



**CAMDEN POWER
STATION**

GENERATION

2024

**CAMDEN POWER STATION : BUILDING
MAINTENANCE
PROVISIONAL BILLS OF QUANTITIES**

CONTRACT NUMBER :

CONTRACTOR :

**CONTRACT AMOUNT
(Excluding VAT) :**

**CONTRACT AMOUNT
INCLD VAT) :**

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CAMDEN POWER STATION MAINTENANCE PROVISIONAL BILLS OF QUANTITIES

NOTES TO TENDERERS**NOTES TO TENDERERS****1. BILLS OF QUANTITIES**

This document comprises Notes to Tenderers, Supplementary Preambles, Model Preambles and Bills of Quantities and is hereafter referred to as "the Bills of Quantities".

2.1 CONTRACT DOCUMENTS

The contract documents will consist of:

2.1.1 The NEC3 Engineering and Construction Contract third Edition third Edition 2013 together with all amendments.

2.1.2 The Model Preambles for Trades (2008 Edition) as published by the ASQA. This document is not incorporated within the text of these Bills of Quantities, accordingly the contractor is urged to make careful reference to this Document for its full intent and meaning.

2.1.3 These Bills of Quantities, including all annexures and supplementary documentation referred to therein.

2.1.4 Documents to be provided by the Contractor in terms of the requirements of these Bills of Quantities.

2.1.5 Construction Regulations 2014

2.1.6 Occupational Health and Safety Act of 1993

2.2 DRAWINGS

There are drawings available as this is a maintenance contract, but should a need arise due to the quantum of work, drawings will be issued.

3 PREAMBLES TO ALL TRADES

Tenderers are referred to the Model Preambles for Trades, 2008 Edition, (recommended and published by the Association of South African ESKOM Officials) and the "Supplementary Preambles to All Trades" (Supplementary Preambles pages 1-10 hereof) for the full descriptions and specifications referred to in these Bills of Quantities. It should be noted that descriptions in these Bills of Quantities generally appear in brief, but whether specific reference to the Model Preambles and the "Supplementary Preambles" is made or not, they shall be deemed to apply fully to and augment the descriptions of the relevant items. No claim whatsoever will be allowed in respect of errors or omissions in pricing due to brevity of descriptions of items in the Bills of Quantities which are fully described when read in conjunction with the relevant requirements of the Model Preambles and the "Supplementary Preambles to All Trades".

The Tenderer must study the Model Preambles and the "Supplementary Preambles to All Trades" before pricing these Bills of Quantities and all prices inserted in these Bills of Quantities shall cover all costs and charges that may be considered necessary by the Tenderer for the carrying out and observance of the Provisions of the Model Preambles and the "Supplementary Preambles to All Trades". Where requirements of descriptions in the Bills of Quantities differ from the relevant requirements of the Model Preambles and the "Supplementary Preambles to All Trades", the requirements of the descriptions in the Bills of Quantities shall apply.

4 VALUE ADDED TAX

Tenderers should compute their rates from the net costs (excluding value added tax). Value Added Tax at the current rate of 14% is to be added to the net sub-total on the final summary page by means of a single sum calculation to establish the tender price.

5 SCOPE OF WORK

As a guide only, the work comprises as follows:-

1. Maintenance of all Building**6 ADDRESS WHERE DOCUMENTS CAN BE OBTAINED**

Tender documents will be available at Eskom Holdings offices or on the Eskom website.

7 POSSESSION OF SITE

The date of which possession of the Site shall be given to the Contractor shall be within 5 days of the acceptance of this tender.

8 COMPLETION DATE

The intended date for practical completion and penalty for each day for non-completion shall be:
Duration: This contract will be for 5 Years

9 COMMON LAW OR BY-LAW REQUIREMENTS

No liability for not specifically mentioning any normal contractual, Common Law or By-law requirements will be accepted by the Employer, ESKOM Official or ESKOM Official.

10 AREA OF WORKS

The Tenderer shall ascertain by personal viewing of the site any restrictions to the area that may be occupied by the contractor including any restrictions imposed by any buildings, etc. and any limitations or restrictions that may be imposed by the Municipal Engineer or the Local Authorities.

Access to the site shall be logically planned and enclosed to ensure minimum disruption to existing user operations. The site is to be restricted to the fenced area.

The contractor is deemed to have allowed for all necessary temporary fencing, screening, hoardings, etc.
Space for the storage of Building Materials must be arranged with the ESKOM Official.

The Contractor shall make all necessary provisions in all rates to take into account these requirements as no claims for extras arising from these matters will be subsequently entertained as admitted. Tenderers will be held responsible for any misunderstanding of incorrect information, however obtained, except information which may have been given in writing over the signature of the ESKOM Official.

11 MANAGEMENT OF WORKS

The Contractor shall to the satisfaction of the ESKOM Official provide, in addition to the Foreman, the services of an experienced and competent Construction Manager.

The names and CV's of the Contractor's proposed Management Team shall be submitted to the ESKOM Official prior to commencement on site and, after the ESKOM Official's agreement on the composition and competence thereof has been obtained, no changes shall be made nor shall any member of the said team be removed from the project while remaining in the employ of the Contractor without the ESKOM Official's prior written approval.

The Contractor shall make necessary provisions in all rates to take into account these requirements as no claims for extras arising from these matters will be subsequently entertained or admitted.

12 INSPECTION OF WORK

The Contractor shall obtain all local authority approvals if required and shall ensure that all work is also approved by the ESKOM Official prior to covering up. The fact that the work will be inspected periodically in no way absolves the Contractor from total responsibility for the quality of his workmanship and for compliance with the specification. He shall timeously notify the ESKOM Official so that foundation and other inspections can be arranged.

13 SITE CLEANLINESS

The Contractor shall clear away all dirt, rubbish and superfluous material as they accumulate and leave the whole of the site clean and tidy on completion to the satisfaction of the ESKOM Official. The Contractor is advised that the adjacent site is functional at all times and that the incumbents should not be unduly inconvenienced.

14 ORDERING OF MATERIALS

No claims will be entertained due to non-availability of materials or labour. The Tenderer is therefore required to investigate and ensure that the specific materials and components required for the works will be available at the relevant estimated construction times, at the time of tendering.

15 PROGRAMME

The Contractor will be required to submit an outline programme of work to completion of the contract within 2 weeks of acceptance of his tender followed by the detailed programme with 4 weeks of acceptance of his tender.

16 CONTRACT PRICE ADJUSTMENT

This contract is subject to escalation

17 DEMOLITION OF EXISTING BUILDINGS – ASBESTOS RISK

Tenderers are to note that any materials that contain asbestos are subject to the latest Asbestos Regulations and the Occupational Health and Safety Act of 1993.

18 PRICED BILLS OF QUANTITIES:

Tenderers must submit to the ESKOM Official a copy of the Bills of Quantities fully priced and extended, with his tender. After the Bills have been checked, and when called upon, each page of the Bills of Quantities shall be initialled and the first and last pages signed in full by the Tenderer.

19 DIFFERENCE AND DISCREPANCIES:

Should there be any difference or discrepancy between the prices or particulars contained in the official Tender form and those contained in any covering letter from the Tenderer, the prices contained in the official Tender form shall prevail.

Every Tenderer shall be deemed to have waived, renounced and abandoned any conditions printed or written upon any stationery used by him for the purpose of or in connection with the submission of his Tender, which are in conflict with the Conditions of Tender or Special and General Conditions of Contract.

Tenderers are warned that any material divergence from the official conditions or specifications may render their Tenders liable to disqualification.

The Tenderers are to note that if there are any arithmetical errors in the Tenderers' form of tender, the client representative will adjust the tender price accordingly.

20 COMMUNICATION WITH MEMBERS OF TENDER BOARD OR PROFESSIONAL TEAM

A Tenderer shall not in any way communicate with a member of the Tender Board or Professional team or with any officer on a question affecting any contract or the supply of goods or for any work, undertaking or service which is the subject of a Tender during the period between the closing date for receipt of Tenders and the despatch of the written notification of the ESKOM Official decision on the award of the contract; provided that a Tenderer shall not hereby be precluded from obtaining from the ESKOM Official or his authorised representative information as to the date upon which the award of the contract is likely to be made or, after the decision upon the award has been made by the ESKOM Official to which the Council had delegated its powers, information as to the nature of the decision or such information as was publicly disclosed at the opening of Tenders.

21 IMPORT PERMITS:

Tenderers must apply direct for any import permit and/or currency required, however the ESKOM HOLDINGS LIMITED will furnish successful Tenderers with a supporting statement if required.

22 BILLS OF QUANTITIES:

No alteration, erasure, omission or addition is to be made to the text and conditions of these Bills of Quantities and should any such alteration, amendment, note or addition be made, the same will not be recognised, but the reading of the Bills of Quantities as prepared by the ESKOM Official will be adhered to.

It should be understood that the system of measurement herein adopted is the only system of measurement, which will be recognised in connection with this contract. Before the signing of the contract, the ESKOM Official will be entitled to call for adjustments of individual rates and rectify discrepancies, as he considers necessary without alterations to the Tender amount.

These Bills are not to be used for the purpose of ordering materials.

All Bill rates are to include for material, labour, plant, wastage, transport and profit.

23 TRAFFIC REGULATIONS AT ESKOM

The Contractor shall comply with all requirements of Eskom in connection with traffic control, gaining access to the site, prevention or disruption of the flow of traffic, transporting of materials and equipment to and from the site

24 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall adopt all safety measures in compliance with all statutes, regulations, etc., and shall take all measures to protect all property and to secure the safety and freedom from injury of all persons.

The Contractor shall in addition take all necessary steps to prevent nuisance from dust and the like and shall use every endeavour to minimise noise emanating from the Contract Works. The Contractor is referred to the various forms that require his attention prior to commencing work on site - All forms duly completed and signed must be forwarded to the ESKOM Official.

25 SETTING OUT OF THE CONTRACT WORKS

The Site shall not be used by the Contractor for any purpose other than that of carrying out the Contract works. The Contractor shall set out the Contract Works and shall be held solely responsible and liable for the correct centre lines, levels, and gradients.

26 KEEP EARTHWORKS FREE FROM WATER, MUD ETC.

The Contractor shall keep the earthworks free from water, mud, etc. by hand or machinery (including day and night attendance as necessary) as no water, mud, etc., shall be allowed to stand or accumulate.

The Contractor must cut all necessary trenches etc., and build embankments in order to divert stormwater and/or ground water and to protect the earthworks. The Contractor shall be solely responsible for any damage caused by storms, rains, surface or underground water or water from other causes.

On completion of the Contract, the Contractor shall fill in temporary trenches including compacting, and shall remove any temporary embankments all at his sole cost.

27 EXISTING AND ADJOINING PROPERTIES, PAVINGS ETC.

The Contractor shall execute the whole of the Contract Works with the minimum of disturbance to the existing and adjoining premises and occupants thereof. He shall keep the Site well watered where necessary, and take all other steps, to prevent dust and shall keep pavements, surrounding roads etc., clean to the entire satisfaction of the ESKOM Official and the Authorities.

The Contractor shall leave such buildings, structures, fences, pavings, roadways, kerbs, gardens, municipal pavements, streets, etc., in the same condition at completion as they were at the commencement of the Contract. Before commencing work, the Contractor shall arrange with the owners of the existing and adjoining buildings and/or the Authorities for an inspection to be made jointly with themselves, the Contractor and the ESKOM Official in order to make written notes of any cracks defects, etc. which may later be claimed to have been caused by the operations under the Contract. Should defects be disclosed, the Contractor shall submit same in writing to the ESKOM Official before commencing the Contract, failing which it shall be understood that no such defects existed and the Contractor shall be liable for all claims in this connection.

28 PROCEDURE OF WORKS

The Contractor shall be solely responsible for ensuring that the procedure of works is kept to and no deviations will be entertained.

Should this, however not be possible then the Contractor shall timeously notify the ESKOM Official.

SPECIAL CLAUSES**29 TRADE NAMES, ETC.**

All materials, fittings, finishes, etc. specified under a "Trade Name", catalogue number or reference shall be either exactly as described or of equal quality, specification and weight to those described.

The ESKOM Official's written approval must be obtained for any departure from the specification before the submission of tenders, failing which specified materials, fittings, finishings, etc. shall be deemed to have been allowed for in the tenders.

Where articles other than what the manufacturer specified are used, an adjustment of the prices will be made and Variation Orders issued to cover these adjustments.

The Contractor must take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instructions after consultation with the manufacturer's authorised representative.

30 CONTRACTOR'S RESPONSIBILITY

The ESKOM Official and the other Professional Consultants shall not be responsible for any act or omission on the part of the Contractor, which may result in any patent or latent defects, in materials or workmanship, breach or neglect of any local regulations. The Contractor shall at all times be responsible for any such neglect, deviation or wrong act, whether the same is discovered before or after the final certificate, or any other Certificate, has been approved.

31 SITE INSTRUCTIONS AND RECORDS

The Contractor shall supply and have available at the site of the works at all times, the following site books:-

a) Site Instruction Book

Receiving and recording instructions in a suitable A4 size triplicate book kept on site. Instructions issued shall be recorded by the ESKOM Official or other Employer's Agents to whom the ESKOM Official has delegated Authority in the book. Only site instructions issued in such a book shall be recognised.

b) Daily Record Book

The Contractor shall record in a suitable A4 size triplicate book kept at the site, a daily record of work done, all site visits by the ESKOM Official and other professional personnel and all events affecting the Works, such as progress, issue of plans, breakdown of machinery, etc. The labour, plant and material on site shall be recorded as well as work performed. Entries must be made by the Contractor and must be signed and forwarded to the ESKOM Official for his counter signature on a daily basis. Copies of these records shall be for the ESKOM Official, ESKOM Official and Contractor.

32 LOCATION OF TEMPORARY BUILDING AND TEMPORARY SERVICES

The Contractor shall provide all necessary temporary works, including temporary roads, tracks, crossings, hard standing and services, etc. required for his own and Sub-Contractor's use during the construction and maintenance period.

There is no guarantee given or implied that Site Conditions will be such that the Contractor will be able to erect such offices, stores and temporary accommodation within the site boundaries and it shall be the Contractor's responsibility to adopt whatever measures he deems necessary in this regard and to obtain permission and pay all cost in connection therewith.

33 OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993 (THE ACT)

By the submission of a tender, any Tenderer will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act. As a mandatory the successful Tenderer will be deemed to be the "Principal Contractor" and an Employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed and machinery and plant used in accordance with the Act. Should the Contractor, for whatever reason be unable to perform as required by the Act, the Contractor undertakes to inform the Employer accordingly.

The Contractor will be required to:-

- 1 Provide the Employer with a health and safety programme and plan specifically related to the Works and ensure that the programme and plan are implemented and maintained, with the programme being subject to audit, at least once a month, by the Employer;
- 2 Exercise discretion and if deemed relevant (by the Contractor) appoint a full-time or part-time Construction Safety Officer (in writing) to assist in the control of all safety related aspects, and to give input into the health and safety plan;
- 3 Appoint (in writing) a full time competent Supervisor (as defined in the Regulation in terms of the Act) to supervise the project;
- 4 Provide the Employer and any sub-contractors that may be engaged by the Contractor and/or nominated sub-contractors with a programme of construction for the Works as well as a method statement with the necessary details and procedures for execution;
- 5 Provide the Employer both before commencing and during construction work with a copy of a risk assessment performed by a competent person who has been appointed in writing by the Contractor, and the risk assessment must form part of the health and safety plan;
- 6 Ensure that every employee or person (including visitors) who enters the site of the Works undergoes health and safety induction training pertaining to hazards identified on the site of the Works and upon such training having been successfully completed, the Contractor must issue written confirmation by a competent person to the trained employees or persons who shall be further instructed to carry such confirmation with them at all times whilst on the site of the Works;
- 7 Issue, on loan, the necessary personal protective equipment to visitors to the site of the Works; and
- 8 Be in good standing with the Compensation Commissioner at all times during the duration of the Contract

The Contractor will be deemed to have satisfied himself with his obligations in terms of the Act and to have allowed for all costs arising from compliance with the Act as no claim for extra costs arising from compliance with, and obligations in terms of the Act will be entertained.

34 CONTRACTORS TO VISIT SITES PRIOR TO SUBMISSION OF TENDER

The contractors are urged to visit all the sites that has been identified to get an overview of the nature of works, numbered assets and the location of the building prior to pricing this document.

35. PRICING OF THESE GENERAL NOTES

The Contractor may allow in his pricing for any additional costs arising out of these "General Notes" as no later claims for additional costs will be considered.

CAMDEN POWER STATION MAINTENANCE PROVISIONAL BILLS OF QUANTITIES

The Association of South African Quantity Surveyors
Die Vereniging van Suid-Afrikaanse Bourekenaars



MODEL PREAMBLES FOR TRADES

2008

*forming part of
the bills of quantities*

Project: _____

Contract Reference Number: _____

Effective date November 2008

ISBN 978-0-620-1663-4

EXPLANATORY NOTES AND INSTRUCTIONS ON THE USE OF THESE MODEL PREAMBLES

1. The document

1.1 This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za

1.2 The contents of this document are intended to cover workmanship and materials encountered in a significant majority of projects. If a material is not encountered in a significant majority of projects, its preamble will in all likelihood not be included in this document

1.3 By its very nature, this document is a "Model" document and one that is designed to act as a basis upon which to build. It is anticipated that it will be supplemented by a "Supplementary Preambles" document included in the text of the bills of quantities that will include, inter alia, the following:

1.3.1 supplementary clauses of a general nature that practitioners may deem necessary to cover their own individual requirements,

1.3.2 additional clauses pertaining to specific materials incorporated in a project and not covered by the Model Preambles,

1.3.3 amendments to anything contained in the Model Preambles. A clause has been incorporated in the "General" section of the document stipulating that anything contained in the "Supplementary Preambles" which is at variance to that which is contained in the Model Preambles, will take precedence over the Model Preambles and apply to the works in hand

1.4 It is intended that this document will be used by reference only in the text of the bills of quantities and will NOT be bound or reproduced therein

2. The basic philosophy

2.1 Wherever possible, reference has been made throughout the preambles to South African National Standards (SANS) to describe materials and methods respectively. It is therefore incumbent on the users of these preambles to have ready access to the relevant Specifications and Codes. Where such Specifications or Codes do not exist, suitable preambles have been compiled

2.2 These preambles have been designed to assist in abbreviating descriptions in the text of the bills of quantities and practitioners are encouraged to make use of this facility. e.g. The description of a stormwater catchpit would read:

"Brick stormwater catchpit size internally 600 x 400 x 1 200mm deep to invert fitted with and including a 450 x 300mm x 59kg cast iron grating and frame"

2.3 Wherever alternatives exist in respect of materials or workmanship, specific choices have been made in these preambles. Should users require different choices to specific items, these should be referred to in the Supplementary Preambles as outlined in clause 1.3

3. Additional notes in the use of these Model Preambles

3.1 Concrete, Formwork and Reinforcement

The Project Specification embodied in these preambles was compiled in collaboration with the Authors of SANS 1200G, which forms the basis for the Concrete, Formwork and Reinforcement model preambles

Users of these preambles are advised to submit a copy of the Model Preambles to the Engineers involved in a project for their scrutiny. Any amplifications, amendments, etc required by individual Engineers would then be incorporated in the Supplementary Preambles referred to in item 1.3

3.2 Roof Coverings

The roof coverings included in these Model Preambles are limited in their content and therefore any roofing material not included in these Preambles will need to have its full preamble included in the Supplementary Preambles

3.3 Structural Steelwork

The comments made under item 3.1 apply equally to Structural Steelwork

Note that the protective treatment of the structural steel covers only the treatment up to and including the primer (and patching after erection). The finishing coats of paint must be fully described and included either in the "Structural Steelwork" or in the "Paintwork" trade, as the practitioner wishes

MODEL PREAMBLES FOR TRADES**CONTENTS**

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A. GENERAL**A.1 APPLICATION OF CLAUSES**

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades

A.2 ABBREVIATIONS

The following abbreviations shall apply:

AASHTO – American Association of State Highway and Transportation Officials

AISI – American Institute of Steel Industries

BS – British Standard

CKS – Coordinating Specifications issued by the Central Coordinating Committee under the auspices of the South African Bureau of Standards

CSIR – Council for Scientific and Industrial Research

SANS – South African National Standards and the number following shall refer to the relevant specification or code of practice as the case may be

A.3 MATERIALS AND WORKMANSHIP

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Project Manager and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable

A.4 PROPRIETARY PRODUCTS

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc shall be for the particular type and manufacture specified

The approval of the Project Manager shall be obtained prior to any substitution and where products or materials etc other than those specified are used, adjustments in the rates will be made if necessary

A.5 ASSEMBLING

Rates for manufactured items shall include assembling complete and handing over in proper working order

A.6 REFERENCES IN DESCRIPTIONS

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules

A.7 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use

A.8 APPLICATION OF THE NATIONAL BUILDING REGULATIONS

All work shall be executed in accordance with the requirements of SANS 10400

A.9 ACCURACY IN BUILDINGS

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 10155 unless otherwise stated

A.10 REFERENCES TO OTHER DOCUMENTS

References in these "Model Preambles for Trades" to other documents, including SANS, CKS and BS, shall pertain to the latest edition thereof including all amendments thereto at the date for submission of the tender

B. ALTERATIONS

B.1 ALTERATIONS

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Project Manager if any disconnection or alterations become necessary

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work

B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Project Manager

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense

B.3 DISPOSAL OF DEBRIS ETC

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations

B.4 MAKING GOOD DAMAGED WORK

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing

B.5 FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

B.6 BUILDING UP OPENINGS

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

C. EARTHWORKS**C.1 DEMOLITIONS****C.1.1 Nature and extent**

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract

The Contractor shall completely demolish the buildings etc in a careful, skilful, practical and safe manner down to 150mm below ground level

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense

C.1.2 Notices etc

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Project Manager. All the abovementioned charges and fees shall be paid by the Contractor and included in his prices

The Contractor shall give ample notice to the Project Manager and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services etc

C.1.3 Loss

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage

C.1.4 Materials from the demolitions, credit, etc

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the Project Manager

C.1.5 Disposal of debris etc

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions

C.2 SOIL INSECTICIDES

The application of soil insecticides shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS 10124 4

C.3 FILLING ETC

C.3.1 Filling generally

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm

Filling under floors and backfilling to excavations shall be suitable inert material, free from clay, vegetable matter, large stones, etc, having a maximum plasticity index of 10, spread, levelled and compacted to a density of at least 90% Mod. AASHTO

C.3.2 Hardcore

Hardcore shall be broken stone or other approved hard material graded from 25mm to 75mm with the finer material on top and shall be spread, levelled and consolidated

C.4 EXCAVATIONS

C.4.1 Classification of excavated material

"Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

"Soft rock" shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact outcrop and material of similar hardness

"Earth" shall mean all ground other than that classified as "hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m³ in volume

D. CONCRETE, FORMWORK AND REINFORCEMENT

D.1 SPECIFICATION FOR CONCRETE WORK GENERALLY

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Project Manager's representative responsible for this section of the Works

PROJECT SPECIFICATION

The following amplifications, additions and amendments to SANS 1200G shall constitute the Project Specification. Clause numbers refer to either the existing clauses in SANS 1200G or to new clauses, which are related to the existing clauses

1. SCOPE

This clause is amended to include:

1.1 This specification does not cover the methods by which the finished structure is to be measured for the purpose of payment and the "Standard System of Measuring Building Work" shall apply

2. INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS

Clause 2.1(b) shall not apply

2.2 APPLICATION

This clause shall not apply

4. PLANT

4.5 FORMWORK

4.5.2 Finish

Unless otherwise stated the quality of all formwork shall be such that the finished surface of the concrete is "Rough" in terms of clause 5.2.1(a)

5. CONSTRUCTON

5.2 FORMWORK

5.2.1 Classification of Finishes

(a) Rough. No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III

(b) Smooth. Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II

(c) Special

(i) Smooth and fair

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant

Formwork shall be metal, wrot timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Project Manager. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing etc. Any defect shall be made good by either removing and replacing the defective concrete or, in certain instances only, by patching

5.5 CONCRETE

5.5.1.6 Prescribed mix concrete

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

Class of Concrete	Estimated minimum compressive strength in MPa at 28 days	Maximum nominal size of coarse aggregate in mm	Proportions of Constituents		
			Cement (Parts)	Fine aggregate (Parts)	Coarse aggregate (Parts)
A	7	37,5	1	4	8
B	15	19	1	3	5
C	20	19	1	2,5	3,5

Cement shall comply with SANS 50917-1 of strength 32,5N or higher

Should cement and aggregates be mixed by volume, the contents of a 50kg sack of cement shall be taken to be 0,033m³

Notwithstanding the requirements contained in SANS 1200G, the Project Manager may permit certain items of non-structural concrete to be mixed by hand

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency

5.5.1.7 Strength concrete

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, eg 30 MPa/19mm

The water/cement ratio shall be as Table 5 of clause 5.5.1.5 for moderate exposure conditions

5.5.1.8 "No-Fines" concrete

"No-fines" concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. "No-fines" concrete mixed with excessive water, which results in a thin grout, which drops off the aggregate, will be rejected

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted

5.5.3.2 Ready-mixed concrete

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer

6. TOLERANCES

Degree of Accuracy II shall apply for all work unless otherwise stated

7. TESTS

7.1 FACILITIES AND FREQUENCY OF SAMPLING

7.1.2 Frequency of sampling

7.1.2.5 The frequency of sampling shall be as directed by the Engineer, but not less than one set of cubes from every 50m³ cast

8. MEASUREMENT AND PAYMENT

This clause shall not apply

D.2 AGGREGATES OF LOW DENSITY

Aggregates of low density shall comply with SANS 794

D.3 HOLLOW BLOCKS, PREFABRICATED BLOCK BEAMS AND PLANKS, ETC

Blocks, block beams, planks, etc shall be fixed and supported in such a manner that no movement can take place before or during the casting of concrete. No broken components shall be used

D.4 SUPERVISION

A competent and experienced foreman shall superintend personally the whole of the concrete construction and pay special attention to:

- (a) The quality, testing and mixing of materials,
- (b) The placing and compaction of concrete,
- (c) The construction and removal of formwork and
- (d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Project Manager before commencing concreting of foundations or reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Project Manager to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Project Manager to inspect all or any part of the Works or that such inspection is necessarily complete in every respect

D.5 GENERAL

Concrete

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, and for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements

Surface beds cast in panels shall be cast in panels approximately 9m²

Formwork

Formwork to slabs and beams shall be cambered where required

Rates for formwork to soffits shall include propping not exceeding 3,5m high unless otherwise described. Formwork to walls and columns is not exceeding 3,5m high above bearing level unless otherwise described

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement

E. PRECAST CONCRETE**E.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Precast concrete paving slabs SANS 541

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT

E.2 CONCRETE

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size

E.3 MOULDS

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as "finished smooth from the mould" or as "precast terrazzo", moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces

E.4 FINISHES TO BLOCKS

Where described as "precast terrazzo", such surfaces shall have a facing of terrazzo described under O. PLASTERING. The facing shall be poured into the moulds in a wet state (not dry pressed) and thoroughly worked up against finished faces to ensure that it finishes smooth from the mould

Projections shall be rubbed off and faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be arris rounded

E.5 CASTING ETC

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting

E.6 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion

E.7 BEDDING, JOINTING AND POINTING

Blocks shall be bedded and jointed solidly in Class I mortar as described under F. MASONRY and shall be pointed with slightly keyed joints

Blocks finished with "precast terrazzo" shall have joints raked out and pointed with slightly keyed joints in tinted waterproofed mortar composed of one part cement and three parts sand to match terrazzo facing

E.8 GENERAL

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing

F. MASONRY**F.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Burnt clay masonry units	SANS 227
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – fine aggregates for plaster and mortar	SANS 1090
Concrete masonry units	SANS 1215
Prestressed concrete lintels	SANS 1504
Burnt clay paving units	SANS 1575
Metal ties for cavity walls	SANS 28
Common cement	SANS 50197-1 (Class 32,5N)
Masonry cement	SANS 50413-1 (Class 22,5X)
Concrete masonry construction	SANS 10145
The structural use of masonry	SANS 10164-1
Masonry walling	SANS 10249
Concrete floors	SANS 10109-1&2

F.2 SAND

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve

F.3 BURNT CLAY BRICKS

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated

Common bricks shall be General Purpose bricks

Extra hard burnt bricks shall be General Purpose (Special) bricks

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of facing and paving bricks during transit and handling

F.4 CONCRETE BRICKS

Concrete bricks shall have a nominal compressive strength of 8 MPa

F.5 QUARRY TILES ETC

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour

F.6 WIRE TIES

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete

F.7 BRICKWORK REINFORCEMENT

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

F.8 MORTAR

Mortar shall comply with the following table:

1	2	3	4
Mortar Class	Minimum compressive strength MPa	Cement:sand (common cement)	Cement:sand (masonry cement)
I	10	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	5	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1,5	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

Mortar shall be Class II unless otherwise specified

Mortar plasticizers may only be used with the approval of the Project Manager

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used

F.9 COMPO MORTAR

Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 litres

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated. Immediately before use, the cement shall be mixed in and the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used

F.10 BRICKWORK

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable

Brickwork, unless otherwise described, shall be built in Class II mortar

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Where necessary, bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre. The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick

F.11 BLOCKWORK

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond. Blockwork, unless otherwise described, shall be built in Class II mortar

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

Hollow blocks shall be laid in shell bedding, ie only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed

The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Clay blocks shall be wetted before being laid and the course of blocks last laid shall be well wetted before laying a fresh course upon it

F.12 CENTRES AND TURNING PIECES

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

F.13 FACE BRICKWORK

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpend shall be vertically aligned

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained

F.14 PAVINGS, SILLS, COPINGS, ETC

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints

G. WATERPROOFING

G.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Bituminous damp-proof courses	SANS 248 (Type FV)
Polyolefin film for damp- and waterproofing in buildings (walls, sills, etc)	SANS 952 (Type B)
Polyolefin film for damp- and waterproofing in buildings (floors and basements)	SANS 952 (Type C)
Mastic asphalt for roofing	SANS 297
Mastic asphalt for damp-proof courses and tanking	SANS 298
Bituminous roofing felt	SANS 92 (Type 60)
Polyolefin film for damp- and waterproofing in buildings (flat roofs)	SANS 952 (Type A)
Chloroprene rubber sheet (for waterproofing)	SANS 580
Sealing compounds for the building industry, two-component, polysulphide base	SANS 110 (Type 2 - Gun Grade)
Sealing compounds for the building and construction industry, two- component, polyurethane base	SANS 1077
The waterproofing of buildings (including damp-proofing and vapour barrier installation)	SANS 10021

G.2 WATERPROOFING TO ROOFS, BASEMENTS, ETC

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work

G.3 DAMP-PROOF COURSE TO WALLS

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap shall equal the full thickness of the wall

H. ROOF COVERINGS ETC

H.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Concrete roofing tiles	SANS 542
Clay roofing tiles	SANS 632
Sawn softwood timber battens	SANS 1783-4
Fibre-cement sheets (flat and profiled)	SANS 685
Aluminium alloy corrugated and troughed sheets	SANS 903

Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities	SANS 3575
Continuous hot-dip zinc-coated carbon steel sheet of structural quality	SANS 4998
Polyolefin film for damp- and waterproofing in buildings	SANS 952
Metal roofing tiles	SANS 1022
Glass-reinforced polyester (GRP) laminated sheets (profiled or flat)	SANS 1150
Fasteners for roof and wall coverings in the form of sheeting	SANS 1273
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Fixing of concrete interlocking roofing tiles	SANS 10062
Roof and side cladding	SANS 10237
Sheet zinc	BS 849
Sheet lead	BS 1178
Sheet aluminium	BS 1470
Sheet copper	BS 2870

H.2 GALVANIZED STEEL PROFILED SHEETS ETC

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m² and shall be free of white rust

H.3 GALVANIZED SHEET IRON

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m² and shall be free from white rust

H.4 NAILING AND SCREWING

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium

H.5 LAPS

Sheet metal flashings shall have minimum 100mm laps and linings to valleys, secret gutters, etc minimum 225mm laps

H.6 GENERAL

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories

I. CARPENTRY AND JOINERY

I.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sawn softwood timber : General requirements	SANS 1783-1
Sawn softwood timber : Stress-graded structural timber and timber for frame wall construction	SANS 1783-2
Sawn softwood timber : Branderling and battens	SANS 1783-4
Softwood flooring boards	SANS 629
Hardwood furniture timber	SANS 1099
Hardwood block and strip flooring	SANS 281
Wooden ceiling and panelling boards	SANS 1039
Laminated timber (glulam)	SANS 1460
Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Wood-wool panels (cement bonded)	SANS 637
Fibre-cement sheets (flat and profiled)	SANS 685
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Particle boards	SANS 50312-1to7
Decorative laminates	SANS 4586
Wooden doors	SANS 545
Fire doors	SANS 1253
Materials for thermal insulation of buildings	SANS 1381-1,2,4&6
Expanded polystyrene thermal insulation boards	SANS 1508
Mild steel nails	SANS 820
Metal screws for wood	SANS 1171
Wood-preserving creosote	SANS 539

Softwood shall bear the relevant SABS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SABS marked timber be unavailable, the Project Manager's prior permission shall be obtained before using unmarked timber

I.2 HARDWOODS

All hardwoods shall be specially selected, well seasoned, free from sapwood and well kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

I.3 INFECTION AND PRE-TREATMENT OF TIMBER

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 1978-12-29, permanent softwood fixed in the building shall be treated against borer etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution

I.4 CONSTRUCTION IN GENERAL

Where applicable, construction methods shall comply with SANS 10082. Wood and laminate flooring shall be installed in accordance with SANS 10043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 10243

I.5 STRUCTURAL TIMBER

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 10096

I.6 PLATE NAILED TIMBER ROOF TRUSSES

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Structural Engineer in accordance with SANS 1900, SANS 10160 and SANS 10163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc

Fully detailed shop drawings of all trusses etc, indicating sizes, bracing, loading, etc, shall be submitted to the Project Manager for approval prior to fabrication

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Roof trusses and bracing shall include design and preparation of shop drawings

I.7 TONGUED AND GROOVED BOARDING

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing

I.8 JOINERY

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where necessary. Skirtings shall be trenched at back

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted

Joinery shall have arris rounded angles and shall be blocked and planted on

I.9 VENEERS

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure

I.10 DOORS

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board

Unless otherwise described double doors shall have rebated meeting stiles

I.11 FIXING

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as "bolted", the bolts have been given separately

I.12 ADHESIVES

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (eg kitchen and laboratory worktops) shall be of the WBP type

J. CEILINGS, PARTITIONS AND ACCESS FLOORING**J.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Gypsum cove cornice	SANS 622
Wood-wool panels (cement-bonded)	SANS 637
Sawn softwood timber : Brandering and battens	SANS 1783-4

Sawn softwood timber : Timber for frame wall Construction	SANS 1783-2
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Raised access flooring	SANS 1549

J.2 TONGUED AND GROOVED BOARDING

Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed

J.3 CEILINGS ETC

J.3.1 Brandering

Brander for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions

J.3.2 Ceiling boards

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to brandering with galvanized or cadmium-plated clout-headed nails

J.4 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

J.5 EXPOSED TEE-SYSTEM SUSPENDED CEILINGS

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices etc shall be as described in the items and shall be finished to match the exposed tees

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance

All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Project Manager before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Project Manager and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings

J.6 FLUSH PLASTERED SUSPENDED CEILINGS

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness etc recommended by the manufacturer

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required

Fixing points shall be agreed to by the Project Manager before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Project Manager and shall have the standard suspension system modified as necessary to work around any pipes or light fittings

K. FLOOR COVERINGS, WALL LININGS, ETC

K.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Semi-flexible vinyl floor tiles	SANS 581
Resin modified vinyl floor tiles	SANS 586
Flexible vinyl flooring	SANS 786
Hardwood block and strip flooring	SANS 281
Wood mosaic flooring	SANS 978
Textile floor coverings (pile construction)	SANS 1375
Textile floor coverings (needle-punched construction)	SANS 141
Carpet underlays	SANS 1419
The installation of wood and laminate flooring	SANS 10043

The installation of resilient thermoplastic and similar flexible floor covering materials	SANS 10070
The installation of textile floor coverings	SANS 10186
Sheet linoleum (calendered types), cork, carpet and linoleum tiles	BS 810
Solid rubber flooring	BS 1711
Felt backed linoleum	BS 1863

K.2 LAYING OF MATERIAL

Floor tiles shall be laid with continuous joints in both directions

Patterned floor coverings shall be matched at joints

K.3 GENERAL

Floor coverings, wall linings, skirtings, nosings, etc shall include all preparatory work to screeded or plastered surfaces etc, priming coats and adhesives

Floor coverings and wall linings shall be dressed around and into corners. Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer

Plastic handrails shall have welded and polished butt joints

L. IRONMONGERY

L.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Locks, latches and associated furniture for doors. (Domestic type)	SANS 4
Kitchen cupboards: Built-in and free-standing	SANS 1385
Single action closers	SANS 1510
Padlocks	SANS 1533
Fasteners	SANS 1700
Chalk writing boards for schools	CKS 36

L.2 KEYS

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as "en suite" shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock

L.3 FIXING

Unless otherwise described, ironmongery is to be fixed to wood

Items described as “plugged” shall be screwed to fibre, plastic or metal plugs

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames

L.4 KITCHEN CUPBOARDS

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs

Where cupboards are described as a “series”, tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc

M. STRUCTURAL STEELWORK**M.1 SPECIFICATION**

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable. Structural fasteners shall comply with SANS 1700

Whenever the term “Engineer” appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Project Manager’s representative responsible for this section of the Works

M.2 PROJECT SPECIFICATION INCORPORATING AMPLIFICATIONS, ADDITIONS AND AMENDMENTS TO SANS 1200H AND 1200HA

The following amplifications, additions and amendments to SANS 1200H and SANS 1200HA shall apply and clause numbers refer to either the existing clauses in the relevant SANS or to new clauses which are related to the clauses therein

SANS 1200H

3.1.1 Weldable structural steel

Weldable structural steel shall comply with SANS 1431

5.1.2 Contractor provides shop details

The Contractor shall be responsible for the preparation of all shop detail drawings

5.1.3 Engineer provides shop details

This clause shall not apply

5.3.9 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

8. Measurement and payment

This clause shall not apply

SANS 1200HA

5.2.10 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

5.3.7 Repairs to paint and site painting

This clause shall not apply

8. Measurement and payment

This clause shall not apply

N. METALWORK**N.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Fasteners	SANS 1700
Expanded metal	SANS 190-1&2
Windows and doors made of rolled mild steel sections	SANS 727
Hot-dip galvanized zinc coatings on fabricated iron and steel articles	SANS 121
Strongroom and vault doors	SANS 949
Anodized coatings on aluminium (for architectural applications)	SANS 999
Steel door frames	SANS 1129
Mushroom- and countersunk-head bolts and nuts	SANS 1143
Welding of metalwork	SANS 1044
Adjustable glass-louvred windows	CKS 413
Aluminium sheet and strips	BS 1470
Aluminium extruded tube and hollow sections	BS 1474
Aluminium bars and sections	BS 1476

N.2 STEEL

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and given one coat of primer as specified before leaving the workshop

N.2.1 Galvanizing of steel

Steelwork described as “galvanized” shall be galvanized by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval

N.3 STAINLESS STEEL

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel

N.4 ALUMINIUM

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.

Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil

N.4.1 Anodizing of aluminium

Aluminium described as “anodized” shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing

N.5 BOLTS AND NUTS

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used

N.6 SCREWING OF METALWORK TO STEEL, WOOD, CONCRETE, ETC

Metalwork described as “screwed” to steel, wood, etc or “plugged” to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs

N.7 BOLTING OF METALWORK

Where metalwork is described as “bolted” to steel, wood, brickwork, concrete, etc the bolts are measured elsewhere

N.8 WELDING OF METALWORK

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous

N.9 METALWORK GENERALLY

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails etc described as “continuous” shall be in long lengths with welded joints

N.10 PRESSED STEEL DOORS, FRAMES, ETC

N.10.1 Door frames

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be primed as specified before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behindappings for screws

N.10.2 Cupboard door frames

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts

N.10.3 Combination doors and frames

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts

N.10.4 Transformer room doors and frames

Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvered ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen

N.10.5 Sizes

The frame widths given refer to unfinished wall thicknesses

N.10.6 Glazing beads

Where specified, glazing beads shall be 12 x 12mm standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

N.11 STEEL WINDOWS, DOORS, ETC

N.11.1 Windows, doors, etc

All fittings to windows, doors, etc shall be chromium plated. Fixed lights and opening sashes shall be in single squares. Windows etc of single unit construction shall have weather bars at transoms above opening sashes

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

Except where described as galvanized, windows, doors, burglar bars, etc shall be primed as specified before leaving the factory

N.11.2 Burglar bars and flyscreens

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes

N.12 ADJUSTABLE LOUVRE UNITS

Adjustable louvre units shall be suitable for hand or longarm operation

Louvre units shall include glass louvres with polished edges and installation, including holes, screws, rivets, preparation of openings, etc

N.13 ALUMINIUM WINDOWS AND DOORS

The foregoing preambles "N.4 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063T6, 6261-T6 or 6082-T6 alloy and temper

Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Project Manager for approval

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to preformed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom

N.13.1 Glazing beads

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads

N.13.2 Finishes

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick

N.13.3 General

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion

N.14 STRONGROOM AND RECORD ROOM DOORS

Strongroom and record room doors shall not be built in as the work proceeds, but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Project Manager's discretion shall provide a new door or lock and keys at his own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Project Manager per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense

N.15 STEEL ROLLER SHUTTERS

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be primed as specified before leaving the factory 28

O. PLASTERING**O.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 225X)
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090

O.2 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any plastering or other in situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

O.3 FINISH

All coats of paving and plastering shall be executed in one operation without any blemishes

O.4 SCREEDS

Screeds shall be composed of one part cement and four parts sand

O.5 CEMENT RENDER

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Cement render finish shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.6 GRANOLITHIC

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid

Granolithic shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.7 TERRAZZO

Terrazzo shall be applied in two coats. The undercoat shall be composed of one part cement and three parts sand and shall be finished with a wooden float. The finishing coat shall be composed of one part cement and two parts marble or stone aggregate of a colour and size to obtain the required colour and texture and shall be at least 12mm thick, and applied before the undercoat has dried out. The finishing coat shall be compacted by tamping or rolling until superfluous water has been expelled, finished with a steel trowel and cured for at least seven days after laying. The finished surface shall show at least 80% of the aggregate

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "brushed" shall be brushed with a steel wire brush on the day the terrazzo has been laid to expose the aggregate as required

Where required, brass or other dividing strips shall be embedded in the undercoat to finish flush with the finished surface

Three sample blocks, each size 300 x 300mm, as separately measured shall be prepared for approval by the Project Manager and kept in an accessible place on the site until the completion of the contract

O.8 SKIRTINGS

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square junction with floor finish

O.9 THICKNESS OF PLASTER

All plaster, other than skim plaster, shall be not less than 10mm and not more than 20mm thick

O.10 CEMENT PLASTER

Cement plaster shall comply with the following table:

1	2	3
Plaster Class	Cement:sand (common cement)	Cement:sand (masonry cement)
I	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

O.11 COMPO PLASTER

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand

O.12 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

O.13 TWO COAT PLASTER WITH GYPSUM FINISH

Two coat plaster with gypsum finish shall comprise an undercoat of Class II cement plaster finished with a wooden float and a finishing coat of gypsum skim plaster

O.14 ROUGH-CAST PLASTER

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture

O.15 FINE ROUGH-CAST PLASTER

Fine rough-cast plaster shall be as for rough-cast plaster but the finishing coat shall be composed of one part cement and three parts coarse sand

O.16 GENERAL

Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall

P. TILING**P.1 MATERIALS AND WORKMANSHIP**

Materials and workmanship shall comply with the following standards:

Glazed ceramic wall tiles and fittings	SANS 22
Ceramic wall and floor tiles	SANS 1449
Common cement	SANS 50197-1(Class 32,5N)

Masonry cement	SANS 50413-1(Class 22,5X)
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090
The design and installation of ceramic tiling	SANS 10107

P.2 TILES, MOSAICS, ETC

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour

P.3 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key

P.4 CERAMIC WALL AND FLOOR TILING

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound

P.5 GENERAL

Tiling described as “on walls” is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall

Q. PLUMBING AND DRAINAGE

Q.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sheet metal

Sheet zinc	BS 849
Sheet aluminium	BS 1470
Sheet copper	BS 2870

Rainwater systems

Unplasticized poly(vinyl chloride) (PVC-U) components for external rainwater systems	SANS 11
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Pipes and fittings

Steel pipes : Pipes suitable for threading and of nominal size not exceeding 150mm	SANS 62
Plain-ended solid drawn copper tubes for Potable water	SANS 460
Malleable cast iron fittings threaded to ISO 7-1	SANS 4
Polyethylene (PE) pipes for water supply – Specifications	SANS 4427
Cast iron fittings for asbestos cement pressure pipes	SANS 546

Vitrified clay sewer pipes and fittings	SANS 559
Reinforced concrete pressure pipes	SANS 676
Concrete non-pressure pipes	SANS 677
Cast iron pipes and pipe fittings for use above ground in drainage installations	SANS 746
Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings	SANS 791
Fibre-cement pipes, couplings and fittings for sewerage, drainage and low-pressure irrigation	SANS 819
Pitch-impregnated fibre pipes and fittings and jointing	SANS 921
Unplasticized poly (vinyl chloride) (PVC-U) pressure pipe systems	SANS 966-1
Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings	SANS 967
Rubber joint rings (non-cellular)	SANS 974-1
Copper-based fittings for copper tubes	SANS 1067-1&2
Fibre-cement pressure pipes and couplings	SANS 1223
Polypropylene pressure pipes	SANS 1315
Non-metallic waste traps	SANS 1321-1&2
Vent valves for drainage installations	SANS 1532
Heavy duty cast iron pipe fittings for drainage and gas and water supplies	BS 78
Lead pipes	BS 602
Cast iron pressure pipes for use in drainage and gas and water supplies	BS 1211
Stainless steel pipes for use with compression fittings	BS 4127
Sanitary fittings etc	
Stainless steel sinks with draining boards (for domestic use)	SANS 242
Stainless steel wash-hand basins and wash troughs	SANS 906
Stainless steel sinks for institutional use	SANS 907
Stainless steel stall urinals	SANS 924
Acrylic sanitary ware : Baths	SANS 1402-1
Glazed ceramic sanitary ware	SANS 497

WC flushing cisterns	SANS 821
Flush valves for WC flushing cisterns	SANS 1509
Taps, valves etc	
Water taps (metallic bodies)	SANS 226
Water taps (plastic bodies)	SANS 1021
Single control mixer taps	SANS 1480
Float valves	SANS 752
Plastic floats for ball valves	SANS 1006
Functional control valves and safety valves for Domestic hot and cold water supply systems	SANS 198
Cast iron gate valves for waterworks	SANS 664
Automatic shut-off flush valves for water closets and urinals	SANS 1240
Check valves (flanged and wafer types)	SANS 1551-1&2
Fire extinguishers	
Portable refillable fire extinguishers	SANS 1910
Portable rechargeable fire extinguishers : Halogenated hydrocarbon type extinguishers	SANS 1151
Water heaters and fire hose reels	
Fixed electric storage water heaters	SANS 151
Fire hose reels (with semi-rigid hose)	SANS 543
Drainage covers, gratings, etc	
Cast iron surface boxes and manhole and inspection covers and frames	SANS 558
Cast iron gratings for gullies and stormwater drains	SANS 1115
The installation of polyethylene and poly (vinyl chloride) (PVC-U and PVC-M) pipes	SANS 10112
Water supply and drainage for buildings	SANS 10252-1&2
Cast iron step irons	BS 1247

Q.2 GENERAL**Q.2.1 Excavations**

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed

Q.2.2 Concrete

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete

Q.2.3 Brickwork

Brickwork shall be of extra hard burnt bricks built in Class I mortar

Q.2.4 Plaster

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded

Q.2.5 Diameters of pipes etc

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated

Q.3 SHEET METAL WORK**Q.3.1 Galvanized sheet iron**

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class Z275, unless otherwise specified, zinc coating complying with SANS 3575/4998. Sheets shall be free from white rust

Q.4 EAVES GUTTERS**Q.4.1 Galvanized sheet iron gutters**

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25m centres

Q.4.2 Fibre-cement gutters

Fibre-cement gutters shall have spigot and socket joints. Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias

Q.4.3 Unplasticized polyvinyl chloride (UPVC) gutters

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias

Q.4.4 Aluminium gutters

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc

Q.5 RAINWATER PIPES**Q.5.1 Galvanized sheet iron pipes**

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints. Pipes shall be fixed to walls etc with galvanized mild steel holderbats spaced at not exceeding 2m centres with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.2 Fibre-cement pipes

Fibre-cement pipes shall have spigot and socket joints. Pipes shall be fixed to walls etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.3 Unplasticized polyvinyl chloride (UPVC) pipes

Pipes shall be fixed to walls etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe

Q.5.4 Aluminium pipes

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters. Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc. Pipes shall be fixed to walls etc with 20 x 0,6mm straps at not exceeding 1,5m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls

Q.6 STORMWATER CHANNELS

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces

Precast concrete channels shall be of 25 MPa concrete, generally in 1m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints

Q.7 JOINTS

Joints of pipes not covered by SANS shall be as follows:

Pipes	Joints
Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use under ground in non-pressure pipe lines	Flexible joints in accordance with the manufacturer's instructions
Cast iron for use above ground	Spigot and socket joints with tarred rope yarn and caulking compound or Plain ended joints with stainless steel couplings with neoprene rubber sleeves
Cast iron for use below ground	Spigot and socket joints with tarred rope yarn and caulking compound
Galvanized mild steel	Joints of screwed galvanized steel sockets or bolted galvanized iron flanges Screwed joints with plastic jointing tape or hemp Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes
Joints between pipes of different materials shall be as follows:	
Between cast iron and mild steel	Spigot and socket joints with tarred rope yarn and caulking compound
Between cast iron and clay	Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet
Between mild steel or copper and clay	Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

- | | | |
|-------|---|---|
| Q.8.1 | Galvanized mild steel (except those stated in Q.8.3) | To walls with galvanized mild steel brackets for pipes not exceeding 80mm diameter and with galvanized cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar
To woodwork with screw-on type galvanized mild steel holderbats |
| Q.8.2 | Copper and stainless steel | To walls with brass holderbats or screw-on type two-piece spacing clips for pipes not exceeding 75mm diameter and with purpose made holderbats for pipes exceeding 75mm diameter; both types with tails cut and pinned in 1:3 cement mortar |
| Q.8.3 | Cast iron and galvanized mild steel for soil, waste and vent pipes | To woodwork with screw-on type brass holderbats
To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar
To woodwork with screw-on type galvanized mild steel holderbats |
| Q.8.4 | Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride | To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes |
| Q.8.5 | Fibre-cement | To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar |

Q.9 PIPES LAID IN GROUND**Q.9.1 Water pipes etc**

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface

Q92 Drain pipes

Excavations taken out too deep shall be filled in with selected soil and compacted. Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

Pipe fittings	Method of sealing and fixing
Fibre-cement	Sealed with synthetic rubber or bituminous mastic packing and fixed with screws
Vitrified clay	Polypropylene lid sealed with synthetic rubber packing and pressed into position
Polypropylene and unplasticized polyvinyl chloride	Sealed with synthetic rubber packing and screwed on or pressed into position
Cast iron	Sealed with tallow or putty and fixed with non-ferrous metal screws
Galvanized malleable cast iron and cast brass	Sealed with synthetic rubber packing and screwed in

Q.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters "CE" (or "SO") cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces

Q.12 INSPECTION EYE MARKER SLABS

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters "IE" (or "IO") formed in top and placed flush in ground or paving

Q.13 GULLEYS

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered

Q.14 DISHED GULLEYS

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces

Q.15 SUMPS, CATCHPITS, INSPECTION CHAMBERS, ETC**Q.15.1 Rainwater sumps**

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces

Q.15.2 Stormwater catchpits and inspection chambers

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and pipes shall be SC type and in accordance with SANS 677

Q.15.3 Sewer inspection chambers

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the pipes shall be SC type in accordance with SANS 677

Q.15.4 Stormwater drain junction boxes

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab

Q.15.5 Step irons

Where inspection chambers exceed 1,2m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally

Q.16 STOPCOCK AND METER BOXES

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces

Q.17 VALVE CHAMBERS

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces

Q.18 CAST IRON COVERS, GRATINGS, ETC

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease

Q.19 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round

Q.20 SANITARY FITTINGS**Q.20.1 General**

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay

Q.20.2 Stainless steel sanitary fittings

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel. All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating. Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets

Q.20.3 Precast concrete wash troughs

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces

Q.20.4 Steel baths

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling

Q.20.5 Acrylic resinous baths

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling

Q.20.6 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling

Q.20.7 Glazed ceramic sanitary fittings

Sinks shall be provided with integral weir overflows

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts. Urinal channels shall be provided with outlet gratings fitted in bitumen

Q.20.8 Flush and sparge pipes

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel

Flushpipes for low level cisterns shall be of plastic

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal

Q.21 INSTALLATION OF SANITARY FITTINGS

Sanitary fittings shall be installed as follows:

Q.21.1 Precast concrete wash troughs

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar

Q.21.2 Stainless steel wash troughs and wash hand basins

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel gallows brackets bolted to wall with 6mm diameter expanding bolts

Q.21.3 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts

Q.21.4 Ceramic wash hand basins

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts

Q.21.5 Acrylic resinous baths

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber

Q.21.6 Washdown closet pans and cisterns

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts

Q.21.7 Ceramic urinals

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts

Q.21.8 Stainless steel urinals

Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals

Q.22 FIRE HOSE REELS

Fire hose reels shall each be fitted with a 30m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle

Q.23 FIRE EXTINGUISHERS

All fire extinguishers shall be fully charged

Q.24 TESTS

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Project Manager and Local Authority

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections

R. GLAZING

R.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glass in building	SANS 50572-1 to 5
Glazing putty for wooden and metal window frames	SANS 680
Silvered glass mirrors for general use	SANS 1236
Safety and security glazing materials for buildings	SANS 1263-1 to 3
Sealing compounds for the building industry, one Component, silicone-rubber based	SANS 1305
The installation of glazing materials in buildings	SANS 10137
Work on glass for glazing	SANS 1817

R.2 PUTTY ETC

Glazing putty shall be Type I for wooden sashes and Type II for steel sashes. Putty for glazing to unpainted hardwood shall be tinted to match the colour of the wood

Back putty shall not exceed 3mm thick. Putty shall not be painted until it has formed a surface crust, and if the putty does not form a surface crust it shall be replaced

Butyl putty shall be used where glass is to be fixed in aluminium sashes with glazing beads

Non-setting compounds shall be used where laminated glass is fixed in sashes with glazing beads

S. PAINTWORK

S.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Decorative paint for interior use	SANS 515
Decorative high gloss enamel paints	SANS 630
Primers for wood (for external work)	SANS 678
Primers for wood (for internal work)	SANS 678
Zinc phosphate primer for steel	SANS 1319
Undercoats for paints (except emulsion paint)	SANS 681
Aluminium paint	SANS 682
Varnish for interior use	SANS 887
Emulsion paints	SANS 1586

Materials for paintwork shall be delivered to the site in unopened containers and applied in accordance with the manufacturer's instructions. Materials shall be suitable for application to the surfaces concerned. Undercoats shall be as recommended by the manufacturer of the finishing coats

S.2 PREPARATORY WORK

S.2.1 Plastered surfaces etc

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water)

S.2.2 Metal surfaces

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed

S.2.3 Wood surfaces

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth

S.3 APPLICATION OF PAINT

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Project Manager. Undercoats and finishing coats may be applied by brush or roller

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary 42

S.4 COLOUR SCHEME

A colour scheme comprising colours and the blending of colours approved by the Project Manager shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases

S.5 GENERAL

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws. Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be primed

T. PAPERHANGING

T.1 PREPARATORY WORK

Plaster surfaces to be papered shall be dry, thoroughly cleaned down, filled with a suitable filler as necessary to obtain a smooth surface and painted thereafter with a single coat of emulsion paint

Wood surfaces to be papered shall be knotted, stopped and sanded

T.2 PAPERHANGING

Wallpaper shall be hung in vertical long lengths. Vertical joints shall be close-fitted and plumb and the paper shall be tightly fitted to skirtings, ceilings, door frames, windows, etc. Horizontal joints will not be allowed

U. EXTERNAL WORKS

U.1 GENERAL

U.1.1 Excavations

Excavations shall be deemed to be in "earth"

U.2 LANDSCAPING

U.2.1 Topsoil

Topsoil shall vary between sandy loamy soil and sandy clayey soil with an ideal composition of 15% to 25% clay, 10% silt/sludge and 65% to 75% sand, with a minimum ratio of organic material of 2%. All material shall be free of harmful deposits as well as unwanted seeds

U.2.2 Compost

Compost shall be composed of properly decayed organic material, free from harmful deposits, salts, seeds and other waste material and shall have a pH of more than 4 and less than 7

U.2.3 Mulch

Mulch shall be approved organic material free from small particles of bark residue, fungus, disease, etc

U.2.4 Lime

Lime shall be agricultural lime of an approved manufacture

U.2.5 Fertilizer

Fertilizer shall be of the type specified, mixed thoroughly into the soil as prescribed. No fertilizer shall be added more than two weeks prior to planting

U.2.6 Backfilling

Backfilling in plant and tree holes shall be composed of two parts topsoil to one part compost mixed thoroughly together and compacted by foot in 100mm layers. Fertilizer shall only be added if prescribed

U.2.7 Pebbles

Pebbles shall be smooth with a uniform colour and form and ranging in size from 50mm to 75mm diameter. Removal of pebbles from river beds shall be done selectively to avoid any major disruption to the ecology of the river and environment

U.2.8 Plant material

U.2.8.1 General

All plant material (plants, shrubs, trees, etc) shall be obtained from a registered nursery and shall be free from damaged parts, parasites, fungus, other plant diseases or insects. No container-bound plants will be acceptable

U.2.8.2 Trees

The height of trees described in the bills of quantities shall be measured from the top of the root ball to the top of the tree. Where trees are pruned, such prune wounds shall not be more than 25mm in diameter and be sealed with an approved sealing compound

U.2.8.3 Shrubs and small plants

Shrubs and small plants shall meet the requirements for height and spread as specified. Thin or sparsely branched plants shall not be accepted. Branches shall be well spread with ample young branches and the plant as a whole shall be growing well

U.2.8.4 Groundcover

Groundcover shall be dense and healthy and shall comply with the minimum requirements for leaf density as specified

Formal grass shall be planted as runners in 50mm deep drills at 150mm centres unless otherwise described

U.2.9 Cultivation and preparation of planting areas etc

All surface rocks and stones larger than 50mm shall be removed before commencing cultivation and preparation. The entire area shall be ripped and rotavated using approved machinery by breaking up the earth to a depth of 300mm at 600mm centres in both directions, unless otherwise described, and then levelled. Where fertilizer or compost is specified, it shall be worked into the topsoil after ripping and rotavation to a depth of 300mm and finished to final levels

All fertilizer to areas to be grassed shall be strewn on the final layer before final finishing is commenced and worked mechanically into the top 150mm soil

U.2.10 Planting procedure

Holes for shrubs and groundcover shall be as follows:

Shrubs – 500 x 500 x 500mm deep

Groundcover – 300 x 300 x 300mm deep (if not planted in drills)

Holes for trees shall be square, of adequate size to accommodate the root system and suitable for the height of the tree

All plant material shall be watered thoroughly before careful removal from the container and planted in the prescribed planting medium with the top of the soil in the container finishing level with the surrounding area. Water dams size 800mm diameter x 150mm deep and 500mm diameter x 150mm deep shall be formed around trees and shrubs respectively and all planting material shall be watered immediately after planting. Trees, shrubs, etc shall be properly staked or stayed, depending on their size, on the prevailing windy side with patent tree ties

U.2.11 Maintenance

All planted areas shall be maintained for a period of three months after practical completion as defined in the contract with the exception of hydroseeded areas which shall be maintained for 12 months after an acceptable cover has been obtained

This maintenance shall consist of keeping clear of weeds and litter, loosening soil where necessary every two weeks, replacing damaged, diseased or dead plants, pruning, cutting and mowing as necessary and watering so as to keep the plant material in a healthy growing condition

U.3 ROADWORK**U.3.1 Filling**

Filling under roads etc shall be of inert material having a maximum plasticity index of 10, free from large stones etc spread, levelled, watered and compacted in layers not exceeding 200mm thick to a density of 98% Mod AASHTO

U.3.2 Preparation of sub-grade

The sub-grade shall be prepared by scarifying for a depth of 150mm and compacting to a density of 98% Mod. AASHTO, including trimming to the correct levels and grades

U.3.3 Base course

The base course shall consist of crusher run stone compacted to a density of 98% Mod. AASHTO and finished to the correct levels and grades

U.3.4 Weed killer

The completed sub-grade shall be treated with an approved total weed killer

U.3.5 Bituminous premix road surfacing

Before spreading the premix material, the base course shall be swept clean and free from all dust, dirt and loose particles, lightly wetted and sprayed with a prime coat of cutback bitumen complying with SANS 308 at the rate of 1 litre/m²

The material shall consist of semi-gap graded crushed stone aggregate having the following grading:

Sieve size (mm)	% By mass passing sieve
13,2	100
4,75	45-60
2,36	42-55
1,18	40-52
0,3	25-45
0,075	5-12

The aggregate shall be mixed with bituminous road tar binder complying with SANS 748 at the rate of 1m³ of stone to 120 litre of emulsion at atmospheric temperature

The binder shall be added to the stone and mixed until the stone is uniformly coated. Thereafter 5% of clean, dry quartzitic sand shall be added and mixed until evenly distributed through the mixture

The premix shall be applied only after the primer has dried out completely and shall be spread immediately after mixing and rolled on the same day

Spreading shall be done evenly over the prepared base course to a loose depth sufficient to ensure the consolidated thickness specified

Rolling shall commence as soon as the binder has set sufficiently, followed after three days by a final rolling

U.3.6 Precast concrete block road surfacing

Paving blocks shall be precast concrete blocks complying with SANS 1058

Blocks shall be laid to true levels and grades on and including a 25mm thick layer of river sand with joints exceeding 2mm and not exceeding 6mm wide

After laying, the paving shall be compacted by means of a vibrating plate compactor, with joints between the blocks filled in, after compaction, by sweeping in fine sand

Infill areas at edges of paving constituting less than 25% of a full block unit and of 25mm minimum dimension shall be filled with Class C prescribed mix unreinforced concrete with top surface trowelled smooth to match blocks. Smaller areas shall be filled with 1:4 cement mortar

U.3.7 Precast concrete kerbs and channels

Precast concrete kerbs and channels shall comply with SANS 927, generally in 1m lengths and finished smooth from the mould on exposed surfaces. Kerbs and channels shall be bedded on and jointed in 1:3 cement mortar and pointed with keyed joints. Bases to kerbs shall be Class B prescribed mix unreinforced concrete

U.3.8 Process control tests

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained

U.4 FENCING ETC**U.4.1 Materials**

Materials and workmanship shall comply with the following specifications and requirements :

Wooden poles, droppers, guardrail posts and spacer blocks	SANS 457-2&3
Zinc-coated fencing wire	SANS 675
Prefabricated concrete components for fencing	SANS 1372
Chain-link fencing and its wire accessories	SANS 1373
Fasteners	SANS 1700
Anti-intruder fences	CKS 451
Metal droppers and standards	CKS 451

U.4.2 Galvanized wire

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire

U.4.3 Plastic coated wire

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm

U.4.4 Galvanized barbed wire

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating

U.4.5 Galvanized wire mesh

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire

U.4.6 Plastic coated wire mesh

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm

U.4.7 Galvanized welded wire mesh

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection

U.4.8 Razor wire

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres

U.4.9 Metal droppers and standards

Droppers shall be of ridged T-section mild steel with a mass of not less than 0,55kg/m. Standards shall be of I-section mild steel with a mass of not less than 3kg/m or of ridged edge Y-section mild steel with a mass of not less than 2,5kg/m, and shall be driven 600mm deep into the ground

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen

U.4.10 Metal posts and stays

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on

Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen

U.4.11 Timber posts, stays and droppers

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter

U.4.12 Prestressed concrete posts and stays

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound

U.4.13 Bolts, nuts and washers

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized

U.4.14 Precast concrete fencing

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc

U.4.15 Concrete bases

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts	–	450 x 450 x 700mm deep
Intermediate posts	–	300 x 300 x 600mm deep
Stays	–	600 x 300 x 500mm deep

U.4.16 Security overhangs

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber

Concrete extension arms shall be cast integrally with the post or standard

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc wired onto the barbed wire and the top straining wire

U.4.17 Gates

Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire

CAMDEN POWER STATION MAINTENANCE PROVISIONAL BILLS OF QUANTITIES**SUPPLEMENTARY PREAMBLES****SUPPLEMENTARY PREAMBLES TO ALL TRADES****GENERAL PREAMBLES**

The Tenderer is referred to the Model Preambles for Trades as recommended and published by the Association of South African Quantity Surveyors (2008 Edition), which are to be read in conjunction with and shall apply to all items in these Bills of Quantities and supplemented by the following Supplementary Preambles as well as all supplementary documentation referred to in the Bills of Quantities and all annexures appended thereto.

Where Model Preambles for Trades and Supplementary Preambles are in conflict, the Supplementary Preamble shall take precedence.

SUPPLEMENTARY PREAMBLES

The following amplifications, additions and amendments to the Model Preambles for Trades shall constitute the Supplementary Preambles.

1 MATERIALS AND WORKMANSHIP GENERALLY

The standard of workmanship and the quality of materials to be utilised throughout this Contract shall be the best of their respective kinds and shall comply in all respects with the latest South African Bureau of Standards Specifications, Codes of Practice, co-ordinating Specifications and Standard methods or where not available, with the latest relevant British Standards.

NOTE: All references to Standards are to signify the latest amendments or issue thereof. No substitutes whatsoever shall be permitted from those materials specified and any work which is not of the highest standard shall be rejected and required to be re-done at the Contractor's expense. Furthermore, references to "SANS No" shall mean the "South African National Standard No".

2 RATES

All rates inserted in the Bills of Quantities shall cover all costs, charges and profit that may be considered necessary for the carrying out and observance for the provisions of these "Preambles to all Trades".

The Tenderer shall insert the amount required against each item which he wishes to price and not insert a lump sum covering a series of items. Only such priced items shall be considered in respect of any adjustment to the Contract Sum. Items left unpriced will be understood to be covered in the rates for other items throughout these Bills of Quantities.

3 TRADE NAMES, ETC.

All materials, fittings, finishes, etc. specified under a "Trade Name", catalogue number of reference shall be either exactly as described or of equal quality, specification and weight to those described. The Eskom ERE (KZN) Official's written approval must be obtained for any departure from the specification before the submission of tenders, failing which specified materials, fittings, finishings, etc. shall be deemed to have been allowed for in the tenders.

4 APPROVED

"Approved" means approved by the Eskom ERE (KZN) Official in writing.

5 NET MEASUREMENTS

Unless otherwise stated herein, all work is measured net as fixed in position, in accordance with the "Standard System of Measuring Builder's Work in South Africa" - **Sixth Edition as amended 1996 and 1999**, no allowance being made for cutting and waste. The term "measured net" means the finished surface or quantity; i.e. with all wants deducted and no allowance made for passings and laps except where otherwise described.

To assist the Contractor certain items may have the words "Measured Net" after the respective descriptions, but it is to be clearly understood that this practice does not establish a precedent.

6 DITTO

"Ditto..." shall mean as the foregoing item plus the new qualification.

"Ditto, but..." or "Ditto...ditto" shall mean as the foregoing item but a substitute of the new qualification for the relevant clause in the foregoing item.

7 NOMINAL SIZES

Where a component is specified as a nominal size the onus is on the Contractor to establish from the manufacturers the exact size or the likely size variation.

ALTERATIONS

FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Prices for items of forming new or altering existing openings shall, unless otherwise stated, include the following:

- a) Formwork for concrete cills and thresholds where required.
- b) Inserting 375 micrometre embossed polyethylene sheeting as damp-proof course under external window cills, including breaking out and making good brickwork as necessary.

The supply, etc., of all windows, doors, frames, etc., to the newly formed openings and the removal of all existing windows, doors, frames, etc., from openings to be altered, have been included elsewhere in these Bills of Quantities.

EARTHWORKS

Generally:

Working space to sides of concrete wall footings, column bases, etc. will be measured and paid for only if specifically instructed by the Engineer as being required, and if the Contractor over-excavated areas will be to his account and shall be compacted to the same degree and in the same manner as the backfilling to the remainder of such excavation.

Site Clearance

"Clear Site" shall include for digging up and removing all rubbish, vegetable soil and substance from the area of the site to be built upon, removing all small trees, etc. having a circumference of less than 200mm measured at a height of 1m above ground level including grubbing up all roots and roughly levelling and carting away debris to a site to be found by the Contractor.

Classification of Materials

The Soil Investigation Report is appended to the Back of these Bills of Quantities. The contractor is encouraged to study this document and acquaint himself with the soil conditions.

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site.

Computation of Quantities

Earthworks will be measured by volume once only in excavation. The volumes handled will be computed from the difference in elevation between the original ground levels and the specified earthwork levels.

Prices of excavation

Prices for all items of excavation shall include for digging out, any necessary staging required, forming to falls, slopes, curves, etc., trimming sides and stepping, levelling and ramming bottoms and for watering same to the satisfaction of the Eskom ERE (KZN) Official if so directed.

Prices shall include for any extra labour required in recommencing excavation to make it deeper or wider if the Eskom ERE (KZN) Official so directs.

Prices shall also include for bulking after excavation and consolidation or filling and for multiple handling of excavated materials as no allowance for bulking or consolidation will be made.

CONCRETE, FORMWORK AND REINFORCEMENT

Prices of Concrete, Formwork and Reinforcement

(i) In situ Concrete

Prices of all in situ concrete shall include for mixing, hoisting and lowering to all levels, placing, working around reinforcement, vibrating, compacting, pumping, etc.

(ii) Formwork

Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damages and shall remain in position until newly constructed work is able to support itself.

Formwork to sides of bases, strap beams, etc. will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks".

The prices of all formwork shall include for use, waste, all straight, square and raking cutting, splayed edges, intersections, struts, hangers, etc. horsing up, wedging, maintaining, easing, striking and removing as and when directed, except where described as "Permanent". The formwork is measured to the actual nett surface of the concrete to be supported.

Prices for smooth formwork shall include 25 x 25mm timber to all external angles.

(iii) Power Floating

After the concrete has been properly placed, struck off or rolled, it shall not be worked until ready for floating. The lapse of time between tamping and power floating may vary from 2 to 8 hours or more depending on weather conditions, concrete temperature and concrete mixture. It should be noted that it may be necessary to power float outside normal working hours and prices shall include for this possibility.

Floating shall begin when the water sheen has disappeared or the mix has stiffened enough so that the weight of a man standing on its leaves on a slight imprint on the surface. If two power floating operations are necessary to bring the surface to the desired state, the concrete shall be allowed to stiffen or become harder before beginning the second floating operation.

Sprinkling dry cement or a mixture of dry cement and water on the surface of the fresh concrete to absorb water or to stiffen the mix shall not be permitted during any stage of floor construction.

Power floating shall continue until the surface attains an even fine matt texture.

The maximum variation in surface tolerance for powerfloated floors shall be 3mm in 3000mm. If variations greater than this exist, the Eskom ERE (KZN) Official may direct the Contractor to grind the floor, at his own cost, to bring the surface within the requirements. Patching of low spots shall not be permitted. Grinding shall be done as soon as possible, preferably within 3 days, but not until the concrete is sufficiently strong to prevent dislodging coarse aggregate particles.

(iv) Steel Reinforcement

The prices for steel reinforcement shall include for the supply, cutting to lengths, bending to the exact dimensions and shapes shown on the drawings and schedules, lowering or hoisting to the various floor levels, placing and wiring in position with and including 1.60 or 1.25mm diameter annealed wire or by the use of all necessary spacers, lifting blocks, etc. and maintaining in position while the concrete is being deposited. Prices of fabric reinforcement shall include for unrolling, cutting, bending and binding wire, and for 300mm (minimum) side and end laps, hoisting or lowering and fixing and maintaining in position complete.

COST OF TEST

The costs of making, storing and testing of concrete test cubes shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports of the tests to the Eskom ERE (KZN) Official. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Eskom ERE (KZN) Official. (Test cubes are measured separately.)

BRICKWORK

Clay Bricks

Stock bricks generally shall be good, hard, sound, well burnt clay stock, even in size and shape and equal to samples to be submitted to and approved by the Eskom ERE (KZN) Official. No chipped or damaged face bricks shall be allowed.

Wire Ties

Where brickwork is required to be in two skins prices shall include for 3.5mm (minimum) modified P.W.D. type galvanised steel wire ties, at a rate of not less than five per square metre.

Where brickwork is described as being in hollow walls prices shall include for 3.5mm (minimum) Butterfly type galvanised steel wire ties at a rate of not less than five per square metre.

Where brickwork is described as being in lining to concrete, prices shall include for 3.5mm (minimum) Butterfly type galvanised steel wire ties at a rate of not less than five per square meter, and for fixing inside formwork, embedding in concrete and for building into brickwork. Additional ties shall be provided within 230mm of any opening at every fourth course.

Builder's Work To Services

No separate items shall be measured for building in electrical boards, switchboards, pipes, etc. but the contractor shall allow in his price of brickwork for building in distribution boards, switchboxes, etc. or leaving recesses for same, cutting and fitting around pipes and flushing solid all chasses in cement mortar.

Prices

The prices for brickwork, etc. shall include for all cutting, plumbing angles, forming reveals weep holes in cavity walls, waste, and for wedging and pinning to underside of steel or concrete beams, concrete slabs, etc.

Prices shall also include for soaking bricks in water immediately before laying, hoisting bricks and mortar, etc. to various floor levels and for raking out joints of brickwork to be plastered or tiled.

CLEARING OFF

Great care shall be taken to keep face brickwork, brickwork, quarry tiles, etc., free from surplus mortar as the work proceeds and at completion they shall be cleaned off with spirits or salts and water or other approved cleaning materials. Rates shall include for this.

Bagged Finish

Bagged finish to brickwork is to be done whilst the mortar in joints is still soft and shall be formed by rubbing over the walls with wet rough sacking, until all joints and cervices are filled up and an even surface is obtained. Mortar, as used for building the brickwork, shall be added as may be necessary.

If bagged to walls is done after the mortar in joints is set. The wall surfaces shall be rubbed over with wet rough sacking as above, but cement grout shall be added as necessary to fill up the joints and crevices and to obtain an even surface. The final rub is to be done only vertically or horizontally and not circular.

ROOF COVERINGS, ETC**COLOURED METAL ROOF SHEETING**

The sheeting and fittings shall be Global Roofing Solutions BR7 profiled steel sheets and fittings with standard colour finish. The roofing sheets shall be fixed to timber or steel purlins with the appropriate fixing clips,

All fittings, fixing clips, etc., shall be those supplied by the manufacturer of the sheeting.

Fittings, unless otherwise stated, shall be lapped a minimum of 150mm.

