

LEGEND

- AP ----- anchor pole
- BP ----- bottom bench
- CFN ----- corner of fence
- CONC ----- CONCRETE SLAB
- CPM ----- concrete pipe marker
- EM ----- edge of gravel road
- ET ----- edge of tar road
- FN ----- fence
- LP ----- lamp post
- PSP ----- powerline pole
- PM ----- pipe marker
- PV ----- paving
- RES ----- reservoir
- RS ----- road sign
- SS ----- spot sheet
- STPS ----- stop sign
- STY ----- stay wire
- SUB ----- substation
- SMH ----- sewer manhole
- TK ----- top kerb
- TR ----- track
- cadastral boundary
- servitude line

**LIST OF BENCHMARKS
REMAINDER OF KOPPIES COMMONAGE 248
DATE: 15 APRIL 2022**

NAME	Y	X	Z	DESCRIPTION
K1	424223716	3011828.132	1433.158	12mm in diam
K2	424242716	3012773.310	1423.842	12mm in diam
Kben1	48924.466	3074828.707	1417.028	10mm in dia

NOTE:
 1) The 248 Plan (1:2500) was used for calibration. Furthermore
 the previous survey benchmark (ben1) was found and signed with the flag.
 2) In addition (K1 and K2) benchmarks were placed to assist during construction.

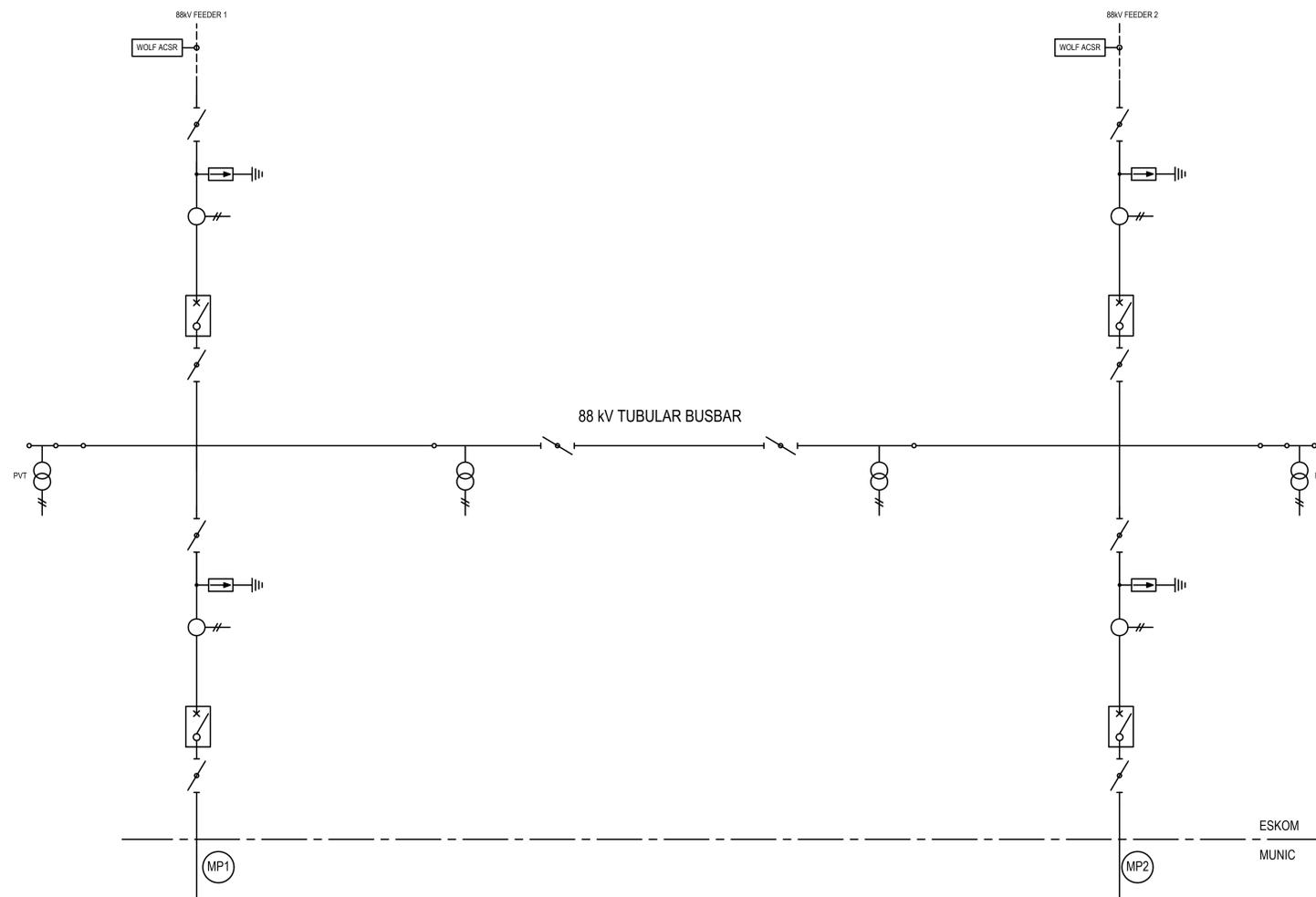
Revision 1
 Topographical Survey on Remainder of Koppies
 Commonage 248, Free State Province

