PANEL OF ELECTRICAL CONTRACTORS FOR MAINTENANCE OF ELECTRICAL INFRASTRUCTURE TO RAY NKONYENI MUNICIPALITY FOR A PERIOD OF THREE YEARS

NOTICE NO: 157 of 2026

BID NO: **8/2/RNM0653**

NAME OF THE BIDDER

_____

BID AMOUNT R _____

TECHNICAL SERVICES DEPARMENT
P.O. BOX 5
PORT SHEPSTONE
4240

NOVEMBER 2026

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MUNICIPAL NOTICE: 157 of 2026

Bid No: **8/2/RNM0653**

PANEL OF ELECTRICAL CONTRACTOR FOR MAINTENANCE OF ELECTRICAL INFRASTRUCTURE TO RAY NKONYENI MUNICIPALITY FOR A PERIOD OF THREE YEARS

Bids are hereby invited for the Panel of electrical contractors for maintenance of electrical infrastructure to Ray Nkonyeni Municipality for a three-year period. Only bidders who are registered with a classification grading of 4EP or higher are eligible to submit a tender and will be considered for an award.

Bid documents can be downloaded on www.etenders.gov.za or www.rnm.gov.za, from Thursday, 12 November 2026.

Reference: "Tender No 8/2/RNM0653: Panel of electrical contractors for maintenance of electrical infrastructure to Ray Nkonyeni Municipality for a three-year period"

Bidders to submit one (01) copy of the bid document together with the original bid document, bidders that fail to submit a copy will be disqualified. Fully completed Bid documents must be submitted in a sealed envelope, clearly marked "Tender No. 8/2/RNM0653 **"PANEL OF ELECTRICAL CONTRACTORS FOR MAINTENANCE OF ELECTRICAL INFRASTRUCTURE TO RAY NKONYENI MUNICIPALITY FOR A THREE-YEAR PERIOD"** and must be deposited in the Bid box at the Municipal offices at 10 Connor Street, Port Shepstone, no later than 12:00 on Monday, 14 December 2026 after which all Bids will be opened in public.

The procedure for the evaluation of responsive Bid Offers will be Method 4 (Financial Offer, preference, and quality (functionality) with 80/20 Preference Points System. Bidders that fail to Score a minimum of 60% for functionality will not be evaluated further. The total score awarded will be the addition of the two scores for price and preference. Preference points claimed in terms of the Preferential Procurement Policy Framework Regulations of 2022

Functionality Criteria	**Points**	**Verification documents**
Company previous relevant experience	10	Appointment letters with corresponding completion certificates **OR** purchase orders with corresponding completion certificates.
Personnel previous relevant experience	20	Attach CV, certified qualification certificates and ECSA registration certificate not older than 3 months of certification by the Commissioner of Oath
Total Points	**30**	

SPECIFIC GOALS	POINTS	Verification Documents
Companies within Ray Nkonyeni Municipality	20	CSD preferred address
Total points	**20**	

A non-compulsory clarification virtual meeting will be held on Thursday, 26 November 2026 @ 10:00. Please confirm your attendance by sending an email to Ms Nandi Sihlali nandi.sihlali@rnm.gov.za and cc Vaneshree Moodley vaneshree.moodley@rnm.gov.za before end of business Monday, the 23 November 2026.

All queries to be directed to Ms Nandi Sihlali, Manager Electrical Section on 039-688-2088/2015 or via email nandi.sihlali@rnm.gov.za.

NOTE TO BIDDERS ON PRE-CONDITIONS OF THE BID:

- The Supply Chain Management Policy of Ray Nkonyeni Municipality will apply. The Council reserves the right not to accept the lowest bid or any bid and reserves the right to accept the whole or part of the bid, or to reject all bids and cancel the notice to bid;
- Service providers are required to download bid documents before the clarification meeting, and present them in meeting on a specified date;
- Only service providers registered in the Central Supplier Database (CSD) will be considered, attach proof of registration failure to attach will result in your bid not evaluated further.
- Qualifications obtained outside of South Africa must be verified by South African Qualifications Authority (SAQA), and bidders to provide proof of SAQA verification.
- Members or Directors of Companies or Service Providers who are state employees are not allowed to bid or quote;
- Unsuccessful bidders will be informed of the Bid outcome through the Municipal website. Aggrieved unsuccessful bidders will be allowed to lodge, within fourteen (14) days of the decision or action, a written objection or complaint to the Office of the Municipal Manager through email, mm@rnm.gov.za or fax number 0865297195. Complaints or objections received after fourteen (14) days of the date of the notice **will not** be entertained; and
- The original bid document plus ONE **extra** (01) copy must be submitted, failure to submit one extra copy will result in disqualification.
- Bids submitted are to be valid for a period of **120 days**.

K J ZULU
MUNICIPAL MANAGER

Ray Nkonyeni Municipality
10 Connor Street
P O Box 5
PORT SHEPSTONE
4240

ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS
(NOT TO BE RE-TYPED)

NB!!!!! Please attach copies of the following documents.

- **Company registration documents.** ☐
- **Certified copy of ID documents of directors/owners/members/ Shareholders.** ☐
- **Copy of a valid TAX Compliance Certificate Or Tax Compliance Status PIN Sheet.** ☐
- **CSD Registration** ☐
- **Declarations (MBD 4, 6.1,8 & 9).** ☐
- **Joint Venture agreements (where applicable)** ☐

STANDARD FORMS

THIS BID IS SUBJECT TO THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT. THIS BID WILL BE EVALUATED AND ADJUDICATED ACCORDING TO THE FOLLOWING CRITERIA:

1. Relevant specifications
2. Value for money
3. Capability to execute the contract
4. PPPFA & associated regulations

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE

RAY NKONYENI MUNICIPALITY
STANDARD FORM FOR BIDS

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE RAY NKONYENI LOCAL MUNICIPALITY					
BID NUMBER:	8/2/RNM0653	CLOSING DATE:	14 DECEMBER 2026	CLOSING TIME:	12:00
DESCRIPTION	PANEL OF ELECTRICAL CONTRACTORS FOR MAINTENANCE OF ELECTRICAL INFRASTRUCTURE TO RAY NKONYENI MUNICIPALITY FOR A PERIOD OF THREE YEARS				

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:

RAY NKONYENI MUNICIPALITY
10 CONNOR STREET
PORT SHEPSTONE
4240

SUPPLIER INFORMATION							
NAME OF BIDDER							
POSTAL ADDRESS							
STREET ADDRESS							
TELEPHONE NUMBER	CODE			NUMBER			
CELLPHONE NUMBER							
FACSIMILE NUMBER	CODE			NUMBER			
E-MAIL ADDRESS							
VAT REGISTRATION NUMBER							
TAX COMPLIANCE STATUS	TCS PIN:		**OR**	CSD No:			
ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ENCLOSE PROOF]			ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, ANSWER PART B:3]		
TOTAL NUMBER OF ITEMS OFFERED				**TOTAL BID PRICE**	**R**		
SIGNATURE OF BIDDER	……			**DATE**			
CAPACITY UNDER WHICH THIS BID IS SIGNED							

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT	TREASURY SCM	DEPARTMENT	TECHNICAL SERVICES
CONTACT PERSON	BONGANI MFENQA	CONTACT PERSON	Nandi Sihlali
TELEPHONE NUMBER	039-3128304	TELEPHONE NUMBER	039 688 2088
FACSIMILE NUMBER		FACSIMILE NUMBER	
E-MAIL ADDRESS	Bongani.mfenqa@rnm.gov.za	E-MAIL ADDRESS	Nandi.sihlali@rnm.gov.za

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE**

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

1.4. THE BID OFFER MUST BE SIGNED BY A PERSON AUTHORIZED TO SIGN ON BEHALF OF THE BIDDER;

1.5. A BIDDER WHO SUBMITTED A BID AS A JOINT VENTURE HAS INCLUDED AN ACCEPTABLE JOINT VENTURE AGREEMENT WITH HIS/HER BID;

1.6. A BIDDER WHO IS A JOINT VENTURE HAS INCLUDED MBD 4, 8 & 9 FOR EACH ENTITY IN THE JOINT VENTURE / CONSORTIUM WITH HIS/HER BID

1.7. THE BIDDERER OR A COMPETENT AUTHORISED REPRESENTATIVE OF THE CONTRACTOR WHO SUBMITTED THE BID HAS ATTENDED THE COMPULSORY CLARIFICATION MEETING OR SITE INSPECTION;

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.

2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.

2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐YES ☐ NO

3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐YES ☐ NO

3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐YES ☐ NO

3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐YES ☐ NO

3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.
NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE: ……..

EVALUATION OF TENDER OFFERS

The procedure for evaluation of responsive Bid Offers will be **METHOD 4: (Financial Offer, preference and quality (functionality)** with 80/20 Preference Points System. Score quality, rejecting all Bid Offers that fail to score the minimum number of points for quality stated in the Bid Data. The total score awarded will be the addition of the two scores for price and preference.

The following formula will be used in Calculation of Percentage for Functionality

$$PS=\frac{So \times Ap}{Ms}$$

Where:

Ps = percentage scored for functionality by Bid/proposal under consideration
So = total score of bid/proposal under consideration
Ms = Maximum possible score
Ap = percentage allocated for functionality

Bidders that fail to Score a minimum of 60% for functionality will not be evaluated further. The total score awarded will be the addition of the two scores for price and preference. Preference points claimed in terms of the Preferential Procurement Policy Framework Regulations of 2022.

ASPECT	CRITERIA	POSSIBLE POINTS	VERIFICATION METHOD
Company Previous Experience	Company who has completed 5 or more projects in maintenance electrical infrastructure.	10	Attach 5 or more appointment letters with 5 or more corresponding completion certificates **OR** 5 or more purchase orders with 5 or more corresponding completion certificates
	Company who has completed 3 to 4 projects in maintenance electrical infrastructure	6	Attach 3 to 4 appointment letters and 3 to 4 corresponding completion certificates **OR** 3 to 4 purchase orders with 3 to 4 corresponding completion certificates
	Company who has completed less than 3 projects in maintenance electrical infrastructure	4	Attach 1 to 2 appointment letters and 1 to 2 corresponding completion certificates.

			OR 1 to 2 purchase orders with 1 to 2 corresponding completion certificates
	Company with no relevant experience in maintenance of transformers electrical infrastructure.	0	No attachments
Electrical engineer, with a bachelor's degree or higher in Electrical Engineering. should be registered with ECSA	With an experience of 10 years or more in electrical works and /or projects.	10	Attach CV, certified qualification certificates and ECSA registration certificate not older than 3 months of certification by the Commissioner of Oath
	With a minimum of 6 years of experience but less than 10 years in electrical works and /or projects	6	
	With an experience of less than 6 years in electrical works and /or projects	4	
	With no experience	0	No attachment
Electrical Technician with NQF level 6 / National Diploma or higher in electrical engineering projects.	With an experience of 5 years or more in electrical works and /or projects.	5	Attach CV and certified copies of certificates not older than 3 months of certification by the Commissioner of Oath
	With a minimum of 3 years of experience but less than 5 years in electrical works and /or projects	3	
	With an experience of less than 3 years in electrical works and /or projects	2	
	With no experience	0	No attachment
Electrical Artisan with an electrical trade test certificate and must be authorised to work with medium voltage.	With an experience of 5 years or more in electrical works and /or projects	5	Attach CV and certified qualification certificates not older than 3 months of certification by the Commissioner of Oath
	With a minimum of 3 years of experience but less than 5 years in electrical works and /or projects	3	
	With an experience of less than 3 years in electrical works and /or projects	2	
	With no experience	0	No attachment
Maximum Possible Points		**30**	

SPECIFIC GOALS	POINTS	Verification Documents
Companies within Ray Nkonyeni Municipality	20	CSD preferred address
Companies within Ugu District Municipality	15	CSD preferred address
Companies within KwaZulu Natal	10	CSD preferred address
Other	5	CSD preferred address
Total points	**20**	

b) Financial Offer

The financial offer will be scored using the following formula:

Nf = W1 x[1-(P-Pm) / Pm]

Where:

W1 = **80** for financial values up to R 50, 000, 000.00 (inclusive of VAT) of all responsive tenders received:
Pm = the value of the comparative offer of the most favourable tender;
P = the value of the comparative offer under consideration;

In the application of the 90/10 preference point system, if all bids received are below R 50, 000, 000.00, the bid must be cancelled. If one or more of the acceptable bid(s) received are above R 50, 000, 000.00 threshold, all bids received must be evaluated on the 90/10 preference point system.

c) Preferences

Up to **20** points (for financial values up to R 50, 000, 000.00), will be awarded to bidders who complete the preference schedule and who are found to be eligible for the preference claimed.
The applicable preference point system for this tender is the 80/20 preference point system.

1.1 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.2 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	**100**

1.3 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.4 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

GENERAL CONDITIONS OF CONTRACT
TABLE OF CLAUSES

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General Conditions of Contract

1. Definitions

1.1 The following terms shall be interpreted as indicated:

1.2 “Closing time” means the date and hour specified in the bidding documents for the receipt of bids.

1.3 “Contract” means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.4 “Contract price” means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.5 “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

1.6 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.7 “Country of origin” means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.8. “Database application form” means the application form required by the Ray Nkonyeni Municipality to be filled in by the successful Bidder, following the award of the contract, for inclusion on the RNM database before payment is made.

1.9 “Day” means calendar day.

1.10 “Delivery” means delivery in compliance of the conditions of the contract or order.

1.11 “Delivery ex stock” means immediate delivery directly from stock actually on hand.

1.12 “Delivery into consignees store or to his site” means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the goods are so delivered and a valid receipt is obtained.

1.13 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which has the potential to harm the local industries in the RSA.

1.14 ” Force majeure” means an event beyond the control of the Supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.15 “Fraudulent practice” means a misrepresentation of facts in Order to influence a procurement process or the execution of contract to the detriment of any bidder and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.16 “GCC” means the General Conditions of Contract.

1.17 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.18 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the goods covered by the bid will be manufactured.

1.19 “Local content” means that portion of the bidding price, which is not included in the imported content provided that local manufacture does take place.

1.20 “Manufacture” means the production of products in a factory using labor, materials, components and machinery and includes other related value-adding activities.

1.21 “Order” means an official written order issued for the supply of goods or works or the rendering of a service.

1.22 “Project site,” where applicable, means the place indicated in bidding documents.

1.23 “Purchaser” means the organization purchasing the goods.

1.24 “Republic” means the Republic of South Africa.

1.25 “SCC” means the Special Conditions of Contract.