Descriptions of all roofing and fittings shall be deemed to include for: -

- (a) Fixing as described and in accordance with the manufacturer's instructions with and including all necessary fixing clips.
- (b) Fastening of fittings to the tops of the vertical ribs with approved pop rivets soldered over or with

20mm x No. 14 (sherardised or stainless) steel self-tapping screws each fitted with one bonded galvanised and bituminous felt washer

- (c) Notching fittings over ribs of roofing or cladding sheets where described in the items

- (d) Coating the heads of all fasteners and the cut edges of all sheets with matching touch-up compound supplied by the manufacturer of the sheeting and in accordance with their instructions.

Taking special care and precautions at all times to prevent the scratching of or other damage to the finished surfaces.

CARPENTRY AND JOINERY**CONSTRUCTION IN GENERAL**

All timbers shall be in as long lengths as possible and except where lapping is possible, timbers up to 76mm in depth shall be halved at junctions and angles and above 76mm shall be splay-scarved at junctions; in all cases the joints shall be arranged over the points of support and well spiked.

PLASTERING**PREPARATION OF SURFACES**

Prior to the application of floor finishes, screeds, plaster finishes, etc., the surfaces of the new concrete, brickwork, etc. shall be thoroughly cleaned, chipped, hacked, sloshed, etc. as necessary to ensure a satisfactory bond. The Contractor will be held entirely responsible for the proper and adequate preparation of the surfaces and any work which results in failure in this regard shall be made good at the Contractor's expense to the satisfaction of the Eskom ERE (KZN) Official.

PLUMBING AND DRAINAGE

FIXING OF PIPES

Where pipes or gutters are fixed to walls, soffits, roof timbers, etc., descriptions shall be deemed to include for all necessary brackets, holder bats, pipe clips, etc. and for plugging and screwing or cutting and pinning or building tails of holder bats, hangers, etc., to brickwork or concrete in (1:3) cement mortar and for making good. No distinction is made between pipes fixed to different elements, cut in, chased in ceiling, built in etc.

PAINTWORK

Materials

For any particular work the priming coat and subsequent coats of paint shall be executed with paints from the same manufacturer.

The Contractor will be held entirely responsible for the proper and adequate preparation of the surfaces and any work which fails to meet the manufacturer's recommendations must be made good at the Contractor's expense to the satisfaction of the Eskom ERE (KZN) Official.

Descriptions

Descriptions shall be deemed to include for cutting in of contrasting colours or paints and masking as required.

CAMDEN POWER STATION BUILDING MAINTENANCE PROVISIONAL BILLS OF QUANTITIES

	Schedule Description	Unit	Amount
	PRELIMINARIES AND GENERAL		
	ESTABLISHMENT OF FACILITIES ON SITE		
1	FIXED CHARGES		
1.1	Contractual requirements, (Contractor to supply Breakdown)	Sum	R
1.2	Establishment of facilities on site		
1.2.1	Transportation to site	Sum	R
1.2.2	Offices for Engineer & staff and signs	Sum	R
1.3	Facilities for the Contractor		
1.3.1	Storage sheds	Sum	R
1.3.2	Eating area	Sum	R
1.3.3	Ablution & latrine facilities	Sum	R
1.3.4	Plant,Tools & equipment	Sum	R
1.3.5	Water supplies& electric power connections	Sum	R
1.3.6	COC for all offices	Sum	R
1.3.7	Site Establishment	Sum	R
1.3.8	Survey/Setting Out	Sum	R
1.3.9	Quality	Sum	R
1.40	SAPS Vetting and /or Finger Print Check	Sum	R
1.41	Other fixed-charge obligations: security, deviations and dealing with traffic.	Sum	R
1.42	As Built Surveys	Sum	R
1.5	Contractor's obligations in respect of the Occupational Health and Safety Act		
1.5.1	Health and Safety Requirements	Sum	R
1.5.2	PPE	Sum	R
1.5.3	Medicals and Induction	Sum	R
1.5.4	Construction Regulation 2014	Sum	R
1,5,6	De- establishment	Sum	R
	TOTAL COST FIXED CHARGES (A)	R	

2	TIME RELATED CHARGES		
	FACILITIES FOR CONTRACTOR		
2.1	Contractual requirements, subsistence, transport and incidental expenses	Sum	R
2.2	Operate & maintain facilities for the duration of the contract	Sum	R
2.3	Offices for Engineer & staff and notice board	Sum	R
2.4	Facilities for the Contractor for the duration of construction	Sum	R
2.5	Offices & storage sheds	Sum	R
2.6	Workshops	Sum	R
2.7	Ablution & latrine facilities	Sum	R
2.8	Tools & equipment	Sum	R
2.9	Enviromental requirements	Sum	R
2.10	Accommodation	Sum	R
2.11	Transport	Sum	R
2.12	Plant	Sum	R
2.15	Other time-related obligations: security and other	Sum	R
	TOTAL COST TIME RELATED ITEMS (B)		R
	TOTAL COST A+B TRANSFERRED TO FINAL SUMMARY PAGE		R

CAMDEN POWER STATION BUIDING MAINTENANCE PROVISIONAL BILLS OF QUANTITIES					
PAGE	ITEM	UNIT	QTY	RATE	AMOUNT
	<p><u>SECTION 2: ALTERATIONS</u></p> <p><u>PREAMBLES:</u></p> <p>The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES:</u></p> <p>The breaking down and demolition of existing block walls, hacking off existing plaster, etc. is to be executed with care so as to prevent damage to remaining floor and wall surface and finishes. The contractor must allow for any necessary protection of the existing surfaces as may be necessary.</p> <p>Particular care is required to protect the existing timber doors, door frames, and windows. Repairing any existing work will be for the contractor's account.</p> <p>The rates for breaking down and removal of brick walls is deemed to include for plaster finishes on walls.</p> <p>All existing items taken out from the works unless otherwise stated are to be handed over to the ESKOM Officials. Representative who shall direct where on the site such items are to be stored for the removal by others. Refer to the schedule at the end of these Bills of Quantities.</p> <p>Rubble resulting from breaking down, demolishing, etc. is to be removed from the site by the Contractor on an on going basis to avoid accumulation of mounds of such rubble or earth.</p> <p><u>Proprietary items or materials:</u></p> <p>Proprietary items or materials are to be of the brand specific- or other approved- by the ESKOM Officials prior to tender closing.</p> <p><u>General</u></p> <p>Unless otherwise described the Preambles and full descriptions of the other sections shall apply equally to this section.</p> <p>All voids in ground consequent upon the pulling or cutting are to be filled in with clean earth well consolidated and rammed up to ground level and made good with the required finish to the satisfaction of the ESKOM Officials.</p> <p>Allow for watering the works by spraying to prevent any nuisance from dust etc., and supply, erect, maintain and remove on completion all temporary dust screens, etc required.</p> <p>Allow for protecting all existing work liable to suffer damage (i.e. walls, finishes, floors, windows, etc.) from damage during the building operations, alterations, etc., and from make good all work damaged with new material to match existing to the approval of ESKOM Officials</p> <p>Provide, erect where directed, maintain for the duration of the contract and remove and make good at completion a hoarding formed of corrugated iron or timber boarding supported as necessary on framing with posts let into ground, complete with lockable pedestrian and vehicular gates.</p> <p><u>Measurement:</u></p> <p>The measurement that are referred to in this section is brief and the contractor is requested to take his own measurements prior to pricing these documents.</p> <p><u>Contractor to visit the site</u></p> <p>The contractor is advised that alterations work is to be done with utmost of care. The contractor is encouraged to visit the site and view all buildings to determine the extent of demolition and alteration works.</p> <p>All items marked as (L.I) must be executed in labour intensive manner, no deviations will be accepted.</p> <p>The contractor must take this method of construction into consideration when programming the work.</p>				

		<u>ASBESTOS CEMENT</u>				
		<u>Note:</u>				
		All preparatory work, alterations, demolitions, etc. to existing asbestos cement roof sheeting, gutters, rainwater pipes, etc. is to be carried out strictly in accordance with statutory requirements (Occupational Health and Safety Act, 1993- Asbestos Regulations, 2001) and all necessary precautions must be taken when work with and disposing of asbestos cement products and the disposing of waste water resulting from cleaning operations, etc				
		<u>Overtime work and normal work including Weekends and Public Holidays:</u>				
1		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>TEMPORARY BARRIES & SCREENS</u>				
		<u>Temporary barriers, screens, etc including removal:</u>				
2	2	Dust screen 2.7m high between concrete floor and ceiling formed of suitable timber framing with 250 micron polyethylene sheeting stapled or nailed on, including corners, ends, etc.	m	100		R
2	3	Drywall barrier, 2.7m high formed of timber studs and rails covered on one side with 12.7mm gypsum board panels and finishes with two coats interior quality PVA paint on one side, including corners, ends, etc.	m	66		R
		<u>TEMPORARY SHORING, PROPPING AND LATERAL SUPPORT AND REMOVAL</u>				
2	4	22mm Timber planking in shoring to face of excavated surfaces including 38x114mm horizontal braces at 1m centres. (gumpole struts and raking shores elsewhere measured)	m ²	37		R
2	6	Temporary propping of existing openings, soffits, beams, slabs, or trusses not exceeding 3.5m high, with steel Kwikjack adjustable props on timber sole plate at not exceeding 600mm centres.	m	25		R
2	7	Temporary propping of existing openings , soffits, beams, slabs, or trusses exceeding 3.5m and not exceeding 5m high, with steel Kwikjack adjustable props on timber sole plate at not exceeding 600mm centres.	m	11		R
		<u>REMOVAL OF EXISTING CONCRETE WORK</u>				
		<u>Break up and removing mass concrete</u>				
2	9	Surface beds, slabs, etc.	m3	60		R
2	10	Strip footings, bases, etc.	m3	88		R
		<u>Break up and removing reinforced concrete including cutting off and removing reinforcement:</u>				
3	11	Surface beds.	m3	44		R
3	12	Slabs.	m3	16		R
3	13	Beams.	m3	23		R
3	14	Stairs and landings.	m3	8		R
3	15	Columns.	m3	12		R
		<u>Repairs to spalled concrete structure:</u>				
3	17	Prepare the slab by propping approximately 8m2 of slab adjacent to the 4m long beam, chip away the spalled concrete around the full circumference of the steel reinforcement for the full length of the beam. Remove all rust on the reinforcement by grit blasting. Prepare for and apply the special epoxy grout mixture, five star Pro-struct 528 or similar approved, (approximately 1m3) to fill the void. Leave the surface smooth and ready for redecoration (elsewhere measured)	No	7		R
3	18	Extra over the previous item for cutting away corroded reinforcement, providing approximately 50kg high tensile steel reinforcement bars and welding into place within the 4m long beam	No	12		R

		<u>CUTTING THROUGH FLOORS AND CEILING</u>				
3	20	Cutting through 100mm thick mesh reinforced concrete apron slab as necessary for installation of new 110mm diameter sewer drain pipe including making good concrete	m	150		R
3	21	Cutting through 100mm thick mesh reinforcement concrete surface bed for 500mm wide concrete wall footing including making good concrete on both sides of new half brick wall	m	67		R
3	22	Cutting through 100mm thick mesh reinforcement concrete surface bed for 700mm wide concrete wall footing including making good concrete on both sides of new half brick wall	m	45		R
		<u>Repair to cracks in concrete floors:</u>				
3	23	Cut out crack in concrete floor 10mm wide x 25mm deep, where instructed with square edges, clean out and fill with Pro-Struct 524" epoxy mortar or similar approved.	m	78		R
		<u>PREPARATORY WORK TO EXISTING CONCRETE SURFACES</u>				
		<u>Preparation to existing vertical surfaces:</u>				
3	25	Hack face of existing concrete columns, beams, etc. to receive plaster (elsewhere measured).	m2	65		R
		<u>Preparation to existing horizontal surfaces:</u>				
3	26	Clean existing concrete slabs, brick paving, etc., using a water pressure cleaning system and steel brushes and remove all dirt and loose particles.	m2	400		R
		<u>REMOVAL OF EXISTING BRICKWORK</u>				
		<u>Breaking down and removing brickwork etc:</u>				
3	27	Mass brickwork in piers, buttresses, etc:	m3	12		R
3	28	One brick wall in foundations.	m2	54		R
3	29	Half brick walls.	m2	377		R
3	30	One brick walls.	m2	344		R
3	31	One and half brick walls.	m2	177		R
4	32	90mm Block wall	m2	210		R
4	33	190mm Block wall	m2	320		R
		<u>Hacking up/off and removing granolithic screed, plaster, etc., from concrete or brickwork and prepare surfaces, for new screed, plaster etc.</u>				
4	36	Hack up/off and remove existing screed from floors (new screed e.m)	m2	400		R
4	37	Hack up/off and remove existing plaster from walls (new plaster elsewhere measured)	m2	790		R
		<u>OPENINGS THROUGH EXISTING WALLS. ETC</u>				
		<u>Breaking out and forming plain openings through brick walls including necessary lintels and making good plaster or facing on one or both sides, into reveals and with precast or concrete thresholds, with steel trowelled finish.</u>				
4	38	Opening not exceeding 1m2 in half brick wall.	No.	240		R
4	39	Opening not exceeding 1m2 in 90mm block wall	No.	169		R
4	40	Opening exceeding 1m2 and not exceeding 2.5m2 in half brick wall.	No.	280		R
4	41	Opening exceeding 1m2 and not exceeding 2.5m2 in 190mm block wall	No.	180		R
4	42	Opening exceeding 2.5m2 and not exceeding 6m2 in half brick wall.	No.	210		R
4	43	Opening exceeding 2.5m2 and not exceeding 6m2 in 190mm block wall.	No.	206		R
4	44	Opening not exceeding 1m2 in one brick walls.	No.	200		R

4	45	Opening exceeding 1m2 and not exceeding 2.5m2 in one brick walls.	No.	134	R
4	46	Opening exceeding 2.5m2 and not exceeding 6m2 in one brick wall.	No.	66	R
		<u>Break out for and form opening through brick wall for door frame including precast or concrete lintels, making good plaster or facings on one or both sides, into reveals and 30mm grano thresholds with three readings, 100mm wide.</u>			
4	47	Opening for door not exceeding 2.50 m2 in half brick wall.	No.	129	R
4	48	Opening for door exceeding 2.5m2 and exceeding 5m2 in half brick wall.	No.	118	R
4	49	Opening for door exceeding 2.5m2 in one brick wall.	No.	76	R
4	50	Opening for door exceeding 2.5m2 and not exceeding 5m2 in one brick wall.	No.	35	R
		<u>Break out and form opening through brick wall for window including necessary precast or concrete lintels, making good plaster or facings on one or both sides, into reveals and with sloping face brick on edge sill on brickwork.</u>			
5	51	Opening for window not exceeding 1m2 in one brick wall	No.	131	R
5	52	Opening for window not exceeding 1m2 in 190mm block wall	No.	135	R
5	53	Opening for window exceeding 1m2 and not exceeding 2.5m2 in one brick wall	No.	76	R
5	54	Opening for window exceeding 1m2 and not exceeding 2.5m2 in 190mm block wall	No.	34	R
5	55	Opening for window exceeding 2.5m2 and not exceeding 6m2 in one brick wall	No.	66	R
5	56	Opening for window exceeding 2.5m2 and not exceeding 6m2 in 190mm block wall	No.	1	R
		<u>REMOVAL OF EXISTING DOORS, WINDOWS, ETC. FROM BRICKWORK</u>			
		<u>Taking out and removing doors, windows, etc. from brickwork to be demolished:</u>			
5	57	Timber single door and frame not exceeding 2.5m2.	No.	65	R
5	58	Steel single door and frame not exceeding 2.5m2.	No.	137	R
5	59	Aluminium single door and frame not exceeding 2.5m2.	No.	76	R
5	60	Timber double door and frame exceeding 2.5m2 and not exceeding 5m2.	No.	55	R
5	61	Timber double door and frame exceeding 2.5m2 and not exceeding 5m2.	No.	78	R
5	62	Aluminium double door and frame exceeding 2.5m2 and not exceeding 5m2.	No.	43	R
5	63	Timber single door and steel frame not exceeding 2.5m2	No.	135	R
5	64	Timber double door and steel frame exceeding 2.5m2 and not exceeding 5m2.	No.	76	R
5	65	Steel double door and steel frame exceeding 2.5m2 and not exceeding 5m2.	No.	59	R
5	66	Aluminium double door and steel frame exceeding 2.5m2 and not exceeding 5m2.	No.	45	R
5	67	Glazed timber window not exceeding 2.5m2	No.	279	R
5	68	Glazed timber window exceeding 2.5m2 and not exceeding 5m2	No.	128	R
5	69	Glazed steel window not exceeding 2.5m2	No.	57	R
5	70	Glazed aluminium window not exceeding 2.5m2	No.	76	R
5	71	Glazed metal window exceeding 2.5m2 and not exceeding 5m2	No.	66	R
5	72	Glazed aluminium window exceeding 2.5m2 and not exceeding 5m2	No.	54	R

5	73	Glazed aluminium sliding door exceeding 2.5m2 and not exceeding 5m2	No.	33	R
5	74	Aluminium framed glass shower door not exceeding 2.5m2	No.	45	R
	74 a	Bullet Proof Glass and frame not exceeding 2.5m2	No.	5	R
	74 b	Bullet Proof Glass and FRAME exceeding 2.5m2 and not exceeding 5m2	NO	2	R
		<u>Taking out and removing doors, windows, etc. including thresholds, sills, etc. from brickwork to remain (build up or altering openings elsewhere measured)</u>			
5	75	Timber single door and frame not exceeding 2.5m2.	No.	34	R
5	76	Timber double door and frame exceeding 2.5m2 and not exceeding 5m2.	No.	56	R
6	77	Timber single door and steel frame not exceeding 2.5m2.	No.	43	R
6	78	Timber double door and steel frame exceeding 2.5m2 and not exceeding 5m2.	No.	66	R
6	79	Glazed timber window not exceeding 2.5m2	No.	78	R
6	80	Glazed timber window exceeding 2.5m2 and not exceeding 5m2	No.	69	R
6	81	Glazed steel window not exceeding 2.5m2	No.	22	R
6	82	Glazed steel window exceeding 2.5m2 and not exceeding 5m2	No.	44	R
		<u>Taking off and removing doors, etc from frames to remain (new door elsewhere measured)</u>			
6	83	Timber door not exceeding 2.5m2	No.	23	R
6	84	Double timber door exceeding 2.5m2 and not exceeding 5m2	No.	43	R
6	85	Timber fanlight frame not exceeding 1m2 from timber frame	No.	24	R
6	86	Timber fanlight frame not exceeding 1m2 from steel frame	No.	33	R
		<u>Carefully taking out doors, windows, fanlights, etc. including thresholds, sills, etc. and set aside for re-use (build up or altering openings elsewhere measured):</u>			
6	87	Timber single door and frame not exceeding 2.5m2.	No.	66	R
6	88	Timber double door and frame exceeding 2.5m2 and not exceeding 5m2.	No.	78	R
6	89	Timber single door and steel frame not exceeding 2.5m2	No.	56	R
6	90	Timber double door and steel frame exceeding 2.5m2 and not exceeding 5m2.	No.	55	R
6	91	Glazed timber window not exceeding 2.5m2	No.	34	R
6	92	Glazed timber window exceeding 2.5m2 and not exceeding 5m2	No.	56	R
6	93	Glazed steel window not exceeding 2.5m2	No.	77	R
6	94	Glazed steel window exceeding 2.5m2 and not exceeding 5m2	No.	32	R
6	95	Glazed timber fanlight from timber door frame.	No.	44	R
6	96	Glazed timber fanlight from steel door frame	No.	1	R
		<u>REFIXING OF DOORS, WINDOWS, ETC. PREVIOUSLY SET ASIDE FOR RE-USE</u>			
		<u>Refixing of existing doors, windows, fanlights etc.</u>			
6	97	Setting up and building in timber door and frame in brickwork, rehang single door on two new 100mm brass hinges and replacing mortice lock and furniture	No.	34	R
6	98	Setting up and building in timber double door and frame in brickwork, rehang double door on four new 100mm brass hinges and replacing rebated mortice lock and furniture	No.	66	R

6	99	Setting up and building in steel door frame in brickwork, rehanging single door on existing hinges and replacing mortice lock and furniture.	No.	67	R
6	101	Setting up and building in aluminium door frame in brickwork, rehanging single door on existing hinges and replacing mortice lock and furniture.	No.	44	R
6	102	Setting up and building in double steel door frame in brickwork, rehanging double door on existing hinges and replacing rebated mortice lock and furniture.	No.	88	R
6	103	Setting up and building in double aluminium door frame in brickwork, rehanging double door on existing hinges and replacing rebated mortice lock and furniture.	No.	76	R
7	104	Setting up and building in glazed timber window not exceeding 2.5m2	No.	44	R
7	105	Setting up and building in glazed timber window exceeding 2.5m2 and not exceeding 5m2	No.	56	R
7	106	Setting up and building in glazed steel window not exceeding 2.5m2	No.	56	R
7	107	Setting up and building in glazed aluminium window not exceeding 2.5m3	No.	43	R
7	108	Setting up and building in glazed steel window exceeding 2.5m2 and not exceeding 5m2	No.	22	R
7	109	Setting up and building in glazed aluminium window exceeding 2.5m2 and not exceeding 5m3	No.	78	R
7	110	Refix existing glazed timber fanlight to timber door frame with two new 75mm brass butt hinges and new fanlight catch.	No.	99	R
7	111	Refix existing glazed timber fanlight to steel door frame to existing butt hinges and refix fanlight catch.	No.	87	R
<u>REMOVAL OF EXISTING GARAGE DOORS, GATES, ETC FROM BRICKWORK</u>					
<u>Taking out and removing garage doors gates, etc. including thresholds, etc. (building up or altering openings elsewhere measured)</u>					
7	112	Timber garage door size 2440 x 2100 mm high from one brick wall.	No.	12	R
7	113	Steel garage door size 4880 x 2100 mm high from one brick wall.	No.	21	R
7	114	Steel roller shutter door complete with frame size 900 x 2100 mm high from one brick wall, etc. and prepare and make good in all trades to receive new door (elsewhere measured)	No.	24	R
7	115	Single steel door and frame size 900 x 2100 mm high from one brick wall.	No.	56	R
7	116	Single steel security gate size 900x 2100 mm high from one brick wall including making good to plaster or brickwork in reveals.	No.	45	R
7	117	Double steel security gate size 1800 x 2100 mm high from one brick wall including making good to plaster or brickwork in reveals.	No.	23	R
7	118	Expanding type security gate approximately 900x2100mm high from one brick wall including making good to plaster or brickwork in reveals and screeds in thresholds.	No.	45	R
7	119	Expanding type security gate approximately 1800x2100mm high from one brick wall including making good to plaster or brickwork in reveals and screeds in thresholds.	No.	43	R
<u>BUILDING UP OPENINGS</u>					
<u>Brickwork in NFP bricks in cement mortar in building up openings in:</u>					
7	120	Half brick walls.	m2	156	R
7	121	One brick walls.	m2	245	R
7	122	270mm Hollow walls of two half brick skins including wire ties.	m2	179	R
7	123	290mm Hollow walls of two half brick skins including wire ties	m2	146	R

		<u>Brickwork Sundries:</u>				
7	124	Bedding on top of wall plate	m	122		R
7	125	Cutting toothing and bonding new brickwork to existing .	m2	344		R
7	126	Bed roof sheets in cement mortar on brickwork.	m	366		R
7	127	300x8mm Diameter mild steel reinforcing dowel epoxy grouted into and including 150mm deep hole drilled in existing brickwork and one end built into new brickwork with cement mortar.	No.	156		R
8	128	Make good half brick wall where pipe not exceeding 100mm diameter was removed.	No.	433		R
8	129	Make good one brick wall where pipe not exceeding 100mm diameter was removed.	No.	468		R
		<u>Face bricks and pointing to match existing:</u>				
8	130	Extra over brickwork for face brickwork in isolated panels.	m2	344		R
8	131	220mm Wide brick-on-edge header course sills set sloping and slightly projecting.	m	232		R
8	132	Cutting toothing and bonding for new face brickwork to existing	m	212		R
		<u>MAKING GOOD OF FACE BRICKWORK TO MATCH EXISTING</u>				
8	133	Carefully cut out and remove damaged face bricks from face brick wall, rake out mortar and build in new face bricks to match the existing with colour matched tinted mortar.	m2	67		R
8	134	Remove oil based paint from face brick work with an approved paint stripper, wash down with clean water and leave perfect on completion	m2	344		R
8	135	Making good brickwork at end of half brick wall.	m	44		R
8	136	Making good brickwork at end of one brick wall.	m	68		R
8	137	Making good brickwork to face of wall where half brick cross wall removed.	m	33		R
8	138	Making good brick wall where pipe, not exceeding 150mm diameter, removed, including matching face brickwork or plaster.	No.	22		R
		<u>PREPARATORY WORK TO EXISTING BRICKWORK SURFACES</u>				
		<u>Preparation to existing vertical surfaces:</u>				
8	139	Clean existing face brick walls using a high pressure water pressure cleaning system and steel brushes and remove all dirt and loose particles.	m2	3500		R
8	140	Clean existing concrete walls using a high pressure water pressure cleaning system and steel brushes and remove all dirt and loose particles.	m2	2390		R
		<u>Clean existing surfaces using a sugar soap and water mix and steel brushes and remove all loose sprawl and deleterious matter</u>				
8	141	Plastered brick walls	m2	438		R
		<u>Chip face and sand down existing surfaces to receive new finishes (finishes elsewhere)</u>				
8	142	Plaster and painted walls to receive wall tiles	m2	297		R
8	143	Hack face of existing fair face brickwork to receive plaster.	m2	378		R
8	144	Hack face existing face brickwork to receive plaster	m2	540		R
		<u>Preparation to existing horizontal surfaces:</u>				
8	145	Clean existing brick paving, etc., using a water pressure cleaning system and steel brushes and remove all dirt and loose particles.	m2	4587		R

		<u>REMOVAL OF EXISTING ROOF COVERINGS</u>				
		<u>Temporary roof protection, etc. including removal:</u>				
		<u>Contractors will be held responsible for all damage, however caused, to ceilings, finishes, etc. inside rooms where the existing roof coverings have been removed and he must make good all damages at his own expense to the approval of the employer.</u>				
9	146	Cover and maintain existing roofs in a perfectly watertight condition during alterations by means of heavy tarpaulins properly secured and maintained in position to the approval of the ESKOM Officials and make good all work damaged or disturbed after completion.	m2	1244		R
		<u>Taking down and removing pitched roof not exceeding 50 degrees complete with ridge and hip cappings, fittings, etc.</u>				
9	147	Profiled or corrugated metal roof sheeting from purlins to remain.	m2	2880		R
9	148	Profiled or corrugated fibre cement roof sheeting from purlins to remain.	m2	1768		R
9	149	Profiled asbestos cement roof sheeting from purlins to remain.	m2	679		R
9	150	IBR roof sheeting from purlins to remain	m2	476		R
9	151	Concrete or clay roof tiles from purlins to remain.	m2	1663		R
9	152	Profile or corrugated metal roof sheeting and timber purlins.	m2	756		R
9	153	Profile or corrugated fibre cement roof sheeting and timber purlins.	m2	487		R
9	154	Curved or corrugated fibre cement roof sheeting and timber purlins.	m2	413		R
9	155	Concrete or clay roof tiles and timber purlins.	m2	343		R
		<u>Taking down and removing pitched roof not exceeding 50 degrees including roof covering, timber trusses and purlins, ceilings and cornices, eaves soffit covering, fascia's, barge boards, gutters and rainwater pipes.</u>				
9	156	Profile or corrugated metal roof sheeting.	m2	276		R
9	157	Curved or corrugated metal roof sheeting.	m2	311		R
9	158	Profile or corrugated fibre cement roof sheeting.	m2	247		R
9	159	Profile or corrugated asbestos fibre cement roof sheeting.	m2	43		R
9	160	Concrete or clay roof tiles.	m2	787		R
		<u>Carefully taking down roof covering pitch not exceeding 50 degrees complete with ridge and hip cappings, fittings, etc. and setting aside for re-use (elsewhere measured):</u>				
9	161	Profile or corrugated metal roof sheeting and timber purlins.	m2	1452		R
9	162	Profile or corrugated fibre cement roof sheeting and timber purlins.	m2	4522		R
9	163	Profile or corrugated asbestos fibre cement roof sheeting and timber purlins.	m2	344		R
9	164	Concrete or clay roof tiles and timber battens.	m2	245		R
		<u>REFIXING OF ROOF COVERING PREVIOUSLY SET ASIDE FOR RE-USE</u>				
		<u>Refixing of existing roof coverings complete with ridge and hip cappings, fittings, flashings, etc. (elsewhere measured) with pitch not exceeding 50 degrees.</u>				
10	165	Profile or corrugated metal roof sheeting and new purlins.	m2	1452		R
10	166	Profile or corrugated fibre cement roof sheeting and new purlins.	m2	4513		R
10	167	Concrete or clay roof tiles and new purlins.	m2	1254		R

		<u>REMOVAL OF EXISTING ROOF COVERING SUNDRIES</u>				
		<u>Taking down and removing sundry roof items:</u>				
10	168	Malthoid/ bitumen roofing membrane from concrete roof to remain.	m2	54		R
10	169	Take out and remove roofing drive screws or hook bolt and replace with new heavy duty, hot dipped galvanised screws with self sealing polypropylene washers and seals (approx.7 fixing per square meter of roof)	m2	9212		R
10	170	Flashing strip approx. 500mm girth at junction of roof and parapet walls and repair plaster or brickwork pointing.	m	325		R
10	171	Flashing strip approx. 500mm girth from junction of pipes and roof sheeting.	m	344		R
10	172	Fibre cement or timber fascia's and barge boards.	m	698		R
10	173	Fibre cement ridge capping	m	276		R
10	174	50x76mm Timber purlins.	m	1544		R
10	175	38x38mm Timber tiling battens.	m	1677		R
10	176	Cut out and remove rotten timber sprockets, including cutting back into brickwork to allow for joining with new (elsewhere measured)	m	245		R
10	177	Timber or laminated timber beam.	m	331		R
10	178	Timber post approximately 3m high including temporary propping and support to veranda roof cover.	No.	66		R
10	179	Take off and remove roof ventilator from sheeting to be removed.	No.	54		R
10	180	Take off and remove timber roof truss spanning 2-3m and not exceeding 800 mm high	No.	33		R
10	181	Take off and remove timber roof truss spanning 3-4m and not exceeding 800 mm high	No.	67		R
10	182	Take off and remove timber roof truss spanning 4-5m and not exceeding 1 m high	No.	44		R
10	183	Take off and remove timber roof truss spanning 5-6m and not exceeding 1.2 m high	No.	23		R
10	184	Take off and remove timber roof truss spanning 6-7m and not exceeding 1.2 m high	No.	21		R
		<u>Taking off and removing sundry roof items and setting aside for re-use:</u>				
10	185	Take off and remove roof ventilator from sheeting to be removed and set aside for re-use..	No.	87		R
		<u>REFIXING OF ROOF COVERING SUNDRIES PREVIOUSLY SET ASIDE FOR RE-USE</u>				
10	186	Refix existing roof ventilator in accordance with the manufacturer's instructions.	No.	87		R
		<u>PREPARATORY WORK TO EXISTING ROOF COVERING SURFACES</u>				
		<u>Clean existing roof covering using a high pressure water cleaning system and steel brushes removing all loose paint, sprawl and deleterious matter.</u>				
11	187	Concrete or clay roof tiles.	m2	2465		R
11	188	Corrugated fibre cement roof sheeting.	m2	3244		R
11	189	Metal roof sheeting.	m2	12887		R
3276	190	Underside of corrugated fibre cement roof sheeting.	m2	3276		R

		<u>REMOVAL OF EXISTING JOINERY</u>				
		<u>Taking out and removing built in cupboard doors, frames, shelves, cleats, bearers and shelving from brickwork including making good as necessary:</u>				
11	191	Timber built in cupboard not exceeding 2.5m2	No.	54		R
11	192	Timber built in cupboard exceeding 2.5m2 and not exceeding 5m2	No.	32		R
11	193	Timber built in cupboard exceeding 5m2 and not exceeding 10m2	No.	16		R
11	194	Floor to ceiling built-in cupboard 2.2m long x 3.04m high x 700mm deep complete with shelves, door, etc.	No.	65		R
11	195	Counter 750 mm wide x 1050 high complete.	m	125		R
11	196	Counter 800 mm wide x 850mm high complete	m	87		R
11	197	Desk and floor cupboard 600 mm wide x 750mm high complete	m	76		R
11	198	U-shaped on plan strong room shelf and cupboard 8m total length x 1.7m high	No.	34		R
11	199	Wall cupboard and shelf unit 1800mm x 2100mm high	No.	57		R
11	200	Three tier 500mm wide x1800mm high adjustable timber shelving including wall bands at 600mm centres, brackets, etc.	m	345		R
11	201	Five tier 300mm wide x 1800mm high adjustable timber shelving including wall bands at 600mm centres, brackets, etc	m	322		R
11	202	Five tier 500mm wide x 1800mm high adjustable timber shelving including wall bands at 600mm centres, brackets, etc	m	267		R
11	203	Slatted shower bench 500mm wide including steel brackets	m	66		R
11	204	19mm Thick timber corner protector size 150x150mm	m	33		R
11	205	19mm Thick timber U-shaped reveal protector 610mm girth	m	56		R
		<u>Taking out and removing kitchen units, etc.</u>				
12	206	Timber floor unit including bearers, cleats, shelves, doors and countertops size 3.7 m long x 900mm high x 600mm deep.	No.	43		R
12	207	Timber sink unit size 1.8m long x 900mm high x 600mm deep including removing sink, disconnecting services and permanently stopping off	No.	78		R
12	208	Timber sink unit size 3.0m long x 900mm high x 600mm deep including removing sink, temporary disconnecting services and reinstating plumbing where new cupboard is installed (e.m.)	No.	33		R
12	209	Timber wall unit 2.2m long x 3.04m high x 700mm deep including bearers, cleats, shelves and doors.	No.	47		R
12	210	Door from timber floor unit to remain and prepare for fitting of new size 600 x 750mm high	No.	145		R
12	211	Door from timber wall unit to remain and prepare for fitting of new size 600 x 750mm high	No.	322		R
12	212	Timber drawer size 600 x 150mm high and runner from cupboard to remain and prepare for fitting of new size 2400mm x 2650mm high x 700mm deep.	No.	88		R
12	213	Floor to ceiling built-in cupboard 3.04m high x 700mm deep complete with shelves, doors, etc.	m	68		R
12	214	Floor to ceiling built-in cupboard 2400mm long x2650mm x 700mm deep complete with shelves, doors, etc.	No.	43		R
12	215	Timber work staation	No.	36		R
		<u>Taking out and removing joinery fittings, etc</u>				
12	216	Steel framed glass viewing panels and glass from brickwork and make good to reveals.	m2	43		R
12	217	Timber framed glass viewing panel and glass from brickwork and make good to reveals.	m2	68		R
12	218	Timber floor unit size 3m x 600mm countertop from cupboard to remain and prepared for fitting of new (elsewhere measured).	m	22		R

12	219	Timber countertop size 3m x 600mm from brickwork to be removed.	m	27	R
12	210	Timber countertop 3m x 600mm from brickwork to remain including shelving, brackets, etc, and making good to brickwork.	m	21	R
12	211	Timber built in shelving not exceeding 450mm deep from brickwork.	m	89	R
12	212	Timber sliding hatch and frame approximately 900x900mm, from brickwork, including making good to brickwork and plaster.	No.	11	R
12	213	Writing board and frame , not exceeding 2.5m2, from brickwork, including making good to plaster, face brick, etc	No.	23	R
12	214	Chalkboard and frame , exceeding 2.5m2, and not exceeding 5m2 from brickwork, including making good to plaster, face brick, etc	No.	54	R
12	215	Writing board and frame , exceeding 2.5m2, and not exceeding 5m2 from brickwork, including making good to plaster, face brick, etc	No.	24	R
12	216	Pinning board and frame, not exceeding 2.5m2, from brickwork including making good to plaster, face brick, etc.	No.	67	R
12	217	Pinning board and frame, exceeding 2.5m2, and not exceeding 5m2 from brickwork including making good to plaster, face brick, etc.	No.	13	R
12	218	Timber framed fly screen to windows not exceeding 2.5m2, including making good to timber frames or plaster in reveals.	No.	15	R
12	219	Timber framed fly screen to windows exceeding 2.5m2, and not exceeding 5m2 including making good to timber frames or plaster in reveals.	No.	17	R
<u>REMOVAL OF EXISTING JOINERY SUNDRIES</u>					
<u>Carefully taking down and removing sundry joinery and setting aside for re-use:</u>					
13	210	19 x 44mm Timber cornices from brickwork.	m	422	R
13	211	19 x 68mm Timber skirtings from brickwork.	m	433	R
13	212	22 x 180mm Timber sills from brickwork.	m	54	R
13	213	19 x 150mm Timber picture or chair dado rail from brickwork.	m	77	R
<u>REFIXING OF JOINERY SUNDRIES PREVIOUSLY SET ASIDE FOR RE-USE</u>					
13	214	Timber cornices to brickwork.	m	422	R
13	215	Timber skirtings to brickwork.	m	433	R
13	216	Timber sills to brickwork	m	54	R
13	217	Timber picture or chair dado rail to brickwork.	m	77	R
13	218	Rehang existing cupboard door with two new concealed, self closing cupboard hinges to existing cupboard frame.	No.	76	R
13	219	Fit existing cupboard with new self closing epoxy powder coated drawer, runner and guide to existing cupboard frame.	No.	231	R
<u>REMOVAL OF EXISTING CEILINGS, PARTITIONING AND FLOORING</u>					
<u>Taking down and removing ceiling, partitioning, and flooring etc.</u>					
13	210	Gypsum plasterboard or fibre cement ceilings including cornices, cover strips, timber brandering, etc.	m2	454	R
13	211	Gypsum plasterboard or fibre cement ceilings including cornices, cover strips from brandering to remain, including preparing branders for new ceiling (elsewhere measured).	m2	243	R
13	212	Acoustic tile suspended ceiling including suspension grid, hangers, etc.	m2	875	R
13	213	Acoustic tile suspended ceiling panels from suspension grid to remain (elsewhere measured).	m2	564	R
13	214	Drywall boarding and studwork, including doors, ironmongery, windows, etc.	m2	763	R
13	215	Drywall boarding from studwork to remain (new boarding elsewhere measured).	m2	459	R