System : WGS 27
 Scale : 1:1000 (A0)
 Contour Interval : 0.25m
 Date : April & September 2022

Company Name: Buziwe Geomatics

Contact Person : Bulelani Lengosasa
 Cell No. : 079 742 7886
 Email Address : bulelani.lengosasa@gmail.com

ESKOM SWITCHING
STATION YARD 88 kV



132kV ISOLATOR

88kV SURGE ARRESTOR

132kV CURRENT TRANSFORMER

132kV CIRCUIT BREAKER

132kV LINE ISOLATOR

132kV B/B

88kV POWER VOLTAGE TRANSFORMER

132 kV ISOLATOR

88kV SURGE ARRESTOR

132kV CURRENT TRANSFORMER

132kV CIRCUIT BREAKER

132V ISOLATOR

1.8m CLEARVU FENCE

ESKOM
MUNIC

NEW KOPPIES ESKOM 88 kV/6.6 kV SUBSTATION SINGLE LINE DIAGRAM
NTS

LEGEND	TECHNICAL DATA	
LINES/TRAFRS	132/88kV	
	ISOLATOR	3150A 132kV
PVT	SURGE ARRESTOR	88kV
	CURRENT TRANSFORMER	See Table Below
88kV	88kV CIRCUIT BREAKER	132kV 3150A 88kV
	ISOLATOR	3150A 132kV
132 B/S	132 B/S ISOLATOR	
	88kV VOLTAGE TRANSFORMER 88kV POWER VT	
ISOLATOR	ISOLATOR	3150A 132kV
	SURGE ARRESTOR	88kV
CURRENT TRANSFORMER	CURRENT TRANSFORMER	See Table Below
	CIRCUIT BREAKER	132kV 3150A 88kV
ISOLATOR	ISOLATOR	3150A 132kV
	EARTH SWITCH	
ISOLATOR	ISOLATOR	3150A 132kV
	SURGE ARRESTOR	88kV
CURRENT TRANSFORMER	CURRENT TRANSFORMER	See Table Below
	VOLTAGE TRANSFORMER	
CIRCUIT BREAKER	CIRCUIT BREAKER	3150A 132kV
	SURGE ARRESTOR	88kV
POWER TRANSFORMER	POWER TRANSFORMER	10 MVA 88 kV/6.6 kV DYN11 6.6kV, 300A
	NER	
SURGE ARRESTOR	SURGE ARRESTOR	6.6kV
	AUXILIARY TRANSFORMER	6.6kV / 11kV
ISOLATOR	ISOLATOR	3150A 88kV

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Revision Schedule				
Rev	Date	by	Description	
0	2022-03-09	TL	ISSUED FOR TENDER	

ELECTRICAL ENGINEERING

Discipline

NEW KOPPIES SUBSTATION

Project

NEW KOPPIES ESKOM 88
KV/6.6 kV SUBSTATION SINGLE
LINE DIAGRAM

Description

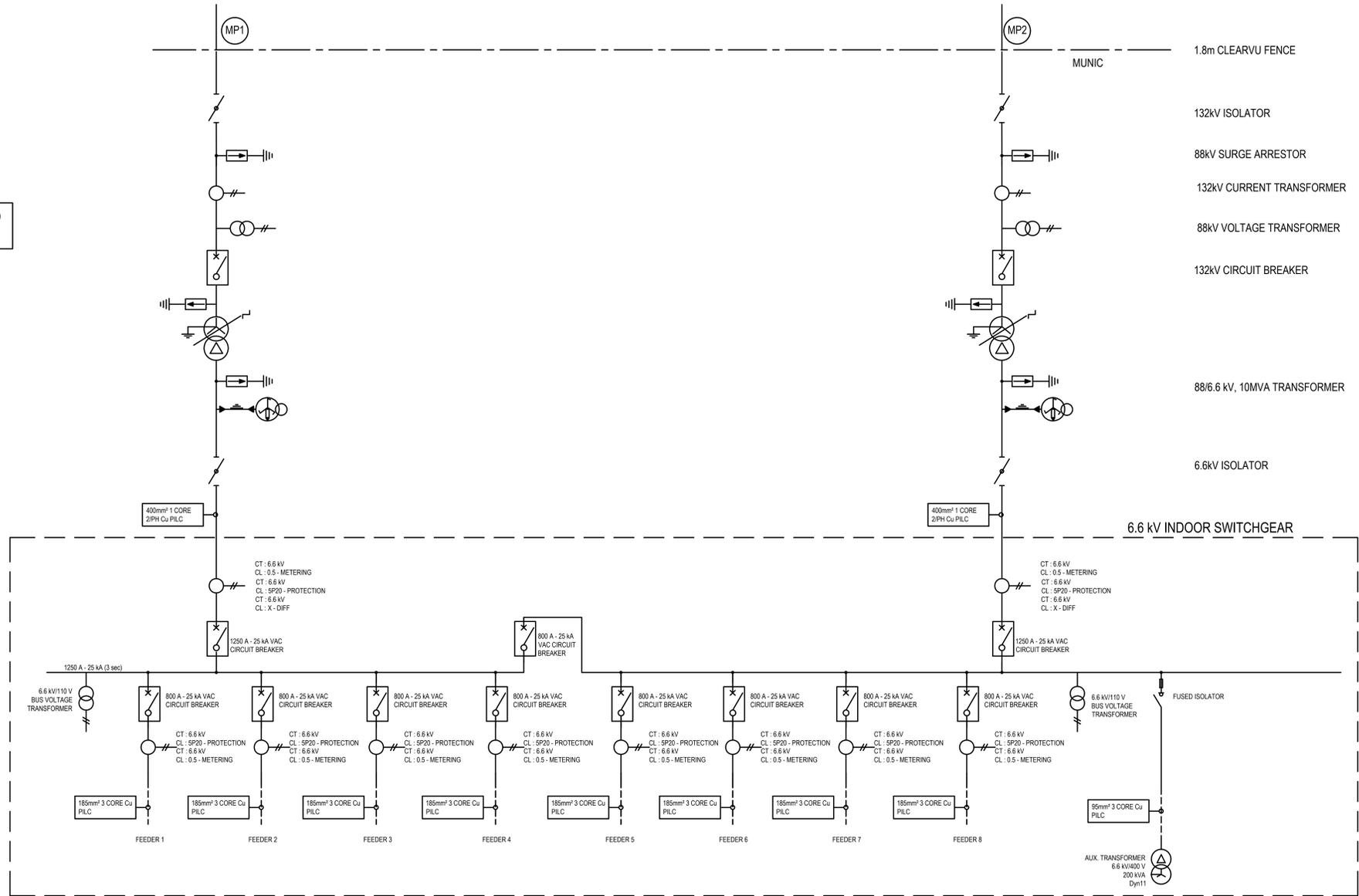
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T. MAKUMULE	T. LEBOHO	S. MANDEBVI	20120237

