



**VOLUME 1
PRELIMINARY DESIGN**

Watershed 132kV Line diversions Project ID: CN-STM-- CTXQ0827

RTB NED
NWOU-AC
Rev 0

INDEX

DESCRIPTION		PAGE
1	Project Scope of Work	2
2	Project Information	3
3	Station Layout Diagram – Watershed MTS	4
4	Station Electric Diagram – Watershed MTS	5
5	Network Diagram	6
6	Geographical Map	7
7	Sequence of Events	8
Annexures – Structure Drawings		
All structure drawings will be part of Volume 3 of this package		

STAKE HOLDERS

Capital Expansion	Ops & Maintenance	Asset Creation	Other
CPD ✓	EDNO Field Services ✓ Plant CPM	Network Planning ✓ NED Land Development ✓ ✓	Customer Services ✓ Transmission Planning ✓ Transmission Design

RELATED ASSETS:

Asset Number	Asset Name
	Watershed/Zeerust 132kV line Watershed/Sephaku 132kV line Watershed/Klerksdorp 132kV line Watershed/Makokskraal 132kV line

COMPILED BY: Network Engineering & Design

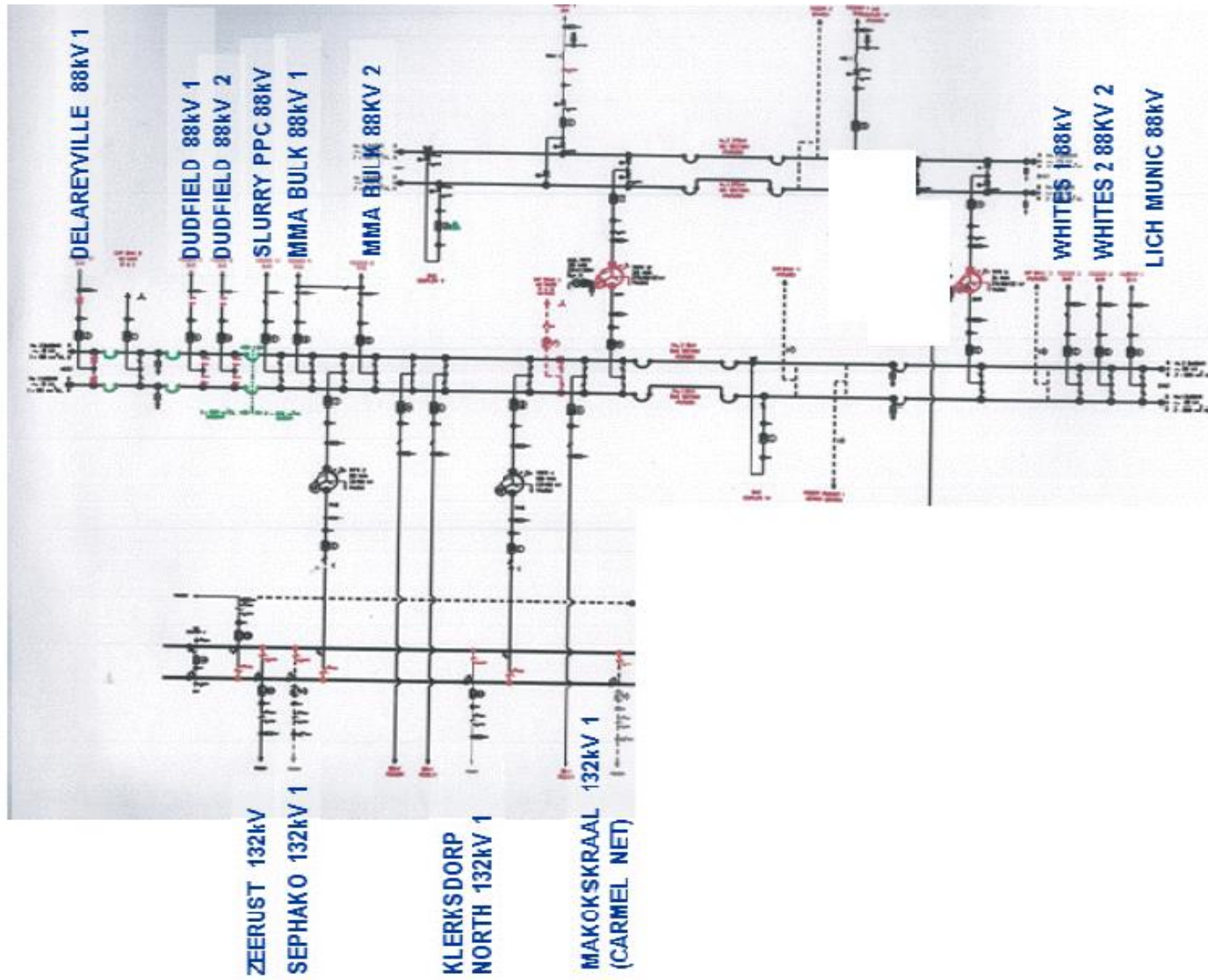
Name: Ayanda Nzo

Tel: 018 464 6741

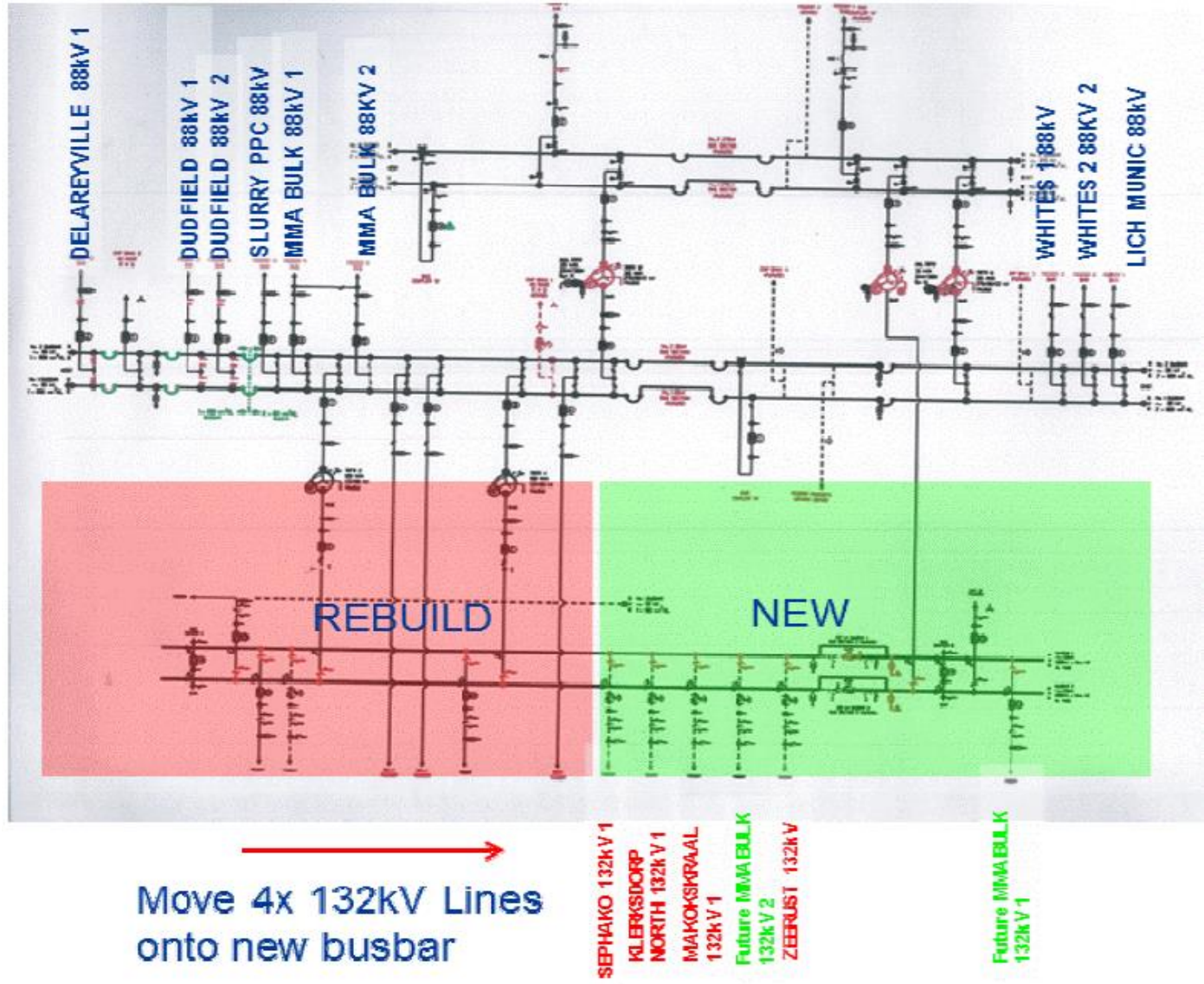
1. SCOPE OF WORK	
Substation Primary Plant: (Civil, Steel, Facilities & Electrical)	
Item	Description
	N/A
Lines Primary Plant: (Survey, Structural, Electrical & Construction)	
Item	Description
1	Relocate 4 x 132kV lines from the existing 132kV busbar to the new adjacent busbar. The 4 lines that are to be re-routed are namely: <ul style="list-style-type: none"> · Zeerust 132kV · Sephaku 132kV · Klerksdorp North 132kV · Makokskraal 132kV
Substation Secondary Plant: (Protection, Metering, Telecommunication, Scada, DC Plant & Quality Monitoring)	
Item	Description
1	Control Plant scope of work to be determined by Control Plant Engineer, the design to be submitted with the final design document of the project.
Other: (Miscellaneous)	
Item	Description
Revision Details: Rev.0	

