



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF PUBLIC WORKS**  
**ROADS AND INFRASTRUCTURE**

**CLOSING DATE**

**CLOSING TIME**

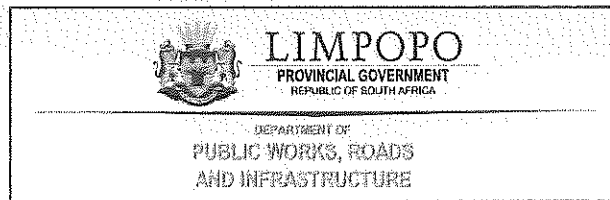
**11h00**

**LDPWRI-B/20051**

**BILLS OF QUANTITIES**  
**FOR THE**  
**CONSTRUCTION OF NEW EMS SATELLITE**  
**STATION AT LEBOWAKGOMO**  
**CAPRICORN DISTRICT**

**CIDB CLASS GRADING 7GB OR HIGHER**

**APRIL 2021**



**SPECIAL CONTRACT CONDITIONS**

Note The clauses in these Special Contract Conditions form part of the contract requirements and shall have preference over any contradicting clauses in these Bills of Quantities, the Preliminaries and the Conditions of Contract.

- The relevant CIDB category for this contract is 7GB. Please note that only contractors categorized as so or better, are able to tender for this project.

**1. BILLS OF QUANTITIES**

The Contractor is warned that should he use any quantities or specifications appearing in these Bills of Quantities for the purpose of ordering materials, he does so at his own risk. The Employer does not warrant the correctness of such quantities or specifications and shall admit no liability whatsoever afterwards.

**2. BUILDINGS**

The work described in these Bills of Quantities comprises the erection and completion a new EMS Satellite Station.

The buildings are single storey with brick walls, face brick walls externally and plastered and painted walls internally, ceilings and roof sheeting on timber trusses. There are existing building that need to be altered and Enviroloo toilets that need to be erected

**3. SITE**

The site is Erf 34, Lebowakgomo BA, Lepelle-Nkumpi Municipality, Capricorn District. The Construction area will be clearly indicated by the project manager. Contractors are advised to inspect the site at their leisure. Co-ordinates Latitude: 24°19'7,96"S, Longitude: 29°28'51,56"E

**4. VALUE ADDED TAX**

Value added tax must be added to the contract amount in the Final Summary and all amounts, rates, etc. in the Bills of Quantities will therefore be exclusive of value added tax.

**5. PROPRIETARY TYPES AND TRADE NAMES**

Where reference is made in these Bills of Quantities to proprietary types or names, the products or materials, etc., referred to are to be exactly as described; the prior approval of the Architects must be obtained for any substitution and may be the subject to a variation order.

**6. S.A.N.S. SPECIFICATIONS**

All references in these Bills of Quantities to South African National Standard (SANS) or Specifications of the Bureau of Standards shall be deemed to be reference to the latest issues of such specifications, and any subsequent amendments thereto. All articles, materials or items described as to conform to the S.A.N.S. Specification must bear the S.A.N.S.

7. **TENDERS**

Tenders are to be submitted on the form provided and delivered to the address indicated thereon, on or before the time and date stipulated thereon. Late, faxed, telegraphic or emailed tenders will not be considered.

8. **LOWEST TENDER**

The Employer does not bind himself to accept the lowest or any tender.

9. **AVAILABILITY AND SUBSTITUTIONS OF MATERIALS**

Tenderers are urged to make themselves *during tender stage* thoroughly acquainted with the availability of all materials for this project as no claim for non-availability or late delivery of materials will afterwards be recognised. If materials specified are not available or it seems that there will be a delay of materials, then the Tenderer must notify the Principal Agent at once in writing who will, at his own discretion, attend to the matter. Once the tenders are handed in it will be taken that all materials as specified in these Bills of Quantities are available and will be delivered on site for completion of the project within the prescribed contract period. Substitution will be strictly subject to the Principal Agent's approval. The Contractor must, as far as possible, purchase materials available in Limpopo Province, provided the quality is acceptable. Materials of an inferior quality shall under no circumstances be accepted. If the contractor cannot comply with these conditions, he must substantiate this in writing with documentary proof from suppliers.

10. **PROCEDURE OF THE WORK**

The Principal Agent reserves the right to direct the order in which the various parts of the contract will be executed should circumstances warrant such action.

11. **TREATMENT OF TIMBER**

For the protection against insect infestation, all softwood and hardwood timber throughout this project is to be treated by an approved method. Contractors must produce satisfactory evidence that all timber used has been subjected to an approved treatment and such evidence must be submitted to the Principal Agent for record purposes. On no account may any untreated timber be used in a building.

12. **LOCAL LABOUR**

Apart from supervisory and key personnel, the Contractor shall employ only local citizens from the district for the execution of the Contract. Under no circumstances, however, shall inferior workmanship be accepted due to these requirements. The contractor is urged to employ local artisans, sub-contractors and the like as it would be advantageous to the contractor to do so.

13. **LODGING AND SCRUTINY OF PRICED BILLS OF QUANTITIES**

The Contractor's attention is specifically directed to the provision that, before the contract is signed, he is to deposit with the Quantity Surveyor his priced Bill of Quantities extended and cast neatly in black ink for checking. The Quantity Surveyor will duly check the priced Bills of Quantities and shall make such adjustment of individual prices and rectify discrepancies, as he may consider necessary. No artificial prices shall be acceptable.

14. **FINAL INSPECTION OF WORKS**

Final inspection of the works will only be carried out on written request from the Contractor. Where more than two final inspections are made due to non-completion of the buildings, all related costs incurred by the Consultants will be for the Contractor's account and deducted from any monies that will become payable to the Contractor. Contractors must clearly reflect dates of inspections as well as identify buildings or structures for control of inspection dates.

15. **EXISTING AND ADJACENT BUILDINGS**

There are adjacent and existing buildings on the site. Under no circumstances can the entrance of the existing occupants be inaccessible. The contractor is to ensure that the present occupants are not disturbed by noise, dust and other encumbrances. There are buildings on the adjacent properties and the contractor is to acquaint himself of the positions and conditions of these buildings at tender's stage

16. **CONTRACTING STAFF**

Tenderers are to submit with their tender a list of all senior staff such as foremen, engineers, contract managers, etc. that will be employed on his contract together with a summarised CV of each person.

17. **VARIATIONS**

Where prices are submitted by the Contractor or Nominated Sub-Contractors during the progress of the works in respect of variations or in regard to a claim under the terms of the contract and notwithstanding the fact that such prices may be used in an interim certificate, it is hereby agreed that there is to be no presumption of acceptance. Should the Principal Agent and/or Quantity Surveyor wish to accept any such prices prior to the issue of the final certificate, he/they will do so in writing.

18. **CONSTRUCTION GUARANTEE**

The tenderer must submit with this tender proper proof (by means of a letter of intent or otherwise) from his guarantor that his guarantor will issue the necessary guarantees if the tender is accepted.

19. **SITE MEETING ROOM**

The contractor shall erect, maintain and take down on completion of the work a building for site meetings with a concrete floor, suitable roof, suitable walls, door and four windows, with tables and chairs (not benches), all suitable to accommodate 15 persons.

It is further a condition that all work or movement of vehicles in the vicinity of this office that create noise or nuisance during site meetings, must be suspended for the duration of the site meetings.

20. **TESTS**

It is the responsibility of the contractor to carry out his own tests during the contract to check the strength of concrete, mortar, etc. density of filling, etc. and only those tests as requested for by the Principal Agent, will be paid for by the client.

21. **MONEY PROVISIONS**

Wherever an amount for work is allowed in these Bills of Quantities under the term "Money Provision", it shall be taken that such amount is for work to be carried out by the Main Contractor or Specialists (who will be ordinary domestic sub contractors to the main contractor) at rates in these Bills of Quantities.

22. **PROVISIONAL WORK**

Any increase or decrease of work measured provisionally will not be sufficient grounds for any adjustments in the tendered rates or an adjustment to the amount of Preliminaries

23. **BLASTING**

No blasting whatsoever will be allowed for excavation of rock.

24. **BORROW PITS**

It is the responsibility of the contractor to find the necessary borrow pits for imported filling and also to ascertain the suitability and acceptability of such filling, as no claims in this regard will be entertained afterwards.

25. **LOCATIONAL BILLS OF QUANTITIES**

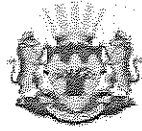
These bills of quantities has the following location structure:

T - Building Works

- T1 - Main Building
- T2 - Existing Building
- T3 - Guard House
- T4 - Pump Station
- T5 - Enviroloo Toilets
  - T51 – Type F4 Female Toilets
  - T52 – Type M2 Male Toilets
  - T53 – Type M3 Male Toilets

U - External Works

U1 - General Site Works



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DEPARTMENT OF  
**PUBLIC WORKS, ROADS & INFRASTRUCTURE**

It is estimated that tenders must have a CIDB Contractor grading of  
CIDB Class Grading 7GB or Higher

**CONTRACT NO: LDPWRI- B/20051**

**FOR**

**CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO:  
CAPRICORN DISTRICT**

**PROCUREMENT DOCUMENT**

**NAME OF TENDERER:** \_\_\_\_\_

**TENDER SUM:** \_\_\_\_\_

**ISSUED BY:**

**DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE PRIVATE BAG X9491  
POLOKWANE 0700**

**Tel: (015) 284 7000**

Name of the Bidder : .....

0006



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
PUBLIC WORKS, ROADS  
AND INFRASTRUCTURE

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CONTRACT No. LDPWRI - B/20051

CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO: CAPRICORN DISTRICT

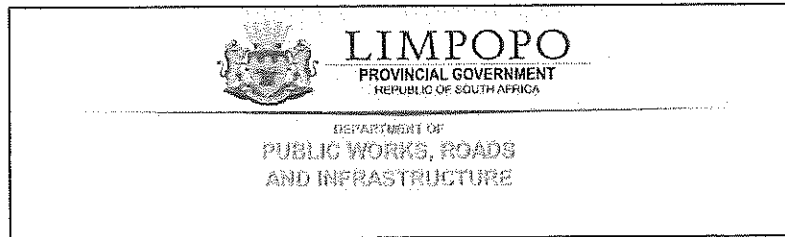


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DEPARTMENT OF  
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## **PART T1: TENDERING PROCEDURE**





## T1.1 Tender Notice and Invitation to Tender

The Limpopo Department of Public Works, Roads and Infrastructure invites tenders for the CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO: CAPRICORN DISTRICT for a period of **16 months**.

It is estimated that tenderers should have a CIDB grading designation of 7GB or higher (Infrastructure).

Only tenderers who meet the minimum requirements stated in the tender data are eligible to submit tenders.

The bid document is uploaded on the departmental website for the bidder to download and print the entire document. Website: <http://www.dpw.limpopo.gov.za>.