1.26 “Services” means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.27 “Supplier” means the successful bidder who is awarded the contract to maintain and administer the required and specified service(s) to the State.

1.28 “Tort” means in breach of contract.

1.29 “Turnkey” means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.

1.30 “Written” or “in writing” means hand-written in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific goods, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the Purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a nonrefundable fee for documents may be charged.

3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

4. Standards

4.1 The goods supplied shall conform to the standards Mentioned in the bidding documents and specifications.

5. Use of Contract documents and information inspection

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specifications, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third Party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

6.2 When a supplier developed documentation / projects for the municipality / municipal entity, the intellectual, copy and patent rights or ownership of such documents or projects will vest in the municipality / municipal entity.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque.

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that goods to be produced or services to be rendered should at any stage be subject to inspections, tests and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or organization acting on behalf of the purchaser.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2and 8.3 show the goods to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the goods or services referred to in clauses 8.2 and 8.3do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Goods and services which are referred to in clauses 8.2 and 8.3and which do not comply with the contract requirements may be rejected.

8.7 Any contract goods may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with goods, which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods, purchase such goods as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 22 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is Required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods and arrangements for shipping and clearance obligations, shall be made by the supplier in accordance with the terms specified in the contract.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified.

13. Incidental services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any:

(a) Performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) Furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
(e) Training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:
(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and;
(b) in the event of termination of production of the spare parts:
(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
(ii) Following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to

any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated.

16.5. Payment will only be made if the supplier has filled in and submitted the necessary database application form to the satisfaction of the Chief Financial Officer.

17. Prices

17.1 Prices charged by the supplier for goods delivered and Services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized or in the purchaser's request for bid validity extension, as the case may be.

18. Variation Orders

18.1 In cases where the estimated value of the envisaged changes in purchase does not vary more than 15% of the total value of the original contract, the contractor may be instructed to deliver the goods or render the services as such. In cases of measurable quantities, the contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its Obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all Sub-contracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the goods are required, or the supplier's services are not readily available.

21.4 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the

imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is
Agreed upon pursuant to GCC Clause 22.2 without the application of penalties.

21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase goods of a similar quality and up to the same quantity in substitution of the goods not supplied inconformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination For default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner, as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the supplier as having no objection and proceed with the restriction

23.5 Any restriction imposed on any person by the purchaser will, at the discretion of the purchaser, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the purchaser actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5)working days of such imposition, furnish the National Treasury, with the following information:

(a) the name and address of the supplier and / or person restricted by the purchaser;
(b) the date of commencement of the restriction;
(c) the period of restriction; and
(d) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Bid Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required , or anti-dumping or countervailing duties are imposed, or the amount of amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favorable difference shall on demand be paid forthwith by the supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to goods or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

25. Force majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the purchaser.

27. Settlement of disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) The parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) The purchaser shall pay the supplier any monies due the supplier for goods delivered and / or services rendered according to the prescripts of the contract.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the Supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.

32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

33. Transfer of

33.1 The contractor shall not abandon, transfer, cede assign or sublet a

	contracts		contract or part thereof without the written permission of the purchaser.
34.	**Amendment of contracts**	34.1	No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.
35.	**Prohibition Of restrictive Practices**	35.1	In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998 as amended, an agreement between, or concerted practice by , firms or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is/ are or a contractor(s) was / were involved in collusive bidding.
		35.2	If a bidder(s) or contractor(s) based on reasonable grounds or evidence obtained by the purchaser has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in section 59 of the Competition Act No 89 0f 1998.
		35.3	If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10)years and / or claim damages from the bidder(s) or contractor(s)concerned.

No contract will be awarded to a person who has failed to submit a copy of Tax Compliance Certificate with a PIN from the South African Revenue Service ("SARS") certifying that the taxes of that person to be in order or that suitable arrangements have been made with SARS.

I certify that I have the appropriate authority to furnish the above-mentioned information and that the above information is correct at the time of completion.

Name:	Signature:
Designation:	Date:

****

STANDARD SPECIFICATION - TECHNICAL

A1. GENERAL: This section of the Specification covers the standards of materials, equipment and workmanship and general methods and procedures to be employed in the execution of the Sub-Contract Works, and forms part of the Sub-Contract documents.

A2. ELECTRICITY SUPPLY:

.1 Applications to Supply Authority: Unless otherwise specified in the Detail Specification, the Engineer will apply to the local Supply Authority for electricity supply and will arrange for the payment thereof by the Employer. The Sub-Contractor shall allow for attending upon the Supply Authority and ensuring that the service connection is not delayed. The term "Council", where used, shall mean the same as Supply Authority.

.2 Details of Supply: Unless otherwise specified in the Detail Specification, the supply will be nominal 400/ 231V, 3 phase, 4 wire, 50 Hz supply system. The type of supply will be one of the following alternatives:

(a) High Voltage (HV): In this alternative, supply will be taken at HV (usually 6,6kV or 11kV) and transformer(s) will be supplied by the Consumer, ie. the Employer.
(b) High Voltage Transformer (HVT): In this typical supply, the Supply Authority will provide the HV switchgear and transformers in the Employer's premises and will provide the connection into the Consumer's main LV circuit breaker's supply terminals.
(c) Low Voltage LV): This refers to a supply provided by the Supply Authority by means of an underground cable from an external LV distribution system. This supply is usually limited to approximately 50 kVA.
(d) Special Low Voltage (SLV): As for low voltage supply [(c) above but usually in excess of 50kVA.

.3 Connections to Consumer's Main LV Circuit Breaker: In the High Voltage Transformer (HVT) type of supply referred to in B2. 2 (b) above, the Sub-Contractor shall provide busbar extensions or stubs from the supply terminals of the main ACB into the transformer room, to enable the Supply Authority to terminate their LV connections therein. These busbar stubs shall be taken through "telescopic" Sheetmetal ducting through the dividing wall between LV room and transformer room, such ducting being fixed to the back of the main circuit breaker housing.

Busbars shall be supported by slotted insulated barriers which serve to close off the duct internally and support the busbars in a robust and secure manner. Stubs shall be of copper, drilled and profited for the necessary connections as required by the Supply Authority. Allowance shall be made for the separate connection of each cable jumper onto the stubs.

As a general guide, allow 267mm² area of copper busbar per phase for each 250 kVA of transformer capacity. The Sub-Contractor shall ascertain from the Supply Authority the exact position of the opening through the wall for the busbar stubs and shall arrange with the Principal Contractor for the opening in the wall to be cut and made good.

.4 Supply Authority's Metering: Unless otherwise specified, the Supply Authority's metering panel and equipment shall be incorporated in the Main Board, or other boards as applicable. The Sub-Contractor shall ascertain and establish the correct space and all other requirements of the Supply Authority for the accommodation of their meter panel or equipment and shall provide the necessary links in busbars or any other requirements for metering CTs, and shall provide all necessary cables, jumpers and connections between such metering equipment and the Consumer's equipment.

.5 Main Circuit Breakers:

(a) Supply Authority's Requirements: The Consumer's main circuit breaker shall comply with the Supply Authority's requirements and codes of practice, where applicable, in respect of overload and tripping characteristics, current rating and setting of overload trips. The Sub-Contractor shall arrange for testing of main circuit breakers where required by the Supply Authority.

(b) Trip-Testing by Sub-Contractor: Where no trip-test is called for or carried out by the Supply Authority, the Sub-Contractor shall carry out the following test and produce written proof of compliance. The requirements for the trip-test are that the breaker shall open circuit within the time stipulated in Table 1 while carrying a current equal to twice the full load rated current.

TABLE 1

Full load rated current of circuit breaker tripcoils	Max Tripping Time in Mins
40	3
40 - 80	4
80 - 125	6
125 - 225	8
225 - 400	10
400 - 700	12
700 - 1000	14
Over 1000	18

(c) Continuous Full-Load Rating Capacity of Breakers: Notwithstanding the requirements for trip-testing specified in (a) and (b) above, the breaker shall be capable of carrying continuously the full load current rating specified, and written proof thereof must be submitted to the Engineer. After trip testing the overload settings shall be sealed.

A3. BOARDS:

.1 Specialist Manufacturers: All switchboards and distribution boards shall be made by approved specialist manufacturers, who shall also install and fit the switchgear and equipment and carry out all internal wiring. An approved list of specialist board manufacturers is specified elsewhere.

.2 General Construction: All boards shall be constructed of folded sheet steel, minimum thickness 1,6mm or of structural steel framework with sheet steel enclosures. All metalwork and welds shall be ground smooth and rendered free from blemishes. Self threading screws may not be used in the construction of boards, nor for fixing of any panels. Exposed styles of width not less than 15mm shall be used between panels.

Where necessary from consideration of space or accessibility boards shall be made up in sections which shall be assembled on site, and the Sub-Contractor shall furnish the board manufacturer at the time of tendering and at all other times with all the necessary information as regards sizes, access, thickness of walls and other local conditions or restrictions affecting the construction of the board.

Where boards are made and transported in sections, control wiring etc. may not be broken through terminals but shall be prewired, disconnected and coiled and reconnected on site. Unless otherwise specified all boards shall be constructed for front access only and equipment etc. shall be easily removable from the front.

Where Supply Authority's metering panel or equipment is to be incorporated on boards sufficient space and provisions shall be made as specified in sub-clause B2.4.

All boards shall be vermin proof.

.3 Barriers: Non-combustible barriers shall be provided:

(a) to separate sections of boards which are fed from different transformers or sources of supply;

(b) to isolate each main incoming circuit breaker where the fault current exceeds 15 kA.

A group of 3 phase or single phase busbars or single core conductors crossing a ferrous metal barrier shall do so together with the neutral through a common opening. Under no circumstances shall a single conductor be surrounded by continuous ferrous metal.

.4 Fault Currents: Boards and all components shall be constructed to be able to withstand fault currents in accordance with any specified or implied values.

.5 Ventilation: All boards having a main isolator rating of 100 A or more (except dust-tight boards) shall be suitably ventilated by means of louvres in the front panels (and doors where applicable) at high and low level. All such openings shall be fitted inside with fine metal mesh wire screening.

For coastal areas the screening may not be spot-welded.

.6 Types of Boards:

(a) Floor Standing Boards: These shall be of the new cabinet or cubical type of construction, with a recessed plinth. The height of boards shall generally be made 2000 mm.

(b) Flush Mounted Boards: These shall be of the adjustable architrave type to SANS 1180, comprising a wall mounted bonding tray of 1,6 mm (min) galvanized sheet steel with edges returned for additional rigidity, and over which is fitted a 1,6 mm architrave frame formed to provide a rebate for front panels and doors and suitable for the fitting of doors at any time. The architrave shall overlap the wall tray by at least 25 mm on all sides to cover rough plaster edges round the bonding tray and shall be so fixed to the tray as to allow for adjustment in depth and plumb alignment. Trays which take up the full depth of walls shall be fitted with expanded metal sheeting welded to backs of trays, having an overlapping border 75 mm all round, to provide a bond for plaster.

(c) Semi-Flush or Partly Recessed Boards: These shall be as specified for flush boards, with a deep architrave providing a minimum of 50 mm of surface perpendicular to the wall for reception of future surface conduit extensions.

(d) Surface Mounted Boards: These shall be as specified for flush boards, with the board housing in place of a bonding tray, integral with the architrave.

(e) Flat Boards: Distribution boards used for residential flats shall be generally as specified for flush mounted boards, except that an over-lapping adjustable dished panel may be used instead of the architrave and cover panel. The flush tray shall in no case be less than 250 mm high and 90 mm deep.

(f) Weather-proof Boards: Where these are specified, they shall always be of the surface mounted type, but installed either flush or on surface as specified in the Detail Specification. Lockable doors shall in all cases be provided. In addition, weather-proof boards shall be so constructed as to prevent any ingress of water and shall be made hose proof. A sloping canopy shall be fitted along the top of the board to divert any water falling on the board.

(g) Distribution Boards Incorporated in Other Boards: Distribution boards which are incorporated in larger boards shall have separately removable matching front panels, and their equipment shall be separated from the other board equipment by metal barriers inside the board case. No separate doors are, however, required.

Where no separate isolator is specified for the incorporated board, then the feeder switchgear, which is also acting as the isolator, shall be included into the incorporated distribution board.

.7 Front Panels and Mounting of Equipment: Equipment shall be chassis-mounted flush behind a removable front panel. This front panel shall have returned edges to give it greater rigidity and shall be secured to the frame of the board with 6 mm studs and chromium plated hexagonal domed nuts. Alternatively, the panel by be secured by means of two pins at the bottom and a square key catch at the top. Self-tapped screws may not be used.

approved handles or knobs shall be provided on the panel to facilitate removal.
Front panels shall not be wider than 600 mm.
All front panels in main boards, sub-main boards and free-standing boards shall be fixed by means of locating pins at bottom and flush square-key operated catches at top edge of panel.
Where panels on any board are accidentally interchangeable, the fixings, e.g., locating pins, shall be arranged, or staggered in such a way as to make it impossible accidentally to interchange such panels.
The chassis shall be arranged for adjustment in depth and for plumb alignment. No equipment shall be mounted on the front panel, except as provided f__ below. The front panel shall be fitted with plastic windows in front of kWh meters, and other instruments which are arranged for chassis mounting. Time switches shall have a hinged flap to allow ample access for adjustment of time switch and for operation of bypass switches without the front panel having to be removed.

Where resettable instruments or meters are specified, e.g., maximum demand indicating, suitable cut-outs shall be provided in the front panel to permit resetting without opening or removing the panel.

Equipment feeding a common load e.g., kWh meter and controlling MCB or MCB's fed from contractors or earth leakage units shall be mounted adjacent to each other under a common panel.

Instruments and other equipment, which is designed for panel mounting only, shall be mounted on a hinged front panel, and the wiring thereto laced together and having sufficient slack to allow full opening of the hinged panel. Slack wiring shall be neatly clipped to back of panel.

Where a switchgear or equipment is specified to be supplied by others, the Sub-Contractor shall obtain the equipment and hand over to the board manufacturer in good time for incorporation in the boards.

Unless otherwise specified, motor starters shall have pushbuttons protruding through the front panel unattached thereto. However, pushbuttons, having mechanical pushrod operation may be attached to the front panel, provided the front panel can be freely removed and reinstalled.

The number of circuit breakers that may be installed in a 2 m high cubicle shall be limited to:

(a) circuit breakers above 500 A - one per cubicle.
(b) circuit breakers below 500 A - the total sum of the circuit breaker ratings shall not exceed 1000 A.

