



Transnet SOC Limited
Transnet RME

REQUEST FOR QUOTATION

TFR RME RFQ Board
TFR RME RFQ Board
Transnet Freight Rail - RME
PROCUREMENT DEPARTMENT

Registration Number: 1990/000900/06
Vat Number : 4720103177

Attention:

Telephone Number :
Fax Number :
Vendor Number :500000

Quotation Deadline Date : 04.11.2013
Quotation Deadline Time : 16:00

REQUEST for QUOTATION
Transnet RME
RFQ Number / Date
6000179281 / 23.10.2013
Contact Person / Telephone
Troy Stevens / 021 940 1892
Return to VAX Number/EMAIL
0218100000 / TCPtendersCapeTown@Transnet.net

Item	Material	Description	RFQ Qty	UoM	Required Del date	Confirm Del date	Unit Price Excl	Total Price Excl
00010		Mini sub	1	ea	25.11.2013			

Mini sub
1000KVA 11750/6600 to 400volt mini sub as per scope specifications

Contact person: Cecil Fourie 0838520773

Project number 1114941

Delivery address: Bellville square stores

Requester and Delivery Address:

Cecil Fourie - Transnet Freight Rail (RME)
Deliver to Bellville Square Bellville South
Western Cape

Tel: 0219401863
Cell: Cecil Fourie 0838520773



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Email: cecil.fourie@transnet.net
 Fax: 021 9401938

If you are unable to quote for this enquiry, please submit a NO QUOTE, with a short reason, if possible, for not being able to quote.

Otherwise we look forward to receive your quote by the date and time stated.

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Delivery Address

TFR RME Cape Town
 De Gatt Complex, Behind Propne
 Bellville South, Cape Tow
 7530

This RFQ is subject to the following conditions:

1. Price/s : The price/s quoted in SA currency and is excluding of V.A.T
2. Delivery : The price/s quoted should include delivery cost to the delivery address stated on the RFQ
3. Returnables : A valid tax clearance certificate and BBBEE certificate from a SANAS accredited verification agency attached to quotation for all quotes above R30 000.
Please note that only the official Transnet RFQ will be accepted and all other correspondence to be attached to the original
4. Safety : To confirm to Transnet Capital Projects Health & Safety plan and specification; HAS-std-0001, copy available on request.
5. Confirmation: To confirm your participation in this tender process please sign and return this document as immediate effect prior to the quotation deadline.
6. Negotiations: The Employer may elect to negotiate the final terms of the contract/order with the preferred tenderer in accordance with Clauses F.2.17 and F.3.13 of the CIDB Standard Conditions of Tender. A copy of which is available upon request.

 Signature

 Date

B: PROJECT SPECIFICATION FOR MINI-SUB

B1 SCOPE

This specification covers the requirements for a mini-sub for the Port of Cape Town

The works consist of the following:

- One 1000kVA mini-substation and associated cabling.

B2 SPECIFICATIONS AND DRAWINGS

SANS 10142
ERD-0001.05 Revision 1
Drawing 1114941

1 1000KVA MINIATURE SUBSTATION TO REPLACE THE MINIATURE SUBSTATION AT TNPA HOUSE

The manufacturer of the mini-sub is to have approval as a supplier from both the Cape Town Local Authority and ESKOM.

The design, manufacture, and routine testing in accordance to SABS 780/NRS004 of a 1000 kVA 11750/6600 to 400 V mini-sub.

Transformer Compartment

Dyn 11; 50 Hz; 11750/6600 to 400V; 1000 kVA; 3 ph; Low loss to SABS 780; Tap switch: plus and minus 2,5% and 5% **AND 11 750 / 6 600 Volt**; Oil: to SABS 555; Cooling: Onan; Sealed with welded cover; Bearing the SABS mark; **HV/LV Winding material: Copper**; Radiators and Tank: zinc metal sprayed; Thermometer pocket; Oil gauge. Tap changers to be lockable.

HV Compartment

NOTE: The manufacturer shall ensure a maximum prospective fault current level of 40 kA on all HT equipment.

3 Panel 11kv SF6 Vacuum ring main unit consisting of

- 1) Incomer supplied via 70mm² XLPE cable. Cable live indicators of the type that allow for secondary phasing checks are to be installed.
- 2) Incomer supplied via 70mm² XLPE cable. Cable live indicators of the type that allow for secondary phasing checks are to be installed.