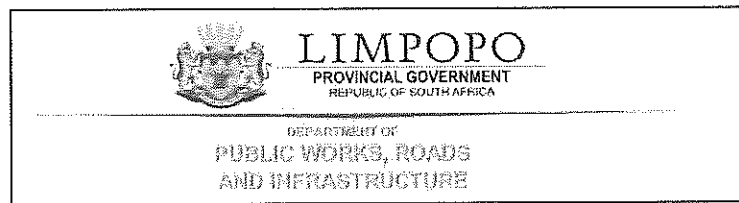
Queries relating to the issue of these documents may be addressed in writing to **Mr T. Maswanganyi, Tel. No. 015 284 7123**. E-mail: [maswanganyiT@dpw.limpopo.gov.za](mailto:maswanganyiT@dpw.limpopo.gov.za).

A compulsory clarification meeting with representatives of the Employer will take place at Erf 34 Lebowakgomo BA, Lepelle Nkumbi Municipality. Co-ordinates, Latitude: 24°19,7.96"S, Longitude: 29°28'51.56"E on site as **per thé advert** in tender bulletin.

The closing date and time for receipt of tenders is as **per the advert**. Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be accepted.

Tenders must only be submitted on the tender documentation that is issued including priced bills of quantities.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.



## T1.2 Tender Data

The conditions of this tender are the latest edition of SANS 10845-3, *Standard conditions of tender*.

SANS 10845-3 makes several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the provisions of SANS 10845-3.

Each item of data given below is cross-referenced to the clause in SANS 10845-3 to which it mainly applies

Clause number	Tender Data
3.1	The Employer is Limpopo Department of Public works, Roads and Infrastructure
3.2	The tender document issued by the employer comprise of the following:  <b>The Tender</b> <b>Part T1: Tendering procedures</b> T1.1 Tender notice and invitation to tender T1.2 Tender data  <b>Part T2: Returnable documents</b> T2.1 List of returnable documents T2.2 Returnable schedules  <b>The Contract Part C1: Agreements and contract data</b> C1.1 Form of offer and acceptance C1.2 Contract data  <b>The Contract Part C2: Pricing data</b> C2.1 Pricing instructions C2.2 Bills of Quantities
3.3	The employer's agent is :  Name: The Creative Axis Architects Address: Suite 2 – 76 Hans van Rensburg Street, Polokwane Tel: 015 297 0909 Fax: E-mail: <a href="mailto:raj@creativeaxis.co.za">raj@creativeaxis.co.za</a>
3.4	The language for communications is English

3.5	<p><b>Eligibility Criteria</b></p> <p>Only tenderers who are registered with the Construction Industry Development Board (CIDB) or are capable of being so prior to the evaluation of submissions in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a <b>7GB</b> or higher class of construction work, are eligible to have their tenders evaluated.</p> <p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> <li>1. Every member of the joint venture is registered with the CIDB.</li> <li>2. The lead partner has a contractor grading designation in the GB class of construction work; and the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a <b>7GB</b> class of construction work.</li> </ol> <p>The tenderer must also submit the compulsory returnable documentation listed in of this tender.</p>
3.6	<p><b>Compulsory site briefing</b></p> <p>A compulsory clarification meeting will be held at Erf 34 Lebowakgomo BA, Lepelle Nkumbi Municipality .Co-ordinates, Latitude: 24°19,7.96"S, Longitude: 29°28'51.56"E on site as <b>per the advert</b> in tender bulletin.</p> <p>Tenderers must sign the attendance list in the name of the <b>tendering</b> entity. Addenda (if any) will be issued only to those tendering entities appearing on the attendance list.</p>
3.7	<p>Parts of each tender offer communicated on paper shall be submitted as an original. No additional copies are required.</p>
3.8	<p>A tender security in line with the <b>JBCC</b> is required and shall remain valid for a period from site handover until issue of final payment from the successful contractor.</p>
3.9	<p>The employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are:</p> <p><b>Location of tender box: DEPARTMENT OF PUBLIC WORKS, ROADS &amp; INFRASTRUCTURE.</b>  <b>Physical address:</b> Corner River and Blaauberg street, Ladanna, 0699  <b>Identification details:</b> Tender reference number, Title of Tender and the closing date and time of the tender</p>
3.10	<p>Should it be necessary for a bidder to obtain clarity on any matter arising from or referred to in this tender document, please refer queries, in writing, to the contact person listed below.  <b>Mr T. Maswanganyi, Tel. No. 015 284 7123.</b></p> <p>Under no circumstances may any other employee within the Department of Public Works, Roads and Infrastructure or its Agents, be approached for any information. Any such action may result to disqualification of a response submitted in competition to the tender process.</p> <p>All questions/enquiries must be forwarded in writing to the Employer's agent.</p>
3.11	<p>No alternative tender offers will be considered</p>
3.12	<p>The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender</p>
3.13	<p>The tender offer validity period is <b>Twelve (12) weeks.</b></p>

3.14	Tenders will not be opened immediately after the closing time for tenders.
3.15	<p>The tenderers will be evaluated in <b>three</b> stages</p> <ul style="list-style-type: none"> <li>(i) Local Content (SBD 6.2) and its Annexures</li> <li>(ii) Compliance documents – refer to list of returnable documents (Part T2)</li> <li>(iii) Price and Preference</li> </ul>
3.16	<p>The procedure for final evaluation of responsive tenders is Method 3 (Financial offer and preference).</p> <p>The total number of tender evaluation points (<math>T_{EV}</math>) shall be determined in accordance with the following formula.</p> $T_{EV} = N_{FO} + N_P$ <p>a) <math>N_{FO}</math> is the number of tender evaluation points awarded for the financial offer made. The score for financial offer is calculated using the following formula:</p> $P = A * \left( 1 - \frac{(P_o - P_m)}{P_m} \right)$ <p>Where:</p> <p>A is 80 since the estimated financial value of works inclusive of VAT is equals or is less than R 50,000,000.00.</p> <p>P is the points awarded to the bid under consideration</p> <p><math>P_m</math> is the lowest Comparative bid price</p> <p><math>P_o</math> is the comparative price under consideration</p> <p>b) <math>N_P</math> is the number of tender evaluation points awarded for preferences claimed in accordance with the Preferencing Schedule in 3.17</p>
3.17	<b><i>The Department is not obliged to award the tender to the bidder with the highest number of tendering points</i></b>
4.1	<p><b><u>First stage – Local Contents (SBD 6.2) and its Annexures</u></b>  <b><u>Failure to comply with the following administrative requirements may disqualify the bidder</u></b></p> <p>(a) Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of bid documentation; and</p> <p>(b) Local Contents Declaration Templates (Annex D and E) should be kept by the bidders for verification purposes for a period of at least 5 years.</p>

4.2

**Second stage – Compliance to administrative requirements**

**Failure to comply with the following administrative requirements shall disqualify the bidder**

**Bidders will be evaluated on the following administrative compliance:**

- Submit Power of attorney / authority for signatory
- Register with CSD. (Attach CSD Report as proof)
- Proof of registration / ownership of entity
- Submit Joint Venture Agreement (if applicable)
- In case of a JV – A JV or Both Parties should register with CSD. (Attach CSD Report as proof)
- Submit Fully Completed Compulsory Declaration Form
- Attachments of Company documents ( Id of Shareholders / Directors, CK )
- Alterations to the bid document or submission of a copy of the original bid document is not allowed
- Completion of the Bid Document must be done with a non-erasable black pen
- Usage of correction fluid is not allowed
- Non completion of form of offer
- Submission of Fully Completed and Priced Bills of Quantities
- Complete and Submit all attached SBD forms

**Third stage – Evaluation in terms of the 80/20 Preference Point System:**

Responsive tenders which have achieved the minimum qualification score for functionality will be evaluated further, using the 80/20 preference point system.

**Step 1: Calculation of points for Price**

The PPPFA prescribes that the lowest acceptable bid will score 80 points for price. Bidders that quoted higher prices will score lower points for price on a pro-rata basis. The formula to be used for calculating points scored for price is the following:

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

**Where**

P<sub>s</sub> = Points scored for price of the bid or tender under consideration

P<sub>t</sub> = Price (Rand value) of bid or tender under consideration

P<sub>min</sub> = Price (Rand value) of the lowest acceptable bid or tender

Points scored must be rounded off to the nearest 2 decimal

4.4

**Step 2: Calculation of points for B-BBEE status level of contributor**

Points shall be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below

**Point System**

Scoring of B-BBEE STATUS LEVEL OF CONTRACTOR: (20 points)

B-BBEE STATUS LEVEL OF CONTRACTOR	NUMBER OF POINTS
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

A bid shall not be disqualified from the bidding process if the bidder does not submit a certificate substantiating the B- BBEE status level of contribution nor is a non-compliant contributor. Such a bidder will score zero (0) out of a maximum of 20 points for B-BBEE. The points scored for price shall be added to the points scored for B-BBEE status level of contribution to obtain the bidder's total points scored out of 100.

**Award of contract to bids not scoring the highest number of points**

- A contract must be awarded to the bidder who scored the highest total number of points in terms of the 80/20 preference point system.
- In exceptional circumstances a contract may, on reasonable and justifiable grounds, be awarded to a bidder that did not score the highest number of points. The reasons for such a decision must be approved and recorded for audit purposes and must be defensible in a court of law.

**Evaluation of bids that scored equal points**

- In the event that two or more bids have scored equal total points, the successful bid must be the one that scored the highest points for B-BBEE.
- If two or more bids have equal points, including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- In the event that two or more bids are equal in all respects, the award must be decided by the drawing of lots.

Department Special  
No.1

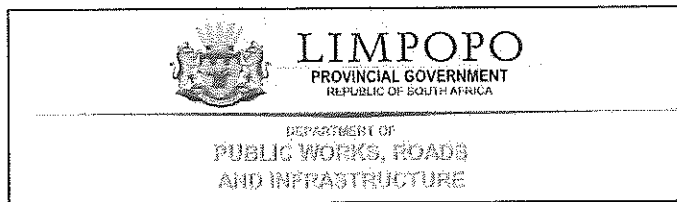
**SMME's:**

It is a requirement of this contract that participation in the contract must be granted to local SMME companies. Local is defined as "having their head office within the Limpopo Province boundaries". A SMME company should be a registered company, and must also be registered with CIDB. The minimum target for local SMME participation shall be **30% of the Tender Sum**. This can be achieved through either one or more local SMME companies. Information in this regard needs to be provided by the contractor on forms RDP2(E), RDP 2(E1), RDP2(E2), etc. Commitments to this goals will be a condition of award. The department also reserves the right to terminate the contract when the contractor does not honour his commitments in this regard during construction.