.8 Provision for Future Equipment and Extensions: Where space for future equipment is called for, the front of blanking dummies or covers provided, and the chassis and bus bars shall be adequately extended and pre-fitted for the reception of the specified future equipment.

Where boards are specified to be extensible, this shall mean that the side panel(s) shall be removable, and the framework pre-fitted for the

addition of a matching extension of the board. Busbars shall likewise be predrilled for future extensions.

.9 Doors: Where doors are specified, they shall be fitted with concealed hinges and shall be flush with the architrave. The doors must be easily removable without the use of tools. Doors shall be of not less than 1,6 mm thickness with double returns rigidly constructed and reinforced or stiffened to give a flat smooth front appearance. Single doors shall not exceed 700 mm in width.

All doors shall be fitted with neat flush mounted chromium plated catches. Doors for flat distribution boards may be of a simplified construction and need not be detachable.

Locking facilities shall be provided where specified and shall be either by separate flush cabinet type locks or locks incorporated in the catches. Each lock shall have two keys, and where more than one locked board is specified, the locks shall be in one master series. All keys plus one master key shall be handed to the Employer for which a receipt shall be obtained.

One master key shall in addition be handed to the Engineer, suitably tagged with the name of the Sub-Contract. All keys submitted by the Sub-Contractor shall likewise be suitably tagged with the board designation and locality.

.10 Painting: Unless otherwise specified in the Detail Specification, all boards shall comply with the following painting specification:

N.B. The painting procedure shall at all times comply with the paint supplier's instructions and recommendations.

(a) Surface Preparation: After fabrication, all metalwork other than flush mounted trays shall be cleaned of slag and welding impurities and cleaned in an approved solvent. It shall be de-rusted, degreased and dipped in phosphate solution.

(b) Baked Enamel Finish: Within 48 hours after phosphating, a high-quality zinc chromate primer shall be applied followed by coat(s) of high-quality baked enamel to provide a minimum paint thickness after baking of 0,06 mm.

The paint shall have an impact resistance of 5,65 J on cold rolled steel plate and a scratch resistance of 2 kg.

In coastal areas, the dry film thickness shall be increased to at least 0,1 mm.

(c) Power Coated Finish: Immediately after cleaning the metal part shall be preheated and then covered by a microstructure paint power applied electrostatically. The paint shall be baked on and shall harden within 10 minutes at a temperature of 190°C.

The minimum paint thickness after baking shall be 0,05 mm. The dry film thickness shall be increased for coastal areas. The paint cover shall have an impact resistance of 5,65 J on cold rolled steel plate and a scratch resistance of 2 kg.

(d) Colours: Unless otherwise specified, the colours of finishes shall be as follows:

(i) Inside board finishes shall be white or light coloured.
(ii) Boards situated in kitchens, shops, flats, hospitals and laboratories: White or light ivory.
(ii) Board in offices, public spaces and corridors of commercial premises: White or light ivory.
(iv) Main Boards, boards in industrial areas, plant rooms, machine rooms, cupboards and any others not specified above, shall be finished in standard electrical orange colour.

.11 Busbars: All boards shall be equipped with copper busbars to SANS 784 of current rating not less than that specified for the main switch or isolator. Current ratings for busbars shall be in accordance with the manufacturer's recommended rating multiplied by a de-rating factor of 0,75. Busbar cross section may not be reduced without the approval of the Engineer.

Unless otherwise specified and if approved by the Supply Authority busbars for 3 phase and neutral application having a rating of 500 amps or more may have neutral bar reduced to not less than half the cross-sectional area of the phase bars.

Busbars shall be of hard-drawn high conductivity and purity copper. Aluminium busbars may not be used.

Busbar supports shall comply fully with SANS 784. Clearances between all bars and any attachments, bolts, etc, thereto shall, however, not be less than 35 mm between bars, and between bars and any earthed metal. In multiple parallel busbar arrangements, the space between bars of the same phase shall be equal to the thickness of each bar.

Bolts for supporting or jointing busbars shall be of high tensile phosphor bronze or high tensile plated steel, not less than size M8, provided with wide flat plated washers at each end and spring back washers under the nuts.

Jointing of and connections to aluminium bars (where specified) shall comply with SANS 784.

Copper or brass neutral bars for sub-circuit distribution shall be provided of sufficient size to accommodate a neutral conductor for each way (including spares) specified, and conductors shall be connected to bars by means of double grub screws.

All busbars and any other uninsulated connecting links shall be taped or sleeved with heat-shrunk material by the board manufacturer except at joints and take-offs. The latter including cable lugs shall be taped by the Electrical Sub-Contractor after installation of boards and connection of cables thereto. Colour coding of busbars shall be strictly observed.

Copper earthbars shall be provided in all boards of cross-sectional area equal to that of the phase busbar, up to a maximum of 160mm². Earth bars must be efficiently bonded to the metal framework of the board and

shall be of sufficient size to accommodate a separate earth wire for each circuit requiring one.

.12 Wiring: All boards shall be internally wired by the board manufacturer. Connections between all switchgear and the busbars shall consist of heavy duty coloured PVC insulted stranded annealed copper conductors of cross section and current rating not less than that of the switchgear connected, complete with crimping lugs bolted in position, or with solid high-conductivity copper bars of ample cross-section insulted as described in Clause B3.11.

The colours to be used in all instances shall be Red, White and Blue for phase connections and Black for neutral connections.

The wiring of control and instrument circuits shall be carried out in heavy duty PVC insulated 2,5 mm² stranded annealed copper wire or 1,0 mm² multistrand (29/0,21) flexible wire. These circuits shall be marked with numbered ferrules, to facilitate circuit identification.

Looping of wiring connections between switchgear phase or neutral terminals is not permitted. All connections and jumpers must be run individually from the appropriate busbars, or neutral bars or neutral terminal blocks.

In small boards all connections and wiring shall be neatly laced and arranged to run horizontally and vertically and shall be supported and fixed at suitable intervals. In the larger boards PVC wiring channel with removable covers shall be used.

The wiring at feeder terminals, eg. MCB shall be long enough to allow for current measurement by means of a clamp-on type ammeter.

.13 Provisions for Wiring and Cable Terminations:

(a) Wiring Terminals: Where wiring terminals are specified, they shall be of nylon or similar durable plastic material, mounted on metal rail and amply rated for the duty. Provisions shall be incorporated for the insertion of suitable labels on the terminals.

(b) Gland Plates: The glands of armoured cables shall be terminated onto the metal housing or framework of the boards or on substantial mild steel gland plates which shall be noted to the board framework and positioned to facilitate the termination of the cables. These plates shall be provided in removable sections of manageable lengths where a number of cable terminations are involved. Gland plates shall be electrically continuous and bonded to the framework or earth conductor.

(d) Proper Provisions for Specified Cable Terminals: The board manufacturers shall ensure that full and proper provisions are made at switchgear terminals, busbars, etc., for the reception of the type of cable and connection specified.

.14 Lightning or Surge Arrestors: All main boards shall be provided with lightning arrestors or surge diverters of approved manufacture and bearing the SANS mark, one for each phase of the incoming supply. The

lightning arrestors shall be mounted inside the main board case in an approved manner. The supply side connections shall be made to the main phase busbars, and earth side connections to earth terminal of main board case.

.15 Current Transformers: Polarity must be strictly observed. CT must be installed on the load side of feeder switches or circuit breakers. For labelling of CT ratios refer also to B3.18 (d).

Phase colour coding must be provided and strictly observes for all wiring to CT's.

Numbered ferrules, or other suitable identification at both ends of wiring connections to CT's and instruments shall be provided.

At commissioning all CT's and meters operated therefrom shall be tested, phase by phase, ie. each phase tested individually to neutral, by means of dummy loads or secondary injection of test currents.

.16 Spare Fuse Cartridges: Whenever HRC or other cartridge fuses are specified, the board shall be fitted with a compartment or other approved facilities for housing one third of all fuse cartridges specified, with a minimum of one set (ie. 3 phases) of fuses of each size specified, and all such spare fuses shall be provided inside the compartment on handing over. The compartment shall be clearly labelled:

"SPARE FUSE CARTRIDGES - REPLACE USED-UP FUSES"

.17 Phase Distribution and Balancing of Load: In multi-phase boards, all single phase sub-circuits shall be wired evenly balanced in respect of electrical loading over the three phases. Each class of sub-circuit, eg. lighting, switched socket, heaters, etc., shall be individually distributed over the phases. Final balancing of the load shall be carried out by the Sub-Contractor after completion of the board installation and wiring of sub-circuits on site.

.18 Labelling: All boards shall be fully labelled as regards the following:

(a) Name or designation of the board, eg. "Sub-Main Board 1", "Dis Ed 1 F", etc.
(b) Source of supply and size of feeder, eg. "Fed from SMB.1 with 2 x 6 mm² in 25 mm conduit", or "Fed from Main Board with 95 mm² x 4 core cable".
(c) Each item of switchgear shall be labelled as regards the board or circuit which it feeds, and the location of such board or circuit fed, eg. "db MA - Supermarket", or "Lights : West Wing". In the case of SP MCB's feeding sub-circuits, a suitable legend with numerical cross reference will be acceptable.
(d) CT operated instruments or meters shall be clearly labelled with the CT ratio and multiplying factor on each instrument or meter, eg.

CT Ratio 150/5
Reading x 30

The Current Transformers themselves shall be clearly labelled or installed in such a manner that their CT ratio indication and polarity markings on any nameplate are clearly visible.

(e) All MCB's and ACBs shall have the current ratings of their trip settings clearly marked either on the handle or on the panel adjacent to the handle.

Labels shall be of sandwich type or other approved plastic board, fixed level to the front panel and neatly by means of blunt ended screws or rivets, or by gluing into metal label holders. Lettering shall be not less than 5 mm in height, and labels shall be mounted centrally below items of switchgear, and generally in approved positions.

Where it is not feasible to label each separate item, MCB's, fuses and light switches shall be numbered and a legend typewritten on stiff paper or cardboard provided in a cardholder frame under optically clear plastic, such frame being fixed t the door of the board, or on panel where there is no door.

.19 Cable and Wiring Trunking: Where specified, folded sheet metal trunking with rebated surrounds and removable front covers shall be supplied and installed to enclose cables and wiring entering boards. Exact sizes and locations of such trunking must be established by accurate measurement on site. Trunking shall be suitably fitted to the board and securely fixed and bonded thereto. The finished trunking shall be made to match the board.

.20 Drawings: As soon as reasonable after commencement of the Sub-Contract dimensioned drawings of the proposed layout and construction of all boards specified shall be obtained by the Sub-Contractor from his board manufacturer for approval by the Sub-Contractor and the supply authority where required. In addition copies of such drawings shall be sent in duplicate to the Engineer for comment. The Sub-Contractor shall check all details and sizes in respect of location and accessibility and shall ensure compliance with the Specification. Comments made and/or approval by the Engineer of drawings and layouts shall not relieve the Sub-Contractor from any obligations in terms of the Specification.

The Sub-Contractor shall also submit to the Engineer for the comment the proposed dimensioned layout of the LV chamber showing the position of the Main Board and Main LV switchgear.

.21 Inspection of Boards: The Engineer will at his option inspect boards either during manufacture or on completion at works and/or on site.

.22 Testing of Boards: All boards shall be fully tested by the manufacturer prior to delivery.

The Engineer shall be given three days prior notice of such tests and will witness the tests at his discretion.

A4. TRIP TESTING

All circuit breakers with adjustable trips shall be trip-tested by

OF BREAKERS

the Subcontractor or his supplier on his behalf, in accordance with the procedure specified for main breakers in Clause B2.5(b) and (c).

A5. INSTALLATION OF BOARDS

.1 Available Spaces and Access: The Sub-Contractor shall check on plans on site that sufficient space and access is available for the mounting of boards as specified. No extra will be allowed arising from failure by the Sub-Contractor to check these details.

.2 Mounting Heights: Unless otherwise specified, boards shall be mounted so that the top of architrave line up with the top of door frames. Where no such reference line exists, tip of boards shall generally be at a height of 2000 mm. The maximum height of any switchgear handle, meter or instrument face shall be limited to 2000 mm.

.3 Flush Board Trays Cast in Concrete Walls: These shall be suitably braced and reinforced to avoid buckling.

.4 Completion: Prior to handing over all boards shall be thoroughly cleaned inside and outside, all rubbish and dust blown out and removed from the board and equipment, and finished surfaces shall be made good where necessary, using the identical paint finishes from the same batch as at time of manufacture.

.5 Tightening of Busbars: After installation of boards (and before tapping), all busbar joints, switchgear and cable terminals shall be checked for tightness.

.6 Connections to Boards Supplied by Others: Unless otherwise specified such boards will be supplied, placed in position and mounted by others. Where specified, the Sub-Contractor shall allow for bringing a supply cable to such boards or connecting outgoing circuits therefrom as specified.

In such instances the Sub-Contractor shall ascertain points of entry or of connection of any cables, and/or inform the suppliers of such boards of any positions of cables, etc., and shall generally co-ordinate and co-operate with such suppliers to ensure the proper positioning of points of connection.

The Sub-Contractor shall allow for connecting up with mains sizes and such outgoing circuits as are specified, and for making off such mains and circuits and connecting into isolators or outgoing feeder switchgear or terminals as applicable. The Sub-Contractor shall take care to check phase rotation. Before switching on or handing over, the Sub-Contractor shall obtain clearance from the supplier of such other boards.

A6. BUSBAR TRUNKING:

.1 General: Busbars shall be designed and manufactured in compliance with SANS 784 and SANS 1195. Busbar trunking shall be supplied by one manufacturer only and shall be supplied complete with all accessories, integral fire barriers, expansion joints, bends, etc. to allow for installation along the routes indicated on the drawings.

.2 Construction: The busbar trunking shall be splash-proof, vermin proof and adequately ventilated. The busbars shall be copper conductors continuously insulated over their entire length. It shall be possible to

remove any one length of trunking in the run, without disturbing adjacent lengths.

Sections of the busbar trunking which pass through walls and floors shall have separate covers.

.3 Operating Voltage: This will be for a nominal 415/230 V, 3-phase, 4-wire, 50 Hz supply system.

.4 Temperature Rating: The maximum allowable temperature of busbars (including) joints carrying full load current in an ambient temperature as specified shall not exceed 80°C . Unless different ambient temperatures are specified, an ambient temperature of 35°C shall be assumed with a maximum temperature increase of 45°C.

.5 Short Circuit Rating: The busbar trunkings shall have a short circuit rating of 100 kA rms asymmetrical.

