures, access roads, NMT, public transport facilities (km 12.00 – km 22.40)

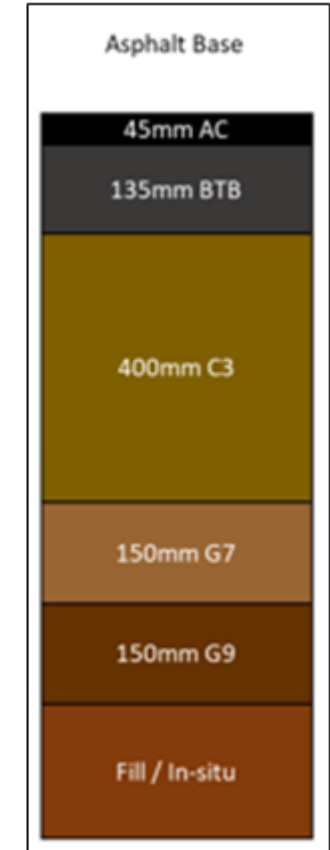


3. PAVEMENT

- Asphalt and BSM1 base layers - advantage of lower risk with wet climatic region, compared to the G1 base;
- Viable pavement design options:



Pavement A – BSM1 base



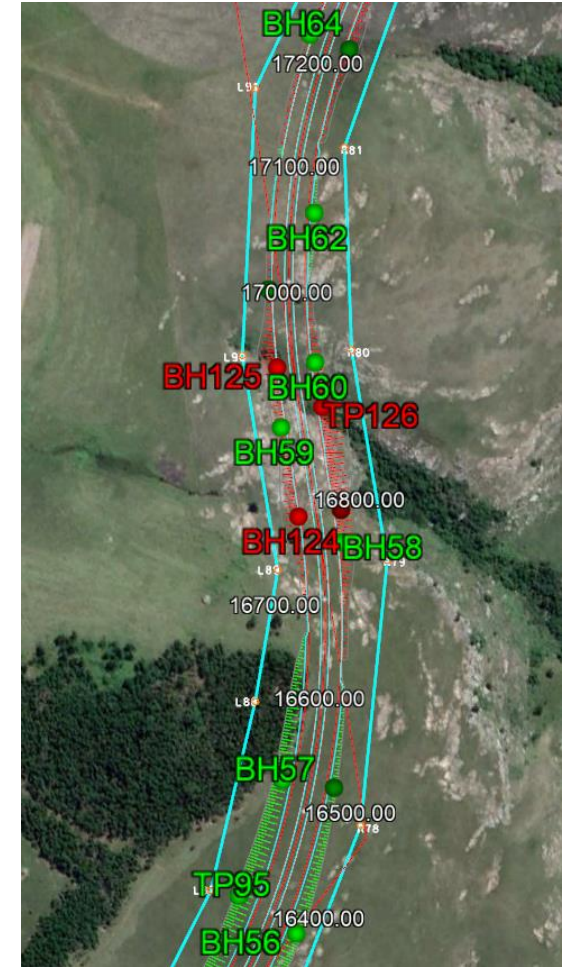
Pavement B – BTB base

4. GEOTECHNICAL ASSESSMENT (to follow)

- Invasive drilling will be required at proposed bridge and culvert footings/foundations;
- Trial hole and drilling investigations to be undertaken at major cuttings and fills.

4. GEOTECHNICAL ASSESSMENT (to follow)

- Drilling and test pit requirements/scope (cuts, fills and structures) were provided to GaGE Consulting who is busy procuring drilling contractor/s to undertake geotechnical investigations over a number of N2 Wild Coast Packages.



5. MATERIALS

- G6 to G8 material:
 - Residual and crushed quartzitic sandstone (possibly G5 material);
- Base course aggregate:
 - Tillite bedrock – and to a lesser extent dolerite bedrock (substantial volumes of overburden is expected before reaching unweather bedrock);
- Materials sourced from cuttings:
 - It is expected that surplus materials removed from e.g. deep cuttings may hold significant potential for the production of fill material (the afore-mentioned will be confirmed from the geotechnical investigations).

5. MATERIALS

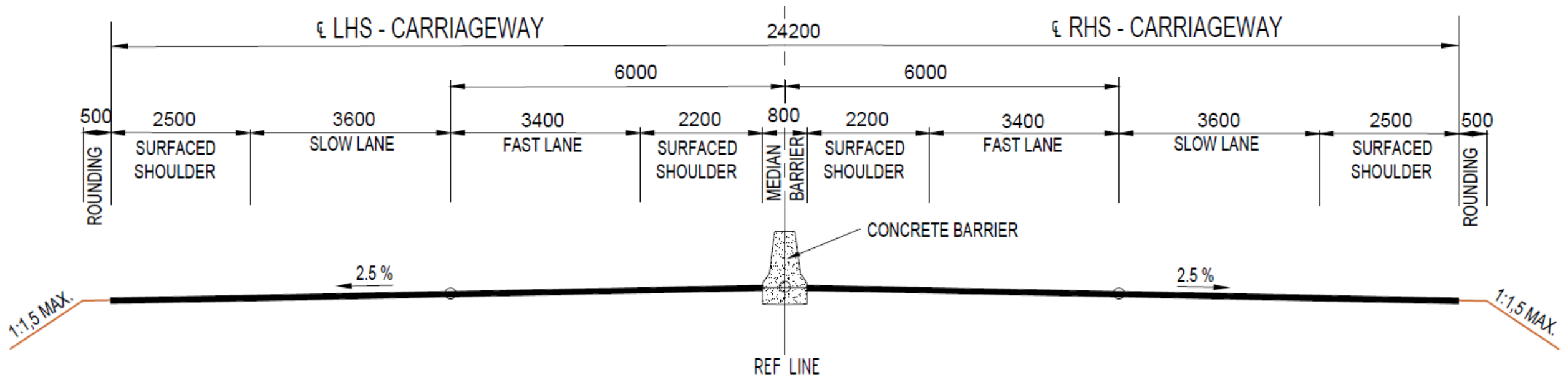
- Upfront materials Tender:
 - An upfront materials tender is out to procure approximately 40% of certain material quantities. The remaining approximately 60% will be sourced commercially by the Contractor during construction;
 - The current tender closing date for Package 6 is 03 September 2021;
 - Base and subbase material will be sourced by the upfront materials tender and commercial sources during construction while fill and selected materials could be sourced from the road prism. The latter will be verified by the drilling investigation and further testing to be performed.