13	216	19 x 44mm Timber cornice and prepare surface to receive new (elsewhere measured).	m	533	R
13	217	50mm Rhino coved cornice and prepare surface to receive new (elsewhere measured).	m	766	R
13	218	9 x 45mm Timber cover strips.	m	344	R
		<u>CUTTING THROUGH FLOORS AND CEILINGS</u>			
14	219	Cutting through Gypsum plasterboard or fibre cement ceilings and brandering for half brick wall including making good ceilings on both sides of new wall (new cornices elsewhere measured).	m	59	R
		<u>MAKING GOOD CEILING FINISHES, ETC.</u>			
		<u>Making good Rhino gypsum plasterboard ceilings and brandering:</u>			
14	210	Ceiling in small areas.	m2	255	R
14	211	Refixing coved cornice.	m	322	R
		<u>PLASTER CRACK REPAIRS</u>			
		<u>Repairs to cracks in existing plaster</u>			
14	212	Cut out plaster at crack on vertical wall or beam face for full depth and minimum 5mm to maximum 10mm wide, prepare and fill with "Sikacryl" or other approved acrylic sealant to finish flush.	m	659	R
14	213	Chase out cracks in top of surface bed to form groove 100mm wide and 50mm deep and fill with 1:4 cement mortar, including finishing smooth with a steel trowel to match existing level.	m	244	R
		<u>CONCRETE REPAIRS</u>			
		<u>Connection between existing slab and new.</u>			
14	214	10mm Diameter x 200mm long high tensile steel dowel bar set in Epidermix 327 epoxy mortar in and including 12mm diameter x 100mm deep mortice, in side of existing concrete slab or beam and one end greased and wrapped in polythene sheeting and cast into new insitu concrete.	No.	166	R
		<u>REMOVAL OF EXISTING FLOOR COVERINGS</u>			
		<u>Taking up and removing vinyl floor coverings, carpeting, suspended floor etc:</u>			
14	215	Vinyl sheet or tile floor covering including screed.	m2	377	R
14	216	Vinyl sheet or tile floor covering including preparing including screed for new vinyl floor covering (elsewhere measured).	m2	343	R
14	217	Wall to wall carpets including underfelt and edge strips.	m2	866	R
14	218	Carpet tile floor covering including preparing screed for new floor finish (elsewhere measured)	m2	287	R
14	219	Vinyl skirting 75mm high from walls.	m	322	R
		<u>Stripping of existing epoxy waterproofing coating:</u>			
14	220	Strip floor and prepare for new epoxy coating (elsewhere measured).	m2	5444	R
		<u>MAKING GOOD OF FLOOR COVERING FINISHES, ETC.</u>			
		<u>Making good 2.5mm thick 300x300mm heavy duty vinyl floor tiles to:</u>			
14	221	Floors in small areas to match existing.	m2	125	R
		<u>Making good 2.5mm thick vinyl sheet floor covering:</u>			
15	222	Floors in small areas to match existing.	m2	232	R
15	223	Repair welded joints to existing vinyl sheeting	m	133	R

REMOVAL OF EXISTING IRONMONGERY						
<u>Taking out and removing ironmongery, lockers, blinds, etc.</u>						
15	224	Vertical louvre blinds including making good to plaster and prepare to receive new (elsewhere measured)	m2	176		R
15	225	Horizontal louvred blinds including making good to plaster and prepare to receive new(elsewhere measured)	m2	248		R
15	226	Pelmet and curtain track, including making good to plaster.	m	122		R
15	227	Coat hooks on timber backing board from brickwork including making good to plaster or face brick.	m	12		R
15	228	Mortice lock and furniture from timber door and steel frame.	No.	265		R
15	229	Chromium plated cupboard lock, escutcheon and keep	No.	342		R
15	230	Chromium plated domed cupboard knob.	No.	231		R
15	231	Magnetic cupboard catch and keep.	No.	66		R
15	232	Concealed self-closing cupboard hinge.	No.	44		R
15	233	800 x 300mm high Stainless steel kick plate from door.	No.	49		R
15	234	Floor spring and hinges.	No.	44		R
15	235	Coat hooks from brickwork or timber, including making good.	No.	42		R
15	236	Glass shelf and brackets, including making good plaster or tiling, etc	No.	44		R
15	237	Towel rails including making good to plaster or tiling, etc	No.	66		R
15	238	Toilet roll holder including making good to plaster or tiling, etc	No.	54		R
15	239	Bank of galvanised wire mesh lockers, size approximately 2400x3000x400mm deep	No.	33		R
15	240	Lockable steel storage cupboard, size approximately 900x450x900mm high, including making good to plaster	No.	34		R
15	241	Lockable steel storage cupboard, size approximately 900x450x2000mm high, including making good to plaster	No.	43		R
15	242	900 x 1200mm Notice Board	No	11		R
15	243	Fire Extinguisher Brackets from wall and make good	No.	22		R
15	244	Fire Extinguisher Box from wall and make Good	No.	13		R
<u>Carefully taking out and removing ironmongery, lockers, letters, nameplates, etc. and setting aside for re-used:</u>						
15	245	Bank of wire mesh lockers approx.2400x3000x400mm deep.	No.	27		R
15	246	Lockable steel storage cupboard, approximately size 900x450x900mm high including making good to plaster	No.	43		R
15	247	Lockable steel storage cupboard, approximately size 900x450x2000mm high including making good to plaster	No.	35		R
15	248	Brass lettering.	No.	157		R
15	249	200 x 200mm Perspex sign board.	No.	169		R
15	250	Mortice lock and furniture from single timber door and set aside for re-use.	No.	210		R
16	251	Mortice lock and furniture from double timber door and set aside for re-use.	No.	175		R
16	252	Mortice lock and furniture from double timber door and set aside for re-use.	No.	146		R
16	253	Mortice lock and furniture from single steel door and frames set aside for re-use.	No.	54		R
16	254	Mortice lock and furniture from double steel door and frames set aside for re-use.	No.	34		R
16	255	Mortice lock and furniture from single aluminium door and frames set aside for re-use.	No.	29		R

16	256	Mortice lock and furniture from double aluminium door and frames set aside for re-use.	No.	93	R
		<u>REFIXING OF IRONMONGERY PREVIOUSLY SET ASIDE FOR RE-USE.</u>			
		<u>Refixing of ironmongery, lockers, letters, nameplates, etc.</u>			
16	257	Bank of wire mesh lockers approx.2400x3000x400mm deep to brickwork.	No.	27	R
16	258	Lockable steel storage cupboard size approximately 900x450x900mm high.	No.	43	R
16	259	Lockable steel storage cupboard size approximately 900x450x2000mm high.	No.	55	R
16	260	Brass lettering.	No.	157	R
16	261	200 x 200mm Perspex sign board.	No.	169	R
16	262	Supply only key for four lever lock.	No.	65	R
16	263	Fit new striker plate to metal door frame.	No.	124	R
16	264	Fit set of two new chromium plated 'Union Dove' lever handles to existing upright mortice lockset.	No.	146	R
		<u>SERVICING OF EXISTING IRONMONGERY</u>			
16	265	Service existing mortice lock, oil and ease furniture and lock, replace missing keys, and refix with matching screws including re-setting striking plate.	No.	439	R
16	266	Overhaul, service, adjust and replace if necessary pivots, catches, keep etc to existing side and top hung opening steel window sashes.	No.	265	R
		<u>REMOVAL OF EXISTING METALWORK</u>			
		<u>Taking and removing sundry metalwork</u>			
16	267	Steel hand-rail from brickwork, including making good to plaster, face brick, etc.	m	66	R
16	268	Steel balustrade approx.900mm high from concrete stairs including making good granolithic finish to tread.	m	426	R
16	268a	Metal Louvres not exceeding 2.5m2	No.	43	R
16	268b	Metal Louvres exceeding 2.5m2 and not exceeding 5m2.	No.	67	R
16	269	Metal burglar proofing screwed to timber frame not exceeding 2.5m2	No.	212	R
16	270	Metal burglar proofing screwed to timber frame exceeding 2.5m2 and not exceeding 5m2.	No.	166	R
16	271	Strong room door and frames not exceeding 2.5m2	No.	1	R
16	272	Clothes rail suspended from concrete slab	m	22	R
16	273	Clothes rail suspended from roof timber	m	37	R
16	274	Curtain rail exceeding 2m and not exceeding 3m long	m	69	R
16	275	Overhaul, adjust and replace if necessary pivots, catches, keep etc to existing side and top hung opening timber window sashes.	No.	337	R
17	276	Overhaul, service, adjust and replace if necessary springs, catches, keep etc to set existing vertical sliding timber window sashes.	No.	212	R
17	277	Service existing mortice lock, oil and ease furniture and lock, replace missing keys, and refix with matching screws including re-setting striking plate if necessary	No.	176	R
17	278	Single flight steel staircase 900mm wide x 4300mm on plan rising 2900mm comprising landings, 16 chequer plate treads and handrails one side	No.	15	R

		<u>Carefully taking out and setting aside sundry metalwork for re-use (elsewhere measured)</u>				
17	279	Metal burglar proofing screwed to timber frame not exceeding 2.5m2	No.	65		R
17	280	Metal burglar proofing screwed to timber frame exceeding 2.5m2 and not exceeding 5m2	No.	89		R
		<u>REFIXING OF METALWORK PREVIOUSLY SET ASIDE FOR RE-USE</u>				
		<u>Refixing of sundry metalwork:</u>				
17	281	Metal burglar proofing to timber frame not exceeding 2.5m2	No.	65		R
17	282	Metal burglar proofing to timber frame exceeding 2.5m2 and not exceeding 5m2	No.	89		R
		<u>SERVICING OF EXISTING METALWORK</u>				
		<u>Service existing steel windows:</u>				
17	283	Overhaul, adjust and service steel windows not exceeding 2,5m² with two opening sashes to ensure proper operation.	No.	54		R
17	284	Extra on servicing existing steel window sash for supply and fitting new handle.	No.	87		R
17	285	Extra on servicing existing steel window sash for supply and fitting new sliding stay.	No.	32		R
17	286	Overhaul, adjust and service louvre aluminium window unit not exceeding 2.5m2 including lubricating and easing catches and slides where necessary.	No.	45		R
17	287	Refix 400 x 400mm aluminium framed louvre door vent to timber with matching screws.	No.	34		R
		<u>REMOVAL OF EXISTING PLASTER</u>				
		<u>Hacking/up off and removing granolithic, screeds, plaster, etc. from concrete or brickwork and preparing surfaces for new finishes (elsewhere measured)</u>				
17	288	Internal plaster from walls and columns.	m2	235		R
17	289	Internal plaster from ceiling and beams.	m2	176		R
17	290	External plaster from walls, columns and beams.	m2	54		R
17	291	25mm Screed from floors.	m2	653		R
17	292	25mm Granolithic from floors.	m2	244		R
17	293	25mm Granolithic from treads and risers of stairs.	m2	98		R
17	294	Granolithic skirting 75mm high	m	245		R
		<u>MAKING GOOD OF PLASTERING FINISHES, ETC.</u>				
		<u>Making good 20mm thick untinted granolithic:</u>				
17	295	Floors in small areas.	m2	54		R
17	296	Floors where partitions removed.	m	65		R
17	297	Floors where brick walls removed, not exceeding 300mm wide.	m	22		R
		<u>Untinted granolithic:</u>				
18	298	Making good 30mm screed floors in small areas	m2	78		R
		<u>Making good internal cement plaster:</u>				
18	299	To walls.	m2	487		R
18	300	To walls in small areas.	m2	56		R
18	301	Concrete ceilings in small areas.	m2	87		R
18	302	To walls where brick cross walls were removed not exceeding 300mm wide.	m	21		R

18	303	Concrete ceilings where brick cross walls removed were not exceeding 300mm wide.	m	24	R
		<u>PREPARATORY WORK TO EXISTING PLASTER SURFACES</u>			
		<u>Making good cement plaster</u>			
18	304	Chase out plaster cracks to form recess 25mm wide and 20mm deep, and fill with 1:4 cement mortar, including floating up smooth to match existing.	m	86	R
18	305	Cut and chase recess 110mm deep x 200mm high in side of one brick wall for edge of concrete slab.	m	43	R
18	306	Cut out for and fit brass dividing strip or weather bar (elsewhere measured) in existing concrete floor.	m	32	R
18	307	Chase out cracks in top of surface bed to form groove 100mm wide and 50mm deep and fill with 1:4 cement mortar, including finishing smooth with a steel trowel to match existing levels.	m	35	R
18	308	Seal 5 x 10mm joint with approved silicone sealant at junction of wall and cornice.	m	44	R
18	309	Rake out existing polysulphide expansion joint filler and prepare to receive new.	m	156	R
18	310	Cut 5 x 25mm groove in plastered brick walls for wedging and pinning metal flashing (elsewhere measured).	m	121	R
18	311	Cut stepped 5 x 25mm groove in plastered brick walls for wedging and pinning stepped metal flashing (elsewhere measured)	m	22	R
18	312	Take off existing timber door and trim bottom edge of same to allow for new floor finish, and rehang to existing frame.	No.	76	R
18	313	Hole for and including 10mm copper keep in existing brickwork or concrete for barrel bolt.	No.	29	R
		<u>Preparation to existing vertical surfaces:</u>			
18	379	Hack face of existing plaster to receive wall tiling (elsewhere measured).	m2	187	R
		<u>Preparation to existing horizontal surfaces</u>			
18	314	Make good defects in existing floor screed with Pavelite, including preparing existing screed by removing all spalled material and scrubbing floors to remove all trace of foreign matter.	m2	768	R
18	315	Prepare granolithic floor finish to receive vinyl tiles (elsewhere measured).	m2	564	R
		<u>REMOVAL OF EXISTING TILING</u>			
		<u>Hacking up/off and removing tiled floor and wall finishes including removing mortar bed or backing and preparing concrete or brick surfaces for new finishes (elsewhere measured)</u>			
18	316	30mm thick Ceramic tiles and plaster to walls .	m2	2331	R
18	317	30mm thick Ceramic wall tiles from timber or drywall cladding	m2	1266	R
18	318	30mm thick Ceramic tiles and screed to floors	m2	754	R
19	319	30mm thick Ceramic tiles and screed to treads and risers of stairs	m2	198	R
19	310	Ceramic soap dish or chromium plated toilet roll holder to walls.	No.	2144	R
19	311	Mosaic tiles and screed to floors	m2	66	R
19	312	Ceramic tile skirtings from wall	m	433	R
		<u>MAKING GOOD OF TILING FINISHES, ETC</u>			
		<u>Making good ceramic wall tiles including 5mm plaster backing or fixed with adhesive:</u>			
19	313	Walls in small areas.	m2	87	R

19		<u>PREPARATORY WORK TO EXISTING TILED SURFACES</u>			
		<u>Preparation to existing vertical surfaces:</u>			
19	314	Clean existing ceramic wall tiles with a sugar soap solution.	m2	165	R
		<u>REMOVAL OF EXISTING GLAZING</u>			
		<u>Taking out and removing glass and mirrors</u>			
19	315	Glass from steel windows including cleaning out rebates and preparing for new glass (elsewhere measured)	m2	344	R
19	316	Glass from timber windows with beads including cleaning out rebates and preparing for new glass (elsewhere measure)	m2	277	R
19	317	Glass from aluminium windows with beads including cleaning out rebates and preparing for new glass (elsewhere measure)	m2	129	R
19	318	Rake out glazing putty, prepare rebates and re-putty	m	689	R
19	319	Mirror not exceeding 0.5m2 including making good plaster or tiling	No.	76	R
		<u>Taking out and removing mesh fence</u>			
20	320	Take out and remove existing mesh wire fence complete with 1800mm high 100mm diameter gumpole supports at 3m centres and, grubbing up and removing any concrete bases, etc including filling with selected material and compacting to 95% Mod Aashto maximum density.	m	5687	R
		<u>REMOVAL OF EXISTING BOND AND INTERLOCKING CONCRETE BLOCK PAVERS</u>			
		<u>Carefully remove precast concrete block road surfacing and set aside for re-use</u>			
21	321	Carefully remove 80mm G-block paving to sidewalks and pathways to falls.	m ²	658	R
21	322	Carefully remove 80mm paving around the buildings to falls.	m ²	546	R
21	323	Carefully remove 80mm paving to roads and parking areas to falls.	m ²	643	R
		<u>REMOVE REINFORCED CONCRETE PAVING</u>			
		<u>25MPa/26mm Reinforced concrete</u>			
21	324	Break up and remove in situ paving to concrete.	m ³	434	R
		<u>HOURLY RATE:</u>			
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.			
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.			
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.			
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.			
		Prior written approval must be received from the ESKOM Official prior to commencement of work.			
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>			
22	442	Artisan	Hr	1	R
22	443	Artisan Assistant	Hr	1	R
22	444	General labourer	Hr	1	R

		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
22	445	Artisan	Hr	1		R
22	446	Artisan Assistant	Hr	1		R
22	447	General labourer	Hr	1		R
		<u>Materials</u>				
	448	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
	449	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
		<u>REMOVAL AND REPLACEMENT OF STEEL LOUVRES WITH SIMILAR PRODUCTS OR EQUALLY APPROVED PRODUCTS</u>				
		<u>Removal and replacemet of steel louvres</u>				
	450	Steel louvres not exceeding 2.5m length	No	80		R
	451	Steel louvres exceeding 2.5m but not exceeding 5m in length	No	60		R
CARRIED TO FINAL SUMMARY						R

CAMDEN POWER STATION BUILDING MAINTENANCE PROVISIONAL BILLS OF QUANTITIES						
Page	Item		Unit	Quantity	Rate	Amount
		<p><u>SECTION NO. 3 : BUILDING WORKS</u></p> <p><u>BILL NO.1 : EARTHWORKS</u></p> <p><u>PREAMBLES</u></p> <p>The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Rate approvals:</u></p> <p>The tenderer is advised that any rate that is required for new work must include the following breakdown:</p> <p>Material, labour, plant, wastage, transport and profit.</p> <p>Rate approvals must be authorised by the Eskom Official prior to work being carried out.</p> <p><u>Nature of ground:</u></p> <p>The Tenderer must acquaint himself with the nature of the material to be excavated.</p> <p>The nature of the ground is assumed to be medium, dense and very dense material, therefore earth, but possibly interspersed with "hard rock" or "intermediate material".</p> <p>A soils investigation has not been carried out on site by the Engineer and the report is not annexed to the back of these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured.</p> <p><u>Carting away of excavated material:</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site.</p> <p><u>Subterranean Water:</u></p> <p>The contractor must keep proper records for all dewatering and these records must be signed by the Eskom Official on a weekly basis so that payments can be effected. If this process is not followed, this work will be provided free of charge.</p> <p><u>Overtime work and normal work including Weekends and Public Holidays:</u></p> <p>The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.</p> <p><u>SITE CLEARANCE, ETC</u></p>				
1	1	Allow for clearing the site as required and cart away all vegetation and debris.	m ²	652		R
		<p><u>EXCAVATIONS OTHER THAN BULK</u></p> <p><u>Excavation in earth not exceeding 2m deep and stock pile on site:</u></p>				
1	2	Reduced levels under floors	m ³	135		R
1	3	Reduced levels under floors (aprons and yard area)	m ³	81		R
1	4	Trenches.	m ³	144		R
1	5	Trenches circular on plan.	m ³	23		R
1	6	Trenches and holes below bases to get out unsuitable material.	m ³	78		R
1	7	Bases.	m ³	59		R
		<u>Excavation in earth exceeding 2m and not exceeding 4m deep:</u>				
1	8	Trenches and holes.	m ³	66		R
1	9	Trenches and holes below bases to get out unsuitable material.	m ³	89		R

		<u>Back excavation of vertical sides of excavation in earth for working space including backfilling with selected material compacted in 150mm layers to 98% Mod AASHTO density and carting away surplus material;</u>				
2	10	Exceeding 500mm and not exceeding 1,5m deep for erection and removal of formwork to ground beams, footings, etc.	m ²	54		R
2	11	Exceeding 1,5m and not exceeding 3,0m deep for erection and removal of formwork to ground beams, footings, etc.	m ²	45		R
		<u>Extra over trench and hole excavations in earth for excavation in:</u>				
2	12	Intermediate material.	m ³	109		R
2	13	Hard rock material.	m ³	114		R
2		<u>Extra over all excavations for carting away:</u>				
2	14	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m ³	453		R
		<u>Risk of collapse of excavations</u>				
2	15	Sides of trench and hole excavations not exceeding 1,5m deep	m ²	243		R
2	16	Sides of trench and hole excavations exceeding 1,5m not exceeding 3,0m deep.	m ²	177		R
		<u>COMPACTION</u>				
		<u>Compaction of surfaces:</u>				
2	17	Rip and scarify to a depth of 200mm, level and compact earth surface under floor to density of at least 98% Mod. AASHTO maximum density.	m ²	289		R
2	18	Compaction of ground surface under floors etc including scarifying for a depth of 300mm, breaking down oversize material, adding selected material where necessary and compacting in 150mm layers to a density of at least 93% Mod AASHTO density.	m ²	432		R
		<u>FILLING ETC.</u>				
		<u>Garden soil filling supplied by the Contractor (not compacted):</u>				
2	19	In flower boxes.	m ³	22		R
		<u>Selected earth filling obtained from the excavations and/or prescribed stock piles on site compacted in 150mm layers to 98% Mod. AASHTO density:</u>				
2	20	Under floors, pavings, etc.	m ³	245		R
2	21	Backfilling to trenches, holes, etc	m ³	322		R
		<u>Filling with approved G7 material in accordance with SANS 1200DM supplied and carted onto site by the contractor, compacted in 150mm layers to a density of at least 95% Mod. AASHTO maximum density:</u>				
2	22	Under floors etc	m ³	166		R
		<u>Filling with approved G5 material supplied and carted onto site by the contractor, compacted to a density of at least 98% Mod. AASHTO maximum density:</u>				
2	23	Under floors, etc	m ³	143		R
		<u>Filling with approved G4 material in accordance with SANS 1200DM supplied and carted onto site by the contractor, compacted in 150mm layers to a density of at least 95% Mod. AASHTO maximum density:</u>				
2	24	Under floors etc	m ³	145		R
		<u>Filling with approved G3 material supplied and carted onto site by the contractor, compacted to a density of at least 95% Mod. AASHTO maximum density:</u>				
3	25	Under floors, etc	m ³	144		R
		<u>Filling with approved G2 material in accordance with SANS 1200DM supplied and carted onto site by the contractor, compacted in 150mm layers to a density of at least 95% Mod. AASHTO maximum density:</u>				
2	26	Under floors etc	m ³	55		R

		<u>Filling with selected material from the excavations stabilised to C4 and compacted to a density of at least 98% Mod. AASHTO maximum density:</u>				
2	27	Backfilling to holes below bases where unsuitable material removed.	m³	87		R
		<u>Filling of river sand:</u>				
3	28	Clean coarse river sand, backfilled and compacted into layers of 150mm against back of retaining wall as backfilling proceeds.	m³	56		R
		<u>KEEPING EXCAVATIONS FREE OF WATER</u>				
		<u>Keeping excavations free of water:</u>				
3	29	Keeping excavations free of all water other than subterranean water	Item	1		R
		<u>Subterranean Dewatering:</u>				
3	30	Allow for supplying a 50mm diameter submersible pump delivering approximately 500 litres per minute with and including a minimum 10m length of discharge hose for pumping away of any subterranean water which may surface in foundation trenches, etc.	Hrs	322		R
		<u>TESTS</u>				
		<u>Testing of material and filling:</u>				
		Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series				
		The items of testing given below are for additional testing which may be required by the ESKOM Official over and above those required in accordance with the SABS 1200 series				
		<u>Prescribed density tests on filling:</u>				
3	31	Modified AASHTO Density test.	No	100		R
3	32	Field Density test including Optimum Moisture Content (Four readings per test).	No	100		R
		<u>SUBFLOOR DRAINAGE</u>				
		<u>Subfloor drainage:</u>				
3	33	110mm Slotted uPVC agriculture pipes laid in trench in fill under floors (fill elsewhere) including 19mm crushed stone encasing size 200 x 200mm and 'Bidim U14' geofabric filter blanket wrapped around encasing with 150mm side and 300mm end laps including stitching.	m	322		R
		<u>SOIL POISONING</u>				
		<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years</u>				
3	34	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming.	m²	265		R
3	35	Under concrete slab, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming (aprons and yard)	m²	721		R
3	36	To bottoms of trenches.	m²	166		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
3	37	Artisan	Hr	1		R
3	38	Artisan Assistant	Hr	1		R
3	39	General labourer	Hr	1		R

		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
4	40	Artisan	Hr	1		R
4	41	Artisan Assistant	Hr	1		R
4	42	General labourer	Hr	1		R
		<u>Materials</u>				
4	43	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
4	44	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.2 : CONCRETE, FORMWORK AND REINFORCEMENT (PROVISIONAL)</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>SAN Standards:</u>				
		All concrete work is to be in accordance with the relevant sections of SANS 1200				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Cost of tests</u>				
		Descriptions of concrete items shall be deemed to include for all necessary testing of concrete components and trial mixes				
		Testing of concrete strength test cubes is measured separately in an inclusive item. The Contractor shall make an assessment of all testing required and include the cost in the item rate				
		The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the ESKOM Official. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the ESKOM Official. (Test cubes are measured separately)				
		<u>Formwork</u>				
		Description of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use				
		The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.				
		Formworks to soffits of solid etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise described				
		Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
		<u>Holding down bolts:</u>				
		Holding down bolts are to be handed over from steel fabricator to the contractor to be bedded into concrete.				

		<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
		<u>Class 10 MPa/38mm concrete:</u>				
6	1	Mass concrete filling below bases where unsuitable material removed	m³	44		R
		<u>Class 15 MPa/19mm concrete:</u>				
6	2	Surface blinding under footings and bases.	m³	32		R
		<u>Class 18MPa/19mm concrete:</u>				
6	3	Surface blinding under footings and bases.	m³	23		R
6	4	Mass concrete filling below bases where unsuitable material removed	m³	32		R
		<u>Class 20MPa/19mm concrete:</u>				
7	5	Strip footings.	m³	21		R
		<u>Class 25 MPa/19mm concrete:</u>				
7	6	Ramps.	m³	24		R
7	7	V-Drains and Aprons.	m³	38		R
		<u>VIBRATED REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
		<u>Class 25MPa/19mm concrete:</u>				
7	8	Foundation beams	m³	18		R
7	9	Strip footings	m³	17		R
7	10	Retaining wall footings	m³	16		R
7	11	Bases	m³	17		R
		<u>Class 30MPa/19mm concrete:</u>				
7	12	Ramps	m³	15		R
7	13	Aprons	m³	16		R
		<u>VIBRATED REINFORCED CONCRETE</u>				
		<u>Class 25MPa/19mm concrete:</u>				
7	14	Aprons	m³	26		R
7	15	Surface beds and thickenings under cast in panels on waterproofing.	m³	17		R
7	16	Ramps	m³	19		R
7	17	Slabs and beams including inverted beams	m³	16		R
7	18	Walls	m³	11		R
7	19	Columns.	m³	22		R
7	20	Stub columns.	m³	16		R
7	21	Stairs and landings	m³	17		R
		<u>Class 30MPa/19mm concrete:</u>				
7	22	Surface beds and thickenings under cast in panels on waterproofing.	m³	14		R
7	23	Slabs and beams including inverted beams	m³	16		R
7	24	Walls	m³	11		R
7	25	Isolated beams	m³	22		R
7	26	Columns	m³	16		R
7	27	Columns in foundations	m³	13		R
7	28	Stub columns in foundations	m³	18		R
7	29	Stairs and landings	m³	11		R

		<u>CAST IN HOLDING DOWN BOLTS</u>				
7	30	Take delivery of and cast M24 holding down bolts with 75mm flange plates in exact position 500mm deep in concrete base	No	66		R
7	31	Take delivery of and cast in Holding Down 'U' bolt in exact position in concrete base including forming 60mm diameter 150mm deep adjustment pockets around necks of bolt.	No.	34		R
		<u>GROUTING</u>				
		<u>30 MPa non-shrink epoxy grout:</u>				
7	32	Bedding approximately 25mm thick under 300 x 200mm base plate including chamfered edges all round.	No.	21		R
7	33	Bedding approximately 25mm thick under 350 x 220mm base plate including chamfered edges all round.	No.	45		R
7	34	Bedding approximately 25mm thick under 400 x 200mm base plate including chamfered edges all around.	No	53		R
7	35	Bedding approximately 25mm thick under 450 x 220mm base plate including chamfered edges all round.	No.	26		R
8	36	Grouting to 60mm diameter 175mm deep pocket around holding down bolt	No.	36		R
		<u>TESTING</u>				
		<u>Test blocks:</u>				
8	37	Allow for all necessary concrete test cubes size 150 x 150 x 150mm cast from batches of concrete required for this contract as specified, made, stored, cured and tested in accordance with SANS Methods 861 and 863, including use of approved cube moulds, transporting to an approved testing laboratory for testing, paying all charges and submitting reports to the Eskom Official.	Item	8		R
		<u>FINISHING TOP SURFACE OF CONCRETE</u>				
		<u>Finishing top surfaces of concrete smooth with a broom finish to give a Class U2 finish</u>				
8	38	Surface beds, slabs, etc.	m²	433		R
8	39	Roof slabs, etc to falls	m²	211		R
8	40	Ramps to falls	m²	359		R
8	41	V-Channel concrete apron	m²	115		R
8		<u>Finishing top surface of concrete smooth with a power float:</u>				
8	42	Surface beds, slabs, etc.	m²	244		R
8		<u>Finishing top surface of concrete smooth with a wood float:</u>				
8	43	Surface beds, slabs, etc to falls	m²	65		R
8	44	Ramps to falls	m²	378		R
8	45	Treads and landings of stairs.	m²	131		R
8	46	Aprons cast in panels.	m²	245		R
		<u>MOVEMENT JOINTS ETC</u>				
		<u>Expansion joints with Bitumen impregnated softboard between vertical concrete and brick surfaces</u>				
8	47	10mm Joints not exceeding 300mm high	m	244		R
		<u>Slip joint comprising two layers of 5mm tempered hardboard smooth sides together and greased with two coats of bitumen sealant between horizontal brick and concrete surfaces:</u>				
8	48	Not exceeding 300mm wide.	m	33		R
8	49	Not exceeding 300mm wide, circular on plan to not exceeding 2m radius	m	64		R
		<u>Expansion joints of 12mm bitumen impregnated softboard between vertical concrete and brick surfaces:</u>				
8	50	Against face of beam.	m²	28		R

		<u>Expansion joints with 'Jointex' closed cell expanded polyethylene preformed joint filler including necessary hinged edge tear-off strip for later removal, between vertical concrete and brick surfaces:</u>				
8	51	12mm Joints not exceeding 300mm high.	m	33		R
		<u>Saw cut joints:</u>				
8	52	3.2 x 35mm Saw cut joints in top of concrete.	m	17		R
8	53	Ream out 3.2mm saw cut joint in top of concrete to size 6 x 20mm.	m	76		R
8	54	6 x 38mm Saw cut joints in top of concrete	m	89		R
8	55	4 x 38mm Saw cut joint in top of concrete	m	65		R
8	56	Ream out 6mm saw cut joint in top of concrete to size 6 x 20mm.	m	43		R
		<u>PRESCRIBED CONSTRUCTION JOINTS</u>				
		<u>Prescribed keyed construction joint, the key formed of 15mm deep splayed recess 30mm wide along centre line, the first pour then coated with bitumen prior to second pour, through:</u>				
8	57	150mm Thick surface beds.	m	34		R
8	58	6 x 20mm Saw cut joint in top of concrete along the construction joint	m	68		R
		<u>FORMWORK</u>				
		Note: Rates for formwork to soffits of slab shall include propping not exceeding 3.5m high unless otherwise described. Formwork to walls and columns is not exceeding 3.5m above bearing level unless otherwise described. All formwork shutters must be new.				
		<u>Rough Formwork (Degree of Accuracy III) to sides:</u>				
9	59	Bases	m²	97		R
9	60	Foundation beams	m²	65		R
9	61	Rectangular stub columns	m²	44		R
9	62	Rectangular columns in foundations	m²	64		R
9	63	Isolated wall beams.	m²	32		R
9	64	Strip footings in foundations not exceeding 300mm high	m	326		R
9	65	Edges, risers, etc not exceeding 300mm high (Aprons)	m	289		R
9	66	Sloping and stepped outer edge of stairs 310mm high extreme	m	214		R
		<u>Smooth Formwork (Degree of Accuracy II) to sides:</u>				
9	67	Walls in foundations	m²	44		R
9	68	Walls	m²	36		R
9	69	Retaining walls	m	68		R
9	70	Rectangular columns.	m²	65		R
9	71	Stub columns in foundations	m²	53		R
9	72	Inverted beams.	m²	66		R
9	73	Inverted beams above concrete.	m²	78		R
9	74	Inverted beams circular exceeding 1m.	m²	34		R
9	75	Inverted beams above concrete circular exceeding 1m.	m²	32		R
9	76	Edges, risers, etc., not exceeding 300mm high or wide.	m	39		R
9	77	Sloping and stepped outer edge of stairs 310mm high extreme	m	51		R
		<u>Smooth Formwork (Degree of Accuracy II) to soffits:</u>				
9	78	Slabs propped up exceeding 1.5m and not exceeding 3m high.	m²	78		R
9	79	Landings	m²	45		R

9		<u>Smooth Formwork (Degree of Accuracy II) to sides and soffits:</u>				
9	80	Beams	m ²	87		R
9	81	Isolated beams	m ²	46		R
9		<u>Boxing in smooth formwork to form:</u>				
9	82	25 x 25mm Chamfer along top or bottom edge of concrete.	m	42		R
9	83	85 x 115mm Projection at bottom edge of beam including weather strip in soffit	m	58		R
9	84	Projection 230mm wide x 115mm deep x 620mm high on side of beam.	No.	45		R
9		<u>REINFORCEMENT</u>				
9		<u>High tensile steel reinforcement to structural concrete work:</u>				
9	85	Various diameter bars.	Tonnes	7		R
9		<u>Mild steel reinforcement to structural concrete work:</u>				
9	86	Various diameter bars.	Tonnes	15		R
9		<u>Fabric reinforcement</u>				
9	87	Type 100 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	791		R
9	88	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	543		R
9	89	Type 245 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	211		R
9	90	Type 395 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	98		R
9	91	Type 617 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	79		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
10	92	Artisan	Hr	1		R
10	93	Artisan Assistant	Hr	1		R
10	94	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
10	95	Artisan	Hr	1		R
10	96	Artisan Assistant	Hr	1		R
10	97	General labourer	Hr	1		R
		<u>Materials</u>				
10	98	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
10	99	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R

BILL NO.3 : PRECAST CONCRETE**PREAMBLES**

The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles

SUPPLEMENTARY PREAMBLES**Rate approvals:**

The tenderer is advised that any rate that is required for new work must include the following breakdown:

Material, labour, plant, wastage, transport and profit.

Rate approvals must be authorised by the ESKOM Official prior to work being carried out.

Overtime work and normal work:

The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.

Sizes

Blocks, sills, etc measured linear shall be made in suitable lengths. Large size setting out drawings shall be prepared where necessary and submitted to the ESKOM Official for approval before moulds are made

General

Where kerbstones, blocks, etc are laid in ground descriptions shall be deemed to include necessary excavation, filling in and ramming

PRECAST CONCRETE WINDOW SURROUNDS**General**

Window surrounds are to be checked at delivery for squareness. Surrounds out of square will be rejected.

Prices are to include for building into brick walls as single units or combinations of two or more units and for bedding solid all round in mortar and pointing on both sides with square recessed joints.

Note: Aluminium infill windows, glazing and pointing with sealing compound are measured elsewhere.

Winblok modular precast concrete window surrounds etc finished smooth on exposed surfaces, including bedding, jointing and pointing:

13	1	375 x 375 x 260mm Purpose made window surround.	No.	12	R
13	2	600 x 600 x 260mm Concrete window frame with four 300 x 300mm concrete panel inserts with wire mesh to all openings to be fixed with epoxy mortar.	No	9	R

WALL CLADDING**Refixing of wall cladding carefully taking off, removing and setting aside for re-use elsewhere measured, including all fixings, etc. and making good finishes where necessary:**

13	3	Precast concrete panels, approximately 1m long segments x 1750 high x 150mm thick precast concrete wall cladding.	No	1	R
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COPINGS, SILLS, ETC**Precast concrete including bedding, jointing and pointing.**

13	4	300mm Wide x 170mm high weathered coping bedded and pointed on top of one brick wall in "Sikalite" admixture waterproof cement mortar	m	21	R
13	5	Purpose made finial pier cap size overall 550 x 550 x 150mm	No.	18	R

HOURLY RATE

The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.

Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.

Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.

Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.

		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
14	6	Artisan	Hr	1		R
14	7	Artisan Assistant	Hr	1		R
14	8	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
14	9	Artisan	Hr	1		R
14	10	Artisan Assistant	Hr	1		R
14	11	General labourer	Hr	1		R
		<u>Materials</u>				
14	12	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
14	13	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.4 : MASONRY</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approval:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Descriptions:</u>				
		Where sizes in descriptions are given in brick units, "one brick" shall be the length and "half brick" the width of a brick.				
		Samples of all masonry building units, except those for walls described as "load bearing", shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30 000 units delivered to site.				
		Descriptions of brickwork shall be deemed to include for steel reinforcing fabric as specified every fourth course in superstructure and every course in foundations. Additional reinforcement in lintels, etc are measured separately.				
		Bricks shall be ordered timeously to obtain uniformity in size and colour.				
		Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.				
		Rates for brickwork, faced brickwork, etc shall include for all required samples.				
		Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Brixal' bitumen emulsion waterproofing coating				
		<u>Tests:</u>				
		The contractor must provide all test results to the ESKOM Official for approval.				