Department Special  
No.2

**Labour Content:**

The minimum Labour content for this project shall be **10% OF THE WORKS**.  
**Note: All unskilled labour shall be sourced from the LOCAL COMMUNITY where LOCAL COMMUNITY means those in the immediate vicinity of the project. The contractor's own skilled personnel will not be counted towards the said 10%.**



#### 4.5. EPWP LABOUR SPECIFICATIONS

<p>4.5</p>	<p><b><u>EPWP – Expanded Public Works Programme</u></b></p> <p><b><u>DESCRIPTION OF THE WORKS</u></b></p> <p><b>1. Employer’s objectives</b> The employer’s objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.</p> <p><b>2. Labour-intensive works</b> Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.</p> <p><b>3. Labour-intensive competencies of supervisory and management staff</b> Contractors shall only engage supervisory and management staff in labour-intensive works that have:</p> <p>Completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate:  <ul style="list-style-type: none"> <li>- Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5</li> </ul> "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C) at NQF outlined.</p>
<p>4.5.1</p>	<p><b>5.3 Contract Documentation for the Works</b> Applicable standard contract documents will apply incorporating specific EPWP/LIC conditions and Specifications as outlined below. <b>EPWP documents and projects should be branded in accordance with the latest Corporate Identity Manual obtainable from <a href="http://www.epwp.gov.za">www.epwp.gov.za</a></b></p> <p><b>5.3.1 Notice and Invitation to tender / Conditions of tender</b> Public bodies must only award contracts to contractors who have demonstrated that they will have in their employ (if awarded the contract) suitably qualified senior and middle supervisory staff to supervise the labour-intensive works during the validity of the contract. Tenderers must be made aware of this requirement in tender documents. Those responsible for evaluating tenders must confirm that the contractor has signed agreements with such staff during the tender evaluation process. The following must be included in the notice and invitation to tender: <i>"Only tenderers who can demonstrate that they will have in their employ staff which satisfy EPWP requirements during the contract validity are eligible to submit tenders".</i></p> <p><b>The following must be included in the tender data in accordance with the provisions of the CIDB Standard for Uniformity in Construction Procurement:</b></p> <p><b>F.2.1 Only those tenderers who can demonstrate that they will have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour-intensive competencies for supervisory and management staff during the validity of the contract are eligible to submit tenders.</b></p> <p><b>F.2.18</b> The tenderer must submit to the Employer, names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.</p>

## GENERIC LABOUR-INTENSIVE SPECIFICATION

The Generic Labour-intensive specification below is the same as SANS 1921-5, Construction and management requirement for works contracts- Part 5: Earthworks activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

### Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- a) trenches having a depth of less than 1.5 metres
- b) stormwater drainage
- c) low-volume roads and sidewalks

### Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

### Hand excavateable material

Hand excavateable material is material:

- a) granular materials:
  - i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or
  - ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;
- b) cohesive materials:
  - i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
  - ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note:

- 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.
- 2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumbnail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumbnail with difficulty; slight indentation produced by blow of a geological pick point.



### **Trench excavation**

All hand excavate-able material in trenches having a depth of less than 1,5 meters shall be excavated by hand.

### **Compaction of backfilling to trenches (areas not subject to traffic)**

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

- a) to 90% Proctor density;
- b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
- c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

### **Excavation**

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

### **Clearing and grubbing**

Grass and small bushes shall be cleared by hand.

### **Shaping**

All shaping shall be undertaken by hand.

### **Loading**

All loading shall be done by hand, regardless of the method of haulage.

### **Haul**

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

### **Offloading**

All material, however transported, is to be off- loaded by hand, unless tipper-trucks are utilised for haulage

### **Spreading**

All material shall be spread by hand.

### **Compaction**

Small areas may be compacted by hand provided that the specified compaction is achieved.

### **Grassing**

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

### **Stone pitching and rubble concrete masonry**

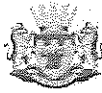
All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

### **Manufactured Elements**

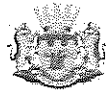
Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper hand hold on them.



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
PUBLIC WORKS, ROADS  
AND INFRASTRUCTURE

## **PART T2: RETURNABLE DOCUMENTS**



LIMPOPO  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
PUBLIC WORKS, ROADS  
AND INFRASTRUCTURE

## T2.1 : LIST OF RETURNABLE DOCUMENTS

1. The following returnable documents are compulsory and failure to comply will be considered **non-responsive** and the bid will not be evaluated any further. All of these returnable documents are incorporated into the bid documents.
  - Compulsory Declaration (fully completed and signed)
  - Certificate of Authority (fully completed and signed)
  - SBD 1: Invitation of bid
  - SBD 3.1: Pricing Schedule
  - SBD 4: Declaration of Interest
  - SBD 6.1: Reference Points claim form in terms of the Preferential Procurement Regulations 2017 or amended
  - SBD 6.2: Declaration certificate for Local Production
  - SBD 8: Declaration of the bidder's past SCM practices
  - SBD 9: Certificate of Bid determination
  - CSD Summary Report indicating Tax Status, Company Registration and Shareholders.
  - Joint venture certificate (where applicable)
  - Record of Addenda (where applicable)
  
2. The following returnable documents are **required for tender evaluation purposes**.
  - Curriculum Vitae (not longer than 4 pages) of all key staff allocated to this project, indicating their experience and qualifications and professional registration with various councils.
  - Certified copies (not older than 3 months) of all qualifications, professional registrations and training.
  - Completion certificate or letters of completion for previous or current work on an appropriate letterhead and signed off by client, must be attached. The letters must detail the scope of work undertaken, project value undertaken, date of award and completion, and location where work was carried out.
  - Proof of ownership of the plant or confirmation of rental agreement thereof.
  - Methodology documentation, detailing the bidder's approach to execute the scope of works, risk and environmental impact.
  - Proof of Contractor Registration issued by the Construction Industry Development Board
  - Signed Preferencing Schedule, including submitting the supporting documents
    - B-BBEE Verification Certificates issued by a verification agency accredited by the South African National Accreditation System (SANAS). Or in the case of an Exempted Micro Enterprise or a Qualifying Small Enterprise, if permitted in terms of the relevant code,
    - A duly completed sworn affidavit on the relevant form obtained from the DTI website ([https://www.thedti.gov.za/economic\\_empowerment/bee\\_codes.jsp](https://www.thedti.gov.za/economic_empowerment/bee_codes.jsp)). Failure to submit these documents will result in no points allocated
    - **Bidders must note that failure to complete the declaration and/or submitting the above-mentioned supporting documentation will lead to the rejection of a claim for a preference**

## T2.2 : RETURNABLE SCHEDULE

Bidders shall indicate whether the list of returnables have been submitted together with the following completed documents or attachments (by indicating Yes or No)		Complaint	
1.	Compulsory Declaration	Yes	No
2.	Certificate of Authority	Yes	No
3.	SBD 1: Invitation of bid	Yes	No
4.	SBD 3.1: Pricing Schedule	Yes	No
5.	SBD 4: Declaration of Interest	Yes	No
6.	SBD 6.1: Reference Points claim form in terms of the Preferential Procurement Regulations 2017 or amended	Yes	No
7.	SBD 6.2: Declaration certificate for Local Production	Yes	No
8.	SBD 8: Declaration of the bidder's past SCM practices	Yes	No
9.	SBD 9: Certificate of Bid determination	Yes	No
10.	CSD Summary Report indicating Tax Status, Company Registration and Shareholders.	Yes	No
11.	Form of Offer and Acceptance	Yes	No
12.	Joint venture certificate (where applicable)	Yes	No
13.	Record of Addenda to the tender	Yes	No
14.	Certified copies of Qualifications , Professional registration and Training for Key persons	Yes	No
15.	Certificates or letters of completed or current similar projects, with Contactable references and on the Client's letterhead	Yes	No
16.	Confirmation of plant availability	Yes	No
17.	Methodology and risk assessment	Yes	No
18.	Preferencing schedule: Broad-based Black Economic Empowerment status	Yes	No
19.	B-BBEE Verification Certificates issued by a verification agency accredited by the South African National Accreditation System (SANAS) / Sworn Affidavit	Yes	No
20.	Proposed amendments and qualifications (if applicable)	Yes	No

## COMPULSORY DECLARATION

The following particulars must be furnished. In the case of a joint venture, separate declaration in respect of each partner must be completed and submitted.

### Section 1: Enterprise Details

Name of enterprise:	
Contact person:	
Email:	
Telephone:	
Cell no	
Fax:	
Physical address	
Postal address	

### Section 2: Particulars of companies and close corporations

Company / Close Corporation registration number	
-------------------------------------------------	--

### Section 3: SARS Information

Tax reference number	
VAT registration number:	<i>State Not Registered if not registered for VAT</i>

### Section 4: CIDB registration number

### Section 5: National Treasury Central Supplier Database

Supplier number	
Unique registration reference number	

### Section 6: Particulars of principals

**principal:** means a natural person who is a partner in a partnership, a sole proprietor, a director of a company established in terms of the Companies Act of 2008 (Act No. 71 of 2008) or a member of a close corporation registered in terms of the Close Corporation Act, 1984, (Act No. 69 of 1984).

Full name of principal	Identity number	Personal tax reference number

Attach separate page if necessary

**Section 7: Record in the service of the state**

Indicate by marking the relevant boxes with a cross, if any principal is currently or has been within the last 12 months in the service of any of the following:

- a member of any municipal council
- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity
- an employee of any department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act of 1999 (Act No. 1 of 1999)
- a member of an accounting authority of any national or provincial public entity
- an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of principal	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

\*insert separate page if necessary

**Section 8: Record of family member in the service of the state**

**family member:** a person's spouse, whether in a marriage or in a customary union according to indigenous law, domestic partner in a civil union, or child, parent, brother, sister, whether such a relationship results from birth, marriage or adoption

Indicate by marking the relevant boxes with a cross, if any family member of a principal as defined in section 5 is currently or has been within the last 12 months been in the service of any of the following:

- a member of any municipal council
- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity
- an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- a member of an accounting authority of any national or provincial public entity
- an employee of Parliament or a provincial legislature

Name of family member	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

\*insert separate page if necessary

**Section 9: Record of termination of previous contracts with an organ of state**

Was any contract between the tendering entity including any of its joint venture partners terminated during the past 5 years for reasons other than the employer no longer requiring such works or the employer failing to make payment in terms of the contract.

Yes       No (Tick appropriate box)

If yes, provide particulars (interest separate page if necessary)

**Section 10: Declaration**

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the tendering entity confirms that the contents of this Declaration are within my personal knowledge, and save where stated otherwise in an attachment hereto, are to the best of my belief both true and correct, and:

- i) neither the name of the tendering entity or any of its principals appears on:
  - a) the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 (Act No. 12 of 2004)
  - b) National Treasury's Database of Restricted Suppliers (see [www.treasury.gov.za](http://www.treasury.gov.za))
- ii) neither the tendering entity or any of its principals has within the last five years been convicted of fraud or corruption by a court of law (including a court outside of the Republic of South Africa);
- iii) any principal who is presently employed by the state has the necessary permission to undertake remunerative work outside such employment (attach permission to this declaration);
- iv) the tendering entity is not associated, linked or involved with any other tendering entities submitting tender offers
- v) has not engaged in any prohibited restrictive horizontal practices including consultation, communication, agreement, or arrangement with any competing or potential tendering entity regarding prices, geographical areas in which goods and services will be rendered, approaches to determining prices or pricing parameters, intentions to submit a tender or not, the content of the submission (specification, timing, conditions of contract etc) or intention to not win a tender;
- vi) has no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
- vii) neither the tenderer or any of its principals owes municipal rates and taxes or municipal service charges to any municipality or a municipal entity and are not in arrears for more than 3 months;
- viii) SARS may, on an on-going basis during the term of the contract, disclose the tenderer's tax compliance status to the Employer and when called upon to do so, obtain the written consent of any subcontractors who are subcontracted to execute a portion of the contract that is entered into in excess of the threshold prescribed by the National Treasury, for SARS to do likewise.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Name \_\_\_\_\_

Position \_\_\_\_\_

Enterprise \_\_\_\_\_

NOTE 2: Section 30(1) of the Public Service Act, 1994, prohibits an employee (person who is employed in posts on the establishment of departments) from performing or engaging remunerative work outside his or her employment in the relevant department, except with the written permission of the executive authority of the department. When in operation, Section

8(2) of the Public Administration Management Act, 2014, will prohibit an employee of the public administration (i.e. organs of state and all national departments, national government components listed in Part A of Schedule 3 to the Public Service Act, provincial departments including the office of the premier listed in Schedule 1 of the Public Service Act and provincial departments listed in schedule 2 of the Public Service Act, and provincial government components listed in Part B of schedule 3 of the Public Service Act) or persons contracted to executive authorities in accordance with the provisions of section 12A of the Public Service Act of 1994 or persons performing similar functions in organs of state from conducting business with the State or to be a director of a public or private company conducting business with the State. The offence for doing so is a fine or imprisonment for a period not exceeding 5 years or both. It is also a serious misconduct which may result in the termination of employment by the employer.