6. GEOMETRY

- Proposed N2 Section 21 cross-section development:
 - Current
 - km 1.56 – km 3.62 (tie-in portion with Mtentu River Bridge cross-section)
 - 4 lane undivided dual carriageway with with painted island or concrete median barrier.
 - km 3.62 – km 22.40
 - 2 lane single carriageway with LHS and RHS auxiliary lanes where required;
 - Quarter link intersections (overpass bridges designed and constructed for future interchange configurations).
 - Future (beyond 2060)
 - km 1.56 – km 3.62
 - Retain current 4 lane undivided dual carriageway with with painted island or concrete median barrier.
 - km 3.62 – km 22.40
 - Add 2nd carriageway for a 4 lane divided dual carriageway;
 - Upgrade quarter link intersections to interchanges (add on- and off ramps).

6. GEOMETRY

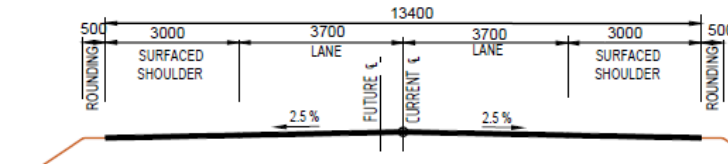
- Proposed N2 Section 21 cross-section development (current & future – km 1.56 to km 3.62):