		<p><u>Sizes in descriptions:</u></p> <p>Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.</p> <p><u>Hollow walls etc:</u></p> <p>Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole.</p> <p><u>Bagged and sealed walls:</u></p> <p>Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with three coats 'Brixeal' bitumen emulsion waterproofing coating.</p> <p><u>Wall ties in hollow walls:</u></p> <p>Wall ties shall be polypropylene 'Permaties' complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the brickwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and no more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other.</p> <p><u>Face Bricks:</u></p> <p>Bricks shall be ordered timeously to obtain uniformity in size and colour, no delay claims will be entertained for late delivery of face bricks.</p> <p><u>Pointing:</u></p> <p>Descriptions of "recessed" pointing to face brickwork shall be deemed to include polished, square recessed, weathered pointing, etc.</p> <p><u>Samples:</u></p> <p>Samples of all masonry building units, except those for walls described as 'load bearing', shall consist of a minimum of 6 units. Samples of building units to be used in walls described as 'load bearing' shall consist of 30 units from every 30 000 units delivered to site</p> <p><u>Mock-up:</u></p> <p>The contractor must allow in his pricing for a mock-up of a 4m2 panel of face brick work for the approval of the EskomOfficial. The mock-up is to remain for the duration of the project.</p> <p><u>Selection of face bricks:</u></p> <p>The contractor must allow for in his pricing to select the face bricks so that there is no colour variance in the works.</p> <p><u>General:</u></p> <p>The contractor must allow for in his pricing to thoroughly clean all brickwork with approved detergent and Jet sprayed on completion of the works.</p> <p><u>Fibre-cement cills:</u></p> <p>Before setting cills in mortar, contractor to ensure the metal lugs are firmly attached to the sill. Cills are to be soaked in water prior to bedding. Where only a thin mortar bed is possible and the lug cannot be fully embedded, pockets in the masonry must be provided to ensure adequate fixing. Where cills are plastered into reveals, sill ends should be separated by means of a thin joint or plastic sheeting.</p> <p><u>BRICKWORK</u></p> <p><u>BRICKWORK IN FOUNDATIONS</u></p> <p><u>Load bearing brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u></p>				
18	1	Piers.	m ³	35		R
18	2	Half brick walls	m ²	177		R
18	3	One brick walls	m ²	198		R
18	4	One brick walls circular on plan.	m ²	49		R
18	5	One-and-a-half brick retaining walls, cross bonded	m ²	14		R
18	6	Two brick retaining walls, cross bonded.	m ²	56		R
18	7	280mm Cavity walls including wire ties, and filling cavity of hollow wall with 20MPa/19mm stone unreinforced concrete (e/m) as the work proceeds.	m ²	87		R

		<u>BRICKWORK IN SUPERSTRUCTURE</u>				
		<u>Brickwork of NFP bricks (14 MPa nominal compressive strength) in Class II mortar:</u>				
18	8	Piers.	m³	13		R
18	9	Half brick walls.	m²	131		R
18	10	Half brick walls in beamfilling	m²	189		R
18	11	One brick walls	m²	222		R
18	12	280mm Cavity Walls including wire ties, bagged and sealed with two coats 'ABE' Brixal emulsion waterproofing (e/m) to the outer face of the inner skin as the work proceeds.	m²	178		R
		<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>				
18	13	One brick walls in two skins, bagged and sealed.	m²	166		R
18	14	One brick walls in two skins, bagged and sealed, circular on plan to exceeding 2m radius	m²	87		R
		<u>BLOCKWORK</u>				
		<u>Blockwork to SANS 1058 strength in class II mortar reinforced with and including block reinforcement of suitable widths built in every second course:</u>				
18	15	90mm Block walls.	m²	12		R
19	16	190mm Block walls.	m²	19		R
		<u>BRICKWORK SUNDRIES</u>				
		<u>Weep holes, triangular fillets, etc.</u>				
19	15	Leaving open perpend at plinth at 900mm intervals to form weep holes.	No	67		R
		<u>Bagging of 1:3 cement and sand mixture:</u>				
19	16	On brick retaining walls in foundations.	m²	144		R
19	17	On brick surfaces.	m²	134		R
		<u>Brickwork reinforcement:</u>				
19	18	75mm wide reinforcement built in horizontally	m	489		R
19	19	150mm wide reinforcement built in horizontally	m	566		R
19	20	150mm Wide reinforcement built in horizontally circular on plan.	m	213		R
		<u>Steel bar reinforcement:</u>				
19	21	R8 reinforcement rod for 3 courses above opening with minimum 300mm bearing on both sides	Tonnes	1		R
19	22	R6 x 600mm long U-Shaped galvanised steel hangers to roller course lintels (500mm centres)	No	234		R
		<u>Galvanized hoop iron cramps, ties, etc:</u>				
19	23	30 x 1,6mm Roof tie 1,6m long with one end fixed to roof truss and other end built six courses into brickwork.	No	327		R
19	24	30 x 1,6mm Cramp 200mm girth with one end twice screwed to timber door frame and other end built into brickwork.	No	214		R
19	25	32 x 1,2mm Galvanised mild steel strap 612mm long set in mortar every third course in masonry control joints , one end wrapped in PVC sheeting.	m	254		R
		<u>Prestressed fabricated lintels</u>				
19	26	110 x 75mm Lintels in lengths not exceeding 1.5m	No	135		R
19	26	110 x 75mm Lintels in lengths not exceeding 3m	No	154		R
19	27	110 x 75mm Lintels in lengths exceeding 3m and not exceeding 4.5m	No	109		R
		<u>Turning Pieces:</u>				
19	28	150mm Wide turning piece to lintels, etc	m	111		R
19	29	220mm Wide turning piece to lintels, etc.	m	65		R
19	30	280mm Wide turning piece to lintels, etc.	m	79		R

		<u>MOVEMENT JOINTS</u>				
		<u>Joint forming material in movement joints:</u>				
19	31	12mm Bitumen impregnated fibre board built in vertically between brick skins.	m²	33		R
19	32	10mm Bitumen impregnated softboard built in vertically between brick skins not exceeding 300mm wide	m	56		R
		<u>FACE BRICKWORK</u>				
		<u>"Golden Wheat Travertine FBX" face brickwork in stretcher bond with recessed horizontal and vertical joints:</u>				
19	33	Extra over brickwork for face brickwork internally.	m²	131		R
19	34	Extra over brickwork for face brickwork externally.	m²	189		R
19	35	Extra over brickwork for face brickwork externally, circular on plan.	m²	22		R
19	36	Extra over brickwork for face brickwork in beam filling.	m²	68		R
19	37	Fair cutting and fitting around pipe not exceeding 100mm diameter.	No.	54		R
		<u>"Manor Blend Travertine FBS" face brickwork with recessed horizontal and vertical joints:</u>				
19	38	Extra over brickwork for horizontal brick-on-end soldier course band one course high externally	m	12		R
19	39	Extra over brickwork for horizontal brick-on-end soldier course band one course high internally	m	46		R
20	40	Horizontal brick-on-edge header course lintel pointed on face and soffit	m	76		R
20	41	Vertical brick-on-flat header course band at window jamb pointed on face and side	m	34		R
		<u>"Agate Travertine Imperial FBX" or other approved face brickwork in stretcher bond with recessed polished horizontal and vertical joints:</u>				
20	42	Extra over brickwork for face brickwork externally.	m²	24		R
20	43	Extra over brickwork for face brickwork in beamfilling	m²	53		R
20	44	Extra over brickwork for brick-on-edge header course horizontal band one brick high	m	24		R
20	45	Extra over brickwork for face brickwork in soldier course one brick high	m	65		R
		<u>"Faced Blockwork" or other approved face brickwork in stretcher bond with recessed polished horizontal and vertical joints:</u>				
20	46	90mm Walls	m²	34		R
20	47	190mm Walls	m²	66		R
		<u>FACE BRICKWORK LINTELS, COPINGS, SILLS, ETC</u>				
		<u>Brick-on-edge header course copings, sills, etc of "Golden Wheat Travertine FBX" solid face bricks with recessed joints on all exposed faces:</u>				
20	48	220mm Wide single cant cut brick sill set sloping and slightly projecting, pointed on all exposed faces.	m	54		R
		<u>Brick-on-edge header course copings, sills, etc of "Manor Blend Travertine FBS" solid face bricks with recessed joints on all exposed faces:</u>				
20	49	Coping on top of one brick wall.	m	21		R
20	50	Coping of double cant bricks on top of one brick wall	m	56		R
		<u>Brick-on-edge header course lintels, copings, sills, etc of "Agate Travertine Imperial FBX" or other approved solid face bricks with recessed polished joints on all exposed faces:</u>				
20	51	115mm Wide horizontal brick-on-edge header course lintel pointed on face and soffit	m	111		R
20	52	220mm Wide single cant cut brick sill set sloping at 20 degrees and slightly projecting, pointed on all exposed faces.	m	65		R
20	53	280mm Wide cut coping on top of cavity walls faced both sides and pointed on all exposed faces	m	79		R
		<u>Air bricks, etc:</u>				
20	54	229 X 152mm Terracotta vermin proofed air bricks built into beamfilling at 500mm centres.	No	76		R
20	55	229 X 152mm Cement vermin proofed air bricks built into beamfilling at 500mm centres.	No	76		R

20	56	230X 175mm Plastic air vents built into beamfilling at 500mm centres.	No	152		R
		<u>NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS</u>				
		<u>Everite Nutec' or other approved Natural grey window sills in single lengths not exceeding 3.6m, bedded in class I mortar including metal fixing lugs screwed to underside with self tapping screws:</u>				
20	57	15 x 150mm Wide internal sills set flat and slightly projecting.	m	178		R
		<u>Natural grey sills in single lengths bedded in class I mortar including metal fixing lugs, etc</u>				
20	58	15 x 150mm Wide sills set flat and slightly projecting	m	156		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
21	57	Artisan	Hr	1		R
21	58	Artisan Assistant	Hr	1		R
21	59	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
21	60	Artisan	Hr	1		R
21	61	Artisan Assistant	Hr	1		R
21	62	General labourer	Hr	1		R
		<u>Materials</u>				
21	63	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
21	64	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						
		<u>BILL NO.5 : WATERPROOFING</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES:</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the Eskom Official prior to work being carried out.				

		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Guarantee:</u>				
		The guarantee on the waterproofing must cover the waterproofing material plus removal and reinstatement of the ancillary work to the satisfaction of the ESKOM Official.				
		<u>Waterproofing to SANS 021:</u>				
		Waterproofing of roofs, retaining walls, etc shall be laid under a ten year written guarantee for site workmanship and watertightness. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups, turn-downs and full bores. All waterproofing to be laid by an approved installation company.				
		<u>General:</u>				
		All waterproofing work must be thoroughly inspected by the ESKOM Official prior to it being covered up.				
		<u>DAMP-PROOFING OF WALLS AND FLOORS</u>				
		<u>Gundie® or other approved 'Brikqrip® DPC 375' damp proof course to SABS mark 952-1985 Type B:</u>				
24	1	In walls.	m²	322		R
		<u>Gundie® or other approved USB Green /Black' 250 µm membrane to SANS mark 952-1985 Type C laid with minimum 150mm overlaps and sealed with 'Gunplas®' or other approved pressure sensitive tape:</u>				
24	2	Under concrete surface beds	m²	1003		R
24	3	Under surface beds in aprons	m²	722		R
		<u>Derbigum LCEM 17' waterproofing with fibre mesh carrier or similar approved:</u>				
24	4	To walls	m²	1		R
		<u>Cemflex' Universal waterproofing and bonding agent with membrane waterproofing system by Sika or similar approved applied under a ten-year guarantee:</u>				
24	5	To walls	m²	454		R
24	6	To walls behind tiles in showers..	m²	155		R
		<u>One layer of 500 micron 'Consol Plastics Gunplas Orange Hyperlastic' waterproof sheeting sealed at laps with Gunplas Pressure Sensitive Tape:</u>				
24	7	Under surface bed.	m²	722		R
		<u>"abe Duraflex" flexible waterproofing slurry applied at 0.4 kg/m2:</u>				
24	8	To walls behind splashbacks.	m²	154		R
		<u>JOINT SEALANTS. ETC</u>				
		Approved joint sealants are: Sikaflex 35SL; Durakol 25; Prostruct 642 or 644.				
		<u>Two-part grey Sikaflex polysulphide sealing compound including backing cord, bond breaker, Bitumen primer, etc:</u>				
25	9	12 x 10mm In expansion joints between floors and walls including tearing off hinged edge of 'Jointex' preformed joint filler.	m	444		R
25	10	12 x 10mm In vertical expansion joints between walls.	m	252		R
25	11	6 x 20mm In saw cut joints.	m	278		R
		<u>"SIKALASTIC-0841 ST" or other approved Waterproofing as per manufacturers specifications.</u>				
25	12	On Concrete Slabs and upstand beams.(Drainage Sump)	m²	176		R
25	13	On Concrete Slabs and upstand beams.(Oil Containment Facility)	m²	322		R

		<u>One layer 'Derbigum SP4' waterproofing membrane sealed by means of torchfusion or Coldbond 90 adhesive with 75mm side laps and 100mm end laps, laid under a ten year guarantee by approved specialist sub-contractor, to receive paint or other approved protection.</u>				
25	14	On flat roofs laid to falls and cross falls.	m²	455		R
25	15	On sloping roofs.	m²	278		R
25	16	On tops and sides of inverted beams.	m²	145		R
25	17	On parapets and gutters to falls and crossfalls.	m²	154		R
25	18	On turn-ups and turn-downs	m²	43		R
25	19	Sealing edges to brickwork or concrete.	m	67		R
25	20	Collar around pipe not exceeding 100mm internal diameter.	No.	133		R
		<u>SUNDRIES</u>				
		<u>One coat primer and three coats "abe Super Laykold " rubber bitumen emulsion paint applied under a five-year guarantee.</u>				
25	21	On bagged brick walls in foundations.	m²	405		R
		<u>3.2mm Hardboard or 10mm softboard protective covering to waterproofing:</u>				
25	22	Placed vertical against waterproofed walls in foundations and retaining walls.	m²	265		R
		<u>Delta MS20 polyethylene protective drainage system:</u>				
25	23	To sides and bottoms of flower boxes.	m²	67		R
		<u>Three coats 'Brixéal' waterproofing:</u>				
25	24	To bagged and sealed walls.	m²	744		R
		<u>Three coats 'Brixéal' waterproofing:</u>				
25	25	On concrete beam.	m²	234		R
		<u>PROTECTIVE STONE DRESSING</u>				
25	26	19mm Crushed stone dressing including sealing tops edge into groove with mastic	m²	655		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
25	27	Artisan	Hr	1		R
26	28	Artisan Assistant	Hr	1		R
26	29	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
26	30	Artisan	Hr	1		R
26	31	Artisan Assistant	Hr	1		R
26	32	General labourer	Hr	1		R
		<u>Materials</u>				
26	33	Percentage Mark Up =	10%	Percentage		R

		Transport				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
26	34	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		BILL NO.6 : ROOF COVERINGS				
		PREAMBLES				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		SUPPLEMENTARY PREAMBLES				
		Rate approvals:				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		Overtime work and normal work:				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		General:				
		Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the ESKOM Official.				
		The following roof sheeting systems are to be manufactured, supplied and installed in strict accordance with the Manufacturer's specifications.				
		Fixing of all roof sheeting is to be in accordance with the Manufacturer's approved Instruction Book.				
		The Manufacturer shall comply with ISO9002 Quality Management System.				
		All roof coverings are to be installed to comply with SANS code of practice 0237 as applicable.				
		All roof sheeting shall be laid under a five year guarantee for site workmanship and water tightness.				
		ROOF TILES				
		<u>420 x 332mm Double Roman M22 coated (terracotta colour) interlocking concrete roof tiles nailed with non-corrosive nails and/or fixed with suitable non-corrosive clips as required to and including 38 x 50 mm sawn softwood battens at 345mm centres over and including an underlay of 250 micron polyethylene sheeting in accordance with SANS 952 Type E fixed to rafters under battens with minimum laps of 150mm all in strict accordance with manufacturer's instructions:</u>				
29	1	Roof covering with pitch exceeding 25 degrees, at 30 degrees	m²	222		R
29	2	Ridges of tiles to match roofing tiles, bedded and pointed in 1:3 tinted cement mortar, including 300mm wide strip of 375 micron embossed damp-proof course in accordance with SANS 952 Type B underlay	m	198		R
29	3	Hips of tiles to match roofing tiles, bedded and pointed in 1:3 tinted cement mortar, including 300mm wide strip of 375 micron embossed damp-proof course in accordance with SANS 952 Type B underlay and raking cutting to tiles on both sides	m	43		R
29	4	Purpose made tile to end of ridge, bedded and pointed in 1:3 tinted cement mortar	No	12		R
29	5	Fascias and Bargeboards	m	144		
		RIBBED METAL SHEETING AND ACCESSORIES				
		<u>IBR steel sheeting and accessories in "Chromadeck" or other approved "Buffalo Brown" standard colour finish fixed to 75x50x20x2.5mm thick lipped channel purlins and girts at approximately 1400mm and 1325mm centres in strict accordance to manufacturer's instructions:</u>				
29	6	Roof covering with pitch not exceeding 25 degrees	m²	256		R
29	7	Flat roof covering for the Loading Area	m²	277		R
29	8	Vertical side cladding	m²	344		R

29	9	Extra over roof sheeting for bullnosing to a radius of 600mm.	m	155	R
29	10	Drip nose to edge of vertical cladding	m	233	
		<u>0.8mm Thick Aluminium flashings and accessories:</u>			
30	11	Ridge capping to suit roof sheet.	m	245	R
30	12	Barge flashing 550mm girth and three times bent along girth (code: FB13).	m	168	R
30	13	Circular barge flashing to a radius of 600mm, 550mm girth and three times bent along girth (code: FB13).	m	44	R
30	14	15mm Girth counter flashing two times bent turned into including groove in brickwork and pointing with silicon sealant	m	377	R
30	15	75 x 300mm Corner trims three times bent along girth.	m	254	R
		<u>CORRUGATED METAL SHEETING AND ACCESSORIES</u>			
		<u>"Global Roofing Solutions BR7" 0.6mm thick galvanized (Z200) steel sheeting and accessories. CIS (to narrow flute) standard colour finish as per GRS standard range (colour Teak/ Buffalo Brown) on one side and protective primer coating on reverse side fixed to steel or timber purlins or rails at approximately 1858mm or 1200mm centres. (Note: Extra length fixings required to accommodate board insulation, elsewhere):</u>			
30	16	Roof covering with pitch not exceeding 25°	m²	133	R
30	17	Roof covering with pitch exceeding 25° (31.5° - to ventilators)	m²	166	R
30	18	Vertical side cladding	m²	112	R
30	19	Circular cutting on roof sheeting or vertical cladding	m	44	R
30	20	Extra over roof covering and side cladding for bullnosing to a radius of 500mm, approximately 1771mm girth.	m	111	R
30	21	Bullnosing to a radius of 500mm, approximately 1971mm girth.	m	46	R
		<u>0.6mm Thick galvanised steel sheet accessories:</u>			
30	22	460mm Girth ridge cap once bent including two serrated ridge poly closure pieces to suit profile, with joints overlapped by 120mm.	m	189	R
30	23	U-shaped flashing 400mm girth, twice bent including poly closure pieces to suit profile.	m	154	R
30	24	L-shaped barge flashing 300mm girth, thrice bent.	m	168	R
30	25	L-shaped barge flashing 300mm girth, thrice bent and curved to 500mm radius, approximately 1771mm long.	No.	157	R
30	26	Headwall flashing 305mm girth and two times bent along girth.	m	144	R
30	27	Sidewall flashing 305mm girth and three times bent along girth.	m	166	R
30	28	Sidewall flashing 305mm girth and three times bent along girth and curved to 500mm radius, approximately 1771mm long.	No.	122	R
30	29	Eaves flashing 305mm girth and two times bent along girth.	m	45	R
30	30	Counter flashing 150mm girth and three times bent along girth and turned into including groove in brickwork and pointing with silicon sealant	m	154	R
30	31	Internal corner flashing 460mm girth and three times bent along girth.	m	255	R
30	32	Internal corner flashing 460mm girth and three times bent along girth and curved to 500mm radius, approximately 1771mm long.	No.	158	R
		<u>PROFILED METAL SHEETING AND ACCESSORIES</u>			
		<u>"Clotan Steel Craft-Lock Blue Scope Steel Zinkalume AX150" (150g/m2) secret fixing profile galvanised steel roof sheeting with "TCT Clean Colorbond" finish (Colonial green):</u>			
30	33	Roof covering with pitch not exceeding 25 degrees fixed to timber purlins at approximately 1050mm centres	m²	54	R
30	34	Roof covering with pitch not exceeding 25 degrees fixed to steel purlins at approximately 1.810m centres	m²	47	R
30	35	Roof covering curved (convex) on elevation to 8,041m radius fixed to steel purlins at approximately 2.0m centres	m²	76	R
30	36	Roof covering curved (convex) on elevation to 4,781m radius fixed to steel purlins at approximately 2.0m centres	m²	24	R
30	37	Curved end down roof covering with sheets 1630mm girth and pitch not exceeding 25 degrees	m²	32	R
30	38	Wall cladding fixed vertically to steel purlins	m²	36	R

30	39	Circular cutting to vertical wall cladding to 8m radius	m	41	R
		<u>"Clotan Steel Craft-Lock Blue Scope Steel Zinkalume AX150" (150g/m2) secret fixing profile galvanised steel roof accessories with "TCT Clean Colorbond" finish (Colonial green)</u>			
31	40	Drip nose flashing 150mm girth, three times bent along girth	m	33	R
31	41	Counter flashing 150mm girth, twice times bent along girth, turned into and including groove in brickwork and pointing with an approved silicone sealer	m	35	R
31	42	Counter flashing 300mm girth, three times bent along girth, turned into and including raking groove in brickwork and pointing with an approved silicone sealer	m	22	R
31	43	Counter flashing 300mm girth, twice bent along girth circular on elevation to 8m radius including cutting on site to suit vertical cladding profile and pointing with approved silicone sealer	m	65	R
31	44	Apex flashing 374mm girth, twice bent along girth	m	14	R
31	45	External corner flashing 460mm girth, three times bent along girth	m	17	R
31	46	Internal corner flashing 460mm girth, three times bent along girth	m	33	R
31	47	Barge/fascia flashing 468mm girth, three times bent along girth	m	37	R
31	48	Extra on barge flashing for 630mm radius bull nose end	No	22	R
31	49	Barge/fascia flashing 468mm girth, three times bent along girth circular on elevation to 8m radius	m	23	R
31	50	Barge/fascia flashing 468mm girth, three times bent along girth circular on elevation to 4.8m radius	m	45	R
31	51	Ridge capping 550mm girth three times bent along girth	m	66	R
31	52	Side wall flashing 500mm girth, twice bent along girth	m	78	R
31	53	Headwall flashing 500mm girth, twice bent along girth circular on elevation to 8m radius and notched on site to suit vertical cladding profile	m	44	R
31	54	Ridge closer in 400mm lengths	m	67	R
		<u>PROFILED FIBRE-CEMENT SHEETING AND ACCESSORIES</u>			
		<u>15mm "Everite Nutek" sheeting and accessories, fixed to timber purlins or rails:</u>			
31	55	Roof covering with pitches not exceeding 25 degrees	m²	188	R
31	56	Side cladding	m²	266	R
31	57	Soffit cladding	m²	98	R
31	58	Circular cutting	m	29	R
31	59	Shaped gable end closer to curved end down sheet roof covering size overall 2800mm wide x 1000mm high to apex fixed to timber framework (timber framework elsewhere)	No	17	R
31	60	Hip end cap	No	87	R
31	61	Ridge end cap	No	55	R
		<u>TRANSLUCENT SHEETING AND ACCESSORIES</u>			
		<u>Extra over GRS BR7 fluted steel roofing for "Modex Industrial 7" 1,25mm thick semi-opaque translucent roof sheeting:</u>			
31	62	Roof covering with pitch not exceeding 25°	m²	177	R
31	63	Vertical side cladding	m²	138	R
		<u>ROOF INSULATION</u>			
		<u>Super Sisalation or other approved Heavy Industrial Grade 420 - Double sided reflective foil laminate incorporating layers of Kraft paper and reinforcing scrim, laminated together with low density polyethylene (293gsm):</u>			
31	64	Insulation laid taut over purlins at up to 1160mm centres and fixed concurrent with roof covering including galvanised straining wire or training tape.	m²	1657	R
		<u>"Factorylite" or other approved insulation laid between purlins.</u>			
31	65	100mm Thick Factorylite insulation laid but jointed between purlins under Sisalation foil laminate	m²	437	R

		<u>"Sondor" or other approved corrugated pattern 'Polyclosures' closers to suit IBR sheeting:</u>				
32	66	Under ridge capping.	m	347		R
32	67	On top of beamfilling under sheeting at eaves	m	44		R
		<u>"Pink Aerolite" flexible, non-combustible lightweight industrial fibreglass insulation material:</u>				
32	68	50mm Thick insulation laid loose over ceilings with 50mm laps.	m ²	358		R
		<u>ROOF AND WALL LINING AND INSULATION</u>				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		Lambdaboard' products are to be installed in strict accordance with the manufacturers written instructions and Agreement Certificate recommendations. Sheets are to be stored on flat surfaces, covered and protected from exposure to inclement weather, sunlight and any form of UV radiation and from surface or edge damage during storage and installation. Damaged sheets are to be removed from the site immediately and replaced with new sheets. In installations not exceeding 8m the sheets are to be installed in single lengths without joints where possible. Where the installed length is such as to require joints between ends of sheets, the joints must occur over supports and should be staggered. An expansion gap of 5mm must be allowed at butt ends of boards. Unsupported end joints will not be permitted. Boards to be fastened tightly between roof sheets and support. Prices for insulation are to include for square and raking cutting and the attendant waste. Circular cutting is measured in metres; rates are to allow for the attendant waste.				
		<u>Rigifoam's Lambdaboard' high density rigid extruded, laminated polyisocyanurate foam closed cell insulation board in 600mm widths fixed concurrent with roof covering or vertical cladding, including 'safety' nailing or screwing to substructure:</u>				
32	69	25mm Thick roof insulation with tongue and groove joints fixed over timber or steel purlins at approximately 1800 or 1200mm centres.	m ²	55		R
32	70	25mm Thick side cladding insulation with tongue and groove joints fixed over timber or steel purlins or girts at approximately 1800 or 1200mm centres.	m ²	67		R
		<u>ROOF VENTILATORS</u>				
32	71	2200mm x 650mm x 540mm Safintra SAFLOK 700 Dove Grey Chromadek ridge mounted roof ventilator with 300mm wide throat, fixed in accordance with the manufacturer's recommendations.	No	6		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
32	72	Artisan	Hr	1		R
32	73	Artisan Assistant	Hr	1		R
32	74	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
32	75	Artisan	Hr	1		R
32	76	Artisan Assistant	Hr	1		R
32	77	General labourer	Hr	1		R
		<u>Materials</u>				
33	78	Percentage Mark Up =	10%	Percentage		

		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
33	79	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.7 : CARPENTRY AND JOINERY</u> <u>PREAMBLES</u> The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles <u>SUPPLEMENTARY PREAMBLES</u> <u>Rate approvals:</u> The tenderer is advised that any rate that is required for new work must include the following breakdown: Material, labour, plant, wastage, transport and profit. Rate approvals must be authorised by the ESKOM Official prior to work being carried out. <u>Overtime work and normal work:</u> The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard. <u>Samples:</u> The tenderer is to allow in his tender to supply a sample of each type of door to the ESKOM Official for approval. <u>Fixing</u> Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete <u>Screws:</u> Screws for fixing of wood shall be stainless steel except for screws to particle board which may be chipboard screws. <u>Timber:</u> All Timber to be selected, prime free of knots and warps. <u>ROOFS, ETC</u> <u>Plate nailed timber roof truss construction</u> Take delivery, temporary store, hoist in position and erect plate nailed timber roof trusses, purlins, gangboarding, temporary and permanent bracing, etc for roof construction to double pitched roof with two gable ends, size 17090 x 14950mm wide (measured on plan over 850mm wide eaves overhang either side and 300mm verge overhang both sides) and 1950mm high overall with 50 x 75mm purlins at maximum 1050mm centres for galvanised steel (150g/m ²) profiled sheeting (sheeting elsewhere measured) <u>Sawn softwood</u> 38 x 114mm Wall plates 76 x 114mm Wall plates bolted to brick wall. <u>Sundries</u> Two coats creosote on sawn timbers <u>EAVES , VERGES , ETC</u> <u>"SouthPro" uPVC fascia and bargeboards in 6m lengths with uPVC connectors fixed to 38 x 38mm tilting batten and 38 x 38mm support battens between rafters twice screwed with 12 x 40mm countersunk brass screws capped with uPVC covers at maximum 800mm centres to support battens , with PVC H-profile fascia corner joiners at board ends:</u> 225 x 9mm Fascias and barge boards including uPVC connectors.				
35	1		No	17		R
35	2		m	245		R
35	3		m	178		R
35	4		m ²	134		R
35	5		m	233		R

		<u>DOORS ETC</u>				
		<u>Purpose made flush panel hollow core doors as manufactured by 'Swartland', hung to timber frames:</u>				
35	6	40 x 813 x 1900mm Door.	No.	22		R
		<u>Standard flush panel semi solid core doors as manufactured by 'Swartland', hung to steel frames:</u>				
35	7	40 x 813 x 2032mm Door.	No.	11		R
		<u>EBCSSL10 Classique deep moulded hollow core flush doors as manufactured by 'Swartland', hung to steel frames:</u>				
36	8	40 x 813 x 2032mm Door.	No.	9		R
		<u>PD 13S Meranti half glass stable doors as manufactured by 'Swartland', hung to steel frames:</u>				
36	9	40 x 813 x 2032mm Stable door, the upper panel open for glazing (glass elsewhere measured).	No.	12		R
		<u>PD 56 Hardwood framed and panelled security single vent doors as manufactured by 'Swartland', hung to steel frames:</u>				
36	10	40 x 813 x 2032mm Door in 6 panels, one panel open for glazing (glass elsewhere measured).	No.	7		R
		<u>PD22 Two panel Cape Dutch hardwood doors as manufactured by 'Swartland', hung to steel frames:</u>				
36	11	40 x 1613 x 2032mm Double door in two leaves with rebated meeting edges.	No.	8		R
		<u>Extra Over Doors</u>				
36	12	250 x 250mm Viewing panel in cut opening in flush panel door, framed around in a double sided stainless steel frame and glazed with and including 6.38mm clear laminated safety glass.	No.	21		R
		<u>"Swartland" semi-solid flush panel doors with sapele veneer suitable for painting on both sides and including hardwood edge strips all round hung to timber frames.</u>				
36	13	44mm Double door 1612 x 2032mm high.	No.	15		R
		<u>"Swartland" Semi-solid flush panel doors with sapele veneer suitable for painting on both sides and including hardwood edge strips all round hung to timber frames.</u>				
36	14	44mm Door 813 x 2 032mm high SWARTLAND PD1 framed ledged and braced door with 6mm plywood panels to inside.	No.	17		R
		<u>SOLID LAMINATED FLUSH DOORS</u>				
		<u>TDM Doors Alpha' solid laminated semi-exterior door with approved veneer both sides:</u>				
36	15	40mm Door to suit frame 540 x 2032mm high.	No.	14		R
		<u>FIRE DOORS AND FRAMES</u>				
		<u>Bitcon Industries fire doors and frames including weather strips:</u>				
		<u>Door frame hinges, handles, locks, etc to be specified by manufacturer and fire doors all to ESKOM Official's approval.</u>				
36	16	Class 'D' fire door 813 x 2032mm high with approved steel cladding to both sides, including pressed steel frame for one brick wall and preparing frame for door closer and 8066 emergency exit fire bolt.	No.	6		R
36	17	Manufacturer specified electronically controlled door, class 'B' fire double door 1740 x 2032mm high with approved marionette finish to both sides, including pressed steel frame for one brick wall and preparing frame for door closer and lock.	No.	6		R
		<u>Class A 2 hour fire rated hardwood doors with galvanised steel inlay by a SANS approved manufacturer, hung to steel frame including weather strips:</u>				
36	18	40 x 813 x 2032mm Door.	No.	8		R
36	19	450 x 450mm Viewing panel in cut opening in fire door, framed around in a double sided stainless steel frame and double glazed with and including 9.38mm PVB clear laminated Georgian wired plate fire glass, by 'Smart Glass' or similar approved.	No.	13		R

		<u>FRAMED FRAMES</u>				
		<u>Wrought meranti:</u>				
36	20	68 x 44mm Rebated linings plugged.	m	122		R
36	21	68 x 90mm Rebated frame	m	24		R
		<u>"Swartland"</u>				
36	22	Swartland Cape Culture 10 years guarantee 70 x 90mm CODE SK1 (925mm) door frame for single door size 813 x 2032mm high.	No	17		R
37	23	Swartland hardwood rebated, moulede, grooved and weather grooved frame, size 90 x 70mm section with no sill. Total frame width = 1724mm (code: sk 3 NS) door to open door outward. Back of frame to receive 2 x coats waterproofing primer.	No	8		R
		<u>FLOORS, ETC</u>				
		<u>Wrought Meranti:</u>				
37	24	Flooring of 19mm tongued and grooved boarding in 250mm widths including fixing to bearers, etc	m²	33		R
		<u>SKIRTINGS, ETC</u>				
		<u>Wrought Meranti:</u>				
37	25	19 x 50mm Skirting plugged including 19mm quadrant bead planted on.	m	187		R
37	26	19 x 76mm Skirting including 19mm quadrant bead planted on.	m	187		R
		<u>WINDOW SILLS</u>				
		<u>Oak hardwood:</u>				
37	27	150 x 45mm Sills to match existing.	m	12		R
		<u>JOINERY FITTINGS</u>				
		<u>NOTICE BOARDS, KEYBOARDS, DUCKBOARDS, ETC</u>				
		<u>Softboard</u>				
37	28	Pinning boards 2100mm x 1200mm high x 12mm softboard in 44mm x 22mm rebated meranti surround all fixed to plastered wall.	No	8		R
		<u>KITCHEN CUPBOARDS, COUNTERS, BENCHES, SHELVES ETC</u>				
		<u>SUPPLEMENTARY PREAMBLES:</u>				
		Fittings shall be constructed from 16mm Melamine faced "natural oak" moisture resistant particle board with Melamine concealed edges for carcass, divisions, shelves, drawers, etc. "Supawood" may be used only for shelves. Backs, unless otherwise stated, to be 6mm tempered hardboard, notched, glued and pinned to unit.				
		The cupboard and counter tops are to be 32mm Formica Postform Worktop 'natural oak moisture resistant particle board bullnosed on leading edge with 0,8mm thick 'Formica Postform' laminate complete with brown backing and fixed to carcasses from beneath with 40mm chipboard screws at 500mm centres.				
		Doors shall be made of 16mm thick melamine faced particle board (Medium Cream) with 10x16mm ABS (Natural oak) Hardwood edging.				
		Doors shall be hung on one pair 'Blum OEA' or other approved chromium plated 110 degrees opening insert hinges. Doors are to be fitted with 'Union AL5123AS' 75mm brushed aluminium pull handle and 'Union 452-32NP' or other approved 32mm cylinder cupboard deadlock.				
		<u>Shop Drawings- Purpose Made Fittings:</u>				
		The tenderer is advised that all fittings are purpose made and as such the tenderer must provide shop drawings to the ESKOM Official for approval.				
		<u>Sizes:</u>				
		All Dimensions to be checked on site & discrepancies reported to the architect in writing for written decision prior to commencement of the fabrication of joinery fittings.				
		Tops of fittings and shelves to be fabricated in max. lengths, neatly fitted & joined on site. Joints shall be located at positions indicated on the drawings, where these positions are not specified , then joints shall be located centrally over brackets or vertical divisions.				

General:

The various components of fittings shall be properly framed, housed, glued, pinned, blocked and screwed together. Screws shall be countersunk & pelleted if on hardwood surfaces. No fixings shall be visible on melamine, formica, timber veneered hardwood surface. Where sides are visible to be biscuited and clamped.

Backs:

Unless otherwise specified, all fittings to have white 6mm tempered hardboard backs, grooved, glued and pinned to unit.

Finishes:

Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish

Fixing to wall:

All Fittings except island type fittings to be securely fixed to brick walls with approved 6mm diameter masonry anchors.

Carcases:

Cupboard carcasses to be constructed out of 16mm Oak melamine faced particle board.

Bases:

100 x 19mm Stained and varnished meranti bases to all exposed fronts and sides of fittings. 10x19mm meranti bases to rear and unexposed sides of fittings, and as baser cross pieces under vertical divisions at 900mm max centres.

Drawers:

Drawers shall be constructed as follows:

Drawer Fronts and drawers carcass to be constructed out of 16mm white melamine faced board and 16mm Oak melamine veneered & edged V313 chipboard fronts.

Drawers to run on Gelmar Ball Bearing Self Closing Runners code 7008 (550mm). Drawers to be fitted with Gelmar Cylinder central locks, Code 9049 to be fitted to drawers.

Handles:

Office Desks: Handles shall be Gelmar Steel Barrel Handles Code 8291.

Kitchens: Handles shall be "Milga" Stainless Steel kitchen handles, 500mm, 12mm diameter for cupboards and 300mm, 12mm diameter for drawers.

Shelves:

Shelves are to be adjustable and supported with standard white plastic studs.