NOTE 3: Regulation 44 of Supply Chain Management regulations issued in terms of the Municipal Finance Management Act of 2003 requires that organs of state and municipal entities not award a contract to a person who is the service of the state, a director, manager or principal shareholder in the service of the state or who has been in the service of the state in the previous twelve months.

NOTE: 4: Regulation 45 of Supply Chain Management regulations requires a municipality or municipal entity to disclose in the notes to the annual statements particulars of any award made to a close family member in the service of the state.

NOTE: 5 Corrupt activities which give rise to an offence in terms of the Prevention and Combating of Corrupt Activities Act of 2004) include improperly influencing in any way the procurement of any contract, the fixing of the price, consideration or other moneys stipulated or otherwise provided for in any contract and the manipulating by any means of the award of a tender.

NOTE: 6 Section 4 of the Competition Act of 1998 prohibits restrictive horizontal practice including agreements between parties in a horizontal relationship which have the effect of substantially preventing or lessening competition, directly or indirectly fixing prices or dividing markets or constitute collusive tendering. Section 5 also prohibits restrictive vertical practices. Any restrictive practices that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties.



## CERTIFICATE OF AUTHORITY

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A Company	B Partnership	C Joint Venture	D Sole Proprietor	E Close Corporation

**A. Certificate for company**

I,....., chairperson of the board of directors of ..... hereby confirm that by resolution of the board (copy attached) taken on .....20...., Mr/Mrs.....acting in the capacity of.....,was authorised to sign all documents in connection with this tender and any contract resulting from it on behalf of the company.

As witness

1.....  
Chairman

2.....  
Date

**B. Certificate of partnership**

We, the undersigned, being the key partners in the business trading as .....

hereby authorise Mr/Mrs....., acting in the capacity of.....to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

NOTE: This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.

**C. Certificate for Joint Venture**

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Mrs....., authorised signatory of the company .....acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract.....and any other contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME & CAPACITY

**D. Certificate for sole proprietor**

I, ....., hereby confirm that I am the sole owner of the business trading as.....

As Witness:

1..... Signature: Sole owner

2..... Date

**E. Certificate for Close Corporation**

We, the undersigned, being the key members in the business trading as.....hereby authorise Mr/Mrs.....acting in the capacity of....., to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

NOTE: This certificate is to be completed and signed by all the key members upon whom rests the direction of the affairs of the Close Corporation as a whole

## PART A INVITATION TO BID

<b>YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF DEPARTMENT/PUBLIC ENTITY)</b>					
BID NUMBER:	LDPWRI-B/20051	CLOSING DATE:	CLOSING TIME:	11H00	
DESCRIPTION	<b>CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO: CAPRICORN DISTRICT.</b>				
<b>BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)</b>					
DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE.					
Physical address: CNR RIVER & BLAAUBERG STREET LADANNA 0699					
<b>BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO</b>			<b>TECHNICAL ENQUIRIES MAY BE DIRECTED TO:</b>		
CONTACT PERSON	MOLOTO MV		CONTACT PERSON	MASWANGANYI T	
TELEPHONE NUMBER	015 284 7142		TELEPHONE NUMBER	015 284 7123	
FACSIMILE NUMBER	N/A		FACSIMILE NUMBER	N/A	
E-MAIL ADDRESS	MolotoMV@dpw.limpopo.gov.za		E-MAIL ADDRESS	MaswanganyiTB@dpw.limpopo.gov.za	
<b>SUPPLIER INFORMATION</b>					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	[TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES &amp; QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]</b>					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER THE QUESTIONNAIRE BELOW ]	
<b>QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?				<input type="checkbox"/> YES <input type="checkbox"/> NO	
DOES THE ENTITY HAVE A BRANCH IN THE RSA?				<input type="checkbox"/> YES <input type="checkbox"/> NO	
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?				<input type="checkbox"/> YES <input type="checkbox"/> NO	

DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?

YES  NO

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?

YES  NO

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

## PART B TERMS AND CONDITIONS FOR BIDDING

<b>1. BID SUBMISSION:</b>
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED--(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
<b>2. TAX COMPLIANCE REQUIREMENTS</b>
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.**

SIGNATURE OF BIDDER: .....

CAPACITY UNDER WHICH THIS BID IS SIGNED: .....  
(Proof of authority must be submitted e.g. company resolution)

DATE: .....

**PRICING SCHEDULE – FIRM PRICES  
(PURCHASES)**

**NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED**

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

Name of bidder.....	Bid number.....
Closing Time 11:00	Closing date.....

OFFER TO BE VALID FOR **90** DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY ** (ALL APPLICABLE TAXES INCLUDED)
----------	----------	-------------	-----------------------------------------------------------------

- Required by: .....
- At: .....
- Brand and model .....
- Country of origin .....
- Does the offer comply with the specification(s)? \*YES/NO
- If not to specification, indicate deviation(s) .....
- Period required for delivery .....
- \*Delivery: Firm/not firm
- Delivery basis .....

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

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

\*Delete if not applicable

## DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state<sup>1</sup>, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes an advertised competitive bid, a limited bid, a proposal or written price quotation). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

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

2.1 Full Name of bidder or his or her representative:  
.....

2.2 Identity Number:.....

2.3 Position occupied in the Company (director, trustee, shareholder<sup>2</sup>, member):  
.....

2.4 Registration number of company, enterprise, close corporation, partnership agreement or trust:  
.....

2.5 Tax Reference Number:  
.....

2.6 VAT Registration Number: .....

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers must be indicated in paragraph 3 below.

<sup>1</sup>"State" means –

- (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) any municipality or municipal entity;
- (c) provincial legislature;
- (d) national Assembly or the national Council of provinces; or
- (e) Parliament.

<sup>2</sup>"Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7 Are you or any person connected with the bidder presently employed by the state? YES / NO

2.7.1 If so, furnish the following particulars:

Name of person / director / trustee / shareholder/ member :

.....

Name of state institution at which you or the person

connected to the bidder is employed :

Position occupied in the state institution:

Any other particulars:

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector?

YES / NO

2.7.2.1 If yes, did you attach proof of such authority to the bid document?

YES / NO

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof:

2.8 Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months?

YES / NO

2.8.1 If so, furnish particulars:

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid?

YES / NO

2.9.1 If so, furnish particulars.

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid?

YES/NO

2.10.If so, furnish particulars.

2.11.Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract?

YES/NO

2.11.1 If so, furnish particulars:

.....  
.....  
.....

**3 Full details of directors / trustees / members / shareholders.**

Full Name	Identity Number	Personal Income Tax Reference Number	State Employee Number / Persal Number

**4 DECLARATION**

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

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT.  
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS  
DECLARATION PROVE TO BE FALSE.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of bidder



**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017**

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.**

**1. GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to all bids:

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

1.2

- a) The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable; or
- b) The 80/20 or 90/10 preference point system will be applicable to this tender (*delete whichever is not applicable for this tender*).

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

	<b>POINTS</b>
<b>PRICE</b>	80
<b>B-BBEE STATUS LEVEL OF CONTRIBUTOR</b>	20
<b>Total points for Price and B-BBEE must not exceed</b>	<b>100</b>

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

## 2. DEFINITIONS

- (a) “**B-BBEE**” means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) “**B-BBEE status level of contributor**” means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) “**bid**” means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) “**Broad-Based Black Economic Empowerment Act**” means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) “**EME**” means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) “**functionality**” means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) “**prices**” includes all applicable taxes less all unconditional discounts;
- (h) “**proof of B-BBEE status level of contributor**” means:
  - 1) B-BBEE Status level certificate issued by an authorized body or person;
  - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
  - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) “**QSE**” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

## 3. POINTS AWARDED FOR PRICE

### 3.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

<b>80/20</b>	<b>or</b>	<b>90/10</b>
$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$	or	$P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$

Where

- $P_s$  = Points scored for price of bid under consideration
- $P_t$  = Price of bid under consideration
- $P_{\min}$  = Price of lowest acceptable bid

**4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR**

4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

**5. BID DECLARATION**

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

**6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1**

6.1 B-BBEE Status Level of Contributor: \_\_\_\_\_ = \_\_\_\_\_ (maximum of 10 or 20 points)  
 (Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.)

**7. SUB-CONTRACTING**

7.1 Will any portion of the contract be sub-contracted?

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
<b>OR</b>		
Any EME		
Any QSE		

**8. DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

**8.4 TYPE OF COMPANY/ FIRM**

- Partnership/Joint Venture / Consortium
  - One person business/sole propriety
  - Close corporation
  - Company
  - (Pty) Limited
- [TICK APPLICABLE BOX]

**8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES**

.....  
 .....  
 .....

**8.6 COMPANY CLASSIFICATION**

- Manufacturer
  - Supplier
  - Professional service provider
  - Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as

indicated in paragraph 1 of this form;

- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
  - (e) forward the matter for criminal prosecution.

WITNESSES
1. ....
2. ....

..... SIGNATURE(S) OF BIDDERS(S)
DATE: .....
ADDRESS .....
.....
.....

## DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

### 1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9) makes provision for the promotion of local production and content.
- 1.2. Regulation 9.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

**The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.**

1.6 A bid may be disqualified if –

- (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and
- (b) the bidder fails to declare that the Local Content Declaration Templates (Annex C, D and E) have been audited and certified as correct.

## 2. Definitions

- 2.1. **“bid”** includes written price quotations, advertised competitive bids or proposals;
  - 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);
  - 2.3. **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
  - 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
  - 2.5. **“duly sign”** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility (close corporation, partnership or individual).
  - 2.6. **“imported content”** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour or intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
  - 2.7. **“local content”** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;
  - 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
  - 2.9. **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.
3. **The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

Description of services, works or goods

Stipulated minimum threshold

4. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

4.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on [www.reservebank.co.za](http://www.reservebank.co.za).

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

5. Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

5.1. If yes, provide the following particulars:

- (a) Full name of auditor: .....
- (b) Practice number: .....
- (c) Telephone and cell number: .....
- (d) Email address: .....

(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)

6. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.