- 3) 1000kVA dual voltage transformer of mini-sub complete with SEG VIC1 transformer protection relay and CT's. Busbar live indicators of the type that allow for secondary phasing checks are to be installed.

Mini-sub Cubicle

3CR12 Steel; Paint colour: C12 Avocado; Stainless steel door handles. All B&N and pivot pins shall be stainless steel.

LV Compartment

Busbar set (4 + E).

To Attached drawing

Meters:

Three individual analogue combined current and maximum demand current meters with resettable pointer indicating the maximum demand current, and a volt meter switched to read the three phase to phase & phase to neutral voltages. Class 1 CT's suitable for use with the meters are to be installed.

The meters are to have their voltage supplies individually fused.

Test blocks, with injection facilities, are required for the metering CT's.

The supplier shall submit 3 sets in hard copy and 1 set electronically of all test results, drawings and operating manuals as may be required.

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APPENDIX 1

SCHEDULE OF REQUIREMENTS
(To be completed by client)

SYSTEM DETAIL

- 1.0 Transformer required for: JUPA 11045R substation/location
- 2.0 Nominal system voltage: 11 150 kV
- 3.0 Number of phases: 3
- 4.0 Frequency: 50 Hz
- 5.0 Neutral point effectively earthed: Yes No

TRANSFORMER DETAIL

- 1.0 Type of transformer: Outdoor: Yes Indoor: Yes
- 2.0 Number of phases: Single phase: _____ Three phase: Yes
- 3.0 Rated power: 1 000 kVA
- 4.0 Impedance percentage %: _____
- 5.0 Primary voltage rating: 11 150 kV
- 6.0 Secondary voltage rating: 4 00 kV
- 7.0 Vector group: DYN 11

TANK TYPE

- 1.0 Free-breathing Yes No
- 2.0 Sealed (Transformer main tank cover joint shall be welded) Yes No

FITTINGS REQUIRED

- 1.0 Conservator with oil level indication. Yes No
- 2.0 Silica gel breather Yes No
- 3.0 Gas and oil actuating relay with test and sample valves Yes No
- 4.0 Main tank drain valve Yes No
- 5.0 Indicating thermometer Yes No
- 5.1 Oil temperature Yes No
- 5.2 Winding temperature indication Yes No
- 6.0 Radiators. Yes No
- 7.0 Auxiliary wiring terminal box Yes No
- 8.0 Neutral current transformer required Yes No
- 8.1 Ratio: _____

8.2 Class: _____
8.3 VA Rating: _____ Yes/No

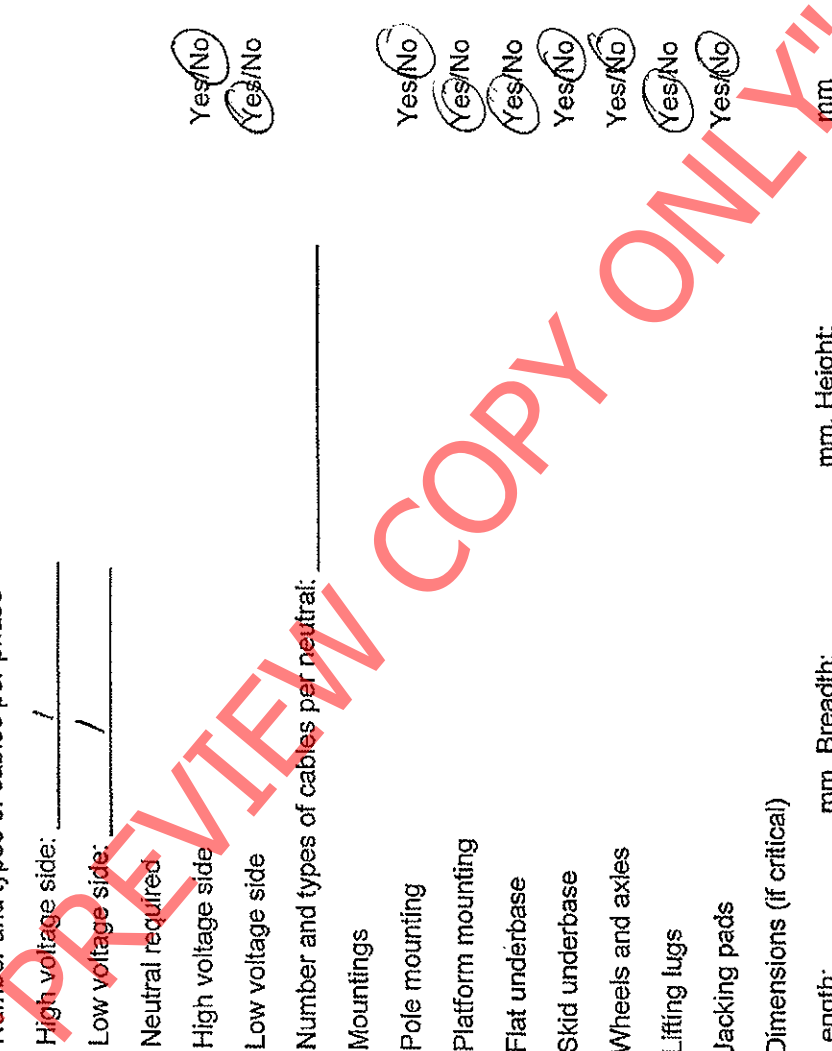
9.0 Off circuit tap switch required
9.1 Number of tap positions: 5