Sink / Basin units:

Stainless steel sink inset in worktops to be fitted according to the manufacturers template and bedded down on white silicone sealant neatly trimmed after tightening of the securing bolts.

Finishing:

Surfaces not melamine surfaced are to be painted with a lacquer spray paint system comprising sealer coat, sanding coat and finishing coats to approved colour in suede enamel. Prior to painting all irregular surfaces are to be filled with approved wood filler.

Pricing:

The cupboard and counter tops are to be 32mm Formica Postform Worktop 'natural oak moisture resistant particle board bullnosed on leading edge with 0,8mm thick 'Formica Postform' laminate complete with brown backing and fixed to carcasses from beneath with 40mm chipboard screws at 500mm centres.

Standard:

All work to comply with 'SABS' specifications, where no SABS specifications exist 'BS' specifications shall apply. Where specifications refer to different grades, degrees of accuracy, specifications or quality, those shall apply.

		General:				
		1.All joinery junctions are to be secretly fixed. 2.No exposed screws, plugs or fillers will be accepted. 3.All colours and finishes are to be confirmed by the architect. 4.Shopfitters to provide samples of all materials for architects approval prior to manufacture. 5.Deviations to these joinery drawings are to be approved by the architect prior to the preparation of the shop drawings. 6.Shopfitter to check all dimensions on site prior to the preparation of the shop drawings. 7.Only waterproof PG Bison V313 board is to be used for all counter tops. 8.All internal and concealed finishes to be white unless otherwise specified. 9.Locksets for cupboards and drawers where required to be allowed for by the shop fitter. Shop fitter to have sample lockset approved by the ESKOM Official prior to ordering and fitting. 10.All dimensions are to be determined on site before fabrication. 11.All laminated wood to be manufactured in accordance with SANS 1460.				
		Balancing backs:				
		All Formica or other veneered boards to have balancing veneers bonded to reverse face of the board.				
		KITCHEN CUPBOARDS				
		Cupboards, counters, shelving, etc set up and fixed complete:				
39	29	Floor unit size 440 x 530 x 900mm high with one door, one fixed shelf and countertop.	No	16		R
39	30	Floor unit size 880 x 530 x 900mm high with two doors, two fixed shelves and countertop.	No	7		R
39	31	Floor cupboard 450 x 530 x 900mm high with four drawers and countertop.	No	9		R
39	32	Floor cupboard 900 x 530 x 900mm high with eight drawers and countertop.	No	8		R
39	33	Floor cupboard 1290 x 530 x 900mm high with three doors, one fixed shelf and countertop.	No	5		R
39	34	Floor sink cupboard 950 x 530 x 900mm high with two doors, two fixed shelves, one drawer and countertop with cut-out for inset sink. (Sink elsewhere measured)	No	6		R
39	35	Floor sink cupboard 1100 x 530 x 900mm high with three doors, three fixed shelves, one drawer and countertop with cut-out for inset sink. (sink with 'Plumbing')	No.	3		R
39	36	Floor sink cupboard 1700 x 530 x 900mm high with four doors, four fixed shelves and countertop with cut-out for inset sink. (sink with 'Plumbing')	No.	5		R
39		WORKTOPS AND COUNTERS				
39		Wrought Meranti:				
39	37	16 x 32mm Cleat plugged.	m	54		R
39		Melawood' 19mm solid particle board supports, faced both sides, one edge, Summer Oak colour:				
39	38	Counter support 500mm wide and 750mm high fixed below counter against wall and floor.	No.	22		R
39		Formica Lifeseal' 32mm solid postformed particle board worktops, Summer Oak colour:				
39	39	Counter 800 mm wide x 1800 mm long, bullnosed both long edges, fixed to brickwork.	No.	11		R
39	40	Counter 600 mm wide x 8680 mm overall length in U shape on plan, comprised of 4340mm centre piece with two end pieces each 2170mm long mitred in at 90 degrees, bullnosed on inner edge, fixed to wood.	No.	23		R
		GRANITE WORK TOPS				
39	41	30mm thick Rustenburg granite worktop supplied and fixed to existing/new cupboards with recommended fixing details as per manufacturers instructions Counter 800 mm wide x 1800 mm long, bullnosed both long edges, fixed to brickwork.	No.	16		R
39	42	30mm thick Rustenburg granite worktop supplied and fixed to existing/new cupboards with recommended fixing details as per manufacturers instructions Counter 600 mm wide x 8680 mm overall length in U shape on plan, comprised of 4340mm centre piece with two end pieces each 2170mm long mitred in at 90 degrees, bullnosed on inner edge, fixed to wood.	No.	9		R
39		CUPBOARDS				
39		The following cupboard fittings, etc have been measured as complete units i.e. the components of the units have not been separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, decorative plastic finish, glass, ironmongery, metalwork, paint or varnish finishes, etc				
39	43	Wall cupboard 200 x 300 x 600mm high with one door.	No.	11		R
39	44	Wall cupboard 260 x 300 x 600mm high with one door.	No.	13		R

39	45	Wall cupboard 600 x 300 x 600mm high with two doors.	No.	6		R
39	46	Wall cupboard 900 x 300 x 600mm high with five doors.	No.	4		R
39	47	Wall cupboard corner unit 1300 x 300 x 600mm high with four doors.	No.	5		R
39	48	Wall cupboard 1650 x 300 x 600mm high with six doors	No.	6		R
39	49	Floor cupboard 260 x 530 x 900mm high with one door, one fixed shelf, one drawer and countertop.	No.	7		R
39	50	Floor cupboard 600 x 530 x 900mm high with one door, one fixed shelf and countertop.	No.	5		R
39	51	Floor cupboard 1200 x 530 x 900mm high with one door, one fixed shelf and countertop.	No.	4		R
39	52	Floor cupboard 1650 x 530 x 900mm high with four doors, four fixed shelves, two drawers and countertop.	No.	4		R
39	53	Floor cupboard 1720 x 530 x 900mm high with three doors, three fixed shelves, three drawers and countertop.	No.	3		R
39	54	Locker cupboard 450 x 500 x 2000mm high with two plastic air vents, one lockable door, two fixed shelves and two hanging rails. (All keys to differ).	No.	7		R
40	55	Locker food cupboard 900 x 500 x 2000mm high with two plastic air vents, two lockable doors and division. (All keys to differ).	No.	2		R
40	56	Floor cupboard 1550 x 530 x 900mm high with three doors, three fixed shelves, two drawers and countertop.	No.	6		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
40	57	Artisan	Hr	1		R
40	58	Artisan Assistant	Hr	1		R
40	59	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
40	60	Artisan	Hr	1		R
40	61	Artisan Assistant	Hr	1		R
40	62	General labourer	Hr	1		R
		<u>Materials</u>				
40	63	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
40	64	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R

		<u>BILL NO.8 : CEILINGS, PARTITIONS AND ACCESS FLOORING</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Descriptions:</u>				
		Items described as nailed shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete.				
		Items described as plugged shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as bolted the bolts have been given.				
		<u>CEILINGS, ETC</u>				
		<u>NAILED UP CEILINGS</u>				
43	1	9.4mm "Gyproc RhinoCeil Value" gypsum flush plastered ceiling with square edged Rhinoboard fixed print side up with 32mm galvanised clout or semi-clout nails at 150mm centres to 38 x 50mm (with 50mm dimension vertical) SA Pine brander at 300mm centres in one direction. All joints to be covered with Rhinotape fixed over joints (double over butt joints) and then plastered with 3mm to 6mm thick Rhinolite gypsum skim plaster, all fixed to trusses at centres exceeding 1000mm, not exceeding 1200mm in accordance with the manufacturer's recommendation.	m²	187		R
43	2	Extra over ceiling for 650 x 650mm trap door of 38 x 50mm wrought softwood rebated framing with one 38 x 50mm sawn softwood cross brander covered with ceiling board and fitted flush in opening.	No	45		R
		<u>9.5mm 'Rhinoboard' gypsum plastered ceiling fixed print side up with 32mm galvanised clout nails at 150mm centres with 48mm wide strips of 'Fibatape' fixed over joints and the whole finished with minimum 3mm and maximum 6mm thick coat of 'Rhinolite' or 'Crestone' gypsum skim plaster trowelled to a smooth polished surface, all in strict accordance with the manufacturer's instructions:</u>				
43	3	Ceilings including 38 x 50mm sawn softwood brander at maximum 600mm centres with cross brander at joints, ends of sheets and at light fittings, etc.	m²	113		R
43	4	Ditto but ceiling perimeter around tiled panel.	m²	22		R
43	5	Extra over ceiling for 600 x 600mm trap door of 70 x 44mm wrought softwood rebated framing with one 38 x 50mm sawn softwood cross brander covered with ceiling board, skim plastered and fitted flush in opening.	No.	46		R
		<u>6mm 'Everite Nutec' plain boards with galvanised steel or white PVC H-profile jointing strips over joints:</u>				
43	6	Ceilings eaves lining including 38 x 50mm sawn softwood brander at 600mm centres with cross brander at joints, ends of sheets and at light fittings, etc.	m²	132		R
		<u>SCREW UP CEILINGS</u>				
		<u>6.4mm 'Rhinoboard' square edged gypsum plasterboard screwed to 'Donn T37K' galvanised steel capped tee flush plastered ceiling suspension system with drywall screws spaced at 250mm centres, including galvanised 1200mm centres and cross tees at 300mm centres, all suspended with galvanised 19mm straps / 20 x 20mm angles at not exceeding 1200mm centres, with 48mm wide strips of 'Fibatape' fixed over joints and the whole finished with minimum 3mm and maximum 6mm thick coat of 'Rhinolite or 'Crestone' gypsum skim plaster trowelled to smooth polished surface in strict accordance with the manufacturer's instructions:</u>				
43	7	Ceilings suspended not exceeding 1m below horizontal steel trusses	m²	122		R

		<u>SUSPENDED CEILINGS</u>				
		<u>Masonite Armstrong' square/revealed edged edge 'Dune Supreme' ceiling tiles size 1200 x 600mm, in colour Global White, laid in 'Masonite Armstrong' 1 hour fire rated, stitched 'Trulock 24' exposed grid system with 24mm wide T-section flanges including galvanised main tees, cross tees, hold-down clips, wedges, reinforcement splines, etc., all suspended with galvanised hangers strictly in accordance with the manufacturer's instructions and SABISA's guidelines:</u>				
44	8	Ceilings suspended not exceeding 1m below timber purlins at 1200mm centres with trusses at 1200mm centres.	m²	89		R
44	9	Ceilings suspended not exceeding 1m below concrete slab.	m²	2		R
44	10	Circular cutting on suspended ceiling.	m²	1		R
		<u>*Owacoustic RH 90" pre-painted Constellation mineral fibre ceiling tiles size 600 x 600 x 15mm with revealed edges on 25mm 'Gridlock' pre-painted 38mm exposed galvanised steel tee suspension system to suit including all necessary hangers, sub-grid, fixings, etc:</u>				
44	11	Ceilings suspended not exceeding 1m below concrete soffits.	m²	54		R
44	12	Extra over suspended ceiling for opening and extra suspension material for 600 x 600mm light fitting.	m²	31		R
44	13	Extra over suspended ceiling for circular opening not exceeding 300mm diameter for toilet extraction fan.	m²	21		R
		<u>CORNICE</u>				
44	14	Lafarge Gypsum Gaudi Nu-cornice polystyrene cornice, overall size 55 x 55mm high, fixed to wall and ceiling using an approved water-based adhesive and appropriate nail fixing where necessary, filling all fixing holes with an approved acrylic sealant, all in accordance with the manufacturers recommendations.	m	14		R
44	15	20 x 20mm pre-painted shadowline cornices for suspended ceilings.	m	17		R
		<u>QBPB RhinoArt' Moulded Gypsum Adhesive Cornices:</u>				
44	16	75mm Coved cornice.	m	231		R
		<u>Nu-cornice' Fibre Cement Cornices:</u>				
44	17	75mm Coved cornice fixed with adhesive	m	144		R
		<u>Masonite Armstrong':</u>				
44	18	Shadowline perimeter trim to suspended ceiling, plugged to brickwork.	m	144		R
44	19	Shadowline perimeter trim to suspended ceiling, circular on plan, plugged to brickwork.	m	25		R
44	20	Sigma Cel-05 recessed transition angle cornice against skimmed ceiling.	m	16		R
		<u>INSULATION</u>				
		<u>Isotherm' or other approved flexible, non- combustible lightweight industrial fibreglass insulation material.</u>				
44	21	100mm Thick thermal insulation (density 10kg/m) laid over ceiling branderling closely fitted between rafters.	m²	289		R
		<u>PARTITIONING, ETC</u>				
		<u>"Vitrex Toilet Partition System" comprising of 16mm thick particle board panels, laminated both sides with baked enamel coated steel sheet, edged all round with 22 x 22mm lipped channel and fixed into position by means of full height vertical aluminium receiving channels plugged to walls and fixed to pilasters. Partitions are to be supported by a continuous 25 x 25mm aluminium transom section over doors and supplied with standard ironmongery comprising door hinges, indicator bolts, hat and coat hooks, door stops and rubber buffers. All exposed aluminium sections are to be natural anodised.</u>				
44	22	25 x 25mm Aluminium transom section over doors.	m	177		R
44	23	End partition 1830 x 1650mm high.	No.	22		R
44	24	Intermediate partition 1830 x 1650mm high.	No.	13		R
44	25	Intermediate pilaster 230 x 1981mm high.	No.	18		R
44	26	End pilaster 115 x 1981mm high.	No.	16		R
44	27	Door 750 x 1762mm high including standard ironmongery.	No.	21		R

		<u>Rhino GypRoc Drywall Classic GW-ST partitioning</u>				
45	28	Partitioning 1m high with bottom track plugged and top to receive aluminium capping	m	66		R
45	29	Partitioning 2,1m high with bottom track plugged and top to receive aluminium capping	m	65		R
45	30	Partitioning 2,76m high with bottom track plugged and top track fixed to suspended ceiling tees	m	57		R
45	31	Extra over partition 2,76m high for circular on plan to radius not exceeding 2m radius	m	8		R
45	32	Extra over partition 1m high for vertical abutment	No	62		R
45	33	Extra over partition 2,1m high for end post fixed between floor and roof slabs 3,56m high	No	16		R
45	34	Extra over partition 2,1m high for splayed vertical abutment	No	3		R
45	35	Extra over partition 2,76m high for vertical abutment	No	6		R
45	36	Extra over partition 2,76m high for irregular corner	No	8		R
45		<u>Doors, Sidelights, etc.</u>				
45	37	Extra over partition for 40mm semi solid flush panel "TDM Alpha" door size 813 x 2032mm high door (ironmongery elsewhere measured) and additional studding, trimming, etc	No	12		R
45	38	Extra over partition for 40mm semi solid flush panel "TDM Alpha" sliding door size 900 x 2150mm high door (ironmongery elsewhere measured) and additional studding, trimming, etc	No	13		R
45	39	Extra over partition for glazed aluminium viewing panel size 1500 x 1050mm high glazed with and including 6,38mm clear laminated safety glass including additional studding, trimming, etc	No	20		R
45		<u>Rhino GypRoc Drywall Classic GW-ST partitioning with cavity bat to give 48dB sound rating</u>				
45	40	Partitioning 3,56m high with bottom track plugged and top plugged to concrete soffit	m	18		R
45	41	Partitioning 4,15m high with bottom track plugged and top to receive aluminium capping	m	22		R
45	42	Extra over partition 3,56m high for circular on plan to radius not exceeding 2m radius	m	5		R
45	43	Extra over partition 3,56m high for fair end	No	13		R
45	44	Extra over partition 3,56m high for vertical abutment	No	15		R
45		<u>Doors, Sidelights, etc.</u>				
45	45	Extra over partition for 40mm semi solid flush panel "TDM Alpha" door size 813 x 2032mm high (ironmongery elsewhere measured) including standard aluminium door frame and additional studding, trimming, etc	No	15		R
45	46	Extra over partition for glazed aluminium viewing panel size 1500 x 1050mm high glazed with and including 6,38mm clear laminated safety glass including additional studding, trimming, etc	No	11		R
45		<u>Rhino GypWall Curved GW-ST63 partitioning with cavity bat to give 48dB sound rating</u>				
45	47	Partitioning 4,15m high with bottom track plugged and top to receive aluminium capping circular on plan to 3,5m radius	m	26		R
45	48	Extra over partition 4,15m high for vertical junction of straight with curved partition	No	2		R
45	49	Extra over partition 4,15m high for fair end	No	2		R
45		<u>Rhino GypWall Secure 102/F120 partitioning</u>				
45	50	Partitioning 3,56m high with bottom track plugged and top to concrete soffit	m	66		R
45	51	Extra over partition 3,56m high for corner	No	8		R
45		<u>Doors, Sidelights, etc.</u>				
45	52	Extra over partition for 40mm semi solid flush panel "TDM Alpha" door size 813 x 2032mm high (ironmongery elsewhere measured) including standard aluminium door frame and additional studding, trimming, etc	No	3		R
45	53	Extra over partition for glazed aluminium viewing panel size 1500 x 1050mm high glazed with and including 6,38mm clear laminated safety glass including additional studding, trimming, etc	No	5		R

		<u>Rhino GypWall Moisture Resistant 102/F120 partitioning</u>				
46	54	Partitioning 2,76m high with bottom track plugged and fixed to suspended ceiling tee	m	58		R
46	55	Extra over partition 2,76m high for vertical abutment	No	13		R
46	56	Extra over partition 2,76m high for splayed vertical abutment	No	8		R
46	57	Extra over partition 2,76m high for T-intersection	No	4		R
46	58	Extra over partition 2,76m high for fair end	No	8		R
46	59	Extra over partition 2,76m high for irregular corner	No	9		R
46		<u>Doors, Sidelights, etc.</u>				
46	60	Extra over partition for 40mm semi solid flush panel "TDM Alpha" door size 813 x 2200mm high (ironmongery elsewhere measured) including standard aluminium door frame additional studding, trimming, etc	No	2		R
46	61	Extra over partition for glazed aluminium viewing panel size 1500 x 1050mm high glazed with and including 6,38mm clear laminated safety glass including additional studding, trimming, etc	No	3		R
46		<u>Pelican Spacewall G2 Demountable partitioning system finished with and including Chamious-CG9012-Azure Wall Paper:</u>				
46	62	Partitioning 2,76m high with bottom track plugged and fixed to suspended ceiling tee	m	36		R
46	63	Extra over partition 2,76m high for vertical abutment	No	2		R
46	64	Extra over partition 2,76m high for splayed vertical abutment	No	5		R
46	65	Extra over partition 2,76m high for T-intersection	No	3		R
46	66	Extra over partition 2,76m high for fair end	No	4		R
46	67	Extra over partition 2,76m high for irregular corner	No	2		R
46		<u>Doors, Sidelights, etc.</u>				
46	68	Extra over partition for 40mm semi solid flush panel "TDM Alpha" door size 813 x 2200mm high (ironmongery elsewhere measured) including standard aluminium door frame additional studding, trimming, etc	No	1		R
46	69	Extra over partition for glazed aluminium viewing panel size 1500 x 1050mm high glazed with and including 6,38mm clear laminated safety glass including additional studding, trimming, etc	No	1		R
		<u>ACCESS FLOORING</u>				
		<u>Screw-down Posilock "Tate Access Floor System" supplied by "Pelican MIS Systems" with a 2mm anti-static vinyl finish to the 600 x 600mm Type 2 steel clad cementitious core panels, supported by and including all necessary under structure components as per the manufactures specification for a finished floor height of 595mm above concrete sub-floor.</u>				
46	70	600 x 600mm steel panels with a finished floor height of 595mm above the concrete sub-floor.	m²	12		R
46	71	Extra over access flooring for access grommet.	No.	3		R
46	72	Extra over access flooring for air diffuser.	No.	2		R
46	73	Extra over access flooring for perforated panel.	No.	3		R
46	74	Extra over access flooring for electrical power box with 2 x 15amp switched socket outlets and protection covers.	No.	6		R
46	75	Junctions against walls and columns.	m	3		R
46	76	Hole for 50mm diameter pipe through floor panel including sealing.	No.	2		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				

		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
47	77	Artisan	Hr	1		R
47	78	Artisan Assistant	Hr	1		R
47	79	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
47	80	Artisan	Hr	1		R
47	81	Artisan Assistant	Hr	1		R
47	82	General labourer	Hr	1		R
		<u>Materials</u>				
47	83	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
47	84	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.9 : FLOOR COVERINGS</u>				
		<u>PREAMBLES:</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Floor and Wall Coverings:</u>				
		All floor coverings and wall linings are to be installed strictly in accordance with the manufacturer's detailed instructions by an approved installation company.				
		<u>Samples:</u>				
		The tenderer must allow in his prices to provide a 10m2 sample panel to the ESKOM Official's approval for all different finishes. The sample is to remain until the end of the contract.				
		<u>FLOWCOAT SF41 RESIN BONDED SPECIALIST FLOORING (OR EQUAL APPROVED)</u>				
		<u>FLOWCOAT SF41 Resin bonded flooring comprising sand papering and vacuum cleaning of screed, prime with Flowprime primer at 6m2 per litre and cure, apply 'Flowcoat SF41' at 0.5mm thickness and cure:</u>				
50	1	Flowcoat SF41 resin on floors and turn-up 100mm skirtings.	m²	344		R
		<u>PERAN PTS RESIN BONDED SPECIALIST FLOORING (OR EQUAL APPROVED)</u>				

		<p><u>PERAN PTS Resin bonded flooring comprising sandblasting or diamond grinding and vacuum cleaning of screed, apply 'Flowprime' solvent free resin at 4m2 per litre, apply 'Scatter Quartz' into the primer whilst wet and cure, apply epoxy scratch coat, apply 'Flowtex F1' coving resin to skirtings, apply 'STB slurry' at 1.6m2 per litre, power float to uniform surface and cure, apply 'Flowcoat SF41' at 2m2 per litre and cure, apply one coat of 'PTS CR Sealcoat' at 4m2 per litre and cure;</u></p>				
50	2	Peran PTS resin on floors and turn-up 100mm skirtings.	m²	699	R	
		<p><u>PROSTRUCT 723 RESIN BONDED EPOXY SPECIALIST FLOORING</u></p> <p><u>Apply "Prostruct 723" or other approved resin bonded epoxy specialist flooring, all as per manufacturer's specification</u></p>				
50	3	"Prostruct 723" resin bonded epoxy flooring 6mm thick on screeded floors	m²	344	R	
		<p><u>VINYL SHEETING</u></p> <p><u>2m wide x 2mm thick "FloorworX Elite" fully flexible vinyl floor sheeting in patterns in Whisper finish (colour code: FEL083), manufactured in accordance with En 649, laid in FloorworX No. 60 Plus acrylic adhesive spread with a notched trowel on suitably prepared subfloor (elsewhere specified) with a hydrometer reading showing a moisture content of less than 70% with joints welded with a fully flexible coloured "Marley Welding Rod" to provide a smooth, hygienic sealed finish and rolled with 68kg three section metal roller on completion, washing down with neutral detergent, applying full spray film, and buffing with a rotary machine and buffing pads all as per manufacturers specification. All adhesives, joint fillers, detergents, and sealants to be as per manufacturers approved specifications. Floor levels and moisture content to be checked and approved by specialist installer prior to installation. The tenderer must make due allowance for all wastage in his rate;</u></p>				
50	4	On floors in patterns	m²	366	R	
		<p><u>14 x 35mm High "FloorworX Extruda" Black (Code MCF54) vinyl cove fillet, to accommodate the 150mm upturn of floor sheeting onto the vertical wall surface, fixed with FloorworX no. 71 solvent based contact adhesive, spread with a brush onto both material and working surface;</u></p>				
51	5	Vinyl skirting with 150mm high upturn.	m	378	R	
		<p><u>POLISH, SEALERS, ETC</u></p> <p><u>Thoroughly clean down and wash, strip with an ammonia based stripper complying with SABS 1225 and apply three coats of a polyurethane based sealer complying with SABS 1042, strictly in accordance with the manufacturer's instructions;</u></p>				
51	6	On vinyl floors	m²	366	R	
		<p><u>TUFTED CARPET SHEETING AND TILES</u></p> <p><u>8mm 'Van Dyk Renaissance' Stain Shield Fibre® (polypropylene) hard twist 'Action Back' backed carpet broadloom sheeting;</u></p>				
51	7	On floors.	m²	268	R	
		<p><u>"Berber Point 920" Bitumen backed carpet sheeting (colour: Boron)</u></p>				
51	8	On floors.	m²	216	R	
		<p><u>"Belgotex Floorcoverings" Heather Twist Kasbah with foam or Hessian underlay;</u></p>				
51	9	On floors.	m²	277	R	
		<p><u>HOURLY RATE</u></p> <p>The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.</p> <p>Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.</p> <p>Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.</p> <p>Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.</p> <p>Prior written approval must be received from the Eskom Official prior to commencement of work.</p>				

		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
51	10	Artisan	Hr	1		R
51	11	Artisan Assistant	Hr	1		R
51	12	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
51	13	Artisan	Hr	1		R
51	14	Artisan Assistant	Hr	1		R
51	15	General labourer	Hr	1		R
		<u>Materials</u>				
51	16	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
51	17	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.10 : IRONMONGERY</u> <u>PREAMBLES</u> The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles <u>SUPPLEMENTARY PREAMBLES:</u> The tenderer is referred to the separate document C2.1 Supplementary Preambles which shall be read in conjunction with and shall apply to all items in these Bills of Quantities. Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the ESKOM Official. <u>Rate approvals:</u> The tenderer is advised that any rate that is required for new work must include the following breakdown: Material, labour, plant, wastage, transport and profit. Rate approvals must be authorised by the ESKOM Official prior to work being carried out. <u>Overtime work and normal work:</u> The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard. <u>Fixing of ironmongery:</u> Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws must be used. <u>Finishes to ironmongery:</u> <u>Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list:</u> BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodized silver AB Anodized bronze AG Anodized gold ABL Anodized black PB Polished brass PL Polished and lacquered PT Epoxy coated				

		SD Sanded SS Stainless steel				
		<u>HINGES, FLOOR SPRING HINGES, BOLTS, PANIC BOLTS, ETC</u>				
		<u>Union:</u>				
54	1	Union' 150mm Chromium plated brass barrel bolt.	No.	24		R
54	2	Union' 8352-100 100 x 75mm ball bearing brass butt hinge.	No.	32		R
54	3	Union' 150mm Chromium plated brass barrel bolt with keep fixed to metal.	No.	16		R
54	4	Union' AL8208-150AS aluminium flush bolt with keep fixed to metal.	No.	34		R
54	5	Union' AL8208-150AS aluminium flush bolt with keep to concrete.	No.	28		R
54	6	Union' CZ80941SC WC indicator bolt.	No.	33		R
54	7	Union' AL37651 Facility indicator bolt.	No.	21		R
54	8	Union' 809 840R panic push bar with dogging device for single door 2032mm high with one keep let into concrete.	No.	12		R
54	9	Union' 820 three point locking panic push bar with dogging device for double door 2032mm high with one keep let into concrete.	No.	24		R
54	10	Union' 812 outside access device.	No.	2		R
54		<u>"Dorma"</u>				
54	11	DFB-SS-027/160mm Stainless steel flush bolt	No	13		R
55	12	DPS-SS-032 Stainless steel dust proof socket	No	16		R
55	13	DBB-SS-009 102 x 75 x 3mm Stainless steel two ball bearing butt hinge.	No	9		R
55	14	DCE-002 Stainless steel euro-profile escutcheon	No	23		R
55		<u>"Howick"</u>				
55	15	H057 Aluminium Robe Hook	No	15		R
55		<u>"Blum"</u>				
55	16	"Blum OEA" chromium plated 110 degrees opening cabinet hinge	No	22		R
55		<u>LOCKS</u>				
55		<u>Union:</u>				
55	17	Union 452-32NP' 32mm cylinder cupboard deadlock.	No.	29		R
55	18	Union' 2295-76SS 2 lever upright mortice lock, with striking plate to metal frame.	No.	16		R
55	19	Union' 2252-76SS 3 lever upright mortice lock, with striking plate to metal frame.	No.	17		R
55	20	Union' 3 lever upright mortice deadlock, with stainless steel forend and striking plate to metal frame.	No.	19		R
55	21	Union' 2195-76SS / 2x18SC Euro profile double cylinder mortice deadlock, with striking plate to metal frame.	No.	44		R
55	22	Union' L-21320-76SS / 2x18SC Euro profile double cylinder mortice deadlock, with striking plate to metal frame.	No.	14		R
55		<u>"Dorma"</u>				
55	23	D032D bathroom / wk. dead lock SS	No	18		R
55	24	D036S euro-profile cylinder sash lock SS	No	3		R
55	25	DK106501 nickel plated 65mm ten pin master keyed euro- profile master knob cylinder.	No	16		R
55	26	PHA2101/2104 emergency exit panic latch for door leaf up to 1000mm wide	No	8		R
55		<u>"Gelmar"</u>				
55	27	Code 9049 cylinder central locks fitted to drawers	No	12		R
55		<u>HANDLES, PULLS, ETC</u>				
55		<u>Union:</u>				
55	28	'Union AL5123AS' 75mm brushed aluminium pull handle	No.	33		R

55	29	Set of two 'Union' AL5D66-05AS Dove lever handles on 152 x 152mm backplate with Euro profile cylinder piercing.	No.	8	R
55	30	Set of two 'Union' AL5D63-06AS Dove lever handles on 152 x 76mm backplate with no piercing.	No.	17	R
55	31	Set of two 'Union' AL5D-06AS Dove lever handles on 254 x 45mm backplates.	No.	22	R
55	32	Set of two 'Union' SS6 EAOO -06 stainless steel lever handles.	No.	23	R
55	33	Set of two 'Union' SS 5305 25SS stainless steel escutcheons.	No.	5	R
55		"Dorma"			
55	34	DPH301C 150 x 19mm stainless steel "D" shaped straight back-to-back pull handle	No	9	R
55	35	CB75 lever handle on rectangular Euro cylinder backplate, 61mm centres.	No	7	R
55	36	TH120 Stainless steel lever handles on rose without escutcheons	No	4	R
55		"Gelmar"			
55	37	Code 8291 steel barrel handles to office desks	No	9	R
55		"Milga"			
55	38	Stainless steel kitchen handles 500mm long x 12mm diameter for cupboards	No	15	R
55	39	Stainless steel kitchen handles 300mm long x 12mm diameter for drawers	No	1	R
55		<u>DOOR CLOSERS</u>			
55		<u>Union' Door Closers:</u>			
55	40	Union' 744SC overhead door closer EN3 power, with bracket fixed to metal.	No.	15	R
56	41	Union' 737SC overhead door closer EN3-5 adjustable power with back check, with bracket fixed to metal.	No.	11	R
56	42	Union' 737SC regular arm overhead door closer, with bracket fixed to metal.	No.	13	R
56	43	Union' 737P overhead door closer with Y672 co-ordinator and YFB600 filler bar, with bracket fixed to metal.	No.	12	R
		<u>DOOR MAGNETS</u>			
		<u>Supply, installation and connection of door magnets excluding wiring</u>			
56	44	"Aritech FE834" door magnets complete	No	4	R
		<u>SLIDING GEAR</u>			
		<u>"Blum"</u>			
56	45	"Blum 230E" nylon metal runners to drawers 550mm long	No	24	R
		<u>"Gelmar"</u>			
56	46	550mm Long ball bearing self closing runners to drawers (code: 7008)	No	16	R
		<u>LETTERS, NAMEPLATES, ETC.</u>			
		<u>Union' 2mm thick Nameplates, etc:</u>			
56	47	AL5066-05AS anodized aluminium push plate size 152 x 152mm with Euro profile cylinder piercing.	No.	15	R
56	48	AL5090-900AS anodized aluminium kick plate size 813 x 200mm.	No.	33	R
56	49	AL5066E-06AS F05 anodized aluminium engraved plate size 152 x 152mm with fire hose reel symbol.	No.	19	R
56	50	AL5066E-06AS F06 anodized aluminium engraved plate size 152 x 152mm with fire extinguisher symbol.	No.	14	R
56	51	AL5066E-06AS E08 anodized aluminium engraved plate size 152 x 152mm with emergency exit symbol.	No.	11	R
56	52	AL5066E-06AS E15 anodized aluminium engraved plate size 152 x 152mm with running man symbol.	No.	18	R
56	53	AL5066E-06AS E16 anodized aluminium engraved plate size 152 x 152mm with running man symbol.	No.	21	R
56	54	AL5066E-06AS E8 anodized aluminium engraved plate size 152 x 152mm with running man symbol.	No.	27	R
56	55	AL5066-06AS E10/ 11 anodized aluminium engraved plate size 152 x 152mm with male/ female symbol.	No.	12	R

56	56	AL5066EE-06AS E14 anodized aluminium engraved plate size 152 x 152mm with disable symbol.	No.	15	R
56	57	AL5066E-18-2AS 15 anodized aluminium engraved plate size 152 x 152mm.	No.	13	R
56		<u>SUNDRIES</u>			
56		<u>Service existing work:</u>			
56	58	Service existing locks, handles, hinges, sliding gear, etc to cupboards, drawers, etc	No.	58	R
56		<u>"Union"</u>			
56	59	CZ8731SC rubber buffered door stop plugged.	No.	33	R
56	60	9002AS aluminium door stop plugged.	No.	15	R
56	61	SS87001 stainless steel door stop plugged.	No.	16	R
56	62	AL8722AS rubber buffered hat and coat hook to doors, fixed with dome-headed cadmium plated screws.	No.	18	R
56		<u>"Dorma"</u>			
56	63	DJW Concealed Fixing Rubber Doorstop fitted to wall / floor as per Architects inspection. Colour Black	No	3	R
56	64	DDS-NP-018 nickel plated floor stop.	No	1	R
56	65	DDS-NP-018 Nickel plated floor stop	No	1	R
56	66	D038R Rebate conversion kit for euro-profile locks SS.	No	1	R
		<u>"Aliseo Metropolis"</u>			
57	67	62 x 54 x 34mm Aliseo Metropolis (Code: 650002) brass double hook with chrome plated finish, plugged and screwed to wall with stainless steel screws concealed with chrome cover plates.	No	34	R
		<u>CATCHES, CABIN HOOKS, ETC</u>			
		<u>"Dorma"</u>			
57	68	Halstead 166 SC cabin hook 150mm.	No	22	R
		<u>VERTICAL BLINDS</u>			
		<u>Aluvert/BlindQuip or other equal and approved vertical fabric blinds (colour Denim Blue) with 127mm wide non-fade fabric vanes with light fast factor of 6 - 7, stable in all directions to eliminate warp and twist, set up and fixed in position complete with track, runners, brackets, end caps, bottom weights, clutch and all controls, etc</u>			
57	69	Vertical fabric blinds reveal fixed in opening size 600 x 1200mm high	No	36	R
57	70	Vertical fabric blinds reveal fixed in opening size 900 x 1200mm high	No	47	R
57	71	Vertical fabric blinds reveal fixed in opening size 1200 x 1500mm high	No	21	R
57	72	Vertical fabric blinds reveal fixed in opening size 1500 x 1500 mm high	No	34	R
		<u>BATHROOM FITTINGS</u>			
		<u>"Kimberley-Clark"</u>			
57	73	130 x 120 x 250mm high Kimberly- Clark Professional Foam Soap Dispenser (colour: WHITE- code:SA427715) installed by a Kimberly Clark installation team.	No	33	R
57	74	130 x 135 x 256mm high Kimberly -Clark Professional SQ2 Toilet Tissue Dispenser (colour: WHITE-code: SA405606). Installation by Kimberly Clark team.	No	24	R
57	75	Code 329912 soap dispenser, plugged.	No.	13	R
57	76	Code 406298 flip top bin of white plastic, 45 litre capacity.	No.	15	R
57	77	Code 408113 Kim- Dry standard dispenser of white polycarbonate plastic.	No.	22	R
57		<u>"Aliseo Metropolis"</u>			
57	78	654 x 54 x 59mm deep Aliseo Metropolis brass towel rail with chrome plated finish (code: 650002) plugged and screwed to the wall with stainless steel screws concealed with chrome plated cover plates.	No	35	R
		<u>Kleenex:</u>			
57	79	Code 405597 Theft proof toilet tissue dispenser plugged.	No.	44	R

		<u>Franke Kitchen Systems (Pty) Ltd'</u>				
57	80	Franke Stratos STRX626 towel bar.	No.	27		R
		<u>Chairman Industries' or other approved:</u>				
57	81	Code DL2' stainless steel wall mounted side grab rail plugged.	No.	13		R
57	82	Code SR2' stainless steel wall mounted rear grab rail plugged.	No.	13		R
57	83	32mm Diameter T-shaped wall mounted grab rail, 1200mm long and 800mm high plugged.	No.	13		R
		<u>WALL MOUNTED WASTE BIN</u>				
		<u>"Kimberley-Clark"</u>				
57	84	Kimberly-Clark Professional Reflex Disposer wall mounted waste (colour: white - Code: SA426213), overall size 334 x 258 x 635mm high, installed by a Kimberly Clark installation team.	No	16		R
		<u>MATS</u>				
		<u>Mat-Lok' Dirt Trap or similarly approved:</u>				
57	85	Heavy duty mat, overall size 1800 x 1200mm in sunken matwell to concrete floor including mat surround frame, mat fixing, accessories, etc.	No.	11		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
58	86	Artisan	Hr	1		R
58	87	Artisan Assistant	Hr	1		R
58	88	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
58	89	Artisan	Hr	1		R
58	90	Artisan Assistant	Hr	1		R
58	91	General labourer	Hr	1		R
		<u>Materials</u>				
58	92	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
58	93	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.11 : METALWORK</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				