**LOCAL CONTENT DECLARATION  
(REFER TO ANNEX B OF SATS 1286:2011)**

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

**IN RESPECT OF BID NO.** .....

**ISSUED BY:** (Procurement Authority / Name of Institution):  
.....

NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thdti.gov.za/industrialdevelopment/ip.jsp>. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ..... (full names),  
do hereby declare, in my capacity as .....  
of .....(name of bidder  
entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
  - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
  - (ii) the declaration templates have been audited and certified to be correct.

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

**If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.**

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

WITNESS No. 1 \_\_\_\_\_

DATE: \_\_\_\_\_

WITNESS No. 2 \_\_\_\_\_

DATE: \_\_\_\_\_

LDPWRI-B/20051 -LEBOWAKGOMO EMS SATELLITE STATION - CAPRICORN DISTRICT

LOCAL CONTENT REFERRAL DOCUMENT FOR SBD6.2 ANNEXURE C,D & E

SECTION	BILL	PAGE NO	ITEM NO	DESCRIPTION	LOCAL CONTENTS	UNIT	QUANTITY
2	2	58		<b>SECTION NO 2</b>			
2	2	58		<b>BILL NO 2</b>			
2	2	57		<b>FOUNDATIONS</b>			
2	2	62		<b>REINFORCEMENT</b>			
2	2	62		Mild steel reinforcement to structural concrete work			
2	2	62	34	8mm Diameter bars	100%	t	1.68
2	2	62		High tensile steel reinforcement to structural concrete work			
2	2	62	35	16mm Diameter bars	100%	t	0.95
2	2	62	36	12mm Diameter bars	100%	t	0.82
2	2	62	37	10mm Diameter bars	100%	t	1.28
2	2	62	38	8mm Diameter bars	100%	t	0.76
2	2	63		Brickwork reinforcement:			
2	2	63	45	150mm Wide reinforcement built in horizontally	100%	m	1489
2	3	66		<b>BILL NO 3</b>			
2	3	66		<b>CONCRETE, FORMWORK AND</b>			
2	3	68		<b>REINFORCEMENT</b>			
2	3	68	14	Mesh steel fabric reinforcement Ref 193 fabric reinforcement laid in surface beds, etc. lapped minimum 150mm along edges and ends (Measured net)	100%	m2	581
2	4	70		<b>BILL NO 4</b>			
2	4	70		<b>MASONRY</b>			
2	4	71		<b>Brickwork reinforcement:</b>			
2	4	71	8	75mm Wide reinforcement built in horizontally (Provisional)	100%	m	1231
2	4	71	9	150mm Wide reinforcement built in horizontally (Provisional)	100%	m	2357
2	6	78		<b>BILL NO 6</b>			
2	6	78		<b>ROOF COVERINGS</b>			
2	6	79		<b>PROFILED METAL SHEETING AND ACCESSORIES</b>			
2	6	79		0,58mm "Brownbuilt" galvanised troughed sheet steel with			

			"Chromadek" finish one side, fixed to roof members as described complete under a ten year guarantee by an approved firm of Specialists, all in accordance with the materials supplied and methods employed by the Manufacturer:			
2	6	79	1 Roof covering with pitch not exceeding 25 degrees fixed to timber purlins	100%	m2	751
2	6	79	2 Roof covering with pitch not exceeding 25 degrees fixed to structural steel	100%	m2	78
2	6	79	3 Side cladding fixed vertically to steel members	100%	m	38
2	6	79	4 Extra on last for 75 degree crank to form 105 degree internal angle, including suitable rib caps to all ribs along crank. (Crank approximately 671mm from edge)	100%	m	73
2	6	79	0,6mm Galvanised sheet iron, with "Chromadek" one side, in:	100%	H3	
2	6	79	5 Ridge capping 550mm girth 3 times bent and notched on site to suit roof profile	100%	m	32
2	6	79	6 Hip capping 550mm girth 3 times bent and notched on site to suit roof profile	100%	m	84
2	6	80	7 Gable trim 580mm girth	100%	m	31
2	6	80	8 Valley gutter 350mm girth and 5 times bent	100%	m	6
2	6	80	9 Internal corner flashing 616mm girth 3 times bent longitudinally	100%	m	1
2	6	80	10 Louvre flashing 150mm girth	100%	m	35
2	6	80	11 Ditto, but external corner flashing	100%	m	2
2	6	80	12 Drip flashing 231mm girth 3 times bent	100%	m	97
<hr/>						
2	7	82	<b>BILL NO 7</b>			
2	7	82	<b>CARPENTRY AND JOINERY</b>			
2	7	90	SHELVES			
2	7	90	Shelco shelving or similar approved with standard epoxy powder coated finish			
2	7	90	37 Garage shelving 4200mm long x 600mm wide , comprising of 6 x1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities)	100%	No	1
2	7	90	38 Medical store shelving 4080mm long x 600mm wide , comprising of 6 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and	100%	No	2

			22mm Laminated Glulam wood shelves fixed with wood screws (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities)			
2	7	90	39 Equipment store shelving 4260mm long x 600mm wide , comprising of 6 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities)	100%	No	2
2	7	90	40 Surgical store shelving 2280mm long x 600mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities)	100%	No	2
2	7	91	41 Surgical store shelving 2000mm long x 600mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brickwork (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities)	100%	No	1
2	7	91	42 Gate house shelving 1827mm long x 455mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brickwork (refer to Shelving Detail on drawing No 500 at the back of these bills of quantities)	100%	No	1
2	10	107	<b>BILL NO 10</b>			
2	10	107	<b>METALWORK</b>			
			<b>WELDED SCREEN,GATES, ETC.</b>			
2	10	107	1 380mm wide x 30mm deep rectacrid	100%	m2	1
2	10	107	2 Purpose made square hollow section mild steel gate	100%	No	10
2	10	108	<b>PRESSED STEEL DOOR FRAMES, ETC.</b>			
2	10	108	1,6mm Double rebated frames suitable for half brick wall, for:			
2	10	108	3 Door 762 x 2032mm high with one stile prepared for striking plate of mortice lock	100%	No	2
2	10	108	4 Door 813 x 2032mm high with one stile prepared for striking plate of mortice lock	100%	No	31
2	10	108	1,6mm Double rebated frames suitable for one wall, for:			

2	10	108	5	Door 813 x 2032mm high with one stile prepared for striking plate of mortice lock	100%	No	15
2	10	108	6	Double door 1613 x 2032mm high, with top rail prepared for keep of barrel bolt	100%	No	1
2	10	108	7	Double door 1613 x 2100mm high, with top rail prepared for keep of barrel bolt	100%	No	1
<b>PRESSED STEEL TRANSFORMER ROOM DOORS.</b>							
2	10	108	8	Purpose made transformer double door 1850 x 1940mm	100%	No	1
<b>PRESSED STEEL LOUVRES.</b>							
2	10	108	9	Purpose made Louvre panel size 900 x 500mm	100%	No	3
<b>STEEL WINDOWS, DOORS, ETC.</b>							
2	10	109		Standard domestic type steel windows:			
2	10	109	10	Window type NE1, size 533 x 654mm high with standard burglar bars BB1	100%	No	10
2	10	109	11	Window type NC1, size 533 x 949mm high with standard burglar bars BB1	100%	No	11
2	10	109	12	Window type ND2, size 1022 x 1264mm high with standard burglar bars BB1	100%	No	12
2	10	109	13	Window type ND7, size 1022 x 1264mm high with standard burglar bars BB1	100%	No	16
2	10	109	14	Window type ND11, size 1511 x 949mm high with standard burglar bars BB1	100%	No	1
<b>STEEL ROLLER SHUTTERS ETC</b>							
2	10	109		Roll-Up Serranda Series 1500 powder coated chain operated with 75 x 0.8mm thick endlocked slatted curtain steel roller shutters with overhead box 360mm high including canopy cover, standard bottom rail, 75mm wide guides, extruded aluminium T-bar with rubber seal, powder coated ancillary components including 4.5mm thick end plates, guide rails, slide bolt and guide lock, fixed to brickwork and concrete lintel			
2	10	109	15	Chain operated slatted roller shutter for 3000 x 3400mm high opening with guide locks	100%	No	2
<b>BILL NO 11</b>							
<b>STRUCTURAL STEELWORK</b>							
2	11	113		The following in Washbay attached to main building manufactured with steel columns, beams and purlins			
2	11	113		Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete			

2	11	113	1	245 x 245 x 73mm x 6.2kg/m Hollow section columns	100%	t	1.39
2	11	113	2	203 x 113 x 25mm x 25.30kg/m I section beam	100%	t	0.4
2	11	113	3	225 x 75 x 20 x 2.2mm x 7.29kg/m Lipped channel purlin	100%	t	0.95
2	11	113	4	80 x 80 x 8mm x 9.63kg/m angle section bracing	100%	t	0.13
2	11	114		The following in Equipmet Washbay attached to main building manufactured with steel columns, beams and purlins			
2	11	114		Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete			
2	11	114	6	75 x 75 x 3.5mm x 7.53kg/m Hollow section column	100%	t	0.18
2	11	114	7	25 x 25 x 3mm x 1.06kg/m equal leg angle in truss	100%	t	0.36
2	11	114	8	65 x 50 x 6mm x 5.16kg/m unequal leg Angle in roof truss	100%	t	0.02
2	11	114	9	100 x 75 x 20 x 2mm x 4.32kg/m Lipped channel purlin	100%	t	0.17
2	14	123		<b>SECTION 2</b>			
2	14	123		<b>BILL NO. 14</b>			
2	14	123		<b>CARPORTS</b>			
2	14	127		<b>WASTE UNIONS, TRAPS, ETC.</b>			
2	14	127		Stainless steel			
2	14	127	20	GTS 1/sec-1200 x 500 x 450mm Stainless steel grease trap with removable basket and 110mm inlet and outles as supplied by Enviro traps or similar and approved	70%	No	2
2	14	127	21	SDT 500 - GTS 500 (500 x 500 x 500mm) Stainless steel sand trap with mentis grating and 110mm outlet as supplied by Enviro traps or similar and approved	70%	No	2
3	2	147		<b>SECTION 3</b>			
3	2	147		<b>BILL NO. 2</b>			
3	2	147		<b>CARPORTS</b>			
3	2	149		<b>REINFORCEMENT</b>			
3	2	149		Mild steel reinforcement to structural concrete work			
3	2	149	9	8mm Diameter bars	100%	t	0.05
3	2	149		High tensile steel reinforcement to structural concrete work			
3	2	149	10	5mm Diameter bars	100%	t	0.03
3	2	149	11	9mm Diameter bars	100%	t	0.02
3	2	150		<b>STRUCTURAL STEEL WORK</b>			