10.0 Bushings required: Outdoor: Indoor: _____
High voltage side Yes No
Low voltage side Yes No
Cable box required Yes No

11.0 Number and types of cables per phase
High voltage side: 1
Low voltage side: 1
Neutral required Yes No
High voltage side Yes No
Low voltage side Yes No

12.0 Number and types of cables per neutral: _____
13.0 Mountings
13.1 Pole mounting Yes No
13.2 Platform mounting Yes No
13.3 Flat underbase Yes No
13.4 Skid underbase Yes No
13.5 Wheels and axles Yes No
13.6 Lifting lugs Yes No
13.7 Jacking pads Yes No

14.0 Dimensions (if critical)
Length: _____ mm. Breadth: _____ mm. Height: _____ mm
15.0 Special requirements: _____



END

APPENDIX 2

INFORMATION TO BE PROVIDED BY TENDERERS

1.0 GENERAL

1.1 Manufacturers name: _____

2.0 TRANSFORMER DETAIL

1.0 Type of transformer: Outdoor: _____ Indoor: KS2.0 Number of phases: Single phase: _____ Three phase: KS3.0 Rated power: 1000 kVA

4.0 Impedance (percentage) %: _____

5.0 Primary voltage rating: 11750 kV6.0 Secondary voltage rating: 400 kV

7.0 Tapping Switch: _____

No of positions: 5 %Steps: 5%8.0 Vector group: DYN11

Yes/No

9.0 Free Breathing

Yes/No

10.0 Seated

Yes/No

11.0 Welded cover

12.0 Method of Cooling: ONAN

13.0 Overall dimensions: Length _____ mm. Breadth _____ mm. Height _____ mm

14.0 Winding material: HV _____ LV _____

15.0 Mass of core and windings: _____ kg

16.0 Oil capacity: _____ (Litres)

17.0 Mass of transformer complete with oil: _____ kg

18.0 HV end turns insulation reinforced Yes/No

19.0 Type of breather and dehydrating agent: _____

20.0 The following information refers to the transformer when connected on the principal tapping and appropriate reference temperature for the class of insulation used.

20.1 Iron loss (Watts): _____

20.2 Copper loss at full load: _____ at _____ °C

20.3 Total load losses (Watts): _____ at _____ °C

20.4 Impedance at full load (percentage) _____ Z _____ X

20.5 Regulation at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at _____ °C

20.6 Efficiency at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at _____ °C

20.7 Temperature rise at rated voltage and power of:

Windings: _____ °C

Top oil: _____ °C

END

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TRANSNET
freight rail

TECHNOLOGY MANAGEMENT SPECIFICATION

MEDIUM VOLTAGE DISTRIBUTION AND SUPPLY TRANSFORMERS IN ACCORDANCE WITH SANS 780. (For nominal system voltages up to 33 kV)

Author:

Chief Engineering Technician

D.O. Schütz

Approved:

Technology Management

Senior Engineer

L.O. Borchard

Authorised:

Technology Management

Principal Engineer

W.A. Coetzee

Date:

29th April 2008

Circulation Restricted To:

Transnet Freight Rail – Chief Engineer Infrastructure

- Technology Management

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1.0 SCOPE

- 1.1 This specification covers Transnet freight rail's requirements for single phase and three phase oil immersed type distribution and supply transformers for indoor or outdoor use in accordance with SANS 780.