		<u>SUPPLEMENTARY PREAMBLES:</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Shop Drawings:</u>				
		As a general rule all work related to this trade must have shop drawings prepared and approved by the ESKOM Official prior to fabrication. Where there is reference to design and supply, it must be designed by a professionally registered engineer.				
		<u>Descriptions</u>				
		Descriptions of bolts shall be deemed to include nuts and washers				
		Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
		Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described.				
		Steelwork, where galvanised, is to be hot dipped galvanised to ISO 1461-1999				
		Contractor to supply product guarantee and slips to architect. All goods to comply with SANS.				
		Hot dipped galvanised and epoxy powder coated to approved colour by specialists mild steel gates.				
		<u>HOT DIPPED GALVANIZED PRESSED STEEL DOOR FRAMES</u>				
		<u>1,6mm Double rebated frames suitable for half brick walls with three "Union JH-BB-STD 2,55 100 x 76mm ball bearing butt hinges per door leaf, fixed with stainless steel screws:</u>				
61	1	Frame for door 813 x 2032mm high	No.	15		R
61	2	Frame for door 813 x 2125mm high	No.	18		R
		<u>1,6mm Double rebated frames suitable for one brick walls with three "Union JH-BB-STD 2,55 100 x 76mm ball bearing butt hinges per door leaf, fixed with stainless steel screws:</u>				
61	3	Frame for door 813 x 2032mm high	No.	12		R
61	4	Frame for door 813 x 2125mm high	No.	14		R
61	5	Frame for door in two leaves 1613 x 2032mm high	No.	9		R
		<u>Preparation of frames for fixing of ironmongery:</u>				
61	6	Arm of door closer.	No.	13		R
		<u>HOT DIPPED GALVANIZED PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u>				
		<u>"Durowin" doors</u>				
61	7	Type "M.V." double door 1 524 x 2 134mm high with 560 x 746mm high louvred ventilation panels to each leaf and rebated frame suitable for one brick wall	No	2		R
		<u>Purpose made transformer room door and frame:</u>				
61	8	914mm x 2134mm High pressed metal transformer room type MV open out double door complete with factory fitted louvred panel to lower section of each door. Louvred panel to receive vermin proofing	No	3		R
62	9	1300mm x 2134mm High pressed metal transformer room type MV open out double door complete with factory fitted louvred panel to lower section of each door. Louvred panel to receive fire mesh.	No	4		R
62	10	1524mm x 2134mm High pressed metal transformer room type MV open out double door complete with factory fitted louvred panel to lower section of each door. Louvred panel to receive vermin proofing	No	2		R

		<u>HOT DIPPED GALVANISED PRESSED STEEL GARAGE TYPE DOOR</u>				
		<u>Standard roll up garage type door with epoxy coated finish to cover 3000mm wide x 2100mm high brick opening, complete with fixing brackets, roller and locking mechanism, crank operation including a manually operated gearbox in place of the endless chain:</u>				
62	11	Roll up door 2400 x 2100mm high.	No	3		R
		<u>Purpose made up garage type door with epoxy coated finish to cover 9mm wide x 5000mm high brick opening, complete with fixing brackets, roller and locking mechanism, crank operation including a manually operated gearbox in place of the endless chain:</u>				
	11a	Roll up door 5000 x 7000mm high.	No	3		R
		<u>STEEL ROLLER SHUTTERS ETC</u>				
		<u>Xpanda' doors fixed and finished to manufacturer's specifications including oven baked polyester or epoxy powder paint coating, ironmongery, fixing in position, etc:</u>				
62	12	Door in two leaves and frame overall size 1800 x 2100mm high with a continuous louvered ventilation panel to each leaf and rebated frame suitable for one brick wall.	No.	6		R
		<u>Roller shutters fixed to brickwork or concrete</u>				
62	13	Manual push-up slatted roller shutter with epoxy coated finish for 2900 x 3400mm wide opening including roller shutter box	No	4		R
		<u>Xpanda Rol-A-Dor' Purpose made, galvanised and powder coated steel roller shutters (the colour to be 'Chromadek' Teal/ Buffalo Brown), with galvanised guides and galvanised and powder coated canopy cover, fixed to brick wall or structural steel jambs and structural steel beam over:</u>		4		
62	14	Face fixed, chain operated roller shutter for 4500 x 5500mm high opening, with 75 x 0,8mm thick slats, 75mm wide side guides, 40 x 40 x 5mm 'T' bar bottom rail, EPX stick on weather seal to bottom edge, and 'Xpanda Rol-Lok, and with pressed metal canopy cover.	No.	16		R
		<u>GALVANISED STEEL WINDOWS</u>				
		<u>Descriptions:</u>				
		Windows to include all ironmongery, fixing in position, sealing around edges externally with approved silicone sealant and protection against damage, etc; glazing elsewhere measured.				
		<u>Duro Pressings' hot dipped galvanised mild steel residential windows, with standard pattern burglar guards over all fixed or opening sections, or similar approved:</u>				
62	15	Window, E type, 533 x 654mm high comprising frame forming one opening fitted with top hung sash to open out.	No.	13		R
62	16	Coupling mullion 654mm high fixed to pair of windows.	No.	9		R
62	17	Window, E type, size 533 x 2125mm high comprising frame forming one opening, a fixed light.	No.	17		R
62	18	Window, E type, size 1070 x 2125mm high comprising frame forming one opening, a fixed light.	No.	6		R
62	19	Window, TD awning type, size 1551 x 1264mm high comprising frame, mullion and part transom forming three openings; two equal upper and lower openings 1000mm wide each fitted with top hung sash to open out, the remaining opening a fixed light.	No.	8		R
62	20	Window, TD awning type, size 1511 x 949mm high comprising frame, mullion and part transom forming three openings; two equal upper and lower openings 1000mm wide each fitted with top hung sash to open out, the remaining opening a fixed light.	No.	4		R
62	21	Window, TD awning type, size 1150 x 949mm high comprising frame forming one opening, a fixed light.	No.	2		R
62	22	Window, TD awning type, size 1150 x 949mm high comprising frame forming one opening fitted with two equal sashes hung to slide horizontally.	No.	13		R
62	23	Window, TD awning type, size 1511 x 949mm high comprising frame, mullion and part transom forming three openings; two equal upper and lower openings 1000mm wide each fitted with top hung sash to open out, the remaining opening a fixed light.	No.	5		R
62	24	Window, G type, size 2489 x 359mm high comprising frame and two mullions forming three openings; two equal end openings 359mm wide each fitted with top hung sash to open out, the remaining centre opening a fixed light.	No.	8		R
63	25	French door (double door) size 1800 x 2125mm high comprising frame forming one opening fitted with two equal door leaves hung to swing one way; each leaf in two unequal fixed lights.	No.	11		R
63	26	Frame as for a French door, to accommodate timber door (elsewhere measured) size 1613 x 2032mm high fitted with 4No. 485 100SS stainless steel butt hinges with bearings, for two equal door leaves hung to swing one way; the frame bolted at both jambs to windows (elsewhere measured), including two coupling mullions.	No.	5		R

		<u>HOT DIPPED GALVANISED STEEL WELDED SCREENS, GATES, ETC</u>				
		<u>Steel gates and frames</u>				
63	27	1500mm x 1170mm High double gate formed of 60 x 40 x 3mm hollow section frame with 30 x 30 x 3mm square hollow section brace with 0.8mm thick pressed spandrel sheet pop-rivet to steel gate frame at 100mm c/c and fitted with two pin type hinges and hinge plates bolted to brickwork and 10mm dia. x 320mm long solid round barrel bolt and keep.	No	3		R
63	28	Gate overall size 900 x 1700mm high formed of 80 x 40 x 3mm top, side and bottom rail with 20 x 20 x 2.5mm square vertical infill tubing at 100mm centres, including 'Union' padlock, barrel bolt, keep, 3 hinges, etc.	No.	4		R
		<u>GALVANIZED STEEL HANDRAILS, BALUSTRADES, ETC</u>				
		<u>Maclock' hot dipped galvanised mild steel welded and bolted patent balustrading, medium duty, type 2A, epoxy powder coated to brown colour.</u>				
63	29	Horizontal 2 rail balustrading of standard height of continuous pipe top and middle rails and type B stanchions at average 1000mm centres bolted to top of concrete. (Ramp, Stair)	m	55		R
63	30	Raking 2 rail balustrading of standard height of continuous pipe top and middle rails and type B stanchions at average 1000mm centres bolted to top of concrete. (Stair)	m	24		R
63	31	Extra over balustrade for straight end closure piece.	No.	8		R
63	32	Extra over balustrade for raking end closure piece.	No.	6		R
63	33	Extra over balustrade for 90 degree corner.	No.	8		R
63	34	Extra over balustrade for angle bends at straight raking.	No.	5		R
		<u>SUNDRY STEELWORK</u>				
63	35	12mm Diameter x 400mm long galvanised steel rod, four times bent to form purpose made anchor for holding down galvanised steel wires (elsewhere) and embedded 100mm deep into concrete slab.	No.	23		R
63	36	4mm Diameter x 1500mm long galvanised steel wires hooked to top of water tank on sleeve and tied down to purpose made anchors (elsewhere), including 15mm standard garden hose cut into reasonable lengths and wrapped around top of hook to prevent any damage to the water tank.	No.	18		R
63	37	300 x 50 x 3mm Thick galvanised plate with 1 (No.) 23mm diameter hole through plate and bolted to edge of concrete slab with and including 2 (No.) 8mm diameter raw bolts.	No.	15		R
		<u>ALUMINIUM WINDOWS, DOORS, ETC.</u>				
		<u>The following Preambles shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable.</u>				
		Aluminium windows and doors shall be manufactured from extruded L28 aluminium members of 6063-T6, 6261-T6 or 6082-T6 alloy and temper. All corners are to be mechanically cleated.				
		Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work and registered with the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA), and shall meet with or exceed the minimum recommended performance requirements as set out by the AAAMSA in the latest edition of the Selection Guide. Doors shall comply with the AAAMSA PTHA1 performance standard.				
		The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the ESKOM Official for approval.				
		An (AAAMSA) performance certificate from the manufacturer of the windows and doors shall be provided prior to commencement of any work on site.				
		Top hung opening sashes shall be hung on two concealed heavy duty FS12-1543 grade 304 stainless steel friction stays and fitted with epoxy powder coated window fasteners.				
		All opening sashes are to be fitted with approved woodpile weatherseals.				
		<u>Glazing beads:</u>				
		Where so described, openings and sashes of windows and doors shall be fitted with approved clip on aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads.				

		<u>Finishes:</u>				
		Windows, doors, etc., described as natural 'anodised' shall be treated with Grade 25 coating thickness.				
		The contractor shall provide a certificate of conformance with these standards.				
		<u>Glazing:</u>				
		Glazing is to be carried out in strict accordance with the SANS 0137/2000 code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SANS 1263.				
		The contractor shall provide a certificate of conformance with these standards.				
		Laminated safety glazing shall be warranted, by the manufacturer, against delamination and colour degradation for not less than 5 years.				
		The contractor shall provide a certificate to this effect.				
		Gasket seals for glazing are to be approved Santoprene seals as recommended by the manufacturer and to suit the glazing thickness.				
		<u>General:</u>				
		Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing around edges externally and internally with approved silicone sealant and protection against damage, deterioration or discolouration by taping the whole door/window with removable PVC tape or covering with temporary casings and removing same on completion. The protection is to be removed only when authorised by the ESKOM Official				
		<u>Rivets:</u>				
		All rivets to be stainless steel.				
		<u>ALUMINIUM WINDOWS, DOORS, ETC</u>				
		<u>Purpose made black powder coated aluminium windows factory glazed with 6,38mm clear laminated safety glass to comply with SABS 0400-1990, SABS 0137 & SABS 1263-1, and plugged to brickwork or concrete and sealed all round with approved silicone sealant, to form watertight joint between frame and brickwork</u>				
64	38	980 x 1200mm Window in four sections with two top hung opening sections.	No	9		R
64	39	1100 x 1200mm Window in four sections with two top hung opening sections.	No	9		R
64	40	1500 x 1200mm Window in four sections with two top hung opening sections.	No	6		R
		<u>Purpose made black powder coated aluminium windows factory glazed with 4mm clear float glass to comply with SABS 0400-1990, SABS 0137 & SABS 1263-1, and plugged to brickwork or concrete and sealed all round with approved silicone sealant, to form watertight joint between frame and brickwork</u>				
64	41	980 x 1200mm Window in four sections with two top hung opening sections.	No	7		R
64	42	1100 x 1200mm Window in four sections with two top hung opening sections.	No	5		R
64	43	1500 x 1200mm Window in four sections with two top hung opening sections.	No	5		R
		<u>BULLET PROOF WINDOWS</u>				
		40mm thick Bullet Proof glass and frame not exceeding 2.5m2	No.	3		R
		40mm thick Bullet Proof glass and frame exceeding 2.5m2 and not exceeding 5 m2	No.	4		R
		<u>Purpose made black powder coated aluminium doors factory glazed with 6,38mm clear laminated safety glass to comply with SABS 0400-1990, SABS 0137 & SABS 1263-1, and plugged to brickwork or concrete and sealed all round with approved silicone sealant, to form watertight joint between frame and brickwork</u>				
64	44	Door size 813 x 2032mm high hung to open out complete with frame to fit brick opening 900mm wide	No	3		R
64	45	Double door size 1613 x 2032mm high hung to open out complete with frame to fit brick opening 900mm wide	No	4		R

		<u>SHOWER CUBICLE DOORS, ETC.</u>				
		<u>Aluminium, white epoxy powder coated, sliding folding shower cubicle doors with sliding gear, cleats, stops, etc., as 'Showerline' sliding silhouette infold door, but glazed with 'Smart Glass' 6.38mm 'Intruderprufe' NS obscure laminated safety glass to comply with part N of NBR, plugged to tiled walls:</u>				
65	46	Shower cubicle door 900 x 2100mm high.	No.	5		R
		<u>STAINLESS STEELWORK</u>				
		<u>STAINLESS STEEL DOOR FRAMES</u>				
		<u>1.6mm Thick Grade 304 stainless steel double rebated frames suitable for half brick walls with three "Union" JH-BB-STD-2-SS 102 x 76mm high performance ball bearing butt hinges per door leaf, fixed with stainless steel screws</u>				
65	47	Frame for door 813 x 2032mm high	No.	2		R
65	48	Frame for double door 1511 x 2032mm high	No.	3		R
		<u>1.6mm Thick Grade 304 stainless steel double rebated frames suitable for one brick walls with three "Union" JH-BB-STD-2-SS 102 x 76mm high performance ball bearing butt hinges per door leaf, fixed with stainless steel screws</u>				
65	49	Frame for door 813 x 2032mm high	No.	2		R
65	50	Frame for double door 1511 x 2032mm high	No.	5		R
		<u>Grade 304 welded and bolted 'Mentis' ball type balustrading</u>				
65	51	34mm Diameter continuous pipe hand and knee rails	m	16		R
65	52	90 Degree 2M straight closure bend	No.	3		R
65	53	Wall end plate	No.	2		R
65	54	43mm Diameter type MT90 two ball handrail stanchion 1000m high	No.	8		R
65	55	12mm Diameter expansion bolt with a fixing length of 5mm	No.	3		R
65	56	12mm Diameter expansion bolt with a fixing length of 10mm	No.	6		R
65		<u>Grade 304 welded and bolted handrails to ramps</u>				
65	57	50mm Diameter x 1.5mm thick tubular handrail	m	14		R
65	58	Extra on handrail for closed end	No.	4		R
65	59	Extra on handrail for knee or ramp	No.	5		R
65	60	Extra on handrail for rounded bend to 75mm radius	No.	3		R
65	61	Extra on handrail for semi-circular diversion piece 1200mm girth around front face of circular column with ferruled joints at either end sealed with clear silicone	No.	2		R
65	62	12mm Diameter handrail lug 150mm long with one end welded to side of tubular handrail and other end epoxied into and including a 15mm diameter x 75mm deep hole drilled into side of concrete wall	No.	3		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				

		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
65	63	Artisan	Hr	1		R
65	64	Artisan Assistant	Hr	1		R
66	65	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
66	66	Artisan	Hr	1		R
66	67	Artisan Assistant	Hr	1		R
66	68	General labourer	Hr	1		R
		<u>Materials</u>				
66	69	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
66	70	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.12 : PLASTERING</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>TESTING</u>				
69	1	Carry out impact tests to establish the soundness of all screeded substrates	No	65		R
		<u>SCREEDS</u>				
		<u>Screeds on concrete:</u>				
69	2	Allow for a trial mix for all screeded surfaces to be sent to an approved laboratory for testing and subject to the approval of the ESKOM Official and Structural Engineer. Allow for a sample panel size 2m x 2m for each thickness and for approval prior to laying.	Item	13		R
		<u>1:4 Cement plaster screeds wood floated on concrete:</u>				
69	3	15mm Thick on sides and top of inverted beams on roofs.	m²	28		R
69	4	25mm Thick on floors and landings.	m²	125		R
69	5	Average 25mm thick on floors to falls.	m²	157		R
69	6	Average 35mm thick receded screed to falls.	m²	137		R
69	7	Average 40mm thick average in showers.	m²	123		R
69	8	Average 40mm thick on roofs to falls and currents.	m²	88		R

69		<u>Slush finish of 1:3 cement and sand mixture on top of concrete slabs:</u>				
69	9	Brushed on top of concrete slabs, surface beds, etc.	m²	37		R
69		<u>GRANOLITHIC</u>				
69	10	Allow for trial granolithic mix and sending to an approved laboratory for testing and for laying a 2m x 2m sample panel for approval by the Engineer/Principal Agent prior to laying of granolithic	Item	2		R
69		<u>Untinted granolithic on concrete</u>				
69	11	25mm Thick on floors and landings	m²	177		R
69	12	Average 35mm Thick on floors to falls	m²	145		R
69	13	Coved skirting 50mm high	m	129		R
69	14	Coved skirting 75mm high	m	144		R
69		<u>INTERNAL PLASTER</u>				
69		<u>1:5 Cement plaster on brickwork:</u>				
69	15	Allow for a trial mix for all plastered surfaces to be sent to an approved laboratory for testing and subject to the approval of the ESKOM Official and Structural Engineer. Allow for a sample panel size 2m x 2m for each thickness and for approval prior to laying.	Item	3		R
69	16	On walls	m²	644		R
69	17	On narrow widths	m²	55		R
69	18	On duct walls	m²	12		R
		<u>Cement plaster on concrete:</u>				
70	19	On ceilings.	m²	78		R
		<u>EXTERNAL PLASTER</u>				
70	20	Allow for a trial mix for all plastered surfaces to be sent to an approved laboratory for testing and subject to the approval of the ESKOM Official and Structural Engineer. Allow for a sample panel size 2m x 2m for each thickness and for approval prior to laying.	Item	3		R
		<u>1:4 Cement plaster on concrete:</u>				
70	21	On projecting and isolated beams.	m²	66		R
70	22	On walls	m²	644		R
70	23	On narrow widths.	m²	33		R
		<u>1:5 Cement plaster on brickwork:</u>				
70	24	On walls	m²	389		R
70	25	On narrow widths	m²	78		R
70	26	On duct walls	m²	12		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
70	27	Artisan	Hr	1		R
70	28	Artisan Assistant	Hr	1		R
70	29	General labourer	Hr	1		R

		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
70	30	Artisan	Hr	1		R
70	31	Artisan Assistant	Hr	1		R
70	32	General labourer	Hr	1		R
		<u>Materials</u>				
70	33	Percentage Mark Up =	10%	Percentage		
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
70	34	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.13 : TILING</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>Descriptions</u>				
		Tiles should comply with the minimum requirements of SANS 1449.				
		Wall tiling to comply with Part 7.2 of SANS 0107:1996.				
		Finished wall tile surfaces to comply with Part 7.2.6.1. of SANS 0107:1996.				
		Protection cleaning and maintenance of wall tiles to comply with part 9 of SANS 0107:1996.				
		Tiling rates to include appropriate plastic edge trims wherever required, to all external corners, jambs, sills, etc.				
		<u>CERAMIC WALL TILING</u>				
		<u>Johnson Optima (OT4)' 200 x 250mm Gloss White glazed ceramic tiles fixed with Ceresit Tylon CM 11 cement based adhesive to wood floated plastered walls and flush pointed with Ceresit Tylon CE 33 grout.:</u>				
73	1	On walls.	m²	360		R
73	2	On walls in isolated panels, splashbacks, etc.	m²	188		R
73	3	On narrow widths.	m²	66		R
73	4	100mm High cut tile skirting with plastic edge trim on top.	m	134		R
73	5	Fair exposed cutting and fitting around pipe not exceeding 50mm internal diameter.	No.	33		R
73	6	Fair exposed cutting and fitting around pipe not exceeding 100mm internal diameter.	No.	28		R
73	7	200 x 200mm Semi-recessed soap dish.	No.	66		R
		<u>Johnson Optima (OT4)' 200 x 250mm Gloss White glazed ceramic tiles fixed with Ceresit Tylon CM 11 cement based adhesive to wood floated plastered wall partitions and flush pointed with Ceresit Tylon CE 33 grout.:</u>				
73	8	On narrow widths top of half brick wall.	m	355		R

		<u>200 x 200mm Wide Union Tiles 'Shiny White' ceramic tiles (code: 1SAMOSH1000), fixed to internal wall plaster backing with TAL tile adhesive (elsewhere specified) mixed with TAL bonding liquid in lieu of water with joints continuous in both directions and grouted with TAL tile grout (colour: White), excess grout on the surface to be cleaned with water as work proceeds:</u>				
73	9	On walls	m²	544		R
73	10	On narrow widths	m²	26		R
73	11	Fair cutting around pipe and fitting not exceeding 100mm diameter.	No	34		R
		<u>50 x 200mm Listello wall tile, fixed to internal wall plaster backing with TAL tile adhesive (elsewhere specified) mixed with TAL bonding liquid in lieu of water with joints continuous in both directions and grouted with TAL tile grout (colour: White), excess grout on the surface to be cleaned with water as work proceeds:</u>				
73	12	50mm High listello horizontal on walls laid in patterns.	m	69		R

		<u>CERAMIC FLOOR TILING</u>				
		<u>330 x 330mm 'Johnson Aquilhas Stone AG706'. PEI4 rating glazed ceramic tiles fixed with Ceresit Tylon CM 11 cement based adhesive to wood floated screeded floors and flush pointed with Ceresit Tylon CE 33 grout. (Pricing shall include plastic edging and corner trims).:</u>				
74	13	On floors and landings	m ²	466		R
74	14	Extra over floor tiling for band one tile wide circular exceeding 300mm radius including all cutting and circular cutting.	m	44		R
74	15	110mm High cut tile skirting with plastic edge trim on top.	m	79		R
74	16	110mm High circular cut tile skirting with plastic edge trim on top.	m	65		R
74	17	Circular cutting.	m	23		R
		<u>MOSAIC FLOOR TILING</u>				
		<u>25 x 25mm 'Tile Africa' 271 Matt charcoal grey, mosaic tiles fixed with 'Tal' or equally approved anti-bacterial and anti-fungal mosaic waterproof tile adhesive and tile grout:</u>				
74	18	On shower floors to falls and outlet.	m ²	25		R
		<u>SLATE AND SANDSTONE FLOOR TILING</u>				
		<u>300 x 300mm African Blue Natural Slate Tiles to exterior wood floated concrete or screed. Allow all new concrete work and screeds to cure for at least 28 days before proceeding. All new concrete work and screeds must have a moisture content of 5% or less before tiling can be commenced. When tiling directly onto concrete, ensure that the surfaces are clean and free of all traces of shutter release and curing agents, laitance and any other surface contaminants, preferably by scarifying or sandblasting. Any screeding must be firmly attached to the underlying concrete, must be integrally sound (no crumbling, cracking etc.) and must be of a quality and consistency suitable for tiling. All defective areas must be removed and the floor made good before proceeding. Apply Tal Gold Star 6 rapid setting adhesive using a notched Tal floor trowel. Grout with light grey Tal Stain free grout mixed 20kg with 6 litres of clean water:</u>				
74	19	On floors in patterns.	m ²	54		R
		<u>EDGE TRIMS</u>				
		<u>M-Trim:</u>				
74	20	AFE080' 15 Micron, bronze, anodised aluminium formable straight edge trim to threshold.	m	66		R
74	21	ARE080' 15 Micron, matt silver, anodised aluminium formable straight edge trim to threshold.	m	48		R
		<u>PVC round edge trim:</u>				
74	22	PVC round edge white tile edge trim 9mm high to suit tiling 7 to 8mm thick, fixed with adhesive to external wall corners.	m	67		R
		<u>NOSINGS, JOINT COVERS, PROTECTORS, ETC.</u>				
		<u>Genesis' floor movement joints:</u>				
74	23	Genesis 'Type MMA' aluminium urethane medium duty movement joint 10mm high with type 20 finish.	m	28		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
74	24	Artisan	Hr	1		R
75	25	Artisan Assistant	Hr	1		R
75	26	General labourer	Hr	1		R

		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
75	27	Artisan	Hr	1		R
75	28	Artisan Assistant	Hr	1		R
75	29	General labourer	Hr	1		R
		<u>Materials</u>				
75	30	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
75	31	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R
		<u>BILL NO.14 : GLAZING</u>				
		<u>PREAMBLES</u>				
		The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the ESKOM Official prior to work being carried out.				
		<u>Overtime work and normal work:</u>				
		The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.				
		<u>GLAZING TO STEEL WITH PUTTY</u>				
		<u>Descriptions:</u>				
		Glazing set in steel frames to comply with Part N of NBR by 'Smart Glass' or similar approved.				
		<u>4mm "Pacific" clear float glass:</u>				
78	1	Panes exceeding 0,1 and not exceeding 0,5m²	m²	87		R
		<u>4mm "Pacific" obscure glass:</u>				
78	2	Panes exceeding 0,1 and not exceeding 0,5m²	m²	69		R
		<u>6mm "Pacific" clear float glass:</u>				
78	3	Panes exceeding 0,1 and not exceeding 0,5m²	m²	21		R
		<u>6mm "Pacific" obscure glass:</u>				
78	4	Panes exceeding 0,1 and not exceeding 0,5m²	m²	44		R
		<u>6.38 mm 'Smartglass Intruderprufe' NS laminated safety glass with obscured surface, glazing:</u>				
78	5	Panes exceeding 0,1 m² and not exceeding 0,5m².	m²	45		R
78	6	Panes exceeding 0,5 m² and not exceeding 2m².	m²	42		R
		<u>6.38 mm 'Smartglass Intruderprufe' NS clear laminated safety glazing:</u>				
78	7	Panes exceeding 0,1 m² and not exceeding 0,5m².	m²	54		R
78	8	Panes exceeding 0,5 m² and not exceeding 2m².	m²	42		R

		<u>Extra over laminated safety glazing for sandblasting one side of glass pane to make obscure:</u>				
78	9	Pane size 565 x 865mm	No.	34		R
78	10	Pane size 830 x 2000mm	No.	21		R
		<u>GLAZING TO CONCRETE WITH GLAZING SILICONE</u>				
		<u>6,38 mm 'Smartglass Intruderprufe' NS clear laminated safety glazing:</u>				
78	11	Panes exceeding 0,1m² and not exceeding 0,5m². (Winblok surrounds)	m²	54		R
		<u>GLAZING TO TIMBER WITH BEADS (BEADS ELSEWHERE)</u>				
		<u>6,38mm Normal strength clear laminated safety glass and glazing set in timber frames with beads (elsewhere) to comply with Part N of NBR by 'Smart Glass' or similar approved.</u>				
78	12	Panes exceeding 0,1 m² and not exceeding 0,5m².	m²	32		R
78	13	Panes exceeding 0,5 m² and not exceeding 2m².	m²	45		R
		<u>GLAZING TO ALUMINIUM WITH CLIP ON BEADS (BEADS ELSEWHERE)</u>				
		<u>6,38mm Normal strength clear laminated safety glass</u>				
78	14	Panes exceeding 0,5 and not exceeding 2m²	m²	19		R
		<u>TOPS, SHELVES, DOORS, MIRRORS, ETC</u>				
		<u>6mm Thick silvered float glass with polished edges fixed to wall surface with 4 chromium plated domed mirror screws:</u>				
79	15	Mirror 400 x 600mm high.	No.	32		R
79	16	Mirror 500 x 700mm high.	No.	24		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
79	17	Artisan	Hr	1		R
79	18	Artisan Assistant	Hr	1		R
79	19	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
79	20	Artisan	Hr	1		R
79	21	Artisan Assistant	Hr	1		R
79	22	General labourer	Hr	1		R
		<u>Materials</u>				
79	23	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
79	24	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R

BILL NO.15 : PAINTWORK**PREAMBLES**

The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles

SUPPLEMENTARY PREAMBLES:**Rate approvals:**

The tenderer is advised that any rate that is required for new work must include the following breakdown:

Material, labour, plant, wastage, transport and profit.

Rate approvals must be authorised by the ESKOM Official prior to work being carried out.

Overtime work and normal work:

The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.

Manufacturer's Details:

The following paints are to be manufactured/supplied by PLASCON PAINTS (PTY) LTD and applied in strict accordance with the manufacturer/supplier's specification.

Supplementary Preambles:

All work to be executed in strict accordance with the specifications of Plascon Paints (Pty) Ltd. The coating systems are as per Plascon's 'List of Decorative Paint Products' unless otherwise specified. Full specifications are available on request from Sophie Fourie Tel. (011) 301-4600 or from the various branch offices as listed above.

Primers and first coats may be thinned in accordance with the paint specifications of Plascon Paints (Pty) Ltd to aid the absorption of the paint.

All surfaces must be sound, clean and have a moisture content of less than 8% for walls generally and 3% for slabs/screeds etc.

Where surfaces of plaster etc are sandy / friable, the first coat must be replaced with 'Plascon Merit' plaster primer thinned 10% with turpentine.

Paint Colours:

The Tenderer is to note the following colour specifications and their application:

1. Internal doors are to be Plascon E14-5 Sombrero
2. Internal and External door frames to be Plascon E14-4 Mayan Stone
3. Windows (steel) to be Plascon enamel/gloss (white)
4. All walls and ceilings to kitchen and ablutions to be Plascon Double Velvet (white)
5. Internal walls to office areas to be Plascon E14-2 Hudson
6. External walls to be Plascon A11-5 Gruyere

ON FLOATED PLASTER

Prepare surfaces and remove all loose material, apply one coat 'Plascon Merit Plaster Primer' and two coats 'Plascon Polvin Super Acrylic' paint:

82	1	On interior walls.	m ²	1200	R
82	2	On interior ceilings.	m ²	967	R
82	3	On exterior beams at eaves.	m ²	875	R

Plascon Wall & All to interior new cement plaster (NW 201). Surface to be dry, sound and clean and cured for a minimum of 14 days, with a moisture content measured with a Doser Hygrometer (or equivalent), of BD 2 scale - 8% or less. Prime with one coat Plascon Plaster Primer (UC 56) with an over coating time of 16 hours and finish with three coats Wall & All (WAA) with 2 hours drying time between coats, for a maintenance cycle of 7 years in a C1 - inland environment. Colour: Pale linen ("Inspired" range - code: Y1-C2-3).

82	4	On plastered interior walls	m ²	785	R
82	5	On plastered exterior walls	m ²	854	R

ON SKIM PLASTER

Prepare surfaces and remove all loose material, apply one coat 'Plascon Merit Plaster Primer' and three coats 'Plascon Double Velvet Pure Acrylic' paint:

83	6	On interior walls.	m ²	832	R
83	7	On ceilings and cornices.	m ²	944	R

		ON WOOD				
		<u>Prepare and apply three coats 'Plascon Woodcare Woodcoat Polyurethane' X33/X44 suede clear varnish:</u>				
83	8	On doors.	m²	166		R
83	9	On door frames.	m²	143		R
83	10	On skirtings, rails, etc not exceeding 300 mm girth	m	786		R
83	11	On timber floors	m²	12		R
		<u>Stop, fill, sand down and prepare wood surfaces and apply one coat 'Plascon Oil Wood Primer', one coat 'Plascon Merit Universal Undercoat' and two coats 'Plascon Velvagio Polyurethane Enamel'</u>				
83	12	On interior doors.	m²	134		R
83	13	On exterior doors.	m²	144		R
83	14	On door frames.	m²	123		R
		<u>Stop, fill, sand down and prepare wood surfaces and apply one coat 'Plascon Oil Wood Primer', one coat 'Plascon Merit Universal Undercoat' and two coats 'Plascon Super Universal Enamel' paint:</u>				
83	15	On interior doors.	m²	143		R
		<u>Plascon Velvagio Satin to interior new wood (NW 201). Surface to be dry, sound and clean. Wash knots and resinous areas with Lacquer Thinners (LS 1) and coat with Woodcare knot Seal (PK 2) and apply one coat Plascon Woodcare Pre-treatment (WWP 1), over coated within 48 hours with a moisture content, measured with a Doser Hygrometer (or equivalent), of BD 2 scale (A1 - A5) < 14% or less. Prime with one coat Wood Primer (UC 2) with an over coating time of 16 hours and finish with three coats Valvagio Satin (VLO) with 16 hours drying time between coats, for a maintenance cycle of 7 years in a C1 - inland environment. Colour: Stone wash (Inspired range - code: Y2-D2-2) to all doors and colour White to all door frames and skirtings.</u>				
83	16	On interior doors.	m²	165		R
83	17	On timber door frames.	m²	178		R
83	18	On skirtings, rails, etc not exceeding 300 mm girth	m	1321		R
		ON FIBRE-CEMENT				
		<u>Prepare surfaces and remove all loose material, apply one coat 'Plascon Polvin' thinned 20% and two coats 'Plascon Polvin Super Acrylic' paint:</u>				
83	19	On ceilings and cornices.	m²	844		R
		<u>Prepare surfaces and remove all loose material, apply one coat 'Plascon Merit Plaster Primer', one coat 'Plascon Merit Universal Undercoat' and two coats 'Plascon Super Universal Enamel' paint:</u>				
83	20	On sills not exceeding 300mm wide.	m	145		R
		<u>Plascon Professional Evolution Acrylic to exterior new fibre cement. Surface to be dry, sound and clean, with a moisture content, measured with a Doser Hygrometer (or equivalent), of BD 2 scale - 8% or less. Prime with one coat Professional Plaster Primer (PP 700) with an over coating time of 16 hours and finish with three coats Professional Evolution Acrylic (PEV 900) with 2 hours drying time between coats, for a maintenance cycle of 7 years.</u>				
83	21	On fascias and barge boards at eaves.	m²	178		R
83	22	On window cills not exceeding 300mm wide.	m	167		R
83	23	On Down pipes	m	134		R
83	24	On Gutters	m	176		R
		<u>Plascon Professional Evolution Acrylic to interior new gypsum plaster board. Surface to be dry, sound and free of dirt and loose particles. Wipe down with a damp cloth and allow to dry completely. Prime with one coat Professional Plaster Primer (PP 700) with an over coating time of 16 hours and finish with three coats Professional Evolution Acrylic (PEV 900) with 2 hours drying time between coats, for a maintenance cycle of 7 years in a C1 - inland environment.</u>				
84	25	Gypsum ceiling boards and cornices	m²	154		R

		<u>ON METAL</u>				
		<u>Prepare surfaces and remove all loose material, dust, grease, salts and contamination with 'Plascon Aquasolve Degreaser GR1', rinse and apply one coat 'Plascon Galvogrip Metal Primer', apply one coat 'Plascon Merit Universal Undercoat' and two coats 'Plascon Super Universal Enamel' paint:</u>				
84	26	On galvanised steel door frames.	m²	145		R
84	27	On galvanised steel windows with Burglar bars (Both sides measured).	m²	133		R
84	28	On Gates	m2	66		R
		<u>Painting specification (Hot Dipped Galvanised):</u>				
		Wash down all steelwork thoroughly with Plascon liquid galvanised iron cleaner, scotchbright and water to manufacturers specification and allow to dry.				
		All coats to be applied according to manufacturer's specifications.				
		<u>Spot priming defects in pre primed surfaces with "Plascon Namelcoat Synthetic Metal" apply one coat "Plascon Merit Universal Undercoat" and three coats "Plascon Super Universal Enamel" paint on primed steel surfaces:</u>				
84	28	On strong room door and frame.	m²	132		R
		<u>Plascon Glatex 8 to exterior new galvanised steel (NW 623). Surface to be dry, sound and clean. Apply Plascon Galvanised Iron Cleaner (GIC 1) to all bare galvanised areas. Allow to react for 1 minute and rinse off with tap water using bristle brush or Scotch Brite pads to remove all surface contaminants until surface is water break-free. Prime with one coat Glatex 8 (PL) with an over coating time of 8 hours and finish with three coats Glatex 8 (PL) colour Black with 16 hours drying time between coats, for maintenance cycle of 10 years in a C3 - Industrial area.</u>				
84	29	On structural steel columns, beams, trusses and purlins	m²	123		R
84	30	On double gate (both sides measured)	m²	145		R
		<u>PROTECTIVE ROOFING PAINT</u>				
		<u>Two coats approved heavy duty acrylic paint:</u>				
84	31	On waterproofing to roofs and box gutters.	m²	866		R
	31a	<u>Road Marking Paint:</u>				
		<u>Prepare surfaces, wash thoroughly, remove loose material, leave to dry and apply three coats 'Promac Aqualine Road Marking' waterborne acrylic road marking paint:</u>				
	31b	100mm Interrupted line on concrete surfaces.	m	150		R
	31c	100mm Line on concrete surfaces.	m	310		R
	31d	100mm Interrupted line on concrete surfaces.	m	66		R
	31e	Directional arrow size 750 x 1500mm on concrete surfaces.	No.	6		R
	31f	Stop sign size 3000 x 1500mm on concrete surfaces.	No.	4		R
	31g	Exit sign size 3000 x 1500mm on concrete surfaces.	No.	3		R
	31h	Enter sign size 3600 x 1500mm on concrete surfaces.	No.	12		R
	31i	Directional arrow size 750 x 1500mm on concrete surfaces.	No	11		R
	31j	Stop sign size 3000 x 1500mm on concrete surfaces.	No	9		R
	31k	Exit sign size 3000 x 1500mm on concrete surfaces.	No	3		R
	31l	Enter sign size 3600 x 1500mm on concrete surfaces.	No	6		R
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
84	32	Artisan				
84	33	Artisan Assistant				
84	34	General labourer	Hr	1		R