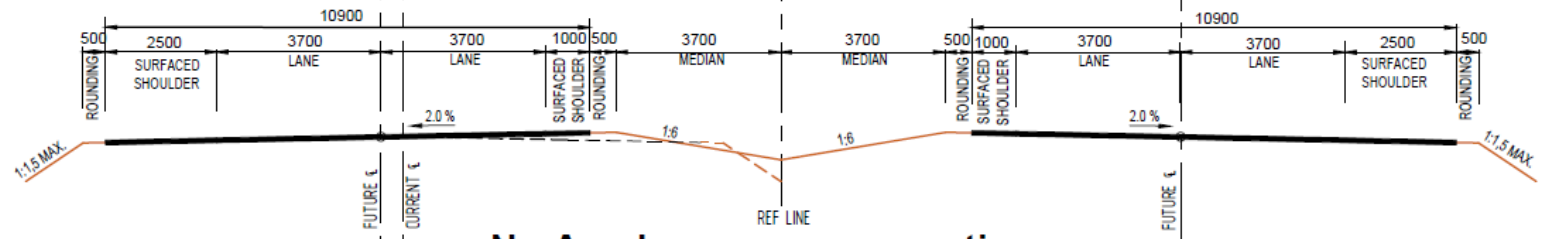
4 lanes undivided with median barrier

6. GEOMETRY - Proposed N2 Section 21 cross-section development (current and future – km 3.62 to km 22.40):

CURRENT

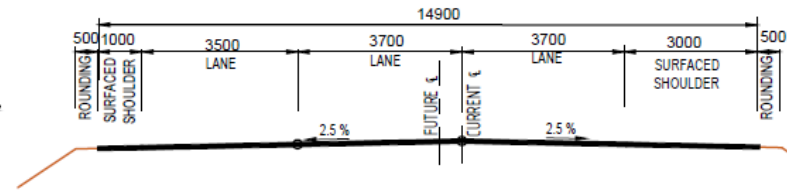


FUTURE

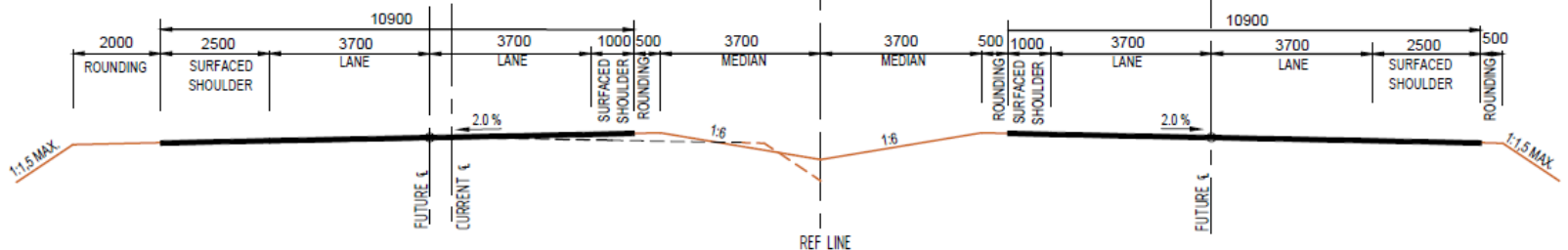


No Aux Lanes - cross-section

CURRENT



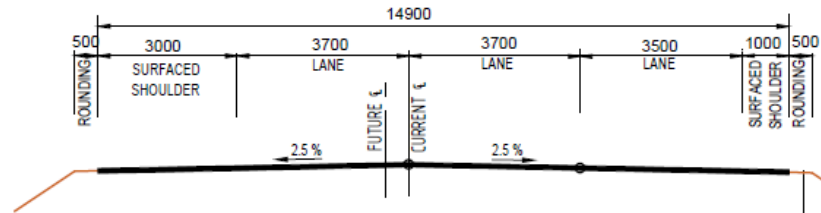
FUTURE



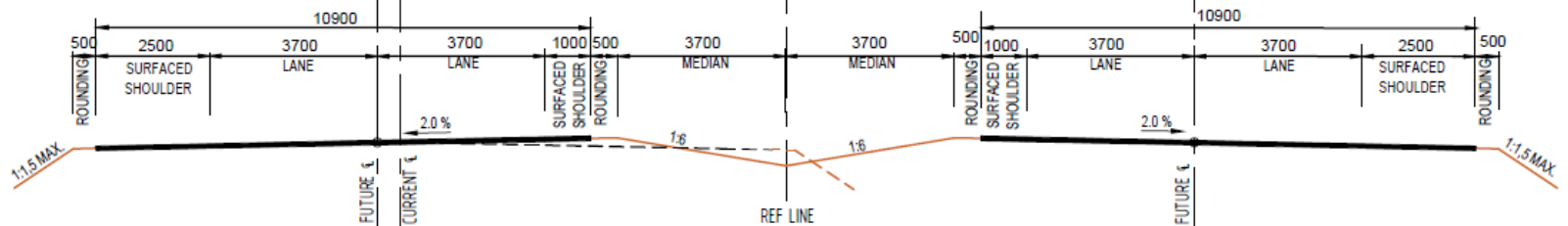
LHS Aux Lane - cross-section

6. GEOMETRY - Proposed N2 Section 21 cross-section development (current and future – km 3.62 to km 22.40):

CURRENT

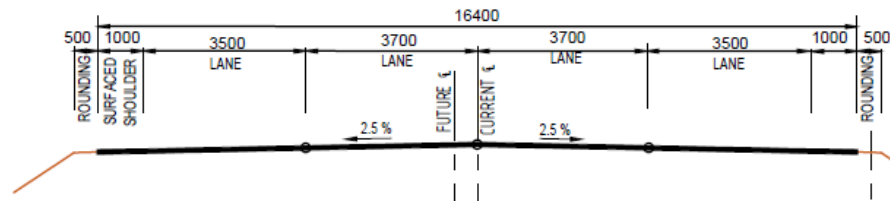


FUTURE

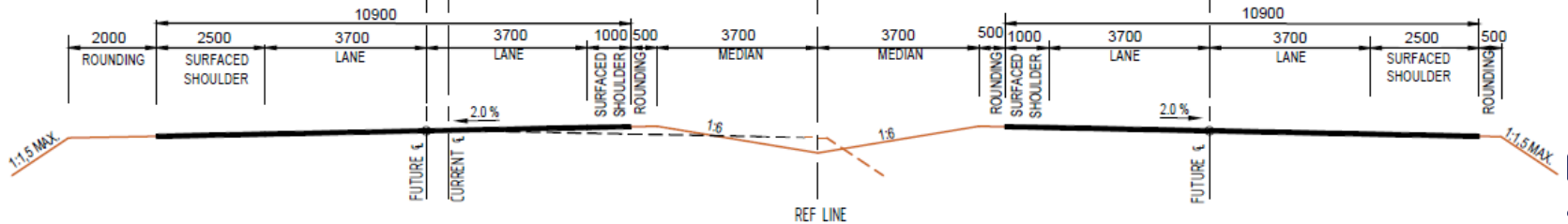


RHS Aux Lane - cross -section

CURRENT



FUTURE



LHS & RHS Aux Lanes - cross-section

6. GEOMETRY

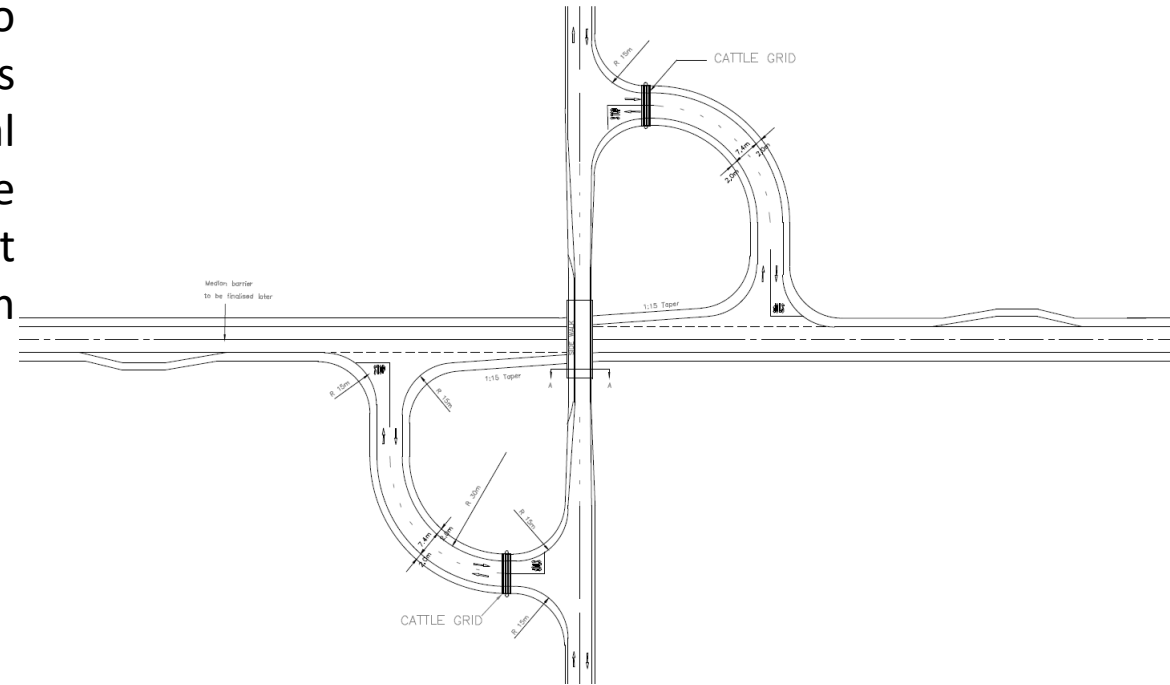
- N2 Section 21 design standards:
 - km 1.56 to km 3.62 - 100km/h design speed (corresponds with posted speed limit over the Mtentu River Bridge)
 - km 3.62 to km 22.40 - 120km/h design speed