2.0 BACKGROUND

- 2.1 Distribution and supply transformers are used on Transnet freight rail for the following applications:

- Supply transformers are used as step down transformers for power distribution of the 11kV and 6,6 kV Transnet freight rail reticulation systems and the 11 kV and 6,6 kV transmission line network.
- Distributions transformers are used as step down transformers for the provision of power at a required voltage.
- Distribution transformers are also used on the 11 kV and 6,6 kV transmission line system for step down supply points to signals relay rooms and for auxiliary supplies to traction substations etc.

3.0 STANDARDS AND PUBLICATIONS

The transformer shall comply with all relevant requirements of the latest edition of the specifications as listed in SANS 780.

3.1 SOUTH AFRICAN NATIONAL STANDARDS

SANS 121	Hot-dip Galvanized coatings for fabricated iron or steel articles.
SANS 780	Distribution Transformer.
SANS 1091	National colour standard.
SANS 9001	Quality Management systems – Requirements.

3.2 TRANSNET FREIGHT RAIL

CEE.0224.	Drawings, Catalogues, Instruction Manuals and Spares lists for Electrical Equipment supplied under contract.
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4.0 APPENDICES

The following appendices form an integral part of this specification:

Appendix 1:	Schedule of requirements.
Appendix 2:	Information provided by the tenderers.

5.0 TENDERING PROCEDURE

- 5.1 Tenderers shall indicate clause by clause compliance with the specification. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.
- 5.2 A statement of non-compliance shall be motivated by the tenderer.
- 5.3 Tenderers shall complete Appendix B. " Information to be provided by tenderers."
- 5.4 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 5.5 Failure to comply with clauses 5.1, 5.2, 5.3 and 5.4 could preclude a tender from consideration.

6.0 SERVICE CONDITIONS.

The transformers shall be designed to operate under the following conditions.

6.1 ATMOSPHERIC CONDITIONS

Altitude:	0 to 1800m above sea level.
Ambient temperature:	-5°C to +45 °C.
Relative humidity:	10% to 90%.
Lightning Conditions:	12 ground flashes per square kilometre per annum.
Pollution:	Heavily salt laden or polluted with smoke from industrial sources.

6.2 ELECTRICAL CONDITIONS

Frequency:

The AC high voltage supply will normally be supplied by Eskom. The frequency will be 50 ± 2.5 Hz.

Harmonics:

For the supply transformers installed at the traction substations to supply power to the 11 kV and 6,6 kV transmission lines systems, it can be expected that the low voltage winding of such transformers shall be subjected to the total voltage harmonic distortion of up to 27%. Distribution transformers that are used for step down points on the 11 kV and 6,6 kV transmission line systems to step down voltages to 400 V/ 230 V for signal relay rooms, auxiliary supplies to traction substations or any other application shall be subjected to the total voltage harmonic distortion of up to 27%.

No of Phases:

Three phase systems.

7.0 TECHNICAL REQUIREMENTS

7.1 CONSTRUCTIONAL REQUIREMENTS

7.1.1 The "schedule of requirements" Appendix 1 shall determine the constructional requirement of the transformers.

7.2 PAINTING AND CORROSIVE PROTECTION.

7.2.1 The corrosion protection and coatings both interior and external surfaces shall be in accordance with Clause 4.17 of SANS 780 and shall be suitable for coastal and heavily polluted conditions.

7.2.2 The transformer radiators shall be hot dipped galvanized in accordance with SANS 121 for coastal and heavily polluted conditions and be painted.

7.2.3 Internal surfaces of the conservator tank above oil level including the tank shall be protected from corrosion by varnishing, priming or painting as specified in clause 4.17.2 for coatings of interior services of SANS 780.

7.2.4 The conservator tank where required shall be painted white.

7.2.5 The finished external coats of paint of the transformer tank shall match the colour G12 for grey as specified in SANS 1091.

8.0 DRAWINGS AND MAINTENANCE MANUALS

8.1 Drawings, instruction manuals and spares lists shall be supplied in accordance with Transnet freight rail's specification CEE.0224.