DATE	SCALE	SHEET SIZE	SIGNATURE
2020-11-30	As indicated	A0	

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MUNIC SUB STATION YARD
88 kV / 6.6 kV



NEW KOPPIES MUNIC 88 kV/6.6 kV SWITCHING STATION SINGLE LINE DIAGRAM
NTS

LEGEND	TECHNICAL DATA	
	LINES/TRAFIRS	132/88kV
	ISOLATOR	3150A 132kV 88kV
	SURGE ARRESTOR	132kV 3150A 88kV
	CURRENT TRANSFORMER	See Table Below
	88kV CIRCUIT BREAKER	132kV 3150A 88kV
	ISOLATOR	3150A 132kV
	132 B/S ISOLATOR 88kV VOLTAGE TRANSFORMER 88kV POWER VT	3150A 132kV
	ISOLATOR	3150A 132kV 88kV
	SURGE ARRESTOR	132kV 3150A 88kV
	CURRENT TRANSFORMER	See Table Below
	CIRCUIT BREAKER	132kV 3150A 88kV
	ISOLATOR EARTH SWITCH	3150A 132kV
	ISOLATOR	3150A 132kV 88kV
	SURGE ARRESTOR	132kV 3150A 88kV
	CURRENT TRANSFORMER	See Table Below
	VOLTAGE TRANSFORMER	3150A 132kV
	CIRCUIT BREAKER	3150A 132kV
	SURGE ARRESTOR	88kV
	POWER TRANSFORMER NER	10 MVA 88 kV/6.6 kV Dyn11 6.6kV, 300A
	SURGE ARRESTOR	6.6kV
AUXILIARY TRANSFORMER	6.6kV / 400V	
ISOLATOR	3150A 6.6kV	