.6 Neutral Conductors: The neutral conductors may be reduced to half the cross-sectional area of each phase conductor.

.7 Earth Conductor: Each run of busbar trunking shall be fitted over its entire length with an earth conductor in accordance with SANS 10142 Code of Practice for the Wiring of Premises. This earth `conductor shall be connected at either end to the corresponding earth bar on the distribution board.

.8 Expansion Joints: Each run of busbar trunking shall have suitable provision to allow for expansion and contraction of the busbars. Where the busbar trunkings are connected directed to the transformer terminals, this shall be done by means of flexible connectors provided by the suppliers of the busbar trunking.

.9 Take-Off Points: Fixed (bolted) take-off units of the type and current rating as specified in the detail specification shall be provided by the suppliers of the busbar trunking.

.10 Paint Finish: The paint finish shall comply with Clause B3.10 of the specification. Colour of finish shall be electrical orange.

.11 Installation: The busbar trunkings shall be installed by the suppliers thereof, on behalf of the Electrical Contractor. The Electrical Contractor shall however be responsible for this installation, including final testing and commissioning.

The runs of busbar trunking shall be carefully co-ordinated by the Electrical Sub-Contractor to avoid clashes between adjacent runs and with other services.

.12 Connections to Boards: Where the busbar trunking is connected directly to a switchboard, the Sub-Contractor, or the suppliers of the busbar trunking on his behalf, shall liaise with the board manufacture concerned, to ensure that the correct provisions are made in the board for the termination of the busbar trunking connection.

.13 Cleaning: Before handing over, the outside of the busbar trunkings shall be thoroughly cleaned of all rubbish and dirt. The finished surface shall be made good where necessary, using the identical paint finishes from the same batch as at the time of manufacture.

.14 Final Measurements: The Sub-Contractor or the manufacturers on his behalf shall take final measurements on site as soon as possible during construction of the building, to enable the manufacturers to prepare working drawings for submission for comment, prior to manufacture. The working drawings shall show in detail the construction and method of installation of the busbar trunking.

Comments made and/or approval by the Engineer of drawings and layouts shall not relieve the Sub-Contractor from any obligations in terms of the specification.

.15 Protection During Construction: The Sub-Contractor shall at all times protect the busbar trunking against the ingress of water or any other damage during the construction of the building.

A7. CABLE:

.1 PVCA Copper Cable: Paper insulated cable shall be to SANS 150 and addenda thereto and shall consist of PVC insulted copper conductors, PVC bedding, galvanised steel wire armouring and a PVC sheath.

.2 PVCA Cable Terminations: These shall be of an approved make, bearing the SANS mark and shall be of the type recommended by the manufacturers of the cable. Neoprene shrouds shall be used in all instances to cover the junction of the cable and the base of the glands. Where waterproof terminations are required, as eg. underground, outdoors, and in damp ambient conditions, inner seals shall be used in the cable glands to provide effective internal water-proofing of the cable bedding in addition to the external neoprene shroud specified above.

.3 PVCA Aluminium Cable: Where aluminium cable is specified the core conductors shall be of solid aluminium, PVCA insulated, steel wire or aluminium strip armoured, PVC bedded and sheathed, of 660 volt (minimum) grade. The aluminium conductors shall comply with BS 6369. The whole of the cable shall be manufactured in accordance with BS 4346 (as amended).

.4 PVCA Aluminium Cable Terminations: These shall be generally as specified in Clause B7.4 above, and shall in addition comply with the following. The termination procedure, tools and materials to be used must be as recommended or specified by the cable manufacturer or supplier.

Cores shall be made off with aluminium compression cable lugs manufactured from electrical purity grade aluminium, plated overall with a suitable material which will require no prepreparation other than cleaning and which eliminates the danger of galvanic action. Such compression lugs shall be used whether cores are to be made off to copper or aluminium busbar or connections.
Shaped lugs of the appropriate size shall be used in conjunction with shaped cable cores.

.5 Earth Continuity for PVCA Glands: The armouring of the cable shall be terminated in the cable gland and clamped thereto in a manner to provide good earth continuity. All surfaces of gland plates or sheet metal casing or boards, etc., shall be thoroughly cleaned and all nuts securely tightened to ensure good electrical contract.

All terminations shall be tested by the Sub-Contractor for earth continuity after completion. Where the Supply Authority permits the use of the armouring in the cable as earth continuity conductor, the cable gland shall in addition be fitted with an earth tag ring which shall be bonded to the earth bar or earth terminal by means of a copper jumper of adequate current rating.

.6 MICC Cable: Where specified, Mineral Insulated Copper Covered (MICC) cable shall be in accordance with BS 6207, and shall be terminated with the appropriate glands and accessories which must be of the type recommended by the manufacturer or supplier of the cable.

.7 MICC Cable Terminations: The termination procedure, tools and materials to be used must be as recommended or supplied by the cable manufacturer or supplier.

Every cut length of MICC cable shall be dried out before use until a 500 V megger reading of not less than 1 Megohm for insulation resistance is obtained. Cable tails shall be served with maker's neoprene sleeving and further covered with phase coloured sleeving tape.

When slack is required, as eg. for connection for a motor or similar equipment, a 360°C loop of not less than 140mm shall be formed in the cable immediately prior to the gland. All seals of cable glands shall be tested not less than 24 hours after completion with a 500 V megger insulation tester.

A8. INSTALLATION OF CABLES

.1 Surface: Where cables are specified to be run along horizontal or vertical building surfaces, structural steel members, in vertical ducts, etc., they shall be secured with approved saddles in accordance with SANS 10142 Code of Practice for the Wiring of Premises. All cable runs shall be plumbed and levelled, or run parallel to building or structural members, and shall at all times present a neat appearance.

Multiple runs of parallel cables shall be spaced apart with a clearance of not less than the diameter of the largest cable in the group. This applies equally when cables are run on cable tray.

Where single core cables are specified to be run "in trefoil" this shall mean that each group of three single core phase conductors shall comprise a "red", "yellow" and "blue" conductor placed in triangular formation. Clamps or straps used to secure groups run in trefoil shall be of non-ferrous material.

Cables to free standing equipment shall be supported by means of suitable galvanised channel or painted angle iron securely fixed to floor and/or roof. Supports, saddles, brackets etc. shall not be fixed to any plant, ducts, bases, etc., neither shall any holes be drilled through them.

.2 Cable Tray: Where cable tray is specified, this shall comprise approved galvanised sheetmetal tray, slotted or perforated to provide maximum ventilation through the tray surface and supported with approved substantial painted or galvanised brackets or hangers, at suitable intervals to reduce sag to a maximum of 10 mm. Where necessary to achieve this end, the run of cable tray shall be reinforced along its length with angle iron or similar stiffening members.

Cables run on cable tray shall be laid on top (not underside) of the tray and secured by means of saddles or approved straps, to present a neat appearance. The brackets or hangers must be so constructed as to permit the easy removal of any cable from the cable tray. The tray shall always be of such width as to permit the addition of one extra cable equal to that within the largest diameter of the group. Cable tray suspended from slabs shall be at a depth of not less than 200 mm from soffit of slab to bottom of tray, and cable tray crossing a beam shall be spaced with a minimum clearance between the soffit of beam to top of largest cable to enable it to be removed. However, where there is any doubt about height restrictions or other considerations affecting the position of cable tray this matter must be referred to the Engineer.

Alternatively galvanised "cable ladder" with 75 mm high sides and rungs 250mm apart constructed out of 2 mm sheetmetal may be used.

.3 Underground: Trenches shall be excavated to a minimum depth of 600 mm below final ground level for LV cables and 900 mm for HV cables. After excavation the bottom of the trench shall be covered to an average depth of 50 mm with dry sifted soil. The cable shall then be bedded in this soil and covered with a further layer of 50 mm deep of dry sifted soil.

Cables shall be spaced as far apart as the width of the trench with permit, but never less than 150 mm clear between cables. Trenching, backfilling and making good of the surface shall be carried out by the Sub-Contractor.

Backfilled soil shall be rammed and well compacted to ensure that no subsidence occurs.

The Engineer shall be notified so that cables may be inspected before trenches are backfilled.

.4 Joints: Every run of cable shall be continuous without joints. However, where the length of cable exceeds a standard drum length, or where existing lengths have to be extended, an approved through-joint will be permitted. Where such joints occur underground, or in outdoor or damp situations, these shall in addition be watertight.

5 Cable Routes: Cable shall follow the routes indicated on drawings and may only be varied with the approval of the Engineer. Where any doubts exist the matter shall be referred to the Engineer.

.6 Cable Markers: These shall be provided on all underground cable routes. Such markers shall be provided at each point of entry to any building, at either side of any road crossing, at any change of direction of the cable, and at intervals not exceeding 25 m along any straight runs. Cable markers consisting of 75 to 100 mm diameter rain water pipe, galvanised sheet metal, or plastic, shall be provided from a point about 150 mm above

the cable level to clear of finished ground level. These shall be filled with sand and topped off with 100 mm of strong cement mix inscribed with number, size and destinations of cables. In hard finished surfaces these markers shall be flush with the finished surface, and elsewhere 50 mm above ground.

.7 Cable Sleeves: Sleeves shall be provided wherever specified or indicated on drawings, and also for all cables entering or leaving any building, crossing a road or other services. Such sleeves shall be supplied and installed by the Sub-Contractor unless otherwise specified or indicated on drawings. In all cases the Sub-Contractor shall ensure that all sleeves are installed in good time, in correct positions, and in the proper manner.

Sleeves through outside walls shall slope downwards to the outside.

After installation of the cables, the Sub-Contractor shall seal the sleeves entering the building from outside areas to prevent ingress of water and moisture. The seals are to removable to allow future installation of new cables or replacement of existing cables.

Where no details are given, the sleeves shall be of generous size and made of substantial material, which may be metal, ceramic, concrete, heavy duty plastic, etc., capable of withstanding any stresses to which they may be subjected, as eg. road compacting. Care shall be taken to ensure the easy passage of cable through the sleeves by providing large radius bends where necessary.

A9. THREE-PHASE 4-WIRE MAINS SYSTEM:

.1 General Procedure: Where three separate single phase distribution boards are specified to be fed by means of 3-phase 4-wire mains, the 3-phase and neutral conductors shall be taken into the first of the boards where one of the phase conductors shall be terminated together with a tapping off the neutral to feed that board. The remaining two phase conductors and the unbroken neutral conductor shall be run to the next destruction board which shall in turn be fed by the second phase, and a tapping off the neutral. The remaining phase and neutral conductors shall then be run to feed the third board. A similar procedure shall be adopted where two single phase distribution boards are fed with two phase and neutral (ie. 3-wire) conductors. This method of mains wiring is usually employed for boards located vertically above one another on consecutive floors, as eg. for flats, but can, where specified, be applied to boards on the same floor.

.2 Neutral Tappings: The neutral conductor, which is to be the same size as the phase conductor, shall not be broken. Neutral tappings shall be made either with screwed clamps such as linetaps, or with a sweated or crimped T-joint. The tapping joint shall be double taped.

.3 Mains Passing Through: The mains passing through a distribution board and not feeding it shall be confined to one side, separately laced.

.4 Earth Wire: The earth wire shall be as specified in the Detail Specification, one wire only being required for a set of 3-phase 4-wire mains looped from board to board, and bonded at each distribution board.

.5 Other Application of System: The 3-phase 4-wire system of distribution as 4-WIRE MAINS described above shall also be used where specified to feed individual single phase outlets or circuits.

A10. CONDUIT:

.1 Steel Conduits: If not otherwise specified in the Detail Specification, all conduit tubing shall be heavy gauge steel welded or solid drawn to SANS specifications. All joints shall be screwed. Only steel couplings shall be used. No conduit less than 20 mm diameter shall be used. Conduit fittings and boxes shall be of malleable iron.

.2 Conduit Finishes: Unless otherwise specified, all conduit and malleable iron conduit fittings shall be finished in black enamel, except in the following situations where hot dipped galvanised conduit and conduit fittings shall be used.

(a) Where required by the Local Authorities;
(b) Where installed in positions exposed to the atmosphere, or in moist surroundings.

Where galvanised conduit is used, cut and threaded surfaces shall be suitably treated to render them rust and weather-proof.

.3 PVC Conduit: Where specified in the Detail Specification and in areas where allowed by the Local Authorities PVC tubing may be used. Such tubing and accessories shall comply with the latest edition of SANS 950.

A11. CONDUIT INSTALLATION:

.1 General: Conduit shall butt firmly together at joints and hard against the shoulders of conduit box spouts and other Conduit fittings. The ends of cut lengths shall be bevelled internally and all burrs removed with a burring reamer.

.2 Terminations: All steel conduit shall be securely bonded to terminating equipment, ensuring complete electrical and mechanical continuity throughout, and every conduit run shall be bonded to earth. Conduit shall either be screwed to, or locknutted on both sides and bushed on the inside of the box or appliance in which it is terminated. Only solid brass bushes shall be used.
Alternatively, and particularly in distribution boards, conduits may be terminated with couplings and brass male bushes. Back entry boxes shall be used wherever necessary, as eg. in hollow tiles, slabs or soffits of beams, etc.

.3 Flush Conduit Installation: Unless otherwise specified, all conduit shall be installed flush, concealed in concrete slab columns, walls, partitions, etc, of the building.

Where false ceilings are provided under concrete slabs, conduits feeding outlets in the ceiling shall be run on surface in the ceiling space.

.4 Chasing: Unless otherwise specified the Sub-Contractor shall do all the necessary chasing of brick and similar partition materials, the outer face of conduit being not less than 12mm back from the finished plastered surfaces. All chasing of walls shall be done by means of powered chasing

machines. No chasing of concrete or finished surfaces, including face bricks, shall be done except with the written permission of the Architect. Where not such permission has been obtained, the Sub-Contractor will be held fully responsible for any damage to structure or finished surfaces resulting from chasing.

The Principal Contractor will make good to all plaster and brickwork in the course of normal chasing and cutting. However, any additional plaster work or making good which has to be carried out due to the Sub-Contractor's incorrect, inefficient, or late installation of conduits, switchboxes, plug boxes, or other equipment, will be carried out at the Sub-Contractor's expense.

.5 Building in of Conduit: Where specified in the Detail Specification that conduit will be built in by the Principal Contractor, the Sub-Contractor shall ensure that all such conduits and associated terminations and boxes are accurately aligned and plumbed at the time of building in.

Under no circumstances shall the Sub-Contractor delay other trades by failing to provide the necessary extensions and boxes in their correct positions in good time.