- 8.2 Three copies of each of the following drawings shall be submitted to the responsible project manager for approval within 7 days of the order being placed.
- 8.2.1 Dimension drawings showing external arrangements of transformer.
- 8.2.2 External wiring diagrams for the transformer.
- 8.2.3 Vector diagram and rating plate.

9.0 INSPECTION AND TESTS

- 9.1 Transnet freight rail reserves the right to carry out inspection and any tests on the equipment at the works of the supplier/ manufacturer.
- 9.2 Arrangements must be made timeously with the Senior Engineer, Technology Management for inspections and tests prior to delivery.
- 9.3 All routine tests shall be carried out in accordance to SANS 780.
- 9.4 These tests shall be carried out at the manufacturers premises and shall be witnessed by Transnet freight rail's Quality Assurance staff.
- 9.5 Type test certificates for the same type of transformers with the validity of five years or less must be made available.

10.0 QUALITY ASSURANCE

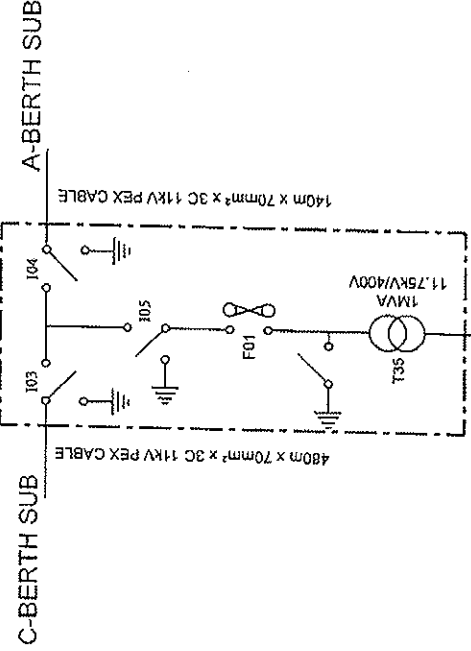
- 10.1 The supplier must indicate what steps have been taken to implement a quality assurance system in terms of SANS 9001.

11.0 GUARANTEE AND DEFECTS

- 11.1 The contractor shall guarantee the transformer and accept liability for maker's defects, which may appear in design, materials and workmanship.
- 11.2 The guarantee period for the transformer shall expire after a period of 12 months commencing on the date of commissioning of the equipment.

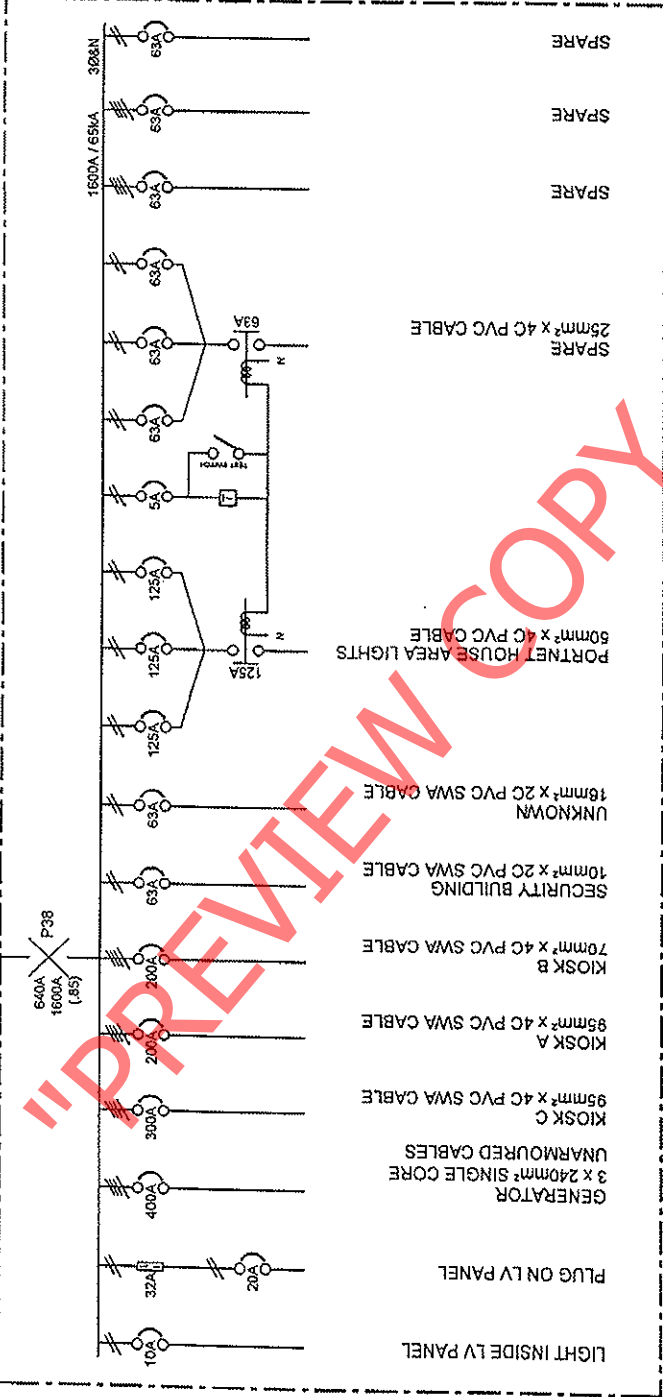
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**PORT CONTROL MINI-SUB
(VACUUM RING MAIN UNIT)**