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ELECTRICAL ENGINEERING

NEW KOPPIES SUBSTATION

NEW KOPPIES MUNIC 88 kV/6.6 kV SUBSTATION SINGLE LINE DIAGRAM

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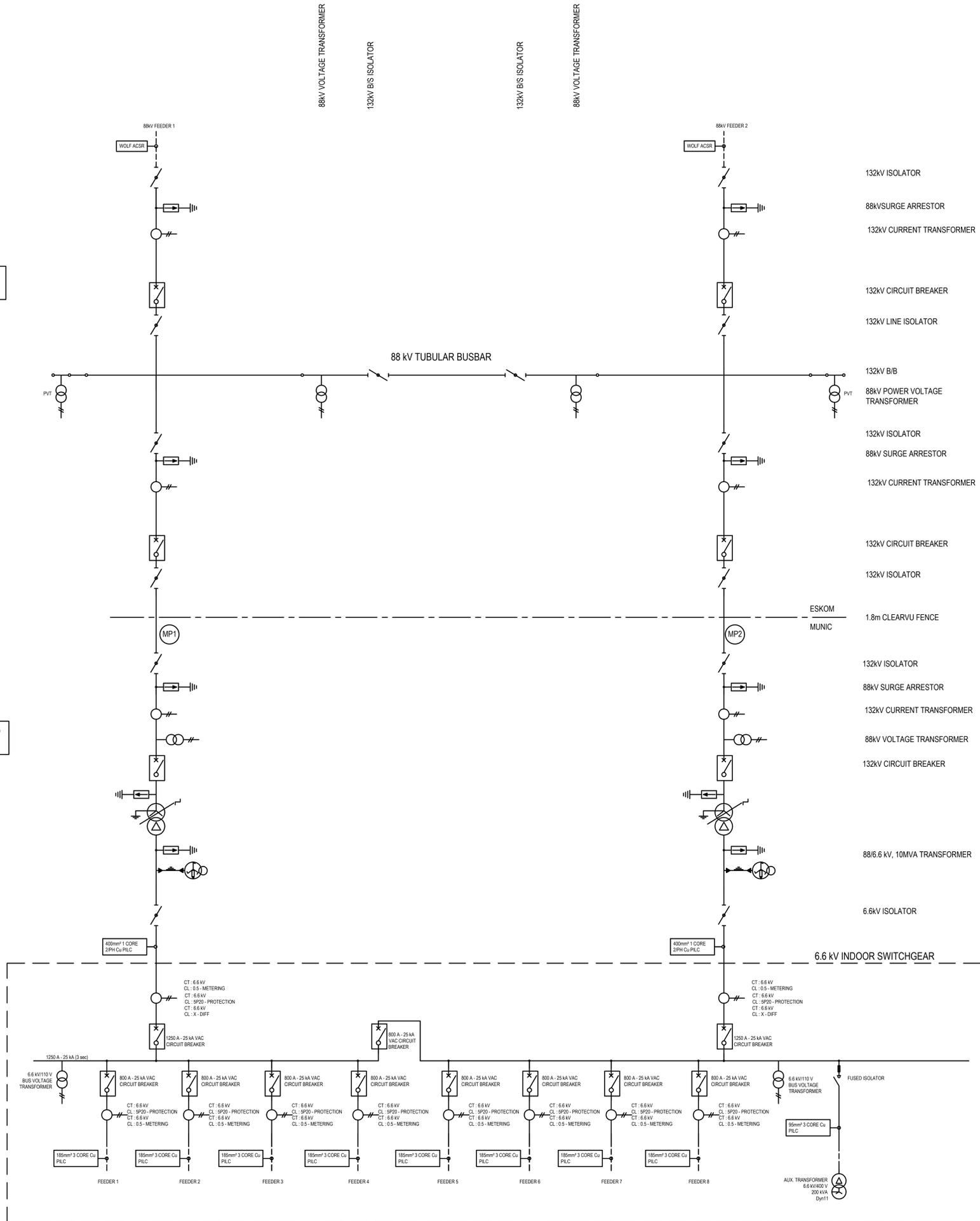
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ESKOM SWITCHING STATION YARD 88 kV

MUNIC SUB STATION YARD 88 kV / 6.6 kV



LEGEND	TECHNICAL DATA	
LINES/TRAFRS	ISOLATOR	3150A
	SURGE ARRESTOR	132kV
	CURRENT TRANSFORMER	See Table Below
	88kV CIRCUIT BREAKER	132kV
	ISOLATOR	3150A
	132 B/S ISOLATOR	132kV
	88kV VOLTAGE TRANSFORMER	88kV
	88kV POWER VT	See Table Below
	ISOLATOR	3150A
	SURGE ARRESTOR	132kV
LINES/TRAFRS	ISOLATOR	3150A
	SURGE ARRESTOR	132kV
	CURRENT TRANSFORMER	See Table Below
	CIRCUIT BREAKER	132kV
	ISOLATOR	3150A
	ISOLATOR EARTH SWITCH	132kV
	ISOLATOR	3150A
	SURGE ARRESTOR	132kV
	CURRENT TRANSFORMER	See Table Below
	VOLTAGE TRANSFORMER	132kV
LINES/TRAFRS	CIRCUIT BREAKER	3150A
	SURGE ARRESTOR	88kV
	POWER TRANSFORMER	10 MVA
	NER	88 kV/6.6 kV
	SURGE ARRESTOR	Dyn11
	AUXILIARY TRANSFORMER	6.6kV / 400V
	ISOLATOR	3150A
	ISOLATOR	6.6kV
	ISOLATOR	3150A
	ISOLATOR	6.6kV