2. PROJECT INFORMATION	
Substation Information:	
Item	Description
Mookodi MTS Substation	
Co-ordinates (Lat.) S/S cent	N/A
Co-ordinates (Long.) S/S cent	N/A
Stand size required	Existing
Land Ownership (S/S site)	Eskom Transmission
Substation System Voltages	132kV/88kV
HV Line Bay Design	No Work to be done from Dx side
Number of HV feeders	4 x 132kV
HV Busbar Design Philosophy	No Work to be done from Dx side
Lines Information:	
Item	Description
Line System Voltage	132kV
Line Length	
Number of lines	4
Number of circuits (single/double)	4 Single circuits
Structure Type (Wood/Steel/Conc./Lat.)	Steel
Number of conductors per circuit	1
Intermediate Struct King Bird	D – DT 7617
Angle Strain Struct King Bird	D - DT 7618 and D-DT7645 config but self-support
Terminal Structure	D-DT7645 config but self-support and 6m Terminal support
Earth wire Type	
Average Wind Span	150m
Site Climate Conditions:	
Item	Not Available
Ambient Temp Max. (°C)	
Ambient Temp Min. (°C)	
Lightning Density (flashes to ground/km ² /year)	
Rain Fall (highest per day)	
Thunder days/year (mean)	
Snow days/year (mean)	
Max. Wind m/sec	
Revision Details: Rev.0	