.6 Conduit in Concrete: Conduit installed within concrete slabs, beams, columns or walls shall be firmly fixed in position before the concrete is cast. Where conduit runs occur in groups or large concentrations, as eg. near distribution boards, draw boxes or in similar situations, they shall be fixed with clearance between adjacent conduits of not less than one conduit diameter to permit of adequate penetration of concrete.

Furthermore, where conduits occur in large concentrations or where large conduits occur the Sub-Contractor shall obtain the approval of the Architect or Structural Engineer for the positioning of such conduits. No extra costs will be allowed as a result of the necessity to alter conduit runs to comply with Structural Engineer's requirements. Steel conduit may only be installed in surface beds provided the conduits are clear of contact with ground and are completely encased in concrete.

Steel conduits may not be run in breeze or ash. Where this is unavoidable such conduit shall be encased in mass concrete to ensure no contact with the breeze or ash.

.7 Surface Conduit: Conduit installed on surface or in accessible roof space shall be run neatly parallel to vertical and horizontal building lines. Runs comprising more than one conduit in parallel shall be spread regularly apart, individually fixed using multi-saddle bars.

.8 Crossing of Expansion Joints: No conduit is to cross an expansion joint in the structure without an approved arrangement for crossover. Where details of crossover are not given in the Detail Specification the Sub-Contractor shall refer to the Engineer for instructions.

.9 Conduits for Future Requirements: This shall be terminated with boxes and overlapping Coverplates, and fitted with galvanised steel draw wires. Where such conduit terminations project from the wall or slab, they shall be fitted with couplings and plugs. Such terminations in exposes positions shall be sealed with bitumen and protected with weather-proof paint.

.10 Inspection of Conduit: The inspection of conduit by the Engineer shall not relieve the Sub-Contractor from any of his obligations in terms of the Sub-Contract from any of his obligations in the event of any errors or omissions in the Sub-Contractor's work.

.11 PVC Conduit Installations: When PVC conduit and accessories are specified, it shall be installed in accordance with the latest issue of SANS 950 and to the requirements of the Local Supply Authorities.

A12. CONDUIT BOXES: .1 Boxes in Concrete: These shall be secured to the shuttering or reinforcing in any approved manner.

.2 Drawboxes and Unwired Empty Boxes: All such boxes shall be fitted with oversized metal coverplates before surrounding surfaces are painted. Similar boxes in surface conduit installations shall be fitted with standard coverplates.

.3 Drawbox Positions: Drawbox positions must be approved and care shall be taken that they do not affect the appearance of the building adversely. Where possible, a single coverplate shall be fitted for a number of adjacent drawboxes.

A13. POWERSKIRTING: .1 General: Where specified, powerskirting shall consist of sheetmetal wiring trunking, mounted at skirting level, unless otherwise specified, with three wiring channels for power, intercom and G.P.O. telephone cables, and having facilities for flush mounted switched sockets in the power wiring channel.

Powerskirting shall be acceptable to the Electricity Supply and Postal Authorities.

.2 Constructions: The Powerskirting shall be manufactured out of 0,9 mm minimum sheet steel, approximately 160 mm high x 50 mm deep in 2500 lengths. The skirting shall have fixed partitions to divide it into separate channels. Two covers shall be provided, one for power compartment and one common cover for both telephone compartments.

Coupling pieces shall be provided to facilitate mounting as a continuous skirting.

No provisions for telephone outlets or telephone sockets shall be made unless specifically called for. Where the skirting is mounted in a situation having provision for modular sub-divisions, it shall be provided with separate covers, at each module, of length as specified. These covers shall span all channels and shall be mounted centrally on the module line. After initial installation these covers will generally be permanent and will therefore be termed "fixed: covers elsewhere in the Specification. The space between fixed covers shall be fitted with removable covers which shall be pre fitted accurately by the manufacturer. The provision for

switched sockets shall be made in the center of each removable cover of the power channel.

Ends of power skirting shall be terminated with factory made end pieces. All internal and external corners or offsets shall be factory-made and shall be made to fit neatly and accurately to the Engineer's approval.

.3 Painting: The power skirting shall be finished in baked enamel of a colour as specified. The quality of paintwork shall be as specified for distribution boards, sub clause B3.10.

.4 Switched Sockets in Power skirting:

(a) Type and Supply: The switched socket used in power skirting shall be 16A 3-pin 100mm x 50mm nominal size, of approved manufacture, with white plastic finish. All switched sockets shall be supplied and installed by the Sub-Contractor.

(b) Provision in Channel and Cover: Provisions for switched sockets which are mounted in the power channel of the skirting shall be by means of suitable brackets which secure the switched socket to the basic channel, free from the cover.

The covers shall be pre-punched for the face of the switched socket at 1250mm intervals for plain skirting, and at the centre of each module for modular covers.

The removable cover shall in addition be screwed to the cradle of the switched socket, acting as the cover plate. No separate cover plates shall be used. All pre-punched covers shall be delivered to site complete with blanks. Blanking off shall be done in an approved manner, flush and neat in appearance and finished in same colour as power skirting.
The fixing screws for blanks shall be painted the same colour as skirting.

These blanks are only to be removed by the Sub-Contractor where a switched socket is required to be installed.

Brackets shall be fitted in the power channel by the Sub-Contractor at every socket outlet provision, regardless of whether a switched socket is installed.

.5 Packing: The power skirting channels, covers and components shall be individually wrapped and protected against damage during transport and while awaiting installation up to completion and handing over.

.6 Installation: All power skirting shall be installed as per manufacturer's instructions. The power skirting shall be installed with the power compartment, ie. the one with a separate cover uppermost. The base of the channel of the power skirting shall be fixed to the wall surface in an approved manner having regard to the nature of the fixing surface.

Where power skirting is required to be fixed to metal brackets or sections, bolts and nuts shall be used, or alternatively, fixing surfaces shall be drilled and tapped and the power skirting bolted thereto. The power skirting shall

generally be installed after the floor screeding has been completed but before the floor tiles or other floor finishes have been laid.

.7 Tubing and Wiring to Power skirting: Conduit carrying electrical wiring shall be as indicated on drawings, run in the floor, and set up behind the skirting, terminating in a flush conduit box and fixed to the electrical compartment of the skirting. The wiring shall be fed through a hole drilled or punched in the skirting. Under no circumstances shall wiring be passes over sharp edges.

Tubing for telephone provisions shall either be terminated with a box behind the telephone compartment, or it shall be set up at an angle out of the floor under the telephone compartment or alternatively, shall terminate in a 100mm x 50mm switchbox at floor level facing upwards under the skirting. The Sub-Contractor shall drill or punch holes for passing of the telephone cables.

Where conduit feeding power skirting is specified to be in a ceiling space below the power skirting, holes in the floor to pass the conduit will generally be provided by the Principal Contractor, but the Sub-Contractor shall ensure that these holes are provided in the correct positions and are adequately sized. Telephone conduits shall be terminated directly in the base of the telephone compartment, and power conduit shall be terminated as specified above.

Where spare conduits are specified, these are to be left empty and fitted with draw wire. Wiring in power skirting shall be laced together neatly in groups and care taken to ensure that loose conductors do not obstruct the fitting of front covers.

Where a run of Power skirting is interrupted by doorways, etc., suitable conduit jumpers shall be installed to bridge the break in the power skirting run. Minimum sizes for bridging conduits shall be
32mm for each of telephone and power channels unless otherwise specified.

.8 Earthing: The sections of power skirting base channel shall be screwed or bolted together to provide earth continuity. In addition, one green insulated copper earth wire of cross section complying with the SANS 10142 Code of Practice for the Wiring of Premises but not less than 2,5mm² shall be run along the entire length of the power skirting, and each separate base section of channel shall be bonded thereto.

The earth terminal of each switched socket or other electrical appliance or equipment fed from the power skirting shall be earthed by means of a copper jumper crimped or soldered to the unbroken earth conductor. Other approved means of earthing connections may be used provided they are also acceptable to the Supply Authority. The main earth wire in the power skirting shall be connected to the earth terminal of each distribution board feeding the power skirting.

.9 Completion: Prior to handing over all power skirting shall be
thoroughly cleaned inside and outside, all rubbish and dust blown out and removed from the power skirting and equipment, and finished surfaces

shall be made good where necessary, using the identical paint finishes from the same batch as at time of manufacture.

A14. FLOOR CHANNEL: .1 Description of Floor Channel: Unless otherwise specified in the Detail Specification, floor channels shall comprise the following:

(a) A three-compartment channel of nominal 200 x 32mm dimensions, normally with the center compartment for electrical and the outer compartments for G.P.O. and intercom wiring. Unless otherwise specified each of the compartments shall be provided with openings at 1,5m intervals to facilitate the installation of pedestal units as described below. The openings shall have 55 x 70mm removable flush cover plates, glued on with soft setting glue.

(b) Flush crossover, T-junction and right-angle bend junction boxes, complete with fixed internal barriers and removable "bridge" pieces to facilitate crossover of the services. Each junction box shall have a nominal 300 x 300mm removable flush cover plate (secured with 4 screws) to provide access to the boxes.

(c) The floor pedestal unit shall consist of two or three compartment diecast aluminium units as specified in the Detail Specification. The units shall have internal barriers and separately removable cover plates for telephone, electrical and intercom compartments.

All pedestal units shall be supplied complete with a standard 16A 3-pin switched socket outlet and a blank cover plate fitted to the telephone and intercom compartments.

The pedestal unit shall be secured to the top of the floor channel with screws (supplied with the pedestals) through ready tapped holes in the channel. A gasket (supplied with the pedestal unit) between the pedestal and the floor channel shall provide a waterproof junction.

.2 Supply and Installation of Floor Channel and Junction Boxes:
The Sub-Contractor shall supply and install the floor channel and junction boxes in the positions as shown on the relevant drawings.

The channel and junction boxes are to be installed on the floor slab by the Electrical Sub-Contractor before screeding takes place. The Electrical Sub-Contractor shall liaise with the Principal Contractor to ensure that the channel is installed to the correct level. The Plasterer will assist the Sub-Contractor while installing the channel by laying a soft layer of mortar for bedding of the channel.

It may be assumed that the screed is thick enough to accommodate the depth of the junction box without chasing of the concrete floor.

.3 Switched Socket Pedestals: The Sub-Contractor shall allow for the supply and installation of pedestal units as indicated on the drawings, and as specified in the Detail Specification.

The layout shown on the drawings shall be used for tender purposes only. Confirm final positions and quantities prior to installation.

Unless otherwise specified in the Detail Specification the flooring contractor will cut the necessary holes in floor finishes for junction boxes and pedestal outlets. The Electrical Sub-Contractor shall however, indicate to the flooring contractor where holes are to be cut.

.4 Wiring: Circuit wiring to the switched sockets shall only be drawn into the electrical, ie. the centre, compartment of the channel. Under no circumstances shall wiring joints be made in the channel other than at junction boxes and inside pedestals.

N.B. It is essential that the Sub-Contractor adhere strictly to the rotation of telephone, electrical and intercom compartments.

When wiring the channel, the Sub-Contractor shall make wiring provisions for the installation of a switched socket pedestal at every 1,5m module (unless otherwise specified), irrespective of whether a switch socket pedestal is specified or not.

In order to make these provisions the covers over the channel openings (electrical compartment only) shall be removed while wiring and a loop of sufficient length to connect directly onto the terminals of the switch socket shall be left in the wiring and pushed back into the channel. The covers shall then be glued back over the openings in the channel.
The foregoing provisions are only required in the area covered by the particular switch socket circuit.

.5 Earth wires: The Sub-Contractor shall install an earth wire complying with the SANS 10142 Code of Practice for the Wiring of Premises but not less than 2,5mm² with each run of electrical floor channel. The earth wires shall be bonded to the junction boxes through which they pass. The switched socket outlets in the pedestal units shall be earthed through a short jumper of insulated earth wire crimped to the main earth wire in the channel.

These earth tails shall be provided at every 1,5m module (unless otherwise specified) to permit the later date. Under no circumstances shall the channel earth wires be cut anywhere along the length of the channel.

Where B.C. earth wire is not permitted by the Supply Authorities, green PVC insulated earth wire shall be used in the channel.

.6 Draw wire: The Sub-Contractor shall install galvanized draw wires for the entire length of the G.P.O. and intercom compartments of the channel. These draw wires shall be broken at the junction boxes and shall have enough slack left in the junction boxes to facilitate the easy drawing in of telephone cables by the G.P.O., or for light current services by others.

A15. WIRING CHANNELS:

.1 General: Unless otherwise specified all wiring channel (trunking) shall be supplied and installed by the Sub-Contractor. The type of channel shall be as specified.

.2 Constructions: Wiring channel shall be made of folded or cold-rolled sheet metal and shall generally be supplied in sections approximately 2500 mm long with suitable coupling pieces and with either screw-on or snap-in or

press-on steel covers as specified. Unless otherwise specified, sheet metal channels and covers shall be finished either in one coat of primer or galvanized when installed in industrial situation or inside a ceiling space concealed from view. Any part of channel or channel covers of sheet metal installed in shops, offices or showrooms which is exposed to view shall be finished in white baked enamel.

Unless otherwise specified, channel suspended clear of ceiling or roof shall be mounted with the open side facing upwards. Where channel is specified to be mounted with the open side facing downwards, suitable stirrups, brackets, clips or other means shall be provided at not less than 1000 mm intervals to support wiring. End caps shall be fitted at the ends of channel runs. Channels and covers finished in baked enamel, or of plastic material shall be separately wrapped and packed to ensure protection against damage during transport and while awaiting installation up to completion.

Snap-in covers for concealed channels shall be supplied in approximately 500 mm lengths. Snap-in covers for exposed channel shall be in approximately 2500 mm lengths where feasible.

Ends of covers abutting partitions, light fittings or other covers, shall be accurately cut to fit square and neatly. Covers shall not be installed prematurely.

Where the channel is mounted flush with plastered surface or recessed into concrete slab, the covers shall overlap the open face of the channel to conceal rough edge of plaster.

Overlapping metal covers shall in addition be fitted with plastic edging on the long sides of the covers to take up minor irregularities in the plaster.

.3 Installation: Ceiling wiring channel shall either be mounted against the roof slab surface or suspended from slab or other structural ceiling or roof members, or mounted against a ceiling surface, as specified, having regard to the nature of the ceiling, slab, or roof construction.

Fixings shall be by no means of velocity bolts, rawl plugs, anchors, brackets, or hangers or other approved. Where the channel is exposed to view, care shall be taken that the runs of channel are straight, level, and neat in appearance. The positions of the channel runs must be confirmed before installation.