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NEW KOPPIES SUBSTATION

NEW KOPPIES 88/6.6 kV SUBSTATION SINGLE LINE DIAGRAM

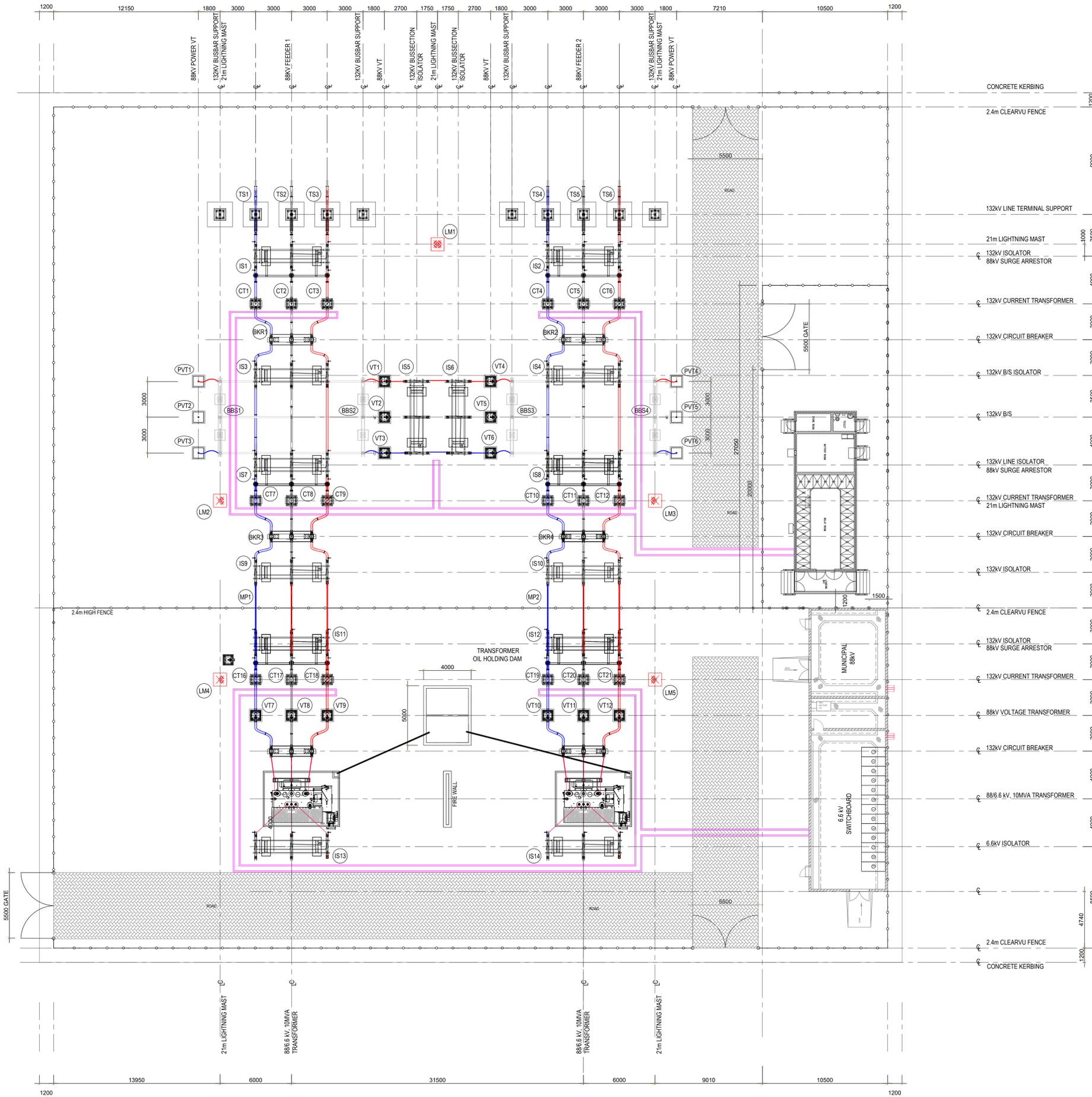
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NEW KOPPIES 88 kV/6.6 kV SUBSTATION SINGLE LINE DIAGRAM

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NEW KOPPIES 88 kV/6.6 kV SUBSTATION YARD FLOOR PLAN
SCALE: 1:125

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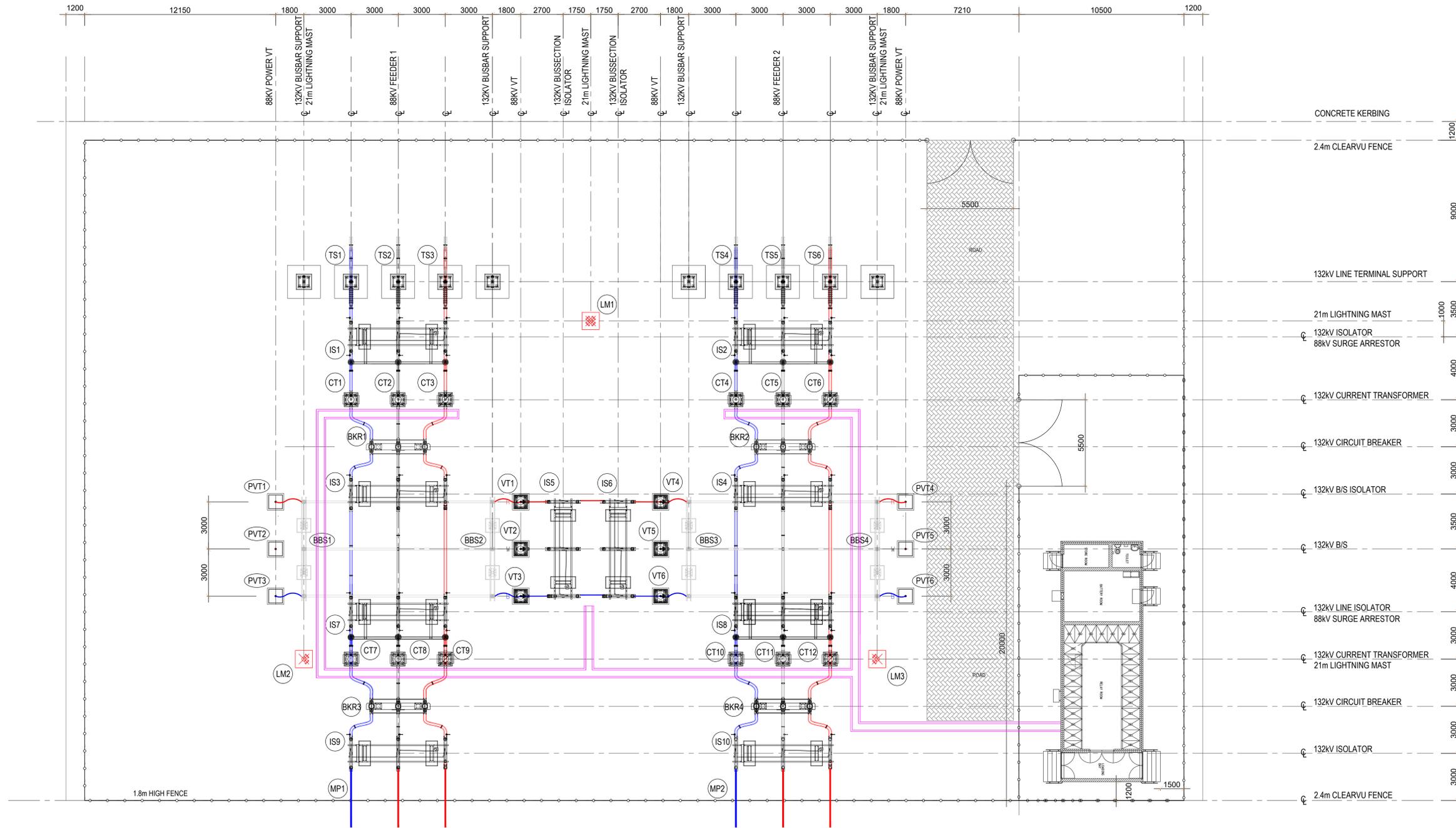
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Revision Schedule			
Rev	Date	by	Description
0	2022.03.09	TL	ISSUED FOR TENDER