6. GEOMETRY

- Intersections/Interchanges:
 - The following three (3) intersections (current) or interchanges (future beyond 2060) are proposed for the N2 Section 21:
 - km 7.46 (N2 Section 21 crossing with DR08122);
 - km 17.10 (between Mnyameni River Bridge and the Kulumbe River Bridge);
 - km 21.66 (Kulumbe Village).

6. GEOMETRY

- Intersections/Interchanges:
 - Low traffic volumes expected to utilise/benefit the intersections (this was confirmed by the analyses of additional traffic surveys), quarter link type intersections is proposed during the current phase and upgraded to interchanges the in future phase/s.



7. DRAINAGE

- Drainage infrastructure envisaged:
 - Bridges;
 - Major culverts;
 - Lesser culverts;
 - Earth drains;
 - Concrete/stone pitched/gabion lined drains;
 - Subsoil drains;
 - Drainage on high fills – kerb channel combinations and down chutes;
 - Erosion protection infrastructure;
 - Berms and cut-off drains;
 - Drainage at wetlands.

8. STRUCTURES

- Bridge Structures:

Number	Structure no.	Bridge description	Angle	km - distance	Approximate Length	Span Configuration
B1	-	Quarter link overpass	-	7.46	80.50	18.75-25-21-15.75
B2	B3036	Underpass	90	11.92	16.00	16
B3	B0582	River bridge - Mnyameni	90	15.98	200.00	T.B.C.
B7	-	Quarter link overpass	-	17.10	71.25	15-20-15-20
B4	B0583	River bridge - Kulumbe	90	17.89	210.00	T.B.C.
B5	B3039	Overpass	42	19.16	71.75	15.75-21-20-15
B6	-	Quarter link overpass	-	21.66	70.00	15-20-20-15

8. STRUCTURES

- Major Culvert Structures (drainage):

Number	Structure no.	Culvert description	Angle	km - distance	Preliminary size
C1	MC1	Major culvert	35	1.64	2 x 3 m x 3m
C2	MC2	Major culvert	32	1.94	1 x 3 m x 3m
C3	MC3	Major culvert	89	2.18	1 x 3 m x 3m
C4	MC4	Major culvert	118	2.49	2 x 3 m x 3m
C5	MC5	Major culvert	78	3.39	3 x 2.1 m x 2.1 m
C6	MC6	Major culvert	65	4.49	5 x 3 m x 3 m
C7	MC7	Major culvert	64	5.38	3 x 1.8 m x 1.8 m
C8	MC8	Major culvert	90	6.92	7 x 2.1 m x 2.1 m
C9	MC9	Major culvert	62	8.16	3 x 3 m x 2 m
C10	MC10	Major culvert	90	15.54	2 x 1.8 m x 1.8 m
C11	MC11	Major culvert	42	16.78	2 x 2 m x 1.8 m
C12	MC12	Major culvert	90	16.92	2 x 1.8 m x 1.8 m
C13	MC13	Major culvert	63	20.68	2 x 2.1 m x 2.1 m
C14	MC14	Major culvert	77	21.06	3 x 2.1 m x 1.8 m

8. STRUCTURES

- Major Culvert Structures (non-drainage):

Number	Structure no.	Culvert description	Angle	km - distance	Preliminary size
UC1	S5026	Underpass	124	3.83	4 m x 4 m
UC2	S5027	Underpass	86	5.70	3 m x 3 m

9. ANCILLARY WORKS

- Envisaged ancillary infrastructure:
 - Road marking;
 - Road studs;
 - Road signs;
 - Fencing;
 - Guardrails;
 - Gabions;
 - Pedestrian facilities;
 - Bus bays;
 - Rest areas/lookout points;
 - Rest area furniture;
 - Spoil areas – possible football fields etc;
 - Cattle grids;
 - Rumble strips;
 - Slope stabilisation.
- It is foreseen that the access management to the N2 Section 21 will have a major influence on the safety of the route, whether it be for vehicles, pedestrians or livestock. The maintenance of fence lines will therefore be very important as the illegal removal of ancillary infrastructure and the forming of illegal accesses could pose risks to the safety of the route.

10. ACCESS CONTRACT

- Separate Contract for the construction/upgrading of access roads adjacent to the N2 Section 21 to service the local road network and relay traffic to the dedicated/controlled access and crossing points on the N2 Section 21;
- A total of 42.567km of access roads to be constructed:
 - Surfaced access roads: 37.562km;
 - Gravel (Feeder roads): 5.005km.