.4 Tubing and Wiring to Channels: Conduit connections to wiring channels shall either be terminated direct to channel using screwed or bushed entry or by means of a conduit box and through a hole in back of channel. Care shall be taken to avoid wiring passing over sharp edges. Wiring connection from channel to light fitting, switch drops or similar, shall be taken through solid tubing, flexible tubing, nipples, bushes or other incombustible approved lead-in tubes depending of the relative positions of channel and fitting, etc. Open wiring through ceiling material will not be permitted.

.5 Earth wire: A standard earth wire complying with the SANS 10142 Code of Practice for the Wiring of Premises but not less than 2,5mm² shall be

installed in each run of ceiling channel and wired back to the earth terminal of the distribution board. In addition each section of metallic channel shall be bonded to the earth wire. A jumper shall be taken from the earth wire in the channel to each light fitting, without breaking the main earth wire.

A16. WIRING

.1 Standards: Unless otherwise specified in the Detail Specification all wiring shall be carried out with PVC insulated single core copper conductors bearing the SANS mark, delivered on site with seals intact.

.2 Wiring in Conduit: All wiring in conduit shall be done by means of looping in. Joints shall only be made in accessible boxes. The number of wires per conduit shall be in accordance with the SANS 10142 Code of Practice for the Wiring or Premises. Unless specifically permitted, no more than one circuit shall be run in one circuit.

.3 Wiring Supports: Vertical runs of wiring exceeding 15 m shall be provided with suitable clamping supports at 15 m intervals to take up the weight of conductors and to relieve any strain on terminals.

.4 Open Wiring: Except where otherwise specified in the Detail Specification, no open wiring will be permitted.

.5 Colour: Colour insulated wiring shall be used for all multi-phase circuits to correspond strictly to the phase colours ie. red, white (or yellow), blue for phases and black for neutral. Single phase circuits however may be wired with red and black.

.6 Wire Sizes: Unless otherwise specified in the Detail Specification the following minimum stranded PVC insulated conductor sizes shall be used for various types of circuits:

Type of Circuit	Conductor Size
Lighting	2,5 mm²
Switched sockets: 16 A single phase	2,5 mm²
Space heaters up to 5 kW	4 mm²
Water heaters up to 4 kW	2,5 mm²
Stoves up to 12 kW single phase	10 mm²
Air conditioners: Single phase up to 15 A	4 mm²
Motors: Single phase up to 2,2 kW	2,5 mm²
Motors: 3-phase up to 4 kW	2,5 mm²
Signs: Up to 15 A standard under canopy	2,5 mm²
Clocks and bells (including low voltage)	2,5 mm²

A17. EARTHING AND BONDING:

.1 General: The installation and other services shall be effectively earthed and bonded in accordance with the SANS 10142 Code of Practice for the Wiring of Premises and to the requirements of the Supply Authority.

.2 Earth Continuity Conductors: Unless otherwise specified the Electrical Sub-Contractor shall provide copper earth continuity conductors with all

mains and circuits in accordance with SANS 10142 Code of Practice for the Wiring of Premises.

.3 Earth Plate or Main Earth: Where required by the Supply Authority the Sub-contractor shall provide and install an earth plate, earth electrodes or main earth to their approval.

A18. LIGHTING OUTLETS:

.1 Outlet Boxes: Unless otherwise specified all lighting outlets shall be terminated in standard round conduit boxes, to which the light fitting shall be screwed. Where necessary, as eg. where conduit is run in ceiling space, back entry boxes shall be used. At all times, the lighting outlet box shall be accessible for wiring. With the exception of small domestic type light fittings, PVC conduit boxes shall not be used to support light fittings.

.2 Outlets in Exposed Positions: Where weatherproof or watertight light fittings are used, the exposed conduit shall be galvanized and shall be taken directly into the fitting. Alternatively, a flush conduit box may be used to which a galvanized domelid and swan-necked galvanized conduit extension may be fitted, using a neoprene or other approved gasket to seal the box effectively against ingress of moisture.

.3 Outlets for Future Lights: Where wiring passes through outlet boxes for future light points, sufficient slack shall be left in the boxes to permit the cutting in and making of future connections.

A19. INSTALLATION OF LIGHT FITTINGS:

.1 Verification of Positions: The positions in which lighting fittings are mounted shall be verified on site, and fittings shall normally be mounted asymmetrically in relation to ceiling patterns and building lines. Should the arrangement of the ceiling or architectural features be such that the layout of fittings as shown on the drawings cannot be adhered to, or should it be found, that points would come in close proximity to beams, cover strips or other obstructions, then the matter shall be referred to the Engineer.

.2 Mounting Facilities for Fittings on Suspended Ceilings: The Electrical Sub-Contractor shall liaise with the Principal Contractor to ensure that adequate mounting facilities are provided in suitable positions by the Principal Contractor.

.3 Mounting of Fluorescent Fittings: Fluorescent fittings mounted direct to ceiling shall be secured by means of either conduit boxes cast into concrete, expansion bolts, "Velocity" studs with nuts, screws in wooden members where these are available, or metallic mineral or plastic plugs used with wood screws, or other approved method of fixing. Fixing of fittings to "hollow block" slabs shall be made by means of "butterfly" nuts and screws or other approved means.

Unless otherwise specified, channel type open lamp fluorescent fittings whose dimensions do not exceed 1200 mm in length and 150 mm in width and containing only one ballast may be mounted with one central fixing point, consisting of a conduit box cast into concrete or similar and approved. All other fluorescent fittings shall have a minimum of two fixing points near the ends, and where the overall width of fitting exceeds 300 mm the fittings shall be fixed with two pairs of fixing points.

Where fluorescent fittings are arranged in continuous rows they shall be coupled together by means of nipples or bushes and locknuts. Where fluorescent fittings are specified to be suspended on pendants the Sub-Contractor shall allow for providing a minimum of two pendants for all fittings of 1200 mm or longer, such pendants consisting of 20 mm diameter steel conduit of 3 specified length, finished in white baked enamel. The wiring of the fitting shall be taken through one of these pendants. The pendants shall be secured to the outlet box or fixing surface by means of domelids which must be of the swivel type where the length of pendants exceeds 600 mm. The domelids must be painted to match pendants.

A20. LIGHTING

.1 Rating: All switches shall be 16 A, 250 V grade, single pole, SWITCHES: unless otherwise specified, to SANS specification.

.2 Flush Switches: Where conduit is built in, or concealed lighting switches shall be fitted in standard flush pressed steel rustproofed boxes and provided with overlapping cover plates as specified elsewhere.

.3 Surface Mounted Switches: Where conduit or cable is surface run, or where specified, lighting switches of the surface mounted, metal clad type shall be used.

.4 Watertight Switches: These shall be used in any positions or situations exposed to the atmosphere, or in damp surroundings.

.5 Mounting Heights: Unless otherwise specified in the Detail Specification, or shown on drawings, all switches shall be mounted 1400 mm above floor, ie. from finished floor level to bottom of box, except in kitchens where they shall be mounted 1000 mm above floor.

.6 Non-Uniform Wall Finishes: Switches located on walls near a change of wall finish, eg. on tiled, face brick, or wood paneled dadoes, shall be arranged so that the Cover plates fall completely within one or other of the surfaces, but not on the junction line of the different finishes.

The Sub-Contractor shall collaborate with the Principal Contractor and other trades to ensure that switches on such surfaces present a neat appearance.

.7 Lighting Switches in Demountable Partitions or Mullions: Where these are specified, they shall be of the special narrow type, nominally 25 mm wide, and shall be mounted flush in vertical hollow mullions or similar hollow metal clad partition members. The opening in the mullions and the holes for reception of the switch-cradle and its fixing screws will be provided by others. The Sub-Contractor shall provide the fixing screws, which may be of the self-tapping kind, and shall provide and fit an overlapping cover plate, finish as specified, to match the special narrow switch.

.8 Wiring to Switches in Hollow Mullions and Demountable Partitions: The wiring to these switches may be run within the hollow mullion or other hollow metal structural members of the partitioning, but shall run in conduit from the lighting outlet, terminating with a bush at a point where wiring enters the hollow mullion. Where the wiring for lighting circuits is run in a ceiling channel which is situated directly over the hollow mullion or other wire carrying member, then the wiring to switches may be taken directly into the latter without the use of conduit or lead in tubes. Under no

circumstances shall the wire pass over sharp edges, and suitable provisions shall be made to shield the wiring accordingly.

An earth Continuity Conductor consisting of 2,5 mm² bare copper wire shall be taken from the nearest earthed point of the conduit or ceiling channel and bonded to the lighting switch cradle.

A21. BELL PUSHES: Bell pushes shall be 250 V grade, even where used for low voltage bell installations. In other respects, bell pushes shall be treated as lighting switches, and the foregoing clauses apply throughout. Bell pushes shall at all times be mounted in separate boxes.

A22. SWITCHED SOCKETS:

.1 Rating: Unless otherwise specified in the Detail Specification or indicated on drawings, switched sockets shall consist of a 16 A single pole 250 V grade switch and a 16 A, 250 V, 3-pin (line, neutral and earth) shuttered socket, all to SANS Specification. The switch and socket may be integrated or mounted together on a common cradle or plate and shall be metal clad.

Unless otherwise specified, switched socket circuits shall be wired with 2,5 mm² conductors and 2,5 mm² earth wire.

.2 Flush Switched Sockets: Where conduit is built in or concealed, switched sockets shall be fitted in standard flush pressed steel rust-proofed boxes 100 x 100 x 50 mm nominal dimensions, and provided with over-lapping cover plates as specified elsewhere.

.3 Surface Mounted Switched Sockets: Where conduit or cable is surface run, or where specified, switched sockets of the surface mounted metal clad type shall be used.

.4 Watertight Switched Sockets: These shall be used in any positions or situations exposed to the atmosphere or in damp surroundings.

.5 Mounting Heights: Where no other mounting heights are indicated on drawings or specified in the Detail Specification, switched sockets shall be mounted at the following heights from finished floor level to bottom of box:

Flush switched sockets generally	:	300 mm
Shops and Showrooms	:	300 mm
Servants Quarters	:	1400 mm
Factories, Workshops and Garages	:	1400 mm
Domestic Kitchens and Tea Kitchens	:	1000 mm
Commercial Kitchens	:	1400 mm

A23. HEATERS:

.1 Recessed Wall Heaters: Where recessed or semi-flush mounted heaters are specified in the Detail Specification, the Sub-Contractor shall supply and install the flush heater trays ensuring correct location and alignment. Conduits shall be terminated in heater trays ensuring correct location and alignment. Conduits shall be terminated in heater trays in close proximity to the connection terminals. No wiring shall be run inside the tray except near bottom and cool portion of heater. The Sub-Contractor shall fit the heater insert and make all connections. Unless otherwise specified switches will be incorporated as part of the heater by the manufacture.

.2 Surface Mounted Heaters: Unless otherwise specified in the Detail Specification, outlets for surface (100 mm x 100 mm, or round) behind and near the bottom of the heaters and wiring connections taken through a bushed hole in back of heater case. Mounting and connections shall be as above. Where heaters are mounted on top of power skirting, wiring shall be taken through bushed holes in the top of skirting and bottom of heater casing.

Outlet boxes for skirting heaters shall be installed at the extreme end of the heater at a height of 120 mm.

.3 Radiant Heaters: Where these are specified, they shall be treated as for surface mounted heater. Where conduit entry facilities are not available on the heater, the connection from the flush outlet box to the terminal block shall be with 3 core (live, neutral and earth) white PVC flex taken through a gland in the cover plate of the flush outlet box.

Where no switch is incorporated in radiant heater panel, the Sub-Contractor shall provide a 15 A SP local isolating switch.

.4 Unit Heaters (i.e. Fan Heater Combination): Where these heaters are specified, and unless otherwise stated in the Detail Specification, they shall be mounted over a flush round conduit box at a height of 1500mm from floor, and shall be securely fixed to mounting surface my means of M8 bolts or other approved fixing. Unless otherwise specified, a flush 30A DP switch shall be provided, mounted 1800mm above floor. Heaters up to 5kW shall be wired on single phase. Unit heaters of higher loading will have isolators and wiring specified in the Detail Specification.

.5 Wiring Sizes for Heaters: Unless otherwise specified in the Detail Specification, all heater circuits not exceeding 5kW in loading shall be wired with 4 mm² conductors and 2,5 mm² earthwire.

A24. UNDER FLOOR HEATING:

Where underfloor heating cable is specified in the Detail Specification, the Sub-Contractor shall supply the cable and thermostats which shall be purchased from a Specialist Supplier specified in the Detail Specification. The cable shall be laid by the Specialist Supplier and connected by the Sub-Contractor who shall also be responsible for testing of cables prior to their being covered by screed and immediately thereafter. Details of circuit wiring and control of underfloor heating will be specified in the Detail Specification.

PVC insulated heating cable with a rating of not higher than 15W per linear meter shall be used. Thermal insulation will be provided by the Principal Contractor.

The size of the heating cable shall be sufficient to give a 20°C temperature rise with an outside ambient temperature of 5°C .

The loading of the elements shall, however, not be less than 135W/m².

A25. WATER HEATERS (GEYSERS):

.1 Supply: Where electric water heaters are specified in the Detail Specification to be supplied by the Sub-Contractor, they shall be of approved manufacture and must carry the SANS mark. Before any water heaters are purchased, the Sub-Contractor must establish the following:

(a) The quantity and type of water heaters to be confirmed by the Engineer.

(b) The details of plumbing entries to be confirmed by the Plumbing Contractor.

(c) The positions and availability of mounting space to be confirmed on site.

(d) That the water heaters are constructed to withstand the water pressure due to the head of water present in any particular situation.

.2 Installations and Connections: The water heaters will be fixed in position by the Plumber who will also make all plumbing connections. The Sub-Contractor shall wire and make all electrical connections. The conduit to water heater outlets shall terminate in a flush round box conveniently near the electrical entry to the water heater. A local 30 A DP surface mounted metal clad isolator shall be mounted over the flush conduit outlet box. The final connections between the local isolator and the terminals of the water heater shall be made in screwed conduit, run in an approved manner.

Only where water heaters are mounted in concealed positions out of normal reach, as eg. in roof space, at high level, or in cupboards, may final connections to water heaters be made with wiring in flexible conduit.

Before testing a water heater, the Sub-Contractor shall confirm with the Plumbing Contractor that the water-heater is filled with water.