ELECTRICAL ENGINEERING	Discipline		
NEW KOPPIES SUBSTATION	Project		
88kV/6.6kV SUBSTATION YARD LAYOUT	Description		
DESIGNED BY T.MAKUMULE	DRAWN BY T. LEBHO	APPROVED BY S. MANDEBU	EGSA NUMBER 20120237
DATE 2020.11.30	SCALE As indicated	SHEET SIZE A0	SIGNATURE
DRAWING NUMBER PR00328_1-EL-400-EL			



- CONCRETE KERBING
- 2.4m CLEARVU FENCE
- 132kV LINE TERMINAL SUPPORT
- 21m LIGHTNING MAST
- 132kV ISOLATOR
- 88kV SURGE ARRESTOR
- 132kV CURRENT TRANSFORMER
- 132kV CIRCUIT BREAKER
- 132kV B/S ISOLATOR
- 132kV B/S
- 132kV LINE ISOLATOR
- 88kV SURGE ARRESTOR
- 132kV CURRENT TRANSFORMER
- 21m LIGHTNING MAST
- 132kV CIRCUIT BREAKER
- 132kV ISOLATOR
- 2.4m CLEARVU FENCE

NEW KOPPIES 88 kV ESKOM SWITCHING STATION YARD FLOOR PLAN
SCALE 1:125