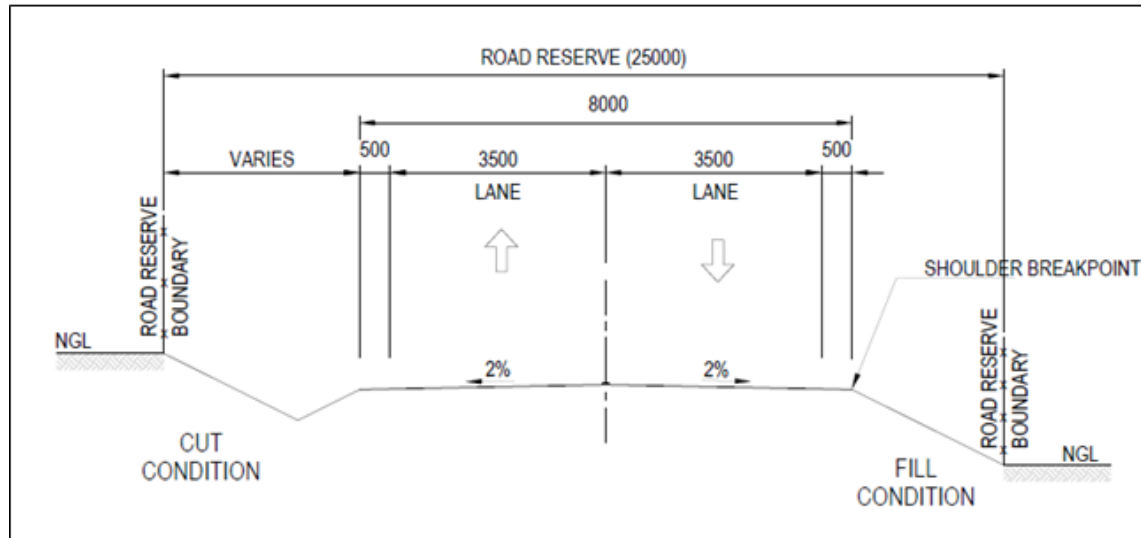
No.	Access road description	Length (km)	Road type proposed	New/Upgrade
1	Access Road 1	1.523	Surfaced	Upgrade
2	Access Road 2	1.301	Gravel (Feeder road)	New
2.1	Access Road 2 Alt	2.300	Gravel (Feeder road)	New
3	Access Road 3	3.717	Surfaced	New
4	Access Road 4	0.894	Surfaced	New
4.1	Access Road 4 Alt	5.900	Surfaced	New
5	Access Road 5	1.314	Surfaced	New
5.1	Access Road 5.1	1.303	Surfaced	New & Upgrade
6	Access Road 6	7.949	Surfaced	New & Upgrade
7	Access Road 7	0.466	Gravel (Feeder road)	Upgrade
8	Access Road 8	1.003	Gravel (Feeder road)	New
9	Access Road 9	0.448	Gravel (Feeder road)	New
10	Access Road 10	1.950	Gravel (Feeder road)	New & Upgrade
11	Access Road 11	1.137	Gravel (Feeder road)	New
12	Access Road 12	6.123	Surfaced	New & Upgrade
13	Access Road 13	1.570	Surfaced	New
13.1	Access Road 13 Alt	2.700	Surfaced	New
14	Access Road 14	0.967	Surfaced	Upgrade
TOTAL		42.567		

10. ACCESS CONTRACT

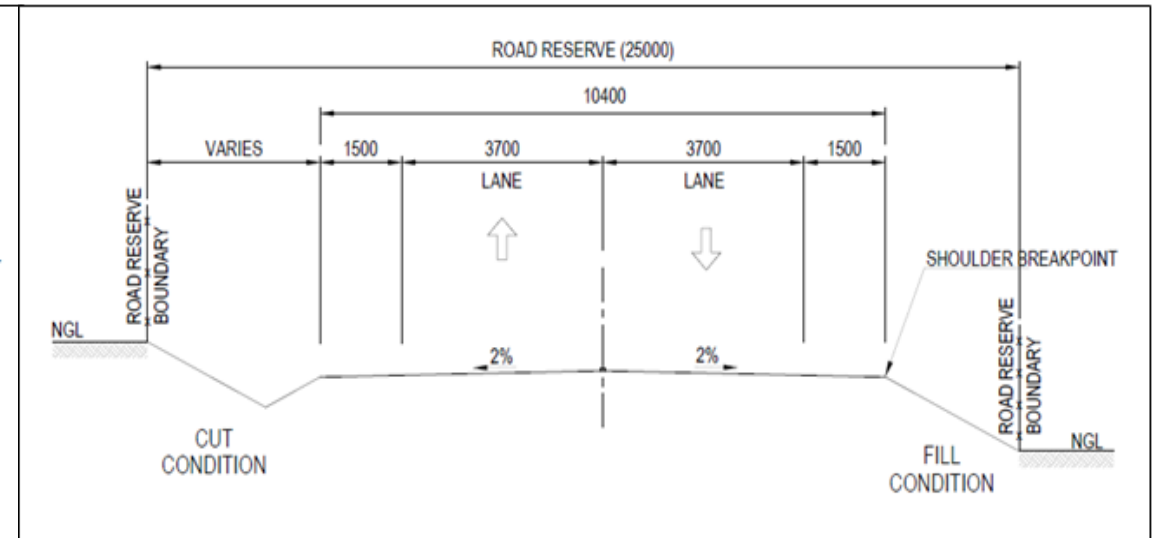
- Pavement design options considered:
 - Surfaced access roads:
 - Surfacing – Bituminous surfacing;
 - 150mm Macadam base layer;
 - 150mm G7 selected layer;
 - Fill/in-situ roadbed.
 - Gravel access roads:
 - 200mm gravel wearing course (Type 2);
 - 150mm G7 selected layer;
 - Fill/in-situ roadbed.