Unless otherwise specified in the Detail Specification, the wiring of water heater circuits of loading not exceeding 4kW shall be done with 2,5mm² conductors and 2,5mm² earth wire.

A26. STOVES: .1 Supply: Unless otherwise specified in the Detail Specification, electric stoves (cooking appliances) will be supplied and placed in position by others.

.2 Connection: The Sub-Contractor shall tube, wire and connect to stove outlets, which shall consist of a flush round box mounted 500mm above floor level at a convenient position on the wall directly behind the stove.

The final connection from the wall outlet box to the terminals of the stove shall be made in wiring encased in flexible conduit with sufficient slack to permit the entire stove being moved 500mm away from the wall. Angle type connectors must be used to couple the flexible conduit to the cover plate of the wall outlet box and to the stove as well where necessary to avoid horizontal entry of the flexible conduit.

Unless otherwise specified in the Detail Specification, stove outlets with a loading not exceeding 12kW shall be wired on a single phase with 10mm² conductors and 6mm² earth wire in 25mm conduit.

.3 Local Isolator: Unless otherwise specified in the Detail Specification,

a local isolator must be provided for each stove connection. This shall consist of a 60A DP isolator mounted inside a flush box in the wall at a convenient position behind the stove and at a height of 1500mm above the floor, or otherwise located to endure that

the cover plate falls entirely on either tiled or plastered wall surface, but not covered by the stove. Unless otherwise specified the cover plate shall be finished in ivory baked enamel.

A27. SANITARY INCINERATORS:

.1 Supply: Where sanitary incinerators are specified in the Detail Specification, the Sub-Contractor shall supply the incinerators of manufacture and type as specified.

.2 Installation: The Sub-Contractor shall install the incinerator at a height of 1500 mm from top of incinerator to finished floor level, unless otherwise specified. Flush mounted models shall be correctly located by the Sub-Contractor for building in by the Principal Contractor. Surface mounted models shall be securely bolted to the wall by the Sub-Contractor.

Unless otherwise specified, the flue and associated accessories will be installed by others, but the Sub-Contractor shall liaise with such other traces to ensure that the incinerators complete with flue, etc, are properly installed in accordance with manufacturer's specifications and recommendations.

.3 Connection: The Sub-Contractor shall wire the incinerator with 2 x 2,5 mm² PVC and 2,5 mm² BC earth wire in 20mm conduit and shall provide a flush 15A DP local isolator mounted immediately below the incinerator.

A28. FANS:

.1 Supply: Where fans are specified in the Detail Specification to be supplied by the Sub-Contractor, they shall be supplied complete with all the necessary accessories as applicable, such as mounting brackets, diaphragm plates, wire guards, weatherproof louvres where fans are mounted on an outside wall etc.

.2 Mounting: The Sub-Contractor shall mount fans and all accessories supplied therewith, bolted screwed or secured to walls and other surfaces as required. Holes in walls or windows will be provided by others to details to be supplied by the Sub-Contractor.

.3 Connection to Lift Motor Room Fan: Where a lift room fan connection is specified the Sub-Contractor shall in addition to the fan also provide and install a cooling thermostat, ie. one which closes the fan circuit on rise of temperature, having room temperature range, which shall be mounted near the fan unless otherwise indicated. The wiring to the fan shall be taken from the SP MCB on the distribution board through a local 16 A switch and through the thermostat to the fan motor terminals. Final connections to the fan shall be carried out in flexible conduit. Wiring shall be 2 x 2,5 mm² PVC and 2,5 mm² earth wire.

.4 Connection to a Small Extract Fan: Where a small extract fan such as is used in domestic kitchens, toilets, etc. is specified, and when no facilities exist on the fan for conduit entry, connections may be made to the fan terminals by means of plastic-covered flexible cable which must include an earth continuity conductor taken from a flush round conduit box in close proximity to the fan. The box shall be provided with a domelid and the flexible cable shall be attached to the domelid by means of a compression gland. Provide a local flush 16 A SP switch near the fan, unless otherwise specified.

.5 Other Fan Connections: Fan connections not falling into the categories of B28.3 and B28.4 above shall be treated as motor connections which are described below.

A29. MOTOR CONNECTION:

.1 Supply and Installation of Motors: Where a motor connection is specified, the motor will be supplied and fixed in position by others.

.2 Wiring: Wiring to motors shall be as specified in the Detail Specification, otherwise in accordance with wire sizes as follows:

Single-phase motors up to 2,2 kW (3 HP)	:	2,5 mm²
Three-phase motors up to 4 kW (5,5 HP)	:	2,5 mm²

In both cases 2,5 mm² bare copper earth wire shall be used, except for multicore PVCA cable incorporating separate earth conductor.

.3 Isolator: Unless otherwise specified in the Detail Specification, each motor shall be controlled by a lockable local metal clad isolator supplied, installed and connected by the Sub-Contractor.

The isolator shall be mounted either on the wall, or on framework of machine or equipment, or in any other suitable position within 2m of the motor terminals. Unless otherwise specified in the Detail Specification, the rating of motor isolators shall be as follows:

Single phase motors up to 2,2 kW (3 HP)	:	30 A DP
3-Phase motors up to 11 kW (15 HP)	:	30 A TP
3-Phase motors up to 22 kW (30 HP)	:	60 A TP
3-Phase motors up to 37 kW (50 HP)	:	100 A TP

.4 Starter: Unless otherwise specified in the Detail Specification, the motor starter will be supplied by others, but shall be mounted and connected by the Sub-Contractor. The starter shall generally be located on the load side of the local isolator.

.5 Mounting Heights of Isolators and Starters: Unless otherwise specified in the Detail Specification, or where not practical to do so, isolators and starters shall generally be mounted at a height of 1400 mm above floor.

.6 Final Connection to Motor: These connections shall be made with PVCA cable, allowing sufficient slack to permit adjustments to motor, and to prevent the transmission of vibration to switchgear. The use of flexible conduit or other connections is not permitted except with the express approval of the Engineer. Wire sizes from starter to motor terminals shall be the same as those from distribution board to isolator and starter, unless otherwise specified.

.7 Motor Rotation and Starter Operation: After completion of the motor connection the Sub-Contractor shall check the correct rotation f the motor and setting and functioning of the motor starter. Such checking and adjustments shall be carried out in the presence of an authorized representative of the supplier of the motor.

A30. PROVISIONS

.1 General: Where provisions for telephones and various other

FOR TELEPHONE AND OTHER SERVICES: systems or communication, fire detection or other services are specified in the Detail Specification and on drawings, the Sub-Contractor shall supply and install all the necessary conduit, wiring channel, cable tray, boards, outlet boxes, draw boxes, sleeves, etc., as specified and in the manner described below.

.2 Cable Sleeves: Unless otherwise specified or indicated on drawings the Sub-Contractor shall supply and install all sleeves for telephone and other service cables of sizes and in positions as specified.

The sleeve for the main incoming Post Office cable shall be located 500 mm below outside ground level and shall extend 150 mm beyond the building line on the outside, and flush with the inside wall surface if a sleeve through wall only is required.

Where sleeves are specified to be supplied and installed by others the Sub-Contractor shall be responsible to ensure that such sleeves are installed in good time and in their correct positions. Provide suitable galvanized mild steel draw wires in all sleeves.

.3 Conduit: All conduit for telephones and other services shall be provided and installed to the same specification as for electrical requirements and shall be fitted with galvanized mild steel draw wires.

Unless otherwise specified conduits for telephones and other services shall be 25 mm diameter steel.

.4 Outlets: Unless otherwise specified all outlets for telephone and other services shall consist of standard flush type pressed steel "plug" boxes (normally 100 x 100 x 50 mm) generally mounted at a height of 300 mm from finished floor level to bottom of box. Where switch sockets or other outlets are mounted in the same room at nominally the same height above floor, care shall be taken to ensure that all such outlets are accurately lined up.

.5 Cover plates: The Sub-Contractor shall supply and fit metal cover plates of the same material and finish to match flush switch and switched socket cover plates. A blank cradle shall be fitted in the outlet box to which the cover plate shall be screwed, allowing for proper alignment of the cover plate.

.6 Co-operation: The Sub-Contractor shall co-operate with the telephone installers and suppliers and installers of other services insofar as concerns the supply of all information required b the installers of such services and shall assist such other installers in the event of any difficulties which they may experience with drawing in of their cables into conduit or channel provided by the Sub-Contractor.

A31. MAINS DIAGRAM: The Sub-Contractor shall include in his net tender price for the supply and mounting of the Mains Diagram. A print of the diagram shall be obtained by the Sub-Contractor from the Engineer for mounting in a wooden frame behind clear perspex. The frame shall be mounted adjacent to the mainboard in a position to be approved by the Engineer.

A32. OUTLET 55 .1 Outlet and Circuit References: In the Schedule of Outlets in

REFERENCES: the Detail Specification and on drawings, the following references will be used to denote the outlet and circuit details.

The prefix capital letter(s) of any outlet refers to the distribution board from which it is fed. The next numeral after the letter(s) indicates the circuit, and the numeral after the point refers to the outlet number on that circuit, eg.

B2.7 = Outlet No. 7 on Circuit No. 2 fed from Distribution Board B; C6 = The only outlet on Circuit No 6 fed from Distribution Board C.

.2 Light Fitting References: The small letter used in the Lighting Fitting column in the Schedule of Outlets or specified elsewhere, refers to the type of light fitting as specified or described elsewhere in the Detail Specification.

A33. PRECEDENCE OF CLAUSES IN THE DETAIL SPECIFICATION

Where any statement in the Detail Specifications at variance with statement in the Standard Specification, then the Detail Specification shall take precedence.

PANEL OF ELECTRICAL CONTRACTORS FOR MAINTENANCE OF ELECTRICAL INFRASTRUCTURE TO RAY NKONYENI MUNICIPALITY FOR A PERIOD OF THREE YEARS - 8/2/RNM0653

RATES ONLY TENDER

Item	Item Description	Unit	Rands / Unit Supply Rate	Rands / Unit Labor Rate for Normal hours	Rands / Unit Labor Rate for Saturday and After hours	Rands / Unit Labor Rate for Sunday & Public Holidays
PANEL A	**CABLE FAULT LOCATION, TRACING AND TESTING**					
1.	**Cable fault location, tracing and testing**					
1.1.	Cable Fault Location (LV)	per fault				
1.2.	Cable Fault Location (MV)					
1.3.	Cable Condition Monitoring	per cable				
1.4.	Cable Identification	per cable				
1.5.	Cable Route Tracing	per cable				
1.6.	Cable Spiking	per cable				
1.7.	Cable Pressure Test – MV cable	per cable				
1.8.	Cable Pressure Test – LV cable	Per cable				
PANEL B	**CABLE TRENCHING, LAYING, JOINTING AND TERMINATIONS**					

2	**Trenching**					
2.1.	**LV cable trenches**					
2.1.1.	Hard materials (Rocky)	per m^3				
2.1.2	Hand pickable materials (Sandy)	per m^3				
2.2	**MV cable trenches**					
2.2.1.	Hard materials (Rocky)	per m^3				
2.2.2.	Hand pickable materials (Sandy)	per m^3				
2.2.3.	Backfilling and Compaction	per m^3				
2.2.4.	Backfill material - Import River sand	per m^3				
3	**Cable Ducting**					
3.1.	Excavation	per m^3				
3.2.	Backfill and Compaction	per m^3				
4	**Cable Ducts**					
4.1.	110mm dia. PVC pipes	per meter				
5	**Supply and Install Copper Earth Wire**					
5.1.	10mm^2 stranded copper	per meter				
5.2.	35mm^2 stranded copper	per meter				
5.3.	50mm^2 stranded copper	per meter				

5.4.	70mm² stranded copper	per meter				
5.5.	95mm² stranded copper	per meter				
6	**Terminations of Earth Wires**					
6.1	10mm² stranded copper	Each				
6.2	25mm² stranded copper	Each				
6.3	35mm² stranded copper	Each				
6.4	50mm² stranded copper	Each				
6.5	70mm² stranded copper	Each				
6.6	95mm² stranded copper	Each				
7	**Supply and Installation of Cables**					
7.1	**LV cables**					
7.1.1	1,5mm² 2-core Copper	per meter				
7.1.2	1.5mm² 2-core Aluminium	Per meter				
7.1.3	2,5mm² multi-core copper	per meter				
7.1.4	2.5mm² multi-core Aluminium	Per meter				
7.1.5	4mm² 2-core copper	Per meter				
7.1.6	4mm² 2-core Aluminium	Per meter				
7.1.7	6mm² 2-core Copper	Per meter				

7.1.8	6mm² 2-core aluminium	per meter				
7.1.9	10mm² 2-core Copper	Per meter				
7.1.10	10mm² 2-core Aluminium	Per meter				
7.1.11	16mm² 2-core Copper	per meter				
7.1.12	16mm² 2-core Aluminium	Per meter				
7.1.13	16mm² 4-core Copper	per meter				
7.1.14	16mm² 4-core Aluminium	Per meter				
7.1.15	25mm² 4-core Copper	per meter				
7.1.16	25mm² 4-core Aluminium	Per meter				
7.1.17	35mm² 4-core Copper	per meter				
7.1.18	35mm² 4-core Aluminium	Per meter				
7.1.19	50mm² 4-core Copper	per meter				
7.1.20	50mm² 4-core Aluminium	Per meter				
7.1.21	70mm² 4-core Copper	per meter				
7.1.22	70mm² 4-core Aluminium	Per meter				
7.1.23	95mm² 4-core Copper	per meter				
7.1.24	95mm² 4-core Aluminium	Per meter				
7.2	**MV cables**					
7.2.1	XLPE 16mm² 3-core Copper	Per meter				
7.2.2	XLPE 16mm² 3-core Aliminium	Per meter				

7.2.3	XLPE 25mm² 3-core Copper	Per meter				
7.2.4	XLPE 25mm² 3-core Aluminium	Per meter				
7.2.5	XLPE 35mm² 3-core Copper	Per meter				
7.2.6	XLPE 35mm² 3-core Aluminium	Per meter				
7.2.7	XLPE 50mm² 3-core Copper	Per meter				
7.2.8	XLPE 50mm² 3-core Aluminium	Per meter				
7.2.9	XLPE 70mm² 3-core Copper	Per meter				
7.2.10	XLPE 70mm² 3-core Aluminium	Per meter				
7.2.11	XLPE 95mm² 3-core Copper	Per meter				
7.2.12	XLPE 95mm² 3-core Aluminium	Per meter				
7.2.13	XLPE 150mm² 3-core Copper	Per meter				
7.2.14	XLPE 150mm² 3-core Aluminium	Per meter				
7.2.15	XLPE 185mm² 3-core Copper	Per meter				
7.2.16	XLPE 185mm² 3-core Aluminium	Per meter				
7.2.17	XLPE 240mm² 3-core Copper	Per meter				