DISTRIBUTION BOARD SYMBOLS	
	VERRIDE OR CONTROL SWITCH
	ISOLATING SWITCH
	HIGH RUPTURING CAPACITY FUSE SWITCH
	HIGH RUPTURING CAPACITY FUSE
	MOULDED CASE CIRCUIT BREAKER
	EARTH LEAKAGE WITH OVERCURRENT PROTECTION
	EARTH LEAKAGE - NO OVERCURRENT PROTECTION
	SINGLE PHASE & NEUTRAL CIRCUIT
	THREE PHASE & NEUTRAL CIRCUIT
	PHOTOELECTRIC CONTROL UNIT
	CONTACTOR
	TRANSFORMER
	KILOWATT HOUR METER

MAIN DB LV SCHEMATIC



NOTES

- THIS DRAWING IS FOR THE MANUFACTURE OF MAIN LV DISTRIBUTION BOARD INSIDE MINISUB ONLY
- MAIN BREAKER MUST BE AIR CIRCUIT BREAKER WITH ELECTRONIC RELEASE
- MATERIAL FOR SWITCH BOARD: MIN 2mm 3CR12 STAINLESS STEEL AND EPOXY COATED WITH HINGES 316 STAINLESS STEEL
- COLOUR OF SWITCH BOARD: ELECTRICAL ORANGE
- ALL BREAKERS MUST BE CLEARLY LABELLED
- ALL CABLE ENTRIES WILL BE BOTTOM ENTRIES
- ALL CABLES MUST BE MOUNTED ON A UNIRAIL EXCEPT MAIN BREAKER MUST BE INSTALLED WITH GLAND PLATE
- MANUFACTURER MUST ENSURE THAT ENOUGH SPACE IS PROVIDED FOR CABLE TERMINATIONS AND SPREADER BARS TO BE PROVIDED FOR MULTIPLE / LARGE CABLE TERMINATIONS.
- PHASE BARRIERS TO BE INSTALLED AS REQUIRED.
- ONLY LOW OXYGEN HIGH CONDUCTIVITY COPPER BUSBARS ARE TO BE USED. BUSBARS TO BE CHEMICALLY TINTED
- THE PANEL BUILDER IS TO CALIBRATE ALL CIRCUIT BREAKERS PRIOR TO DELIVERY
- DISTRIBUTION BOARD MUST HAVE A 15A SWITCHED SOCKET OUTLET MOUNTED INSIDE WITH APPROPRIATE EARTH LEAKAGE CIRCUIT AND TUBE LIGHT
- ALLOW FOR 30% SPARE POSITIONS COVERED WITH BLANK-OFFS
- ALL RELEVANT SABS SPECIFICATIONS TO BE COMPLIED WITH & THE PANEL BUILDER IS TO BE ISO REGISTERED. ALL TEST CERTIFICATES FOR THE TYPE(S) OF BOARD INCLUDING, BUT NOT LIMITED TO, ROUTINE TEST CERTIFICATES ARE TO BE PROVIDED.

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NO	REVISIONS	DATE	CHECKED	APPROVED

PROJECT TITLE	DRAWING TITLE
PORT OF CAPE TOWN	PORT CONTROL BUILDING MINISUB LV PANEL

DATE	SCALE	PAPER SIZE
01/10/2013	NTS	A4
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ef Louw		DATE
		SIGNATURE
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