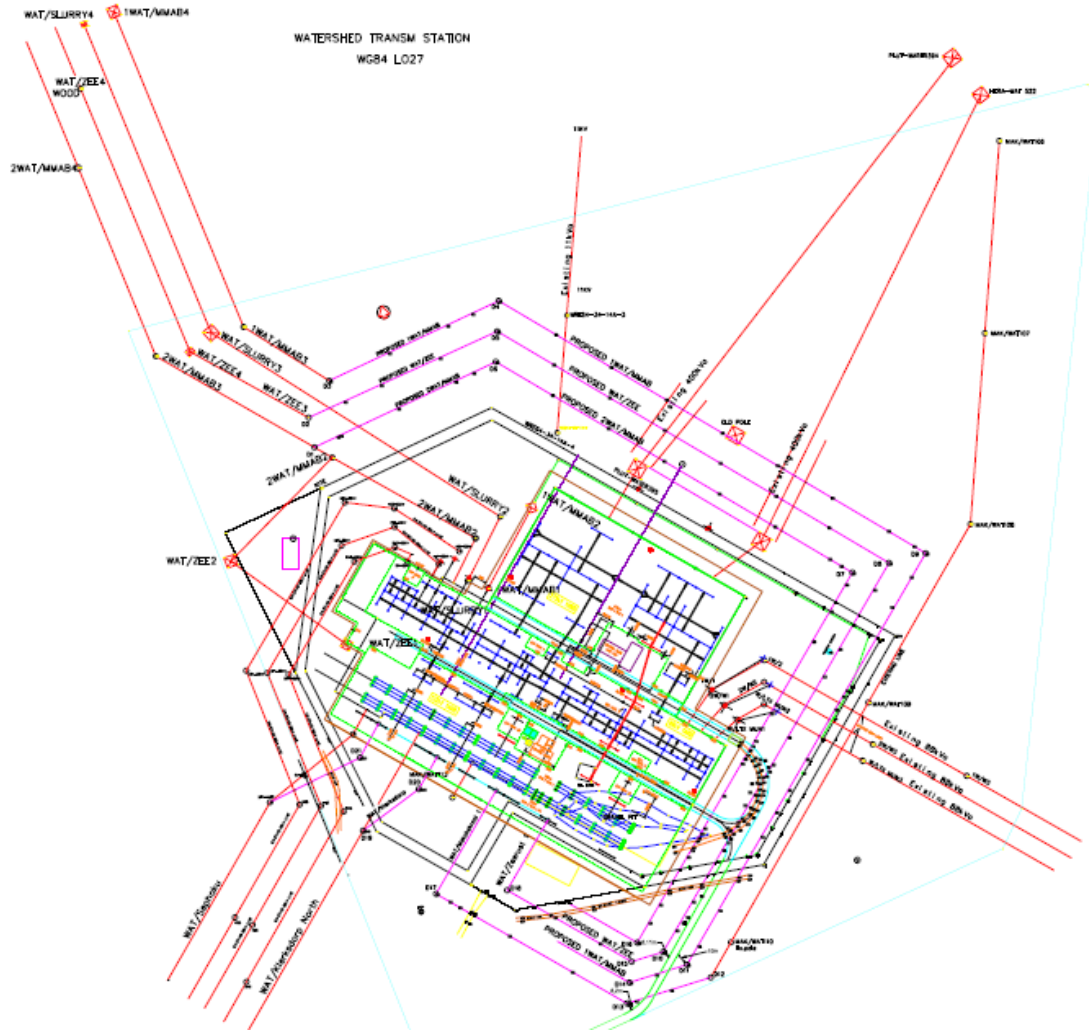
3. EXISTING STATION ELECTRIC DIAGRAM - WATERSHED MTS



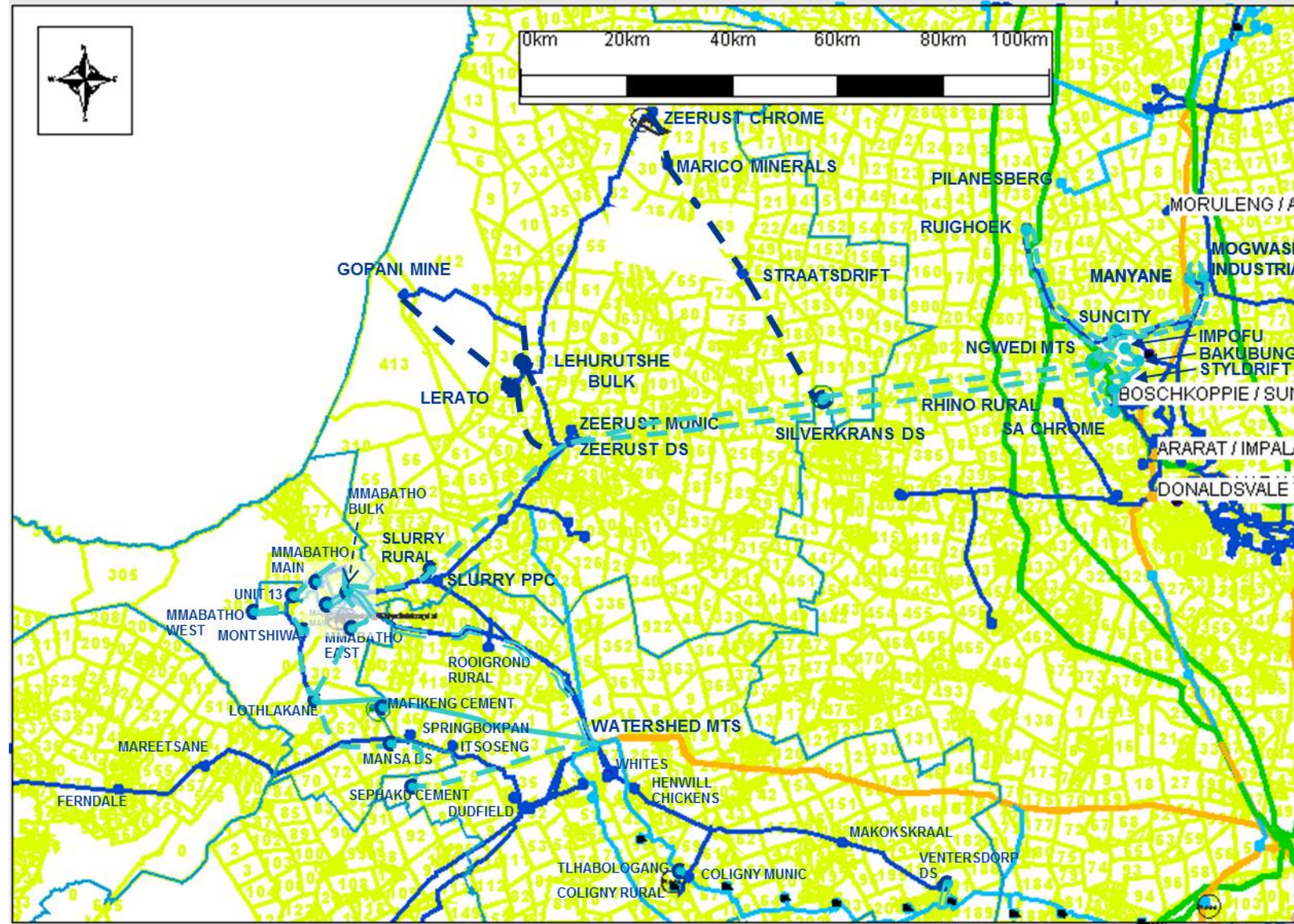
3. PROPOSED STATION ELECTRIC DIAGRAM - WATERSHED MTS



4. PROPOSED LAYOUT DIAGRAM: WATERSHED MTS.



6. GEOGRAPHICAL MAP



Revision Details: Rev.0

8. SEQUENCE OF EVENTS

After the constructability meeting, a detailed sequence of events will form part of the final design document, once all the necessary outages (if needed) and Network Optimisation Studies have been received from Ops and Maintenance.

Revision Details: Rev.0