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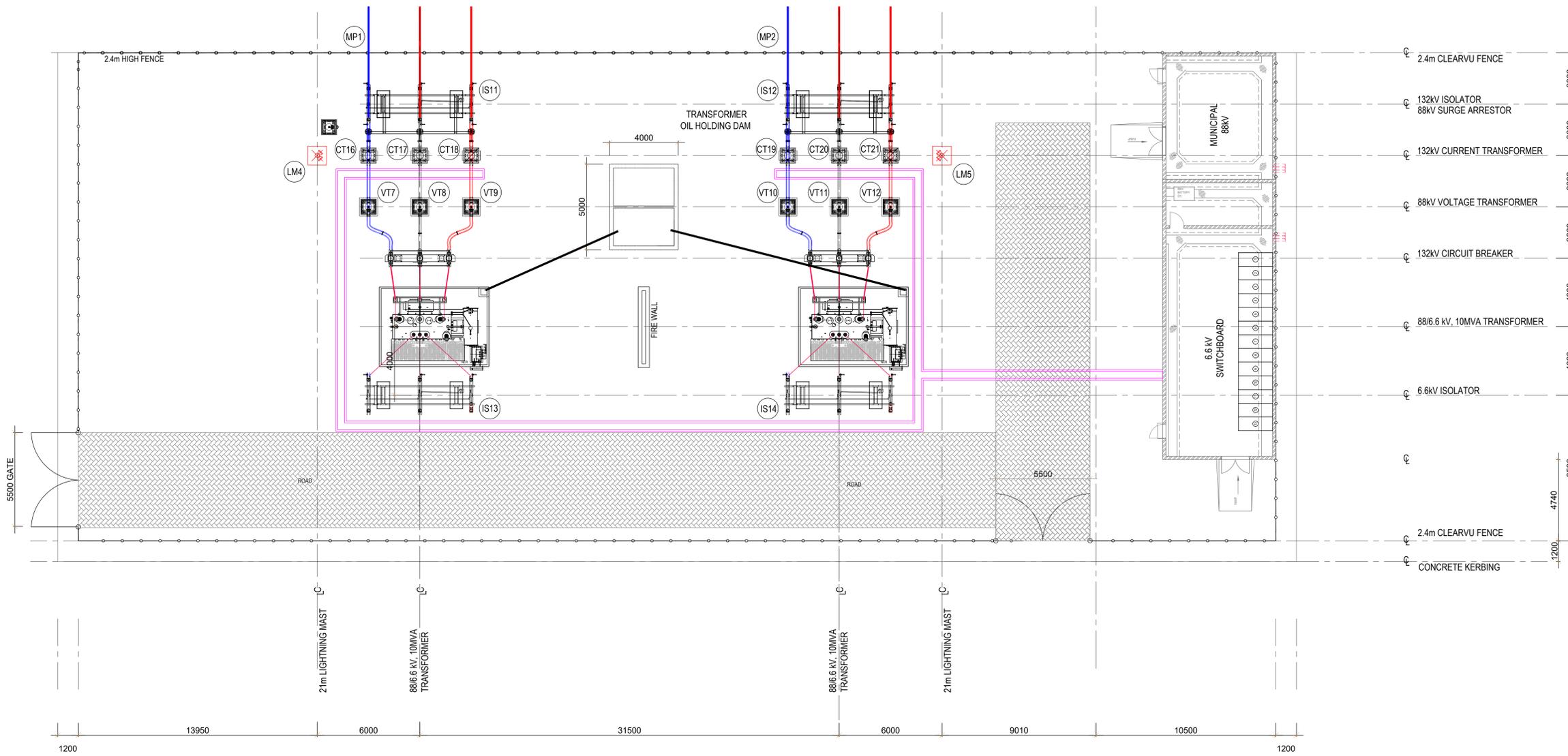
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Revision Schedule			
Rev	Date	by	Description
0	2022.03.09	TL	ISSUED FOR TENDER

ELECTRICAL ENGINEERING	Discipline		
NEW KOPPIES SUBSTATION	Project		
88kV ESKOM SWITCHING STATION YARD LAYOUT	Description		
DESIGNED BY T. MAKUMULE	DRAWN BY T. LEBHO	APPROVED BY S. MANDEBVI	ECSA NUMBER 20120237
DATE 2020.11.30	SCALE As indicated	SHEET SIZE A0	SIGNATURE
DRAWING NUMBER PR00328, 1-EL-401-EL			



NEW KOPPIES MUNIC 88 kV/6.6 kV SWITCHING STATION YARD FLOOR PLAN
SCALE 1:125

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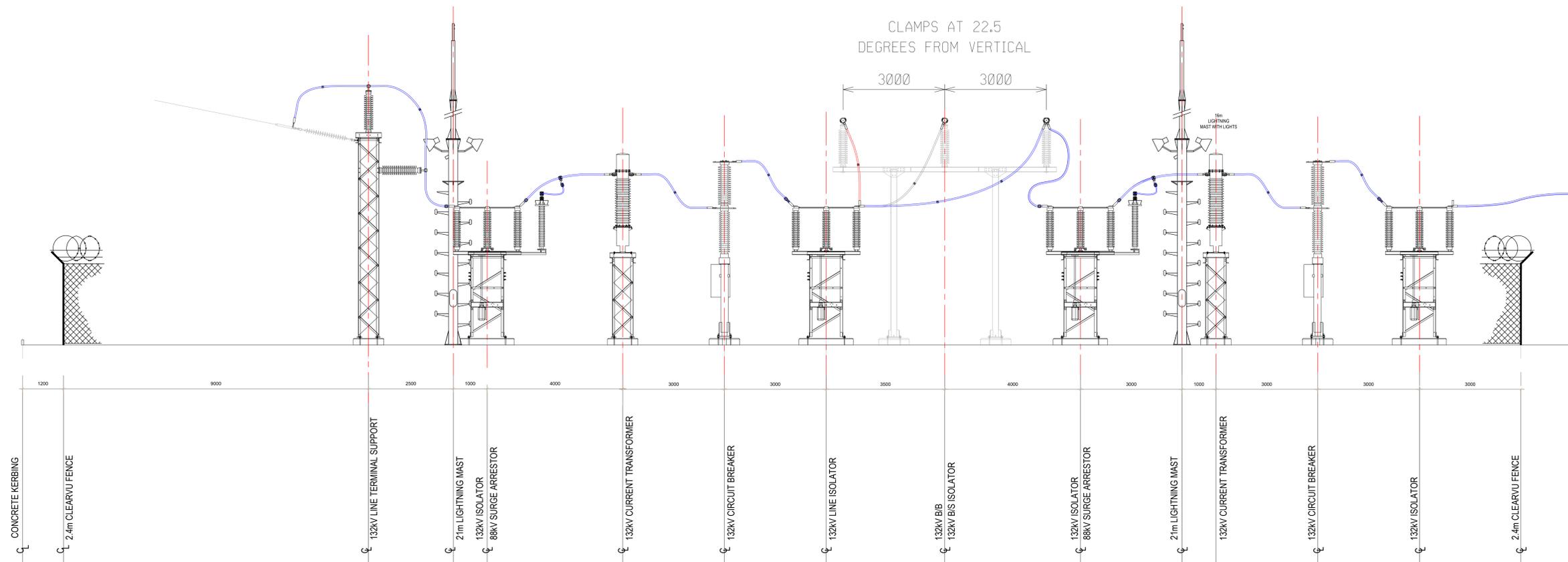
Revision Schedule			
Rev	Date	by	Description
0	2022.03.09	TL	ISSUED FOR TENDER