10. ACCESS CONTRACT

- Cross-section options:
 - Surfaced access roads:



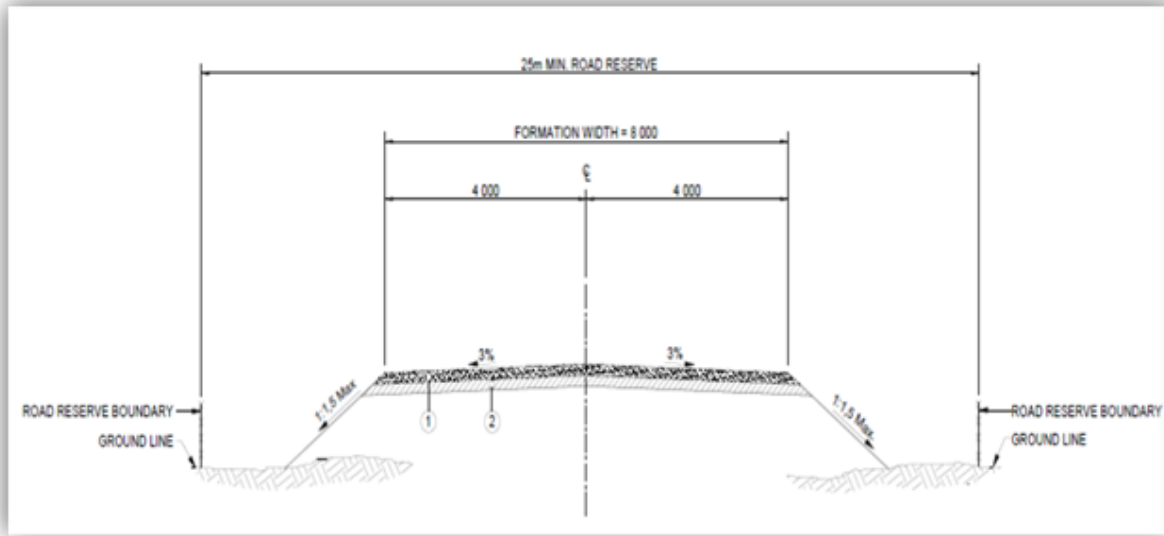
Option 1: 8m surfaced width - cut and fill condition



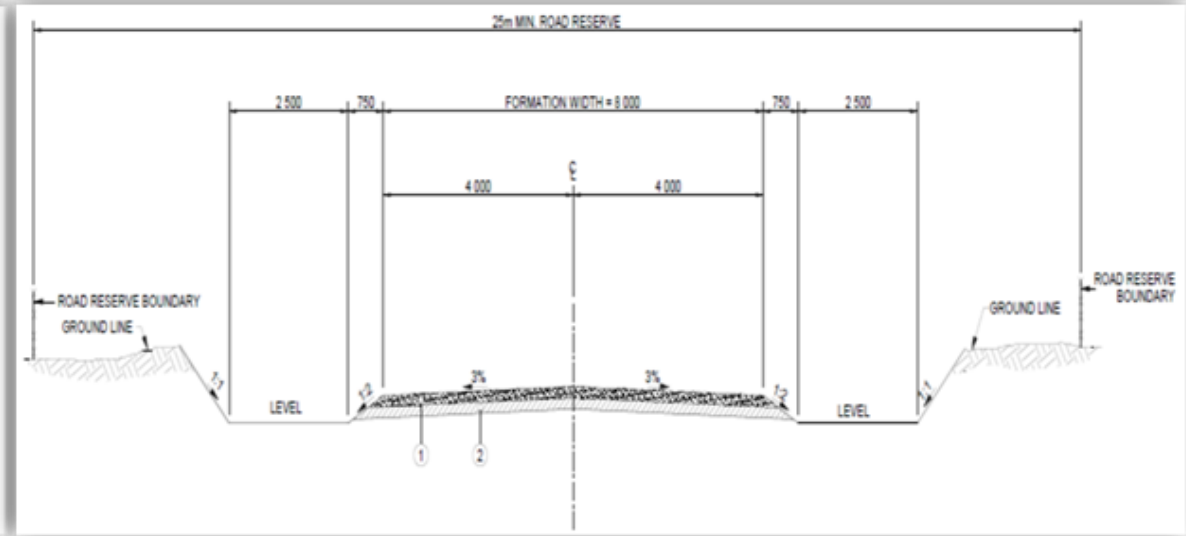
Option 2: 10.4m surfaced width - cut and fill condition

10. ACCESS CONTRACT

- Cross-section options:
 - Gravel access roads:



Gravel access road: 8m road cross-section - fill condition



Gravel access road: 8m road cross-section - cut condition

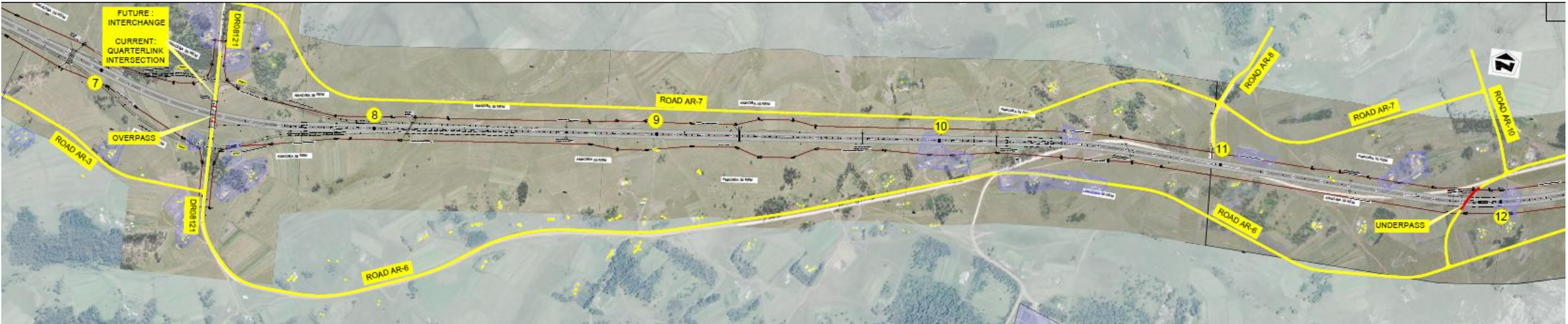
10. ACCESS CONTRACT

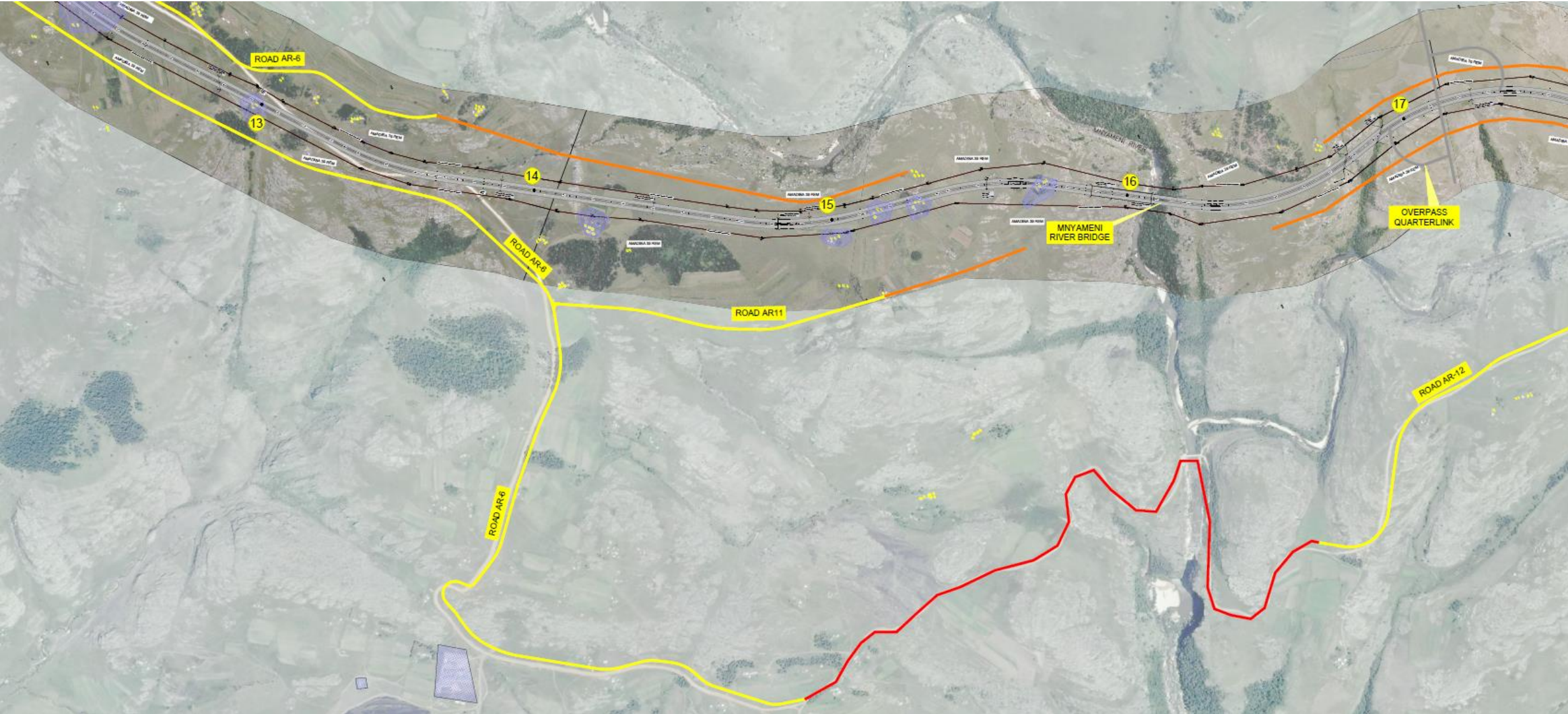
- DR08122 to be relocated away from the road reserve from km 10.36 to km 13.80 (Access Road 6 between km 3.50 to km 7.25) and from km 18.38 to km 19.74 (Access Road 12 between km 1.75 to km 3.00);
- Three (3) underpasses be constructed across the N2 Section 21 for the following Access Roads:
 - Access Road 1 at km 3.83;
 - Access Road 4 at km 5.70 and;
 - Access Road 10 at km 11.92.
- One (1) overpass be constructed for Access Road 12 at km 19.16;
- The access roads will have seventeen (17) T-type intersections and one (1) four-way type intersection.