7.2.18	XLPE 240mm² 3-core Aluminium	Per meter				
7.2.19	PILC 16mm² 3-core Copper	Per meter				
7.2.20	PILC 16mm² 3-core Aluminium	Per meter				
7.2.21	PILC 25mm² 3-core Copper	Per meter				
7.2.22	PILC 25mm² 3-core Aluminium	Per meter				
7.2.23	PILC 35mm² 3-core Copper	Per meter				
7.2.23	PILC 35mm² 3-core Aluminium	Per meter				
7.2.24	PILC 50mm² 3-core Copper	Per meter				
7.2.25	PILC 50mm² 3-core Aluminium	Per meter				
7.2.26	PILC 70mm² 3-core Copper	Per meter				
7.2.27	PILC 70mm² 3-core Aluminium	Per meter				
7.2.28	PILC 95mm² 3-core Copper	Per meter				
7.2.29	PILC 95mm² 3-core Aluminium	Per meter				
7.2.30	PILC 150mm² 3-core Copper	Per meter				
7.2.31	PILC 150mm² 3-core Aluminium	Per meter				
7.2.32	PILC 185mm² 3-core Copper	Per meter				

7.2.33	PILC 185mm² 3-core Aluminium	Per meter				
7.2.34	PILC 240mm² 3-core Copper	Per meter				
7.2.35	PILC 240mm² 3-core Aluminium	Per meter				
8.	**Supply and make off cable joints (Make Allowance for Aluminium Cables)**					
8.1.	**LV cable joints**	Each				
8.1.1	16mm² 2-core	Each				
8.1.2	16mm² 4-core	Each				
8.1.3	25mm² 4-core	Each				
8.1.4	35mm² 4-core	Each				
8.1.5	50mm² 4-core	Each				
8.1.6	70mm² 4-core	Each				
8.1.7	95mm² 4-core	Each				
8.2	**MV cable joints**					
8.2.1	XLPE 16mm² 3-core	Each				
8.2.2	XLPE 25mm² 3-core	Each				
8.2.3	XLPE 35mm² 3-core	Each				
8.2.4	XLPE 50mm² 3-core	Each				
8.2.5	XLPE 70mm² 3-core	Each				
8.2.6	XLPE 95mm² 3-core	Each				

8.2.7	XLPE 150mm² 3-core	Each				
8.2.8	XLPE 185mm² 3-core	Each				
8.2.9	XLPE 240mm² 3-core	Each				
8.2.10	PILC 16mm² 3-core	Each				
8.2.11	PILC 25mm² 3-core	Each				
8.2.12	PILC 35mm² 3-core	Each				
8.2.13	PILC 50mm² 3-core	Each				
8.2.14	PILC 70mm² 3-core	Each				
8.2.15	PILC 95mm² 3-core	Each				
8.2.16	PILC 150mm² 3-core	each				
8.2.17	PILC 185mm² 3-core	Each				
8.2.18	PILC 240mm² 3-core	Each				
8.3	**Transition cable joint**					
8.3.1	16mm² 3-core	Each				
8.3.2	25mm² 3-core	Each				
8.3.3	35mm² 3-core	Each				
8.3.4	50mm² 3-core	Each				
8.3.5	70mm² 3-core	Each				
8.3.6	95mm² 3-core	Each				
8.3.7	150mm² 3-core	Each				

8.3.8	185mm² 3-core	Each				
8.3.9	240mm² 3-core	Each				
9	**Supply and Make Off Terminations**					
9.1	**LV Terminations**					
9.1.1	16mm² 2-core	Each				
9.1.2	16mm² 4-core	Each				
9.1.3	25mm² 4-core	Each				
9.1.4	35mm² 4-core	Each				
9.1.5	50mm² 4-core	Each				
9.1.6	70mm² 4-core	Each				
9.1.7	95mm² 4-core	Each				
9.2	**MV Terminations**					
9.2.1	XLPE 16mm² 3-core	Each				
9.2.2	XLPE 25mm² 3-core	Each				
9.2.3	XLPE 35mm² 3-core	Each				
9.2.4	XLPE 50mm² 3-core	Each				
9.2.5	XLPE 70mm² 3-core	Each				
9.2.6	XLPE 95mm² 3-core	Each				
9.2.7	XLPE 150mm² 3-core	Each				
9.2.8	XLPE 185mm² 3-core	Each				

9.2.9	XLPE 240mm² 3-core	Each				
9.2.10	PILC 16mm² 3-core	Each				
9.2.11	PILC 25mm² 3-core	Each				
9.2.12	PILC 35mm² 3-core	Each				
9.2.13	PILC 50mm² 3-core	Each				
9.2.14	PILC 70mm² 3-core	Each				
9.2.15	PILC 95mm² 3-core	Each				
9.2.16	PILC 150mm² 3-core	Each				
9.2.17	PILC 185mm² 3-core	Each				
9.2.18	PILC 240mm² 3-core	Each				
PANEL C:	**MINOR AND MAJOR ELECTRICAL MAINTENANCE**					
10	**LV breaker reset/replace**					
10.1.	**Reset LV Breaker**					
10.1.1.	30A - 80A	Each				
10.1.2.	100A – 150A	Each				
10.2.	**Replace LV Breaker**					
10.2.1	30A – 100A (single phase)	Each				
10.2.2.	30A – 100A (three phase)	Each				
10.2.3.	150A – 630A (three phase)	Each				

11	**Streetlights Maintenance**					
11.1.	**Excavation of streetlight pole holes**					
11.1.1.	**7m Pole: 1 200mm deep**					
11.1.1.1.	Hard material	Each				
11.1.1.2.	Hand packable material	Each				
11.1.2.	**9m / 10m Pole: 1 500mm deep**					
11.1.2.1.	Hard material	Each				
11.1.2.2.	Hand packable material	Each				
11.1.3.	**11m Pole: 1 800mm deep**					
11.1.3.1.	Hard material	Each				
11.1.3.2.	Hand packable material	Each				
11.2.	**Painting of streetlight pole bases (anti corrosion paint)**					
11.2.1.	1 200mm (7.5m pole)	Each				
11.2.2.	1 500mm (10m pole)	Each				
11.2.3.	1 800mm (11m pole)	Each				
11.3.	**Installation of streetlight poles**					
11.3.1.	7m mounting height - straight 120mm pole top	Each				

11.3.2.	9 and 10m mounting height - straight 120mm pole top	Each				
11.3.3.	11m mounting height - straight 120mm pole top	Each				
11.4.	**Backfill and Compaction of pole holes**					
11.4.1.	1 000mm deep	Each				
11.4.2.	1 500mm deep	Each				
11.4.3.	1 800mm deep	Each				
11.5.	**Mounting and Wiring of Streetlight / Floodlight Fitting**					
11.5.1.	50W LED streetlight fitting	Each				
11.5.2.	100W LED streetlight fitting	Each				
11.5.3.	200W LED floodlight	Each				
11.5.4.	LED equivalent to 1000W MV and HPS	Each				
11.6.	**Replacement of streetlight poles**					
11.6.1.	7m mounting height - straight 120mm pole top	Each				
11.6.2.	9m, 10m mounting height - straight 120mm pole top	Each				
11.6.3.	11m mounting height - straight 120mm pole top	Each				

11.6.4.	Installation of Areal Bundle conductor all sizes for Street lighting	Per meter				
11.7.	Streetlights pole numbering	Each				
12	**Traffic Lights Maintenance**					
12.1.	**Painting of traffic light poles (anti corrosion coating):**					
12.1.1.	Straight type poles	Each				
12.1.2.	Cantilever type poles	Each				
12.2.	**Traffic light poles:**					
12.2.1.	Straight type poles complete with plinth	Each				
12.2.2.	Cantilever type poles complete with plinth	Each				
12.4.	**Mounting, wiring, and maintenance of traffic signal**					
12.4.1	3-aspect (S1) complete with visor, backboard and screws (traffic signal), it must be temper proof	Each				
12.4.2	5 aspect (S8 and S9) LED traffic signals (complete with visor, backboard and screws), it must be temper proof					

12.4.3	2-aspect (S11) pedestrian complete with visor, backboard and screws, it must be temper proof	Each				
12.4.4	2-aspect (S10) right or left turn arrow complete with visor, backboard and screws, it must be temper proof					
12.4.5	Mounting of Push Buttons	Each				
12.4.6	Supply and installation of 27 core x 1,5 mm2 ECC cable	Per m				
12.4.7	Supply and installation of 19 core x 1,5 mm2 ECC cable per meter	Per m				
12.4.8	Replace Traffic lights controller (all types)	Each				
	Programming of Traffic Lights controller (all types)	Each				
12.4.9	Fault finding a traffic light and submitting a detailed report	Per hr				
12.4.10	Repairs on a traffic light as per fault report	Per hr				

The units of measurement used in the Schedule of Rates are metric units. Abbreviations used above are as follows:

mm = millimeters
hr. = hour
m = meter
kg = kilogram
km = kilometer
t = ton
mm^2 = square mil
m^2 = square meter

MBD 3.2

PRICING SCHEDULE – NON-FIRM PRICES (PURCHASES)

NOT E: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder……	Bid number……
Closing Time **12h00**	Closing Date **14 December 2026**

- **The quote/tender is valid for a period of 120 days.**
- **Escalation will be made annually based on the average CPI for each completed year of the award.**
- **All products supplied must comply with SANS standards and be SABS approved.**

- Required by:
  ……
- At:
  ……..……

- Brand and model
  ……..……
-
- Country of origin
  ……..…….

- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s)
  ……
- Period required for delivery
  ……
- Delivery: *Firm/Not firm

** ”all applicable taxes” includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

*Delete if not applicable

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON-FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON-FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1 - V)Pt\left(D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

Pa	=	The new escalated price to be calculated.
(1-V) Pt	=	85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**
D1, D2 ...	=	Each factor of the bid price e.g. labour, transport, clothing, footwear, etc. The total of the various factors D1, D2…etc. must add up to 100%.
R1t, R2t ……	=	Index figure obtained from new index (depends on the number of factors used).
R1o, R2o	=	Index figure at time of bidding.
VPt	=	15% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

3. The following index/indices must be used to calculate your bid price:

Index……. Dated……. Index……. Dated……. Index……. Dated…….

Index……. Dated……. Index……. Dated……. Index……. Dated…….

4. FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

FACTOR (D1, D2 etc. e.g. Labour, transport etc.)	PERCENTAGE OF BID PRICE

B PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

1. Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR =		
				ZAR =		
				ZAR =		
				ZAR =		
				ZAR =		
				ZAR =		

2. Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD:	DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE	DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state[1].

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name of bidder or his or her representative…….

3.2 Identity Number: ……..

3.3 Position occupied in the Company (director, trustee, shareholder[2])……..

3.4 Company Registration Number: ……

3.5 Tax Reference Number……

3.6 VAT Registration Number: ……

3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8 Are you presently in the service of the state? **YES / NO**

3.8.1 If yes, furnish particulars. ….……

……

[1]MSCM Regulations: "in the service of the state" means to be –
(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature.

[2] Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

3.9. Have you been in the service of the state for the past twelve months? ……**YES / NO**

3.9.1 If yes, furnish particulars……..……..

……

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

…… **YES / NO**

3.10.1 If yes, furnish particulars.

……
……

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.11.1 If yes, furnish particulars

……
……

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.12.1 If yes, furnish particulars.

……
……

3.13 Are any spouse, child or parent of the company's directors' trustees, managers, principal shareholders or stakeholders in service of the state? **YES / NO**

3.13.1 If yes, furnish particulars.

……
……

3.14 Do you or any of the directors, trustees, managers, principal kshareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract. **YES / NO**

3.14.1 If yes, furnish particulars:

……..
……..

4. Full details of directors / trustees / members / shareholders.

Full Name	**Identity Number**	**State Employee Number**

……..
Signature

……..
Date

……
Capacity

……
Name of Bidder

CONTRACT FORM – PAST EXPERIENCE

Bidders must furnish hereunder details of similar works / service, which they have satisfactorily completed in the past. The information shall include a description of the works, the contract value and the name of the employer.

EMPLOYER	NATURE OF WORK	VALUE OF WORK	DURATION AND COMPLETION DATE	EMPLOYER CONTACT NO

DATE **SIGNATURE OF BIDDER**

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

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1 GENERAL CONDITIONS

12.2 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

12.3 To be completed by the organ of state

The applicable preference point system for this tender is the 80/20 preference point system.

12.4 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(c) Price; and

(d) Specific Goals.

12.5 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	**100**

12.6 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

12.7 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

13 DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"Rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

14 FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \qquad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. QWE73In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

***Note to tenderers: The tenderer must indicate how they claim points for each preference point system.*)**

The specific goals allocated points in terms of this tender	**Number of points allocated (80/20 system)**	**Number of points claimed (80/20 system) (To be completed by the tenderer)**
Companies within Ray Nkonyeni Municipality	20	
Companies within Ugu District Municipality	15	
Companies within KwaZulu Natal	10	
Other	5	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ϒ Partnership/Joint Venture / Consortium
- ϒ One-person business/sole propriety
- ϒ Close corporation
- ϒ Public Company
- ϒ Personal Liability Company
- ϒ (Pty) Limited
- ϒ Non-Profit Company
- ϒ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution, if deemed necessary

……
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: ……
DATE: ……

ADDRESS: ……

……

……

……

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. been listed in the Register for Bid Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied). **The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Bid Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? **The Register for Bid Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		

4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
Item	**Question**	**Yes**	**No**
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……..……..……

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……...	**……..**
Signature	**Date**
……	**……....**
Position	**Name of Bidder**

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3. Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

   (a) take all reasonable steps to prevent such abuse;

   (b) reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

   (c) cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5. In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

RNM/MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____
(Bid Number and Description)

in response to the invitation for the bid made by:

_____
(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of:_____..._____that:
(Name of Bidder)

1. I have read, and I understand the contents of this Certificate;

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

   (a) has been requested to submit a bid in response to this bid invitation;

   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

   (a) prices;

(b) geographical area where product or service will be rendered (market allocation);

(c) methods, factors or formulas used to calculate prices;

(d) the intention or decision to submit or not to submit, a bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid; or

(f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

SIGNATURE	**DATE**
POSITION	**NAME OF BIDDER**

[3] Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.