ELECTRICAL ENGINEERING	Discipline
NEW KOPPIES SUBSTATION	Project
88 kV/ 6.6 kV MUNIC SWITCHING STATION YARD LAYOUT	Description

DESIGNED BY T.MAKUMULE	DRAWN BY T. LEBHO	APPROVED BY S. MANDEBU	ECSA NUMBER 20120237
DATE 2020.11.30	SCALE As indicated	SHEET SIZE A0	SIGNATURE
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NEW KOPPIES 88kV ESKOM SWITCHING STATION YARD SECTION/ELEVATION
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ELECTRICAL ENGINEERING

Discipline

NEW KOPPIES SUBSTATION

Project

88 kV ESKOM SWITCHING STATION YARD SECTIONS/ELEVATIONS LAYOUT

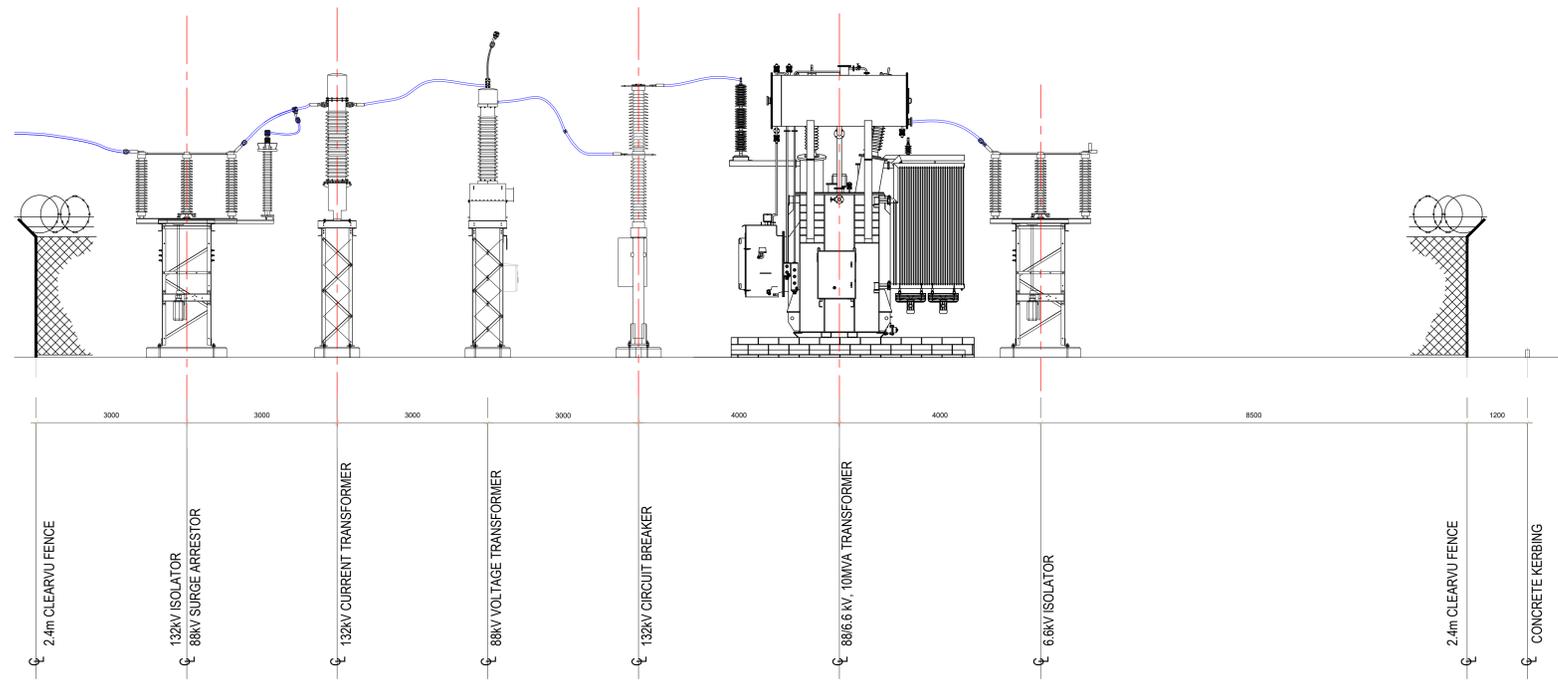
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NEW KOPPIES 88 kV/6.6kV MUNIC SWITCHING STATION YARD ELEVATION

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Discipline

NEW KOPPIES SUBSTATION

Project

88 kV/6.6kV MUNIC SWITCHING STATION YARD SECTIONS/ELEVATIONS LAYOUT

Description

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