3	2	150		Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete			
3	2	150	13	203 x 113 x 25mm x 25.30kg/m I section columns	100%	t	1.23
3	2	150	14	203 x 113 x 25mm x 25.30kg/m I section beam	100%	t	1.13
3	2	150	15	175 x 75 x 4.5mm x 11.71kg/m Lipped channel purlin	100%	t	3.12
3	2	150	16	80 x 80 x 8mm x 9.63kg/m angle section bracing	100%	t	0.3
3	2	150	17	50 x 6.0mm x 2.36kg/m plate	100%	t	0.35
<hr/>							
3	3	152		<b>SECTION 3</b>			
3	3	152		<b>BILL NO. 3</b>			
3	3	152		<b>FENCING</b>			
3	3	154		CLEAR VU FENCING			
3	3	154		Clear Vu or similar approved fencing			
3	3	154	1	2100mm High Clear Vu or similar approved fencing formed of galvanised high density anti climbing and anti cut pressed mesh panel formed of 4mm diameter horizontal and vertical high tensile wires galvanised with Alu-Galv coating with aperture size 76,2mm x 12,7mm and reinforcing V-section ribs, bolted with vandal resistant bolts and clamping plates to and including 85 x 45mm taper locking post 2700mm high including locking recess mechanism at 3382mm centres with sealed caps and	100%	m	818
3	3	154	2	100mm High galvanised "Castle" type spike rail, bolted to 50mm wide Clear Vu or similar approved mesh fencing flange	100%	m	818
3	3	154	3	1000 x 2100mm High Clear Vu or similar approved pedestrian gate comprising of 40 x 40mm angle section palings with "Castle" spikes on top welded to 50 x 40 x 3mm rectangular tubing fixed to 200 x 100 x 6mm flanges with 120mm heavy duty hinges including fixing to wall with 4 x 12mm rawl bolts with and including lock	100%	No	1
3	3	155	4	5000 x 2100mm High Clear Vu or similar sliding gate comprising of 40 x 40mm angle section palings with "Castle" spikes on top welded to 50 x 40 x 3mm rectangular tubing fixed to 200 x 100 x 6mm flanges in one full leaf to match fencing complete with sliding mechanism, rail, track, lock, etc.	100%	No	1
3	3	155	5	6000 x 2100mm Ditto	100%	No	1
<hr/>							
	2	7		<b>ELECTRICAL RETICULATION</b>			
	2	7		<b>BILL NO 2</b>			
	2	7		<b>Low Voltage cables</b>			
	2	7		Supply and installation of 600/1000V PVC Cables			



	2	7	2.3.1	120mm2 4 core	90%	m	70.00
	2	8	2.3.2	70mm2 4 core	90%	m	190.00
	2	8	2.3.4	16mm2 4 core	90%	m	330.00

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No. LDPWR-B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s) LEBOWAKGOMO EMS  
 (C4) Tender Authority:  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula

EU

GBP

Tender Item no 5	List of Items	Tender price - each (excl VAT)	Calculation of local content				Local content % (per item)
			Exempted imported value	Tender value - net of exempted imported content	Imported value	Local value	
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
34-2-62	8mm Diameter bars						
35-2-62	16mm Diameter bars						
36-2-62	12mm Diameter bars						
37-2-62	10mm Diameter bars						
38-2-62	8mm Diameter bars						
45-2-63	150mm brick reinforcement built in horizontally						
14-3-68	Mesh steel fabric reinforcement ref 195						

Signature of tenderer from Annex B

Date: \_\_\_\_\_

Tender summary

Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C16)	(C17)	(C18)	(C19)
1.68			
0.95			
0.82			
1.28			
0.76			
1.489			
581			
	R 0	R 0	R 0
	(C20) Total tender value	(C21) Total Exempt imported content	(C22) Total Tender value net of exempt imported content
		R 0	R 0
		(C23) Total imported content	(C24) Total local content
		R 0	R 0
		(C25) Average local content % of tender	

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No. LDPWR/B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s)  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value - net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
8-4-70	75mm brick reinforcement built in horizontally						
9-4-70	150mm brick reinforcement built in horizontally						
1-6-79	Roof covering on timber purlins						
2-6-79	Roof covering on steel purlins						
3-6-79	Side cladding fixed on steel members						
4-6-79	Extra on last for 75 degrees crank						
5-6-79	Ridge capping 550mm girth						
6-6-79	Hip capping 550mm girth						

Calculation of local content

Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C16)	(C17)	(C18)	(C19)
1 231			
2 357			
751			
78			
38			
73			
32			
84			
	R 0	R 0	R 0

Tender Summary

(C20) Total tender value R 0  
 (C21) Total Exempt imported content R 0  
 (C22) Total Tender value net of exempt imported content R 0  
 (C23) Total imported content R 0  
 (C24) Total local content R 0  
 (C25) Average local content % of tender

Signature of tenderer from Annex B

Date:

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No.: LDPWR-B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s):  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender item no's	List of Items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)	Tender summary			
				Tender value- net of exempted imported content	Imported value	Local value		Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
7-6-80	Gable trim 580mm girth							31			
8-6-80	Valley gutter 350mm girth and 5 timber bent							6			
9-6-80	Internal corner flashing 810mm girth							1			
10-6-80	Louvre flashing 150mm girth							35			
11-6-80	Ditto but external corner flashing							2			
12-6-80	Drip flashing 321mm girth							97			
37-7-90	Garage shelving 4200mm long							1			
38-7-90	Medical store shelving 4080mm long							2			
(C20) Total tender value								R 0			
(C21) Total Exempt imported content								R 0			
(C22) Total Tender value net of exempt imported content								R 0			
(C23) Total Imported content								R 0			
(C24) Total Local content								R 0			
(C25) Average local content % of tender											

Signature of tenderer from Annex B

Date: \_\_\_\_\_

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No. LDPWRU-B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s) LEBOWAKGOMO EMS  
 (C4) Tender Authority:  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)
				Tender value- net of exempted imported content	Imported value	Local value	
(C8) 39-7-90	Equipment store shelving 4250mm long	(C9)	(C11)	(C12)	(C13)	(C14)	(C15)
40-7-90	Surgical store shelving 2280mm long						
41-7-91	Surgical store shelving 2000mm long						
42-7-91	Gate house shelving 1827mm long						
1-10-107	380mm wide x 30mm recharid						
2-10-107	Purpose made square hollow section steel gate						
3-10-108	Half brick door frames 762 x 2032mm high						
4-10-108	Half brick door frames 813 x 2032mm high						

Signature of tenderer from Annex B

Date:

Tender summary

Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C16) 2	(C17)	(C18)	(C19)
2			
1			
1			
10			
2			
31			
	(C20) Total tender value	R 0	
	(C21) Total Exempt imported content	R 0	
	(C22) Total Tender value net of exempt imported content	R 0	
	(C23) Total Imported content	R 0	
	(C24) Total local content	R 0	
	(C25) Average local content % of tender		

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No.: LDPWR/8/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s):  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender/Item no's	List of Items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)	Tender summary			
				Tender value - net of exempted imported content	Imported value	Local value		Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
5-10-108	One brick door frames 813 x 2032mm high							15			
6-10-108	One brick door frames 1613 x 2032mm high							1			
7-10-108	Double brick door frames 1613 x 2100mm high							1			
8-10-108	Purpose made transformer double door 1850 x 1940mm							3			
9-10-108	Purpose made transformer double door 900 x 500mm							10			
10-10-109	Window type NE1, 533 x 654mm high							20			
11-10-109	Window type NC1, size 533 x 949mm high							3			
12-10-109	Window type ND2, size 1022 x 1264mm high							3			
								(C20) Total tender value	R 0	(C21) Total Exempt imported content	R 0
								(C22) Total Tender value net of exempt imported content	R 0	(C23) Total Imported content	R 0
								(C25) Average local content % of tender	R 0	(C24) Total local content	R 0

Signature of tenderer from Annex B  
 Date: \_\_\_\_\_

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No. LDP/WRI-B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s) LEBOWAKGOMO EMS  
 (C4) Tender Authority:  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pulse  EU  GBP

Tender Item no's	List of Items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)	Tender summary			
				Tender value net of exempted imported content	Imported value	Local value		Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
13-10-109	Window type ND1, size 1022 x 1264mm high							16			
14-10-109	Window type ND1, size 1511 x 949mm high							1			
15-10-109	Chain operated slatted roller shutter door 3000 x 3400 mm high							2			
1-11-113	245 x 245 x 75mm x 6.2kg/m Hollow section columns							1.39			
2-11-113	203 x 113 x 25mm x 25.30kg/m I section beam							0.40			
3-11-114	225 x 75 x 20 x 2.2mm x 7.29kg/m lipped channel purlin							0.95			
4-11-114	80 x 80 x 8mm x 9.63kg/m angle section bracing							0.13			
							(C20) Total tender value	R 0			
							(C21) Total Exempt imported content	R 0			
							(C22) Total Tender value net of exempt imported content	R 0			
							(C23) Total Imported content	R 0			
							(C24) Total local content	R 0			
							(C25) Average local content % of tender	R 0			

Signature of tenderer from Annex B

Date:

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No: LDPWR/B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s):  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender item no's	List of Items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)
				Tender value-net of exempted imported content	Imported value	Local value	
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
6-11-114	75 x 75 x 3.5mm x 7.53kg/m Hollow section column						
7-11-114	75 x 25 x 3mm x 1.06kg/m equal leg angle in truss						
8-11-114	65 x 50 x 6mm x 5.16kg/m unequal leg Angle in roof truss						
9-11-114	100 x 75 x 20 x 2mm x 4.32kg/m Lipped channel purlin						
20-14-127	GTS 11/sec-1200 x 500 x 450mm Stainless steel grease trap						
21-14-127	STD 500 - GTS 500 (500 x 500 x 500mm) sand trap						
9-2-149	8mm Diameter bars						
10-2-149	5mm Diameter bars						

Signature of tenderer from Annex B

Date: \_\_\_\_\_

Tender summary

Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C16)	(C17)	(C18)	(C19)
0.18			
0.36			
0.02			
0.17			
2			
0.05			
0.03			
	R 0	R 0	R 0
	(C20) Total tender value	(C21) Total Exempt imported content	(C22) Total Tender value net of exempt imported content
		R 0	R 0
		(C23) Total Imported content	(C24) Total local content
			R 0
		(C25) Average local content % of tender	



Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No. LDPWR/B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s)  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender Item no's	List of Items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Local content % (per item)	
				Tender value - net of exempted imported content	Imported value	Local value		
(C8) 11-2-149	9mm Diameter bars	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)
13-2-150	203 x 113 x 25mm x 25.30kg/m   section column							
14-2-150	203 x 113 x 25mm x 25.30kg/m   section beam							
15-2-155	175 x 75 x 4.5mm x 11.71kg/m Lipped Channel purlin							
16-2-150	80 x 80 x 8mm x 9.63kg/m angle section bracing							
17-2-150	50 x 6.0mm x 2.36kg/m plate							
1-3-154	2100mm High, Clear Vu fence							
2-3-154	100mm High galv type spike							

Signature of tenderer from Annex B

Date: \_\_\_\_\_

(C20) Total tender value  
 (C21) Total Exempt imported content

(C22) Total Tender value net of exempt imported content  
 (C23) Total Imported content  
 (C24) Total local content  
 (C25) Average local content % of tender

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total imported content
(C16) 0.02	(C17)	(C18)	(C19)
1.23			
1.13			
3.12			
0.30			
0.35			
8.18			
	R 0	R 0	R 0
		R 0	R 0
			R 0
			R 0

Annex C

Local Content Declaration - Summary Schedule

Note: VAT to be excluded from all calculations

(C1) Tender No.: LDPWRU-B/20051  
 (C2) Tender description: CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO  
 (C3) Designated product(s):  
 (C4) Tender Authority: LEBOWAKGOMO EMS  
 (C5) Tendering Entity name:  
 (C6) Tender Exchange Rate:  
 (C7) Specified local content %

Pula  EU  GBP

Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Calculation of local content			Tender summary				
				Tender value- net of exempted imported content	Imported value	Local value	Tender Qty	Total tender value	Total exempted imported content	Total Imported content	
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
3-3-155	1000 x 2100mm High Pedestrian gate							1			
4-3-155	4700 x 2100mm High Clear Vu Sliding gate							1			
5-3-55	6000 x 2100mm High Clear Vu Sliding Gate							70			
2.3.1-7	120mm <sup>2</sup> 4 core cable							190			
2.3.2-8	70mm <sup>2</sup> 4 core cable							330			
2.3.4-8	16mm <sup>2</sup> 4 core cable										
				(C20) Total tender value	R 0					R 0	
				(C21) Total Exempt imported content						R 0	
				(C22) Total Tender value net of exempt imported content						R 0	
				(C23) Total Imported content							R 0
				(C24) Total local content							R 0
				(C25) Average local content % of tender							

Signature of tenderer from Annex B

Date: \_\_\_\_\_

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No.