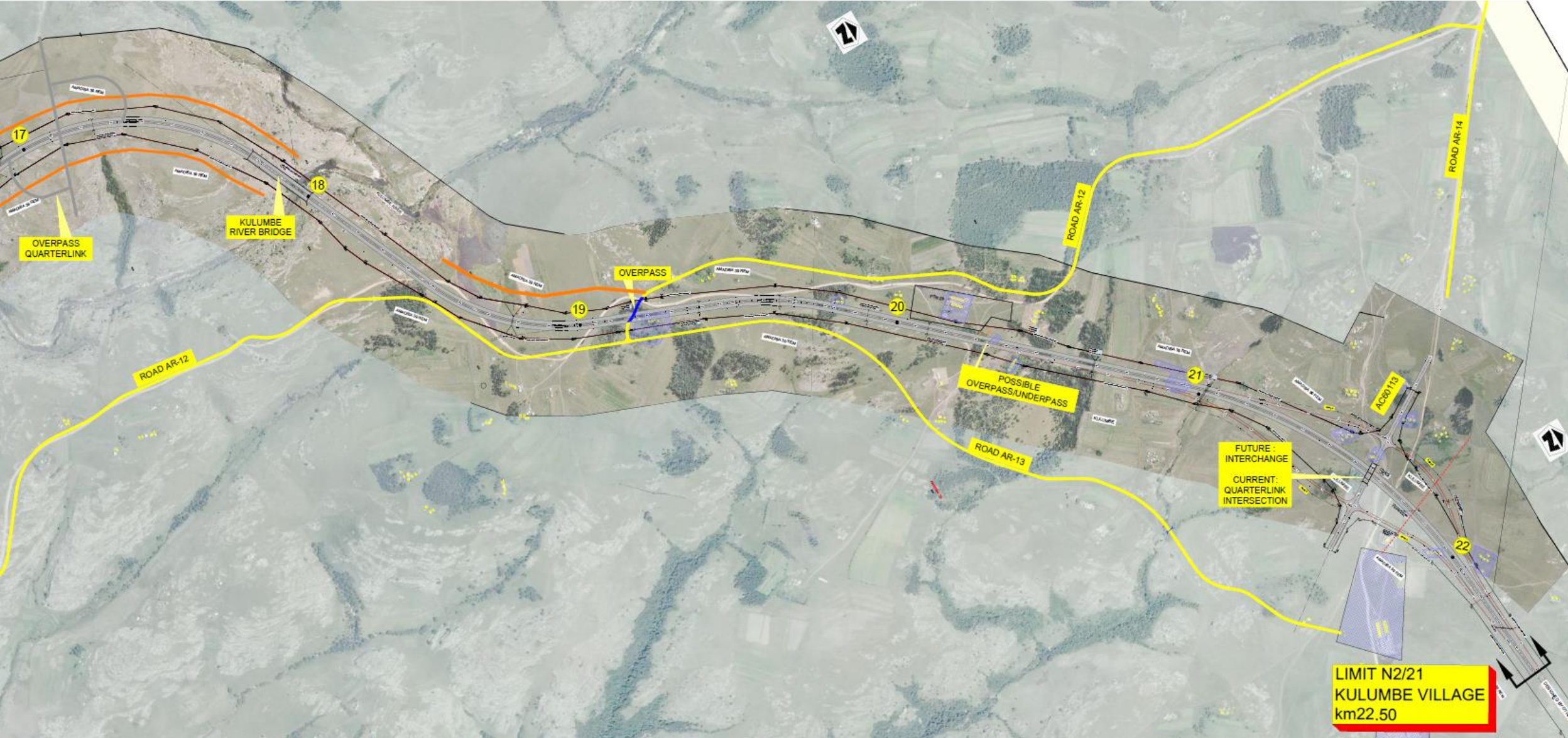
10. ACCESS CONTRACT

- Installation of drainage infrastructure on the access roads;
- Installation of ancillary works on the access roads;
- Construction of public transport facilities along the access roads;
- The construction of pedestrian walkways next to the school at km 20.24 as well as other NMT facilities;
- The construction of a tourist route towards the Mnyameni waterfall (downstream from the River Bridge) with access provided to and from the N2 Section 21 at km 7.46 and km 21.66 (quarter link intersections). The following roads will form part of the tourist route:
 - Access Road 6;
 - Myameni Gorge Community Development road project and;
 - Access Road 12.
- A topographical survey of the access roads were requested based on the concept horizontal alignments. Once this survey is received the vertical alignments and other detail design elements will be completed.









11. RELOCATION CONTRACT

- Approximately sixty five (65) homesteads and nine (9) crop or storage fields will be affected by the Project and will have to be relocated. Some fall within the proclaimed road reserve while others fall within the 20m rural road buffer zone;
- The buildings to be relocated will be replaced with similar size structures on alternative land acquired through the Project. Crop fields will be replaced with similar sized fields. Where portions of fences are affected, the full road frontage fence will be replaced;
- In cases where the site is partially affected and the affected components can be rebuilt on the existing erf, the affected structure will be relocated on the same site. Extension of existing erven will also be considered;

11. RELOCATION CONTRACT

- Homesteads and crop or storage fields has been avoided as far as possible during the planning of the Access Road Network. It is however that envisaged that some relocation will be required for the Access Contract. The afore-mentioned will however be confirmed once the topographical survey is received and more detailed designs can be undertaken;
- It should be noted that the capturing of Notional Sites will commence soon for Package 6.

12. LAND ACQUISITION

- SANRAL's Property Service Provider confirmed that the existing/proclaimed road reserve (80m) was staked out on site to provide local reference points/markers during future site surveys/inspections/investigations.
- Additional areas identified for possible land acquisition:
 - Future interchanges;
 - Possible major cut and fills;
 - Access Contract.

13. Environmental and H&S

- Environmental
 - RoD issued for the entire Wild Coast Project;
 - SLR, the Environmental Subservice for the entire Wild Coast Project, scope/responsibilities;
 - The Project Specific Environmental Subservice Provider, to be appointed through a tender process for the Project, will be required to undertake the following:
 - Environmental approvals of new relocation sites;
 - Environmental approvals of spoil sites/sports fields etc.;
 - Environmental approvals for the access roads (including Water Use Licences);
 - Search and rescue operation for sensitive vegetation;
 - Licencing for additional water abstraction points;
 - The rehabilitation of informal tracks over wetlands (Kulumbe Village).
 - The appointment of a registered archaeologist will be required who will be responsible for the relocation of all graves on the Relocation, Access and Main Contracts.
 - Ecosolve - Environmental Control Officer (ECO) for the construction Contract (ECO function excluded from the Project Specific Environmental Subservice Provider scope).
- Health and Safety
 - A Design Risk Assessment was conducted by the Occupational Health and Safety Agent (SHE Group).

14. TRAFFIC MANAGEMENT DURING CONSTRUCTION

- Traffic accommodation strategy
 - Public/3rd party and construction traffic;
 - Temporary bypasses (within the existing/proclaimed road reserve) or half-width construction (2-way traffic or stop/go control);
 - The case specific traffic accommodation method and phasing for each affected road will be determined and refined in the design stages to follow.

15. SERVICES

- Existing:
 - To be verified and the impact determined (topographical survey and site visits);
 - Accommodation of services also expected on the Access and Relocation Contracts.

16. QUESTIONS

THANK YOU