		<u>Work to be done after normal working hours</u>				
84	35	Artisan	Hr	1		R
85	36	Artisan Assistant	Hr	1		R
85	37	General labourer	Hr	1		R
		<u>Materials</u>				
85	38	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
85	39	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
Bill Total Carried To Sectional Summary						R

SECTION 3 BUILDING WORKS SUMMARY						
		BILL NO.1 : EARTHWORKS				R
		BILL NO.2 : CONCRETE, FORMWORK AND REINFORCEMENT (PROVISIONAL)				R
		BILL NO.3 : PRECAST CONCRETE				R
		BILL NO.4 : MASONRY				R
		BILL NO.5 : WATERPROOFING				R
		BILL NO.6 : ROOF COVERINGS				R
		BILL NO.7 : CARPENTRY AND JOINERY				R
		BILL NO.8 : CEILINGS, PARTITIONS AND ACCESS FLOORING				R
		BILL NO.9 : FLOOR COVERINGS				R
		BILL NO.10 : IRONMONGERY				R
		BILL NO.11 : METALWORK				R
		BILL NO.12 : PLASTERING				R
		BILL NO.13 : TILING				R
		BILL NO.14 : GLAZING				R
		BILL NO.15 : PAINTWORK				R
	TOTAL CARRIED TO FINAL SUMMARY					R

CAMDEN POWER STATION BIUILDING MAINTENANCE PROVISIONAL BILLS OF QUANTITIES						
Page	Item	Description	Unit	Quantity	Rate	
		<p><u>SECTION NO 5: PLUMBING AND DRAINAGE</u></p> <p><u>PREAMBLES</u></p> <p>The Tenderer is referred to the relevant clauses in the latest edition of the Model Preambles for Trades and to the Supplementary Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Overtime work and normal work including Weekends and Public Holidays:</u></p> <p>The tenderers are advised that the following works may be done during normal working hours as well as after normal working hours. Tenderers must make due allowance for these working hours in the pricing as no claims will be entertained in this regard.</p> <p><u>Rate Approvals:</u></p> <p>The tenderer is advised that any rate that is required for new work must include the following breakdown:</p> <p>Material, labour, plant, wastage, transport and profit.</p> <p>Rate approvals must be authorised by the Eskom ERE (KZN) Official prior to work being carried out.</p> <p><u>MAINTENANCE WORK TO EXISTING PLUMBING AND DRAINAGE</u></p> <p><u>REMOVING OF EXISTING SANITARY FITTINGS</u></p> <p><u>Taking out and removing sanitary fittings including making good wall and floor finishes and stop off services</u></p>				
1	2	Plastic cistern and flush pipe.	No.	45		R
1	3	Stainless steel catering double bowl potwashing sink unit.	No.	21		R
1	4	Stainless steel cistern	No.	56		R
1	5	Stainless steel curved back urinal not exceeding 900mm wide	No.	32		R
1	6	Stainless steel curved back urinal exceeding 900mm and not exceeding 2135mm wide.	No.	12		R
1	7	Stainless steel curved back urinal exceeding 2200mm and not exceeding 3500mm wide.	No.	15		R
1	8	Stainless steel curved back urinal exceeding 3600mm and not exceeding 4600mm wide.	No.	17		R
1	9	Stainless steel single bowl sink 1500mm on brackets or sink unit.	No.	34		R
1	10	Stainless steel double bowl sink 1500mm long on brackets or sink unit.	No.	15		R
1	11	Stainless steel double bowl sink 1800mm long on brackets or sink unit.	No.	9		R
1	12	900mm Wide stainless steel single wash hand basin.	No.	38		R
1	13	Stainless steel triple wash hand basin range.	No.	3		R
1	14	Stainless steel wall hung bowl urinal	No.	46		R
1	15	Stainless steel WC pan and cistern.	No.	27		R
1	16	Stainless steel WC pan and flush valve.	No.	66		R

2	17	Stainless steel single bowl wash trough	No.	17	R
2	18	Stainless steel double bowl wash trough	No.	18	R
2	19	Stainless steel triple bowl wash trough	No.	5	R
2	20	Vitreous china low level cistern and flush pipe.	No.	47	R
2	21	Vitreous china high level cistern and flush pipe.	No.	23	R
2	22	Vitreous china wall hung urinal and flush valve	No.	18	R
2	23	Vitrious china wash hand basin	No.	78	R
2	24	Vitrious china WC suite	No.	31	R
2	25	Precast concrete or fibre cement single wash trough	No.	4	R
2	26	Precast concrete or fibre cement double or triple wash trough	No.	7	R
		<u>Carefully taking out and setting aside for re-use sanitary fittings including making good wall and floor finishes and temporarily stop off services:</u>			
2	27	Stainless steel curved back urinal not exceeding 900mm wide	No.	7	R
2	28	Stainless steel curved back urinal exceeding 900mm and not exceeding 2135mm wide.	No.	4	R
2	29	Stainless steel curved back urinal exceeding 2200mm and not exceeding 3500mm wide.	No.	3	R
2	30	Stainless steel curved back urinal exceeding 3600mm and not exceeding 4600mm wide.	No.	6	R
2	31	Stainless steel single bowl sink 1500mm on brackets or sink unit.	No.	7	R
2	32	Stainless steel double bowl sink 1500mm long on brackets or sink unit.	No.	5	R
2	33	Stainless steel double bowl sink 1800mm long on brackets or sink unit.	No.	4	R
2	34	Stainless steel single wash hand basin.	No.	12	R
2	35	Stainless steel triple wash hand basin range.	No.	4	R
2	36	Stainless steel wall hung bowl urinal	No.	8	R
2	37	Stainless steel combination bed pan and wash-up sink unit.	No.	6	R
2	38	Stainless steel single bowl wash trough	No.	4	R
2	39	Stainless steel double bowl wash trough	No.	3	R
2	40	Stainless steel triple bowl wash trough	No.	2	R
2	41	Stainless steel bed pan and bottle rack	No.	5	R
2	42	Vitrious china single wash hand basin	No.	8	R
2	43	Vitrious china slophopper (cistern removal elsewhere measured).	No.	12	R
2	44	Vitrious china wall hung urinal and flush valve	No.	7	R
2	45	Vitrious china WC suite	No.	8	R
3	46	1000 x 1000mm Drip tray with 100mm high upstand with top edge bent over all round including 50mm diameter overflow pipe 1500mm long approximately 3,3m above floor level	No.	6	R

		<u>REFIXING OF SANITARY FITTINGS PREVIOUSLY SET ASIDE FOR RE-USE</u>				
		<u>Refixing of sanitary fittings complete in position and connected to services:</u>				
3	47	Stainless steel catering double bowl potwashing sink unit.	No.	7		R
3	48	Stainless steel curved back urinal not exceeding 900mm wide	No.	4		R
3	49	Stainless steel curved back urinal exceeding 900mm and not exceeding 2135mm wide.	No.	3		R
3	50	Stainless steel curved back urinal exceeding 2200mm and not exceeding 3500mm wide	No.	6		R
3	51	Stainless steel curved back urinal exceeding 3600mm and not exceeding 4600mm wide.	No.	7		R
3	52	Stainless steel single bowl sink 1500mm on brackets or sink unit.	No.	5		R
3	53	Stainless steel double bowl sink 1500mm long on brackets or sink unit.	No.	4		R
3	54	Stainless steel double bowl sink 1800mm long on brackets or sink unit.	No.	12		R
3	55	Stainless steel single wash hand basin.	No.	4		R
3	56	Stainless steel slophopper unit with grid (cistern elsewhere measured removed)	No.	8		R
3	57	Stainless steel triple wash hand basin range.	No.	6		R
3	58	Stainless steel wall hung bowl urinal	No.	4		R
3	59	Stainless steel combination bed pan and wash-up sink unit.	No.	3		R
3	60	Stainless steel single bowl wash trough	No.	2		R
3	61	Stainless steel double bowl wash trough	No.	5		R
3	62	Stainless steel triple bowl wash trough	No.	8		R
3	63	Stainless steel bed pan and bottle rack	No.	12		R
3	64	Vitrious china single wash hand basin	No.	7		R
3	65	Vitrious china slophopper (cistern removal elsewhere measured).	No.	8		R
3	66	Vitrious china wall hung urinal and flush valve	No.	8		R
3	67	Vitrious china WC suite	No.	4		R
		<u>REMOVAL OF EXISTING WATER SUPPLY AND FITTINGS</u>				
		<u>Taking off and removing defective water supply pipe and fittings:</u>				
3	68	Fitting to copper pipe not exceeding 30mm diameter	No.	149		R
3	69	Fitting to copper pipe not exceeding 50mm diameter	No.	167		R
		<u>Hacking off plaster and locating defective pipe fittings in walls and replacing with Conex brass compression fittings:</u>				
3	70	Fitting to copper or polyethylene pipe not exceeding 30mm Diameter	No.	156		R
3	71	Fitting to copper or polyethylene pipe not exceeding 50mm Diameter	No.	143		R

		<u>Taking off and removing piping including holderbats, fittings, etc. including disconnecting piping from fittings and making good wall and floor finishes (making good tiling and paintwork elsewhere measured)</u>				
4	72	Surface mounted piping not exceeding 50mm Diameter	m	133		R
4	73	Surface mounted piping exceeding 50mm but not exceeding 100mm diameter	m	210		R
4	74	Surface mounted piping exceeding 100mm but not exceeding 150mm diameter	m	321		R
4	75	15mm Pillar/Bib tap, including temporary stopping off of service	No.	176		R
4	76	20mm Pillar/bib tap, including temporary stopping off of service	No.	155		R
4	77	15mm Underwall stopcock, including temporary stopping off of services	No.	87		R
4	78	20mm Underwall stopcock, including temporary stopping off of services	No.	56		R
4	79	Shower rose, extension pipe and swivel head	No.	79		R
4	80	Shower rose, extension pipe and swivel head, riser pipe and underwall stopcocks	No.	54		R
4	81	Shower mixer set	No.	59		R
4	82	High pressure water heater/Hydo Boilers, including temporarily stopping off service (new geyser/hydo Boilers elsewhere measured)	No.	43		R
		<u>MAINTENANCE OF EXISTING WATER SUPPLY AND FITTINGS</u>				
		<u>Plumbing Maintenance</u>				
4	83	Unblock existing 110mm diameter waste water pipe	m	222		R
4	84	Unblock urinal trap	No.	44		R
4	85	Replace 15mm chromium plate tap heads.	No.	47		R
4	86	Replace 15mm or 20mm tap washers.	No.	66		R
4	87	Replace ball valve complete with and including Cobra No. 700 Float valve and plastic ball	No.	89		R
4	88	Replace syphonic cistern valve with Cobra No. 780-235 syphonic flushing valve unit complete with handle, cap and back nuts and flushpipe	No.	75		R
4	89	Replace flush pipe rubber between cistern and pan	No.	44		R
4	90	Refix cistern to wall including 6mm rawl bolts or 6mm diameter Eureka threaded rods	No.	72		R
4	91	Remove and replace pan connector	No.	87		R
4	92	Refix basin to wall including 6mm rawl bolts or 6mm diameter Eureka threaded rods	No.	65		R
4	93	Replace missing cistern lid	No.	47		R
4	94	Remove undertile stopcocks and shower rose and stop off.	No.	54		R
4	95	Service Electric Geyser as and when required	No	23		R
4	96	Replace thermostat and element	No	19		R
4	97	Seal existing copper leaks with epoxy	No	88		R
4	98	Seal existing PVC pipe 50 to 100mm diameter leaks with epoxy	No	36		R

<u>MAINTENANCE OF EXISTING STORMWATER</u>						
4	99	Excavate to expose and remove existing storm water pipes not exceeding 1m deep including backfilling with selected fill compacting to 95% Mod Aashto and level to match existing.	m	578		R
5	100	Excavate to expose and remove existing storm water pipes exceeding 1m and not exceeding 2m deep including backfilling with selected fill compacting to 95% Mod Aashto and level to match existing.	m	344		R
5	101	Break up and remove existing brick stormwater inspection chamber not exceeding 1m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing.	m	167		R
5	103	Break up and remove existing brick stormwater inspection chamber exceeding 1m and not deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing ground surface.	m	221		R
5	104	Break up and remove existing concrete circular stormwater inspection chamber not exceeding 1m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing ground surface.	m	249		R
5	105	Break up and remove existing concrete circular stormwater inspection chamber exceeding 1m and not exceeding 2m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing ground surface.	m	178		R
<u>Grating</u>						
5	106	Remove existing 450 x 600mm x 68kg type 9D cast iron single seal manhole cover, frame and replace with new	No.	19		R
5	107	Remove existing 450 x 600mm x 117kg type 9D cast iron single seal manhole cover, frame and replace with new	No.	33		R
5	108	Remove existing precast circular manhole cover, frame and replace with new 150mm thick manhole cover slab size 1670 x 16770mm cover slab with 150mm thick x 620mm with 150mm x 620mm diameter removable cover.	No.	56		R
<u>Rodding</u>						
5	109	Allow for rodding stormwater line clean	m	1800		R
5	110	Allow for cleaning stormwater inspection chamber	No.	98		R
<u>Testing</u>						
5	111	Allow for testing drainage pipe system	item	21		R
<u>MAINTENANCE OF EXISTING SEWER</u>						
5	112	Excavate to expose and repair existing sewer pipes not exceeding 1m deep including backfilling with selected fill compacting to 95% Mod Aashto and level to match existing.	m	268		R
5	113	Excavate to expose and repair existing sewer pipes exceeding 1m and not exceeding 2m deep including backfilling with selected fill compacting to 95% Mod Aashto and level to match existing.	m	349		R
5	114	Break up and remove existing brick sewer inspection chamber not exceeding 1m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing.	m	166		R
5	115	Break up and remove existing brick sewer inspection chamber exceeding 1m and not deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing.	m	137		R
5	116	Break up and remove existing concrete circular sewer inspection chamber not exceeding 1m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing.	m	233		R
5	117	Break up and remove existing concrete circular sewer inspection chamber exceeding 1m and not exceeding 2m deep including backfilling with selected fill, compacting to 95% Mod Aashto and level to match existing.	m	166		R

		<u>Grating</u>				
6	118	Take up and remove existing 1050mm diameter 180kg type ZA cast iron manhole cover and frame and replace with new.	No.	22		R
6	119	Remove existing 450 x 600mm x 117kg type 9D cast iron single seal manhole cover and frame and replace with new	No.	23		R
6	120	Remove existing precast circular manhole cover, frame and replace with new 1640 x 1640 x 170mm heavy duty precast manhole cover slab including bedding edges all round in cement mortar.	No.	19		R
		<u>Rodding</u>				
6	121	Allow for rodding sewer line clean	m	1806		R
6	122	Allow for cleaning sewer inspection chamber	No.	76		R
		<u>Testing</u>				
6	123	Allow for testing drainage pipe system	item	21		R
		<u>REMOVAL OF EXISTING RAINWATER GOODS</u>				
		<u>Taking off and removing piping, gutters, etc. and making good wall finishes (making good paintwork elsewhere measured)</u>				
6	124	UPVC rainwater pipes and holderbats.	m	144		R
6	125	UPVC eaves gutter and brackets	m	267		R
6	126	Fibre cement rainwater pipe and holderbats	m	357		R
6	127	Fibre cement eaves gutter and brackets	m	266		R
6	128	Sheet metal rainwater pipe and holderbats	m	548		R
6	129	Sheet metal eaves gutter and brackets	m	374		R
		<u>MAINTENANCE OF EXISTING RAINWATER GOODS</u>				
		<u>Cleaning out rain of rainwater goods</u>				
6	131	Clean out fibre cement eaves gutters internally, rake out joints and re-seal with a polysulphide sealant	m	1600		R
6	132	Dismantle and clean out fibre cement eaves gutters, re-assemble with new gutter bolts and re-seal with a polysulphide sealant	m	668		R
6	133	Clean out existing valley lining of all vegetation and debris	m	326		R
6	134	Clear existing eaves gutter and rainwater outlet of all vegetation and debris	m	257		R
6	135	Take down and remove half round gutter brackets and replace with new aluminium brackets with new galvanised bolts	No.	188		R
6	136	Take down and remove 152x152 gutter brackets and replace with new aluminium brackets with new galvanised bolts	No.	144		R
6	137	Clear existing full-bore outlets and storm water inlets of all vegetation and debris.	No.	63		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				

		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
7	138	Artisan	Hr	1		R
7	139	Artisan Assistant	Hr	1		R
7	140	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
7	141	Artisan	Hr	1		R
7	142	Artisan Assistant	Hr	1		R
7	143	General labourer	Hr	1		R
		<u>Materials</u>				
7	144	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
7	145	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
		<u>NEW WORK TO PLUMBING AND DRAINAGE</u>				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Rate Approvals:</u>				
		The tenderer is advised that any rate that is required for new work must include the following breakdown:				
		Material, labour, plant, wastage, transport and profit.				
		Rate approvals must be authorised by the Eskom ERE (KZN) Official prior to work being carried out.				
		<u>Compensation events:</u>				
		Tenderers are advised that there is a three month delay in the approval of compensation events. In respect of this delay, no pending compensation events will be paid for until such time as we receive approval for the compensation events. Tenderers must make due allowance for this possible delay in their tenders.				

		<u>Watertite Guttering commercial and industrial Square profile aluminium H3003h 1 seamless gutter coated internally and externally with ColourTech G4 in colour Marble White with matching splash-plate including cut and mitred angles covered with a mitred strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to metal roof sheets with 25 x 2.5mm L-Shaped and 20 x 3mm dual-purpose brackets at 600mm centres using aluminium pop rivets, including a 50 x 20mm high overflow spigot, with 75 x 100 x 0.9mm thick aluminium downpipe in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipe riveted and silicone sealed to gutter outlets:</u>				
10	1	140 x 150 x 0.9mm thick Watertite Guttering eaves gutter	m	344		R
10	2	Extra over seamless gutter for angle	No	77		R
10	3	Extra over seamless gutter for stopped end	No	56		R
10	4	Extra over seamless gutter for outlet	No	43		R
10	5	75 x 100mm Fluted aluminium rain water down pipe.	m	265		R
10	6	Extra over rainwater pipe for shoe	No	77		R
10	7	Extra over rainwater pipe for bend to fit 70 x 100mm fluted aluminium rain water down pipe.	No	58		R
10	8	Extra over rainwater pipe for eaves or plinth offset 600mm projection	No	59		R
		<u>0.8mm Zinkalume purpose made pressed metal box-gutter:</u>				
10	9	350 x 100mm Box-gutter bent to suit top of stanchion with fall to rain water down pipe outlets including expanded aluminium mesh leaf guard set over gutter	m	188		R
10	10	Extra over 350 x 100mm box-gutter for outlet	No	65		R
10	11	75 x 100mm Fluted aluminium rain water down pipe.	m	210		R
10	12	Extra over rainwater pipe for shoe	No	87		R
		<u>SANITARY FITTINGS</u>				
		<u>"Franke stainless steel washtrough"</u>				
10	13	"Franke Grade 304 18/10" Stainless steel SIRX washtrough 500 x 450 x 240mm deep with slanted ribbed front site for scrubbing, PVC waste and plug with handle, fitted to wall on a pair of stainless steel brackets (code: 300367) pop-riveted to flange.	No	34		R
		<u>"Geberit Combifix"</u>				
11	14	"Geberit Combifix" concealed cistern for wall hung WC (code: 110.350.00.5), front actuated with Bolero dual-flush actuator (code: 115.777.11.1) in white Alpine finish, including flush pipe and pan connector, water supply connection with stop valve, protection cover for service opening and protection cover for flush pipe, fixed with included fastening materials inside solid wall from 120mm up to 200mm. All with Geberit conditional guarantee.	No	89		R

		<u>WC suites as specified or equally approved:</u>				
		NOTE: Angle stop/ regulating valves are to be "Cobra Watertech" 15mm code 832-350.				
11	15	WC paraplegic suite comprising 'JICA Dino' wall hung back entry washdown pan (code 8.2137.0) size 530 x 355mm with 'Duroplast' double flap white plastic seat with anti bacterial coating (code 8.9337.0) and pan connector, complete with 'Geberit Combifix' concealed cistern for wall hung WC (article No. 110.765.00.1), front actuated with 'SIGMA 20' dual flush actuator plate (article No. 115.778.KJ.1) in white enamel finish, including lid, fittings, low level flush pipe, netting for direct plastering, protection covers for service opening and flush pipe, water supply connection with angle stop valve, fixed with fastening materials inside solid wall from 90mm up to 120mm.	No	45		R
		<u>Vaal Sanitaryware:</u>				
11	16	'Vaal Sanitaryware Flamingo' vitreous china wall mounted basin (Colour: White - code: 7007), size 560 x 405mm with one tap-hole including overflow and chain- stay hole bolted to wall with two 10mm bolts (code: 8448Z0) and sealed with silicone sealant where basin meets wall with Cobra Watertech Metsi 15mm chrome plated basin mixer with cast fixed outlet, pop-up waste, mounting kit and angle valves (code: MI-294), manufactured in accordance with SANS 226: 2004 Type 2 (BS 5412).	No	23		R
11	17	Vaal Urinal Complete with wall hangers etc	no	17		R
		<u>"Franke stainless steel":</u>				
11	18	Franke Trendline Model 900 x 460 SEB grade 304 18/10 polished stainless steel Double End Bowl drop on sink (code: 312081), overall size 1200 x 535mm wide with two 343 x 410 140mm deep bowls, fitted onto cupboard including 38mm waste fitting and PVC trap	No	16		R
11	19	Franke Softline Model QLX 622 grade 304 18/10 polished stainless steel Double End Bowl drop on sink (code: 820018) overall size 1500 x 500mm wide with two 343 x 410 x 140mm deep bowls, fitted onto cupboard including 38mm waste fitting and PVC trap	No	19		R
		<u>TRAPS ETC</u>				
		<u>"Marley"</u>				
11	20	32 x 50mm Deep seal "P" or "S" trap	No	117		R
		<u>TAPS, VALVES ETC</u>				
		<u>"Brass"</u>				
11	21	22mm Stopcock	No	145		R
11	22	50mm Isolating valve	No	87		R

		<u>"Cobra Watertech"</u>				
11	23	15mm Chrome plated code XE 296 'Xena' pillar type sink mixer	No	48		R
11	24	32 mm 340 CP Bottle Trap	No	10		R
		<u>"Cobra Watertech"</u>				
11	25	15mm Cariva 404 CP underwall stop cock	No	6		R
11	26	15mm CP Fullway gate valve	No	7		R
11	27	15mm fullway ballcock	No	12		R
11	28	15 mm CP Wall type bib tap	No	15		R
11	29	Nova 433 Half chromium plated Shower cubicle set with under tile shower mixer 186 overhead shower arm no 027	No	19		R
11	30	15mm Cp Pillar Tap	No	15		R
11	30	Flush Master FS 6000	No	16		R
11	31	PB1.10RB vacuum breaker	No	12		R
11	32	PAI.1 RB "kWIKFLO pressure reducing valve	No	14		R
11	33	FJB102cp Flushmaster urinal flush valve	No	16		R
		<u>SANITARY PLUMBING</u>				
		<u>uPVC pipes</u>				
12	34	50mm Pipes	m	344		R
12	35	110mm Pipes	m	389		R
		<u>Extra over uPVC pipes for fittings</u>				
12	36	110mm Reducer	No	88		R
12	37	50mm Bend	No	66		R
12	38	50mm Junction	No	54		R
12	39	110mm Pan connector	No	64		R
12	40	50mm Access bend	No	63		R
12	41	110mm Access bend	No	68		R
12	42	50mm Access junction	No	43		R
12	43	110mm Access junction	No	34		R
12	44	50mm "GI Two-way" vent valve	No	49		R
		<u>WATER SUPPLIES</u>				
		<u>Class 2 copper pipes</u>				
12	45	15mm Pipes	m	289		R
12	46	15mm Pipes chased into brick walls	m	328		R
12	47	22mm Pipes	m	216		R
12	48	22mm Pipes chased into brick walls	m	286		R
12	49	28mm Pipes	m	174		R

		<u>Extra over class 2 copper pipes for capillary fittings</u>				
12	50	15mm Fittings	No	78		R
12	51	22mm Fittings	No	66		R
12	52	28mm Fittings	No	96		R
		<u>Copper overflow and service pipes</u>				
12	53	15mm Service pipe 500mm girth	No	44		R
		<u>ELECTRIC WATER HEATERS</u>				
12	54	5L Zip hydroboils	No	8		R
12	55	5L Zip hydroboils	No	12		R
		<u>KWIKHOT</u>				
12	56	100 Litre Kwikhot geyser complete with all fittings	No	9		R
12	57	150 Litre Kwikhot geyser complete with all fittings	No	13		R
	58	250 Litre Kwikhot geyser complete with all fittings	No	15		R
		<u>TESTING</u>				
12	59	Testing water pipe system	Item	21		R
		<u>HOT DIPPED GALVANISED MILD STEEL PIPES</u>				
		<u>Galvanised steel pipes:</u>				
12	60	25mm Diameter pipes	m	16		R
12	61	65mm diameter Galvanized Mild Steel Delivery Line.	m	21		R
12	62	65mm diameter Galvanized Mild Steel Delivery Line fully bedded in wet to dry epoxy where chased through walls.	m	45		R
12	63	110mm Diameter galvanised steel pipes	m	13		R
		<u>Extra over galvanised steel pipes for steel fittings:</u>				
13	64	65mm Bend.	No	12		R
13	65	65mm Tee	No	11		R
13	66	100mm Bend	No	9		R
13	67	100mm Tee	No	3		R
13	68	100mm Reducing tee	No	6		R
		<u>Sundries</u>				
13	69	225 x 225mm x 10kg Type 11B cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	21		R
		<u>TANKS ETC:</u>				
13	70	4500 litre Heavy Duty Vertical 'JO-JO' or other approved Chemical Tank	No	7		R
		<u>"Dorbyl Prestank" or similar approved</u>				
13	71	600mm Diameter oil separator tank including all accessories	No	1		R

		<u>HOLES ETC</u>				
		<u>Core drilling of hole for pipe exceeding 50mm and not exceeding 100mm diameter:</u>				
13	72	One brick wall	No	16		R
13	73	200mm Thick reinforced concrete slab, beam, wall, etc	No	25		R
		<u>uPVC pipes:</u>				
13	74	50mm Diameter syphon pipe.	m	51		R
		<u>Extra over uPVC pipes for fittings:</u>				
13	75	50mm Bend	No	4		R
		<u>STORMWATER DRAINAGE</u>				
		<u>Subsoil Drainage:</u>				
13	76	100mm Slotted uPVC agricultural pipes laid to falls in trench including 19mm crushed stone encasing overall size 400 x 400mm and including U14 'Bidim' filter fabric wrapped around encasing with 200mm stitched side, stitched endlaps and backfilling not exceeding 1000mm deep x 400mm wide with river sand.	m	43		R
		<u>Concrete stormwater channels:</u>				
13	77	Class 20MPa/19mm reinforced concrete in drainage "V" channel 600mm wide and 150mm maximum thickness, the top surface floated smooth on exposed faces with salient angles rounded, cast in lengths not exceeding 2000mm and laid to falls, including all necessary excavation, filling in and ramming around and all necessary formwork	m	66		R
	78	385 x 170 Precast Channel with 110 mm deep segmental channel	m	111		R
	79	459 x 170 Precast Channel with 310x 110 mm deep segmental channel	m	76		R
	80	Extra for angles,intersection,end dressing into sides	No.	23		R
		<u>Class 100D spigot and socket concrete pipes laid and jointed including excavation, Class C bedding, selected backfilling, risk of collapse, strutting and shoring, etc:</u>				
13	81	300mm Pipes laid in and including trenches not exceeding 1m deep.	m	136		R
13	82	300mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	78		R
		<u>uPVC Pipes, Class 34, laid and jointed including excavation, Class C bedding, selected backfilling, risk of collapse, strutting and shoring, etc:</u>				
13	83	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	23		R
13	84	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	44		R

		<u>SUMPS, CATCHPITS, MANHOLES, INSPECTION CHAMBERS, STORMWATER INLETS, ETC</u>				
		<u>Standard stormwater manhole, internal size 600 x 600mm and 1060 x 1060mm externally consisting of 1260 x 1260 x 200mm thick Class 20MPa/19mm reinforced concrete foundation, 230mm load bearing brickwork in NFX bricks with brickwork reinforcement every third course, and including concrete benching for the pipe with rendering at least 20mm thick of 1 part H.A.C and two parts sand applied to benching while concrete is still green, all to include formwork, reinforcement, excavation, backfilling, risk of collapse, etc.:</u>				
13	85	600 x 600mm Stormwater manhole not exceeding 1m deep	No	4		R
13	86	600 x 600mm Stormwater manhole exceeding 1m deep and not exceeding 1.5m deep	No	7		R
		<u>Excavate for and build standard concrete and brick catchpit to the internal depth to invert stated with 25MPa/26mm unreinforced concrete base and 25MPa/13mm unreinforced concrete benching and 25MPa/19mm reinforced precast concrete cover slab, the benching plastered with 20mm thick cement 1:3 mortar, and including all risk of collapse and backfilling compacted to 95% Mod AASHTO density on completion:</u>				
13	87	Catchpit 1000 x 1000mm and not exceeding 1000mm deep internally.	No.	3		R
13	88	Catchpit 1000 x 1000mm and exceeding 1000mm and not exceeding 1500mm deep internally.	No.	8		R
		<u>Standard stormwater grid inlet, internal size 550 x 550mm and 985 x 985mm externally consisting of 1000 x 1000 x 200mm thick Class 20MPa/19mm reinforced concrete foundation, 230mm load bearing brickwork in NFX bricks with brickwork reinforcement every third course, and including concrete benching, all to include formwork, reinforcement, excavation, backfilling, risk of collapse, etc.:</u>				
13	89	550 x 550mm Stormwater Grid inlet not exceeding 1m deep.	No	5		R
13	90	550 x 550mm Stormwater Grid inlet exceeding 1m deep and not exceeding 1.5m deep.	No	7		R
		<u>Gratings, Covers, etc:</u>				
13	91	450 x 600mm x 68kg Type 9D cast iron single seal manhole cover and frame.	No.	11		R
13	92	450 x 600mm x 117kg Heavy duty cast iron dished grating and frame.	No.	4		R
13	93	600mm Diameter precast concrete medium duty stormwater lid. (Splayed inlets)	No	2		R
		<u>Sundries:</u>				
13	94	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in intermediate material.	m³	11		R
13	95	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock material.	m³	16		R

13	96	Extra over excavation for pipe trenches, chambers, etc for carting away surplus material to a dumping site to be located by the Contractor.	m³	18	R
13	97	Unreinforced concrete encasing 100mm thick to 160mm pipe in trench.	m	22	R
13	98	Unreinforced concrete encasing 100mm thick to 300mm pipe in trench.	m	47	R
13	99	Unreinforced concrete encasing 100mm thick to 450mm pipe in trench.	m	43	R
13	100	Cut into existing manhole for and insert 450mm diameter concrete pipe and make good.	No.	6	R
13	101	Break up and remove and fill in existing manhole not exceeding 2m deep.	No.	7	R
		<u>Keeping excavations free of water:</u>			
13	102	Keeping excavations free of all water other than subterranean water.	Item	1	R
		<u>Subterranean Dewatering:</u>			
13	103	Allow for supplying a 50mm diameter submersible pump delivering approximately 500 litres per minute with and including a minimum 10m length of discharge hose for pumping away of any subterranean water which may surface in foundation trenches, etc.	Hr	60	R
		<u>SOIL DRAINAGE</u>			
		<u>HD uPVC pipes laid and jointed including excavation, selected backfilling, risk of collapse, strutting and shoring, etc:</u>			
13	104	110mm Pipes laid in and including trenches not exceeding 1m deep.	m	55	R
13	105	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep.	m	58	R
13	106	110mm Pipes laid in and including trenches exceeding 2m and not exceeding 3m deep.	m	32	R
		<u>Inspection chambers (covers elsewhere):</u>			
13	107	Inspection chambers are to have brick reinforcement to every third course of brick walls.			
13	108	Inspection chambers are given in number, classified in depths not exceeding 1000mm deep to invert levels and thereafter in stages of 500mm.			
		<u>Standard concrete and NFX brick inspection chamber to the internal depth to invert stated with 25MPa/26mm unreinforced concrete base and 20MPa/13mm unreinforced concrete benching and 25MPa/19mm reinforced concrete cover slab, the benching plastered with 20mm thick cement 1:3 mortar, all to include formwork, reinforcement, excavation, backfilling, risk of collapse, etc.:</u>			
13	109	Inspection chamber 1000 x 1000mm and not exceeding 1000mm deep internally.	No.	8	R

13	110	<p>Inspection chamber 1000 x 1000mm and exceeding 1000mm and not exceeding 1500mm deep internally.</p> <p><u>Standard concrete sewer manhole chambers 1m diameter chamber to the internal depth to invert stated with 25MPa/26mm unreinforced concrete base and 20MPa/13mm unreinforced concrete benching and 25MPa/19mm reinforced concrete cover slab, the benching plastered with 20mm thick cement 1:3 mortar, all to include formwork, reinforcement, excavation, backfilling, risk of collapse, etc.:</u></p>	No.	5	R
13	111	Inspection chamber 1000mm diameter and not exceeding 1m deep internally.	No	9	R
13	112	Inspection chamber 1000mm diameter and exceeding 1m and not exceeding 1.5m deep internally.	No	5	R
		<u>Grease trap chamber:</u>			
13	113	<p>Excavate for and build standard three compartment concrete and brick grease trap size overall 4290 x 1460 x 1480mm deep to invert, with 25MPa/19mm reinforced concrete base and cover slabs, both reinforced with one layer ref. 193 mesh, the base 150mm thick, the cover slab 180mm thick with three openings for 450 x 600mm covers (elsewhere), with one brick external wall and two half brick partition walls (all NFX bricks), all internal surfaces plastered with 10mm thick waterproofed cement 1:3 mortar, and including all risk of collapse and backfilling on completion. The grease trap is to be provided with the following 110mm PVC fittings: 1No. 800mm girth bend inlet, 1 No. 1300mm girth bend outlet with short portion cut to channel, and 2 No. 1400mm girth T bend transition pipes.</p> <p><u>Gratings, covers, etc:</u></p>	No.	1	R
13	114	Precast concrete 35MPa/13mm 'dogbone' cover unit size 500 x 165 x 155mm, finished smooth on all surfaces, including steel reinforcement, set in recess in chamber. (Grease trap)	No.	1	R
13	115	225 x 225mm x 10kg Cast iron single seal manhole cover and frame. (Grease trap)	No.	4	R
13	116	450 x 600mm x 68kg Type 9D cast iron single seal manhole cover and frame.	No.	13	R
13	117	450 x 600mm x 117kg Heavy duty cast iron single seal manhole cover and frame.	No.	14	R
		<u>Special Backfilling:</u>			
13	118	G2 material compacted to 98% Mod AASHTO density.	m³	56	R
13	119	River sand bedding and backfilling compacted to 93% Mod AASHTO density.	m³	88	R
		<u>Sundries:</u>			
13	120	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in intermediate material.	m³	16	R
13	121	Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock material.	m³	12	R
13	122	Unreinforced concrete encasing 100mm thick around 110mm uPVC pipe in trench	m	23	R
13	123	Unreinforced concrete encasing 100mm thick around 200mm uPVC pipe sleeve in trench	m	13	R

		<u>Keeping excavations free of water:</u>				
13	124	Keeping excavations free of all water other than subterranean water.	Item	1		R
		<u>Subterranean Dewatering:</u>				
13	125	Allow for supplying a 50mm diameter submersible pump delivering approximately 500 litres per minute with and including a minimum 10m length of discharge hose for pumping away of any subterranean water which may surface in foundation trenches, etc.	Hr	56		R
		<u>Testing:</u>				
13	126	Testing drainage pipe system.	Item	1		R
		<u>HOURLY RATE</u>				
		The tenderer is advised that the following items are Labour Rates for items not covered in this Bills of Quantities.				
		Tenderers are advised that all labour charges and transport charges must be procured from the closest to the effected site.				
		Any call out work commenced during working hours and completed after normal working hours will be compensated by using normal working hour rates only.				
		Any call out work commenced after normal working hours will be compensated by using after normal working hour rates only.				
		Prior written approval must be received from the Eskom Official prior to commencement of work.				
		<u>Work to be done from Monday to Friday between 7:30am and 4pm:</u>				
13	127	Artisan	Hr	1		R
13	128	Artisan Assistant	Hr	1		R
13	129	General labourer	Hr	1		R
		<u>Work to be done after normal working hours Weekends and Public Holidays</u>				
14	130	Artisan	Hr	1		R
14	131	Artisan Assistant	Hr	1		R
14	132	General labourer	Hr	1		R
		<u>Materials</u>				
14	133	Percentage Mark Up =	10%	Percentage		R
		<u>Transport</u>				
		Payment for transport/traveling will be paid in excess of a 30Km round trip from Centre of ERMELO CBD				
14	134	Cost of transport/ travelling (Toll Fees to be allowed for in tendered rates)	km	1		R
TOTAL CARRIED TO FINAL SUMMARY						R

CAMDEN POWER STATION BIUILDING MAINTENANCE PROVISIONAL BILLS OF QUANTITIES

FINAL SUMMARY

	Bill No.		Page		Amount
	1	PRELIMINARIES	1-31	R	
	2	ALTERATIONS	2-24	R	
	3	BUILDING WORKS	3-87	R	
	4	PLUMBING AND DRAINAGE	5-17	R	
		Sub-Total		R	
		Allow 5% Contingencies on the above total to be used at the discretion of the Project Manager and deducted in part if so required.		R	
		Sub-Total		R	
		ADD:			
		15% VAT		R	
		TOTAL CARRIED TO FORM OF OFFER		R	