(D2) Tender description:

(D3) Designated Products:

(D4) Tender Authority:

(D5) Tendering Entity name:  Pula

(D6) Tender Exchange Rate: EU  GBP

Note: VAT to be excluded from all calculations

A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C21

B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C23

**Annex D**

**Imported Content Declaration - Supporting Schedule to Annex C**

(D1) Tender No. \_\_\_\_\_  
 (D2) Tender description: \_\_\_\_\_  
 (D3) Designated Products: \_\_\_\_\_  
 (D4) Tender Authority: \_\_\_\_\_  
 (D5) Tendering Entity name: \_\_\_\_\_  
 (D6) Tender Exchange Rate: Pula \_\_\_\_\_ EU \_\_\_\_\_ GBP \_\_\_\_\_

Note: VAT to be excluded from all calculations

**A. Exempted imported content**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C.21

**B. Imported directly by the Tenderer**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

**C. Imported by a 3rd party and supplied to the Tenderer**

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

**D. Other foreign currency payments**

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C.23

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. \_\_\_\_\_  
 (D2) Tender description: \_\_\_\_\_  
 (D3) Designated Products: \_\_\_\_\_  
 (D4) Tender Authority: \_\_\_\_\_  
 (D5) Tendering Entity name: \_\_\_\_\_  
 (D6) Tender Exchange Rate: Pula \_\_\_\_\_

Note: VAT to be excluded from all calculations

EU \_\_\_\_\_ GBP \_\_\_\_\_

A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)

(D19) Total exempt imported value R 0

This total must correspond with Annex C - C21

B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)

(D32) Total imported value by tenderer R 0

C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)

(D45) Total imported value by 3rd party R 0

D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	

(D52) Total of foreign currency payments declared by tenderer and/or 3rd party

Signature of tenderer from Annex B

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

Date: \_\_\_\_\_

This total must correspond with Annex C - C23

**Annex D**

**Imported Content Declaration - Supporting Schedule to Annex C**

(D1) Tender No. \_\_\_\_\_

(D2) Tender description: \_\_\_\_\_

(D3) Designated Products: \_\_\_\_\_

(D4) Tender Authority: \_\_\_\_\_

(D5) Tendering Entity name: \_\_\_\_\_

(D6) Tender Exchange Rate: \_\_\_\_\_ Puia \_\_\_\_\_ EU \_\_\_\_\_ GBP \_\_\_\_\_

Note: VAT to be excluded from all calculations

**A. Exempted imported content**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C.21

**B. Imported directly by the Tenderer**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

**C. Imported by a 3rd party and supplied to the Tenderer**

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

**D. Other foreign currency payments**

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party					R 0	

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C.23

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. \_\_\_\_\_  
 (D2) Tender description: \_\_\_\_\_  
 (D3) Designated Products: \_\_\_\_\_  
 (D4) Tender Authority: \_\_\_\_\_  
 (D5) Tendering Entity name: \_\_\_\_\_  
 (D6) Tender Exchange Rate: \_\_\_\_\_ Pula \_\_\_\_\_

Note: VAT to be excluded from all calculations

EU \_\_\_\_\_ GBP \_\_\_\_\_

A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted Imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C.21

B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total Imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total Imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_  
 Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C.23

**Annex D**

**Imported Content Declaration - Supporting Schedule to Annex C**

(D1) Tender No. \_\_\_\_\_  
 (D2) Tender description: \_\_\_\_\_  
 (D3) Designated Products: \_\_\_\_\_  
 (D4) Tender Authority: \_\_\_\_\_  
 (D5) Tendering Entity name: \_\_\_\_\_  
 (D6) Tender Exchange Rate: \_\_\_\_\_ Pula \_\_\_\_\_

Note: VAT to be excluded from all calculations

EU \_\_\_\_\_ GBP \_\_\_\_\_

**A. Exempted imported content**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C21

**B. Imported directly by the Tenderer**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

**C. Imported by a 3rd party and supplied to the Tenderer**

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

**D. Other foreign currency payments**

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_  
 Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C 23



Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. \_\_\_\_\_

(D2) Tender description: \_\_\_\_\_

(D3) Designated Products: \_\_\_\_\_

(D4) Tender Authority: \_\_\_\_\_

(D5) Tendering Entity name: \_\_\_\_\_

(D6) Tender Exchange Rate: Pula \_\_\_\_\_ EU \_\_\_\_\_ GBP \_\_\_\_\_

Note: VAT to be excluded from all calculations

A. Exempted imported content

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C21

B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total Imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party					R 0	

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

This total must correspond with Annex C - C 23

Annex D

**Imported Content Declaration - Supporting Schedule to Annex C**

(D1) Tender No.

(D2) Tender description:

(D3) Designated Products:

(D4) Tender Authority:

(D5) Tendering Entity name:  Pula

(D6) Tender Exchange Rate: EU  GBP

Note: VAT to be excluded from all calculations

**A. Exempted imported content**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C21

**B. Imported directly by the Tenderer**

Calculation of imported content										Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total Imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

**C. Imported by a 3rd party and supplied to the Tenderer**

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

**D. Other foreign currency payments**

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above: R 0

This total must correspond with Annex C - C 23

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1) Tender No. \_\_\_\_\_  
 (D2) Tender description: \_\_\_\_\_  
 (D3) Designated Products: \_\_\_\_\_  
 (D4) Tender Authority: \_\_\_\_\_  
 (D5) Tendering Entity name: \_\_\_\_\_  
 (D6) Tender Exchange Rate: Pula \_\_\_\_\_ EU \_\_\_\_\_ GBP \_\_\_\_\_

Note: VAT to be excluded from all calculations

A. Exempted imported content

Calculation of imported content										Summary	
Tender Item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer

Calculation of imported content										Summary	
Tender Item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)
(D32) Total imported value by tenderer										R 0	

C. Imported by a 3rd party and supplied to the Tenderer

Calculation of imported content										Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R 0	

D. Other foreign currency payments

Calculation of foreign currency payments					Summary of payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party						

Signature of tenderer from Annex B \_\_\_\_\_  
 Date: \_\_\_\_\_

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above: R 0

This total must correspond with Annex C - C 23

### Annex E

#### Local Content Declaration - Supporting Schedule to Annex C

(E1)	Tender No.	<input style="width: 95%;" type="text"/>
(E2)	Tender description:	<input style="width: 95%;" type="text"/>
(E3)	Designated products:	<input style="width: 95%;" type="text"/>
(E4)	Tender Authority:	<input style="width: 95%;" type="text"/>
(E5)	Tendering Entity name:	<input style="width: 95%;" type="text"/>

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased <i>(E6)</i>	Local suppliers <i>(E7)</i>	Value <i>(E8)</i>
<i>(E9) Total local products (Goods, Services and Works)</i>			R 0

(E10)	<b>Manpower costs</b>	(Tenderer's manpower cost)	<input style="width: 95%;" type="text"/>	R 0
(E11)	<b>Factory overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	<input style="width: 95%;" type="text"/>	R 0
(E12)	<b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	<input style="width: 95%;" type="text"/>	R 0
<b>(E13) Total local content</b>				<input style="width: 95%;" type="text"/>
<b>This total must correspond with Annex C - C24</b>				

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

### Annex E

#### Local Content Declaration - Supporting Schedule to Annex C

(E1)	Tender No.	<input style="width: 95%;" type="text"/>
(E2)	Tender description:	<input style="width: 95%;" type="text"/>
(E3)	Designated products:	<input style="width: 95%;" type="text"/>
(E4)	Tender Authority:	<input style="width: 95%;" type="text"/>
(E5)	Tendering Entity name:	<input style="width: 95%;" type="text"/>

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of Items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10)	Manpower costs	(Tenderer's manpower cost)	<input style="width: 90%;" type="text"/>	R 0
(E11)	Factory overheads	(Rental, depreciation & amortisation, utility costs, consumables etc.)	<input style="width: 90%;" type="text"/>	R 0
(E12)	Administration overheads and mark-up	(Marketing, insurance, financing, interest etc.)	<input style="width: 90%;" type="text"/>	R 0
(E13) Total local content				<input style="width: 90%;" type="text"/>
This total must correspond with Annex C - C24.				

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

### Annex E

#### Local Content Declaration - Supporting Schedule to Annex C

(E1) Tender No.

(E2) Tender description:

(E3) Designated products:

(E4) Tender Authority:

(E5) Tendering Entity name:

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)  R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)  R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)  R 0

**(E13) Total local content**  R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

## Annex E

### Local Content Declaration - Supporting Schedule to Annex C

(E1)	Tender No.	<input type="text"/>
(E2)	Tender description:	<input style="height: 20px;" type="text"/>
(E3)	Designated products:	<input style="height: 20px;" type="text"/>
(E4)	Tender Authority:	<input style="height: 20px;" type="text"/>
(E5)	Tendering Entity name:	<input style="height: 20px;" type="text"/>

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased <i>(E6)</i>	Local suppliers <i>(E7)</i>	Value <i>(E8)</i>
<b>(E9) Total local products (Goods, Services and Works)</b>			R 0

(E10)	<b>Manpower costs</b>	(Tenderer's manpower cost)	<input style="width: 80%;" type="text"/>	R 0
(E11)	<b>Factory overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	<input style="width: 80%;" type="text"/>	R 0
(E12)	<b>Administration overheads and mark-up</b>	(Marketing, insurance, financing, interest etc.)	<input style="width: 80%;" type="text"/>	R 0
<b>(E13) Total local content</b>			<input style="width: 80%;" type="text"/>	R 0
<b>This total must correspond with Annex C - C24.</b>				

Signature of tenderer from Annex B

\_\_\_\_\_

Date: \_\_\_\_\_

Annex E

**Local Content Declaration - Supporting Schedule to Annex C**

(E1) Tender No.

(E2) Tender description:

(E3) Designated products:

(E4) Tender Authority:

(E5) Tendering Entity name:

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased (E6)	Local suppliers (E7)	Value (E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)  R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)  R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)  R 0

(E13) Total local content  R 0

**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_



### Annex E

#### Local Content Declaration - Supporting Schedule to Annex C

(E1) Tender No.

(E2) Tender description:

(E3) Designated products:

(E4) Tender Authority:

(E5) Tendering Entity name:

**Note:** VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased (E6)	Local suppliers (E7)	Value (E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)  R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)  R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)  R 0

(E13) Total local content  R 0  
**This total must correspond with Annex C - C24**

Signature of tenderer from Annex B

---

Date:

**Annex E**

**Local Content Declaration - Supporting Schedule to Annex C**

(E1) Tender No.	<input type="text"/>
(E2) Tender description:	<input type="text"/>
(E3) Designated products:	<input type="text"/>
(E4) Tender Authority:	<input type="text"/>
(E5) Tendering Entity name:	<input type="text"/>

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased (E6)	Local suppliers (E7)	Value (E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) <b>Manpower costs</b> (Tenderer's manpower cost)	<input type="text"/>	R 0
(E11) <b>Factory overheads</b> (Rental, depreciation & amortisation, utility costs, consumables etc.)	<input type="text"/>	R 0
(E12) <b>Administration overheads and mark-up</b> (Marketing, insurance, financing, interest etc.)	<input type="text"/>	R 0
(E13) Total local content		<input type="text"/>
<b>This total must correspond with Annex C - C24</b>		

Signature of tenderer from Annex B  
 \_\_\_\_\_  
 Date: \_\_\_\_\_

### Annex E

#### Local Content Declaration - Supporting Schedule to Annex C

(E1)	Tender No.	<input style="width: 95%;" type="text"/>
(E2)	Tender description:	<input style="width: 95%;" type="text"/>
(E3)	Designated products:	<input style="width: 95%;" type="text"/>
(E4)	Tender Authority:	<input style="width: 95%;" type="text"/>
(E5)	Tendering Entity name:	<input style="width: 95%;" type="text"/>

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased <i>(E6)</i>	Local suppliers <i>(E7)</i>	Value <i>(E8)</i>
<i>(E9) Total local products (Goods, Services and Works)</i>			R 0

(E10)	<b>Manpower costs</b>	(Tenderer's manpower cost)	<input style="width: 95%;" type="text"/>	R 0
(E11)	<b>Factory overheads</b>	(Rental, depreciation & amortisation, utility costs, consumables etc.)	<input style="width: 95%;" type="text"/>	R 0
(E12)	<b>Administration overheads and mark-up</b>	(Marketing, Insurance, financing, interest etc.)	<input style="width: 95%;" type="text"/>	R 0
<b>(E13) Total local content</b>			<input style="width: 95%;" type="text"/>	R 0

This total must correspond with Annex C - C24

Signature of tenderer from Annex B \_\_\_\_\_  
 Date: \_\_\_\_\_

**Annex E**

**Local Content Declaration - Supporting Schedule to Annex C**

(E1) Tender No.

(E2) Tender description:

(E3) Designated products:

(E4) Tender Authority:

(E5) Tendering Entity name:

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased (E6)	Local suppliers (E7)	Value (E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tenderer's manpower cost)  R 0

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.)  R 0

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.)  R 0

(E13) Total local content  R 0

This total must correspond with Annex C - C24

Signature of tenderer from Annex B \_\_\_\_\_

Date: \_\_\_\_\_

## DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Standard Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be disregarded if that bidder, or any of its directors have-
  - a. abused the institution's supply chain management system;
  - b. committed fraud or any other improper conduct in relation to such system; or
  - c. failed to perform on any previous contract.
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p><b>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</b></p> <p>The Database of Restricted Suppliers now resides on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) and can be accessed by clicking on its link at the bottom of the home page.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p><b>The Register for Tender Defaulters can be accessed on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) by clicking on its link at the bottom of the home page.</b></p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	<p>Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
4.4	<p>Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

4.4.1	If so, furnish particulars:
-------	-----------------------------

I, \_\_\_\_\_ THE \_\_\_\_\_ UNDERSIGNED (FULL NAME)

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

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

.....  
 Signature

.....  
 Date

.....  
 Position

.....  
 Name of Bidder

## CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) must form part of all bids<sup>1</sup> invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).<sup>2</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
  - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- 4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

## CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

\_\_\_\_\_  
(Bid Number and Description)

in response to the invitation for the bid made by:

\_\_\_\_\_  
(Name of Institution)

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

I certify, on behalf

of: \_\_\_\_\_ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - (a) has been requested to submit a bid in response to this bid invitation;
  - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium<sup>9</sup> will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - (a) prices;
  - (b) geographical area where product or service will be rendered (market allocation)
  - (c) methods, factors or formulas used to calculate prices;
  - (d) the intention or decision to submit or not to submit, a bid;
  - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
  - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.



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

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of Bidder

<sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.

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

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

## Record of Addenda to tender documents

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	Title or Details
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

Attach additional pages if more space is required.

Signed \_\_\_\_\_ Date \_\_\_\_\_

Name \_\_\_\_\_ Position \_\_\_\_\_

Tenderer \_\_\_\_\_

## Preferencing schedule: Broad Based Black Economic Empowerment Status

### Preamble

Section 10(b) of the Broad-Based Black Economic Empowerment Act of 2003 (Act No. 53 of 2003) states that "Every organ of state and public entity must take into account and, as far as is reasonably possible, apply any **relevant code of good practice** issued in terms of this Act in developing and implementing a preferential procurement policy."

A number of codes of good practice have been issued in terms of Section 9(1) of the B-BBEE Act of 2003, including a generic code of good practice and various sector codes. The sector codes vary the metrics, weightings and targets used in the generic code of good practice to establish the overall performance of an entity and its B-BBEE status. The B-BBEE status needs to be assessed in accordance with the applicable code.

### 1 Conditions associated with the granting of preferences

Tenderers who claim a preference shall provide proof of B-BBEE status level of contributor in accordance with the requirements of section 2 in respect of the applicable code as at the closing time for submissions, failing which their claims for preferences will be rejected.

#### 1 Proof of B-BBEE status level of contributor

Proof of B-BBEE status level of contributor shall be by means of

- the B-BBEE status level certificate issued by an authorised body or person;
- a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
- any other requirement prescribed in terms of the Broad-Based Black Economic Empowerment Act

### 3 Tender preferences claimed

The scoring shall be as follows:

B-BBEE status level of contributor	Status level of tenderer (tick relevant level)	Number of preference points	
		90/10 preference points system	80/20 preference points system
Form not completed or non-complaint contributor		0	0
Level 8 contributor		1	2
Level 7 contributor		2	4
Level 6 contributor		3	6
Level 5 contributor		4	8
Level 4 contributor		5	12
Level 3 contributor		6	14
Level 2 contributor		9	18
Level 1 contributor		10	20

**4 Declaration**

The tenderer declares that

a) the tendering entity is a level contributor as stated in the submitted proof of B-BBEE status level of contributor as at the closing date for submissions

b) the tendering entity has been measured in terms of the following code (tick applicable box):

- Generic code of good practice
- Construction Sector Code
- Other – specify

c) the tendering entity confirms that it will only enter into a subcontract with the Employer's prior approval and is not permitted to subcontract more than 25% of the total of the prices of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor unless the contract is subcontractor to an Exempted Micro Enterprises which has the capability to execute the contract.

d) the contents of the declarations made in terms of a) and b) above are within my personal knowledge and are to the best of my belief both true and correct

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the tenderer, confirms that he/she understands the conditions under which such preferences are granted and confirms that the tenderer satisfies the conditions pertaining to the granting of tender preferences.

Signature: .....

Name: .....

Duly authorised to sign on behalf of: .....

Telephone: .....

Fax: ..... Date: .....

Name of witness: ..... Signature of witness: .....

- Note:**
- 1) Failure to complete the declaration will lead to the rejection of a claim for a preference.
  - 2) Supporting documentation of the abovementioned claim for a preference must be submitted with the tender submission to be eligible for a preference

## Proposed amendments and qualifications

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause 5.8 of SANS 10845-3 regarding the employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

Signed

\_\_\_\_\_

Date

\_\_\_\_\_

Name

\_\_\_\_\_

Position

\_\_\_\_\_

*Tenderer*

\_\_\_\_\_

## EVALUATION SCHEDULE 1: EXPERIENCE OF KEY PERSONNEL

### 1. PROJECT SUPERVISOR. ( SITE REPRESENTATIVE)

A CV of the Project Supervisor of **not** more than 4 pages must be attached to this schedule. Each CV should be structured to reflect the following:

- Name
  - Date and place of birth
  - Place (s) of tertiary education and dates associated therewith
- 2 Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations)
  - 3 Name of current employer and position in enterprise
  - 4 Overview of post graduate experience (year, organization and position / responsibilities)
  - 5 Outline of assignments / experience that has a bearing on the required services giving dates, nature and scope of similar services that have been undertaken including the level of responsibility

Certificates / suitable proof of membership must be attached to this schedule

### 2. CONSTRUCTION FOREMAN

A CV of the foreman of **not** more than 4 pages must be attached to this schedule. Each CV should be structured to reflect the following:

- Name
  - Date and place of birth
  - Place (s) of tertiary education and dates associated therewith
- 2 Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations)
  - 3 Name of current employer and position in enterprise
  - 4 Overview of post graduate experience (year, organization and position / responsibilities)
  - 5 Outline of assignments / experience that has a bearing on the required services giving dates, nature and scope of similar services that have been undertaken including the level of responsibility

### 3. SAFETY OFFICER

A CV of the Safety officer of **not** more than 4 pages must be attached to this schedule. Each CV should be structured to reflect the following:

- Name
  - Date and place of birth
  - Place (s) of tertiary education and dates associated therewith
- 2 Qualifications (Minimum N3 certificate, register with professional council as a Safety Officer (SACPCMP))
  - 3 Name of current employer and position in enterprise
  - 4 Overview of post graduate experience (year, organization and position / responsibilities)
  - 5 Outline of assignments / experience that has a bearing on the required services giving dates, nature and scope of similar services that have been undertaken including the level of responsibility

**EVALUATION SCHEDULE 2: COMPANY EXPERIENCE**

**Relevant Experience in Similar Projects completed on time** and include the following:

NB: Completion of this table is mandatory for points to be allocated. Site Handover Certificate, Practical completion certificate and approved extension of time award letters (if any) must be attached as proof of completion on time for full points to be allocated.

Client Name	Project Description	Project Type (e.g GB, EE, CE etc)	Project Value	Project Duration	Final/Practical Completion Certificate Attached?(Yes/No)	Contact Person (Cell/Tel.)

**EVALUATION SCHEDULE 3: PLANT AND TRAINING TO OPERATE EQUIPMENT**

**A: The bidder to provide evidence of ownership or leasing agreement for the following plant:**

<b>EQUIPMENT</b>	<b>QUANTITY</b>
LDV	1
Tipper Truck 6m2	1
TLB.....cubic	1
Small Equipment and Hand Tools (for these only provide a list)	1

**The Tender to provide proof of ownership of his Plant and Equipment**

**EVALUATION SCHEDULE 4: PROPOSED METHODOLOGY**

The tenderer should specifically outline the proposed methodology to be implemented in the execution of the works. The methodology should indicate the bidders understanding of the risks involved, programming and the resources or strategies to be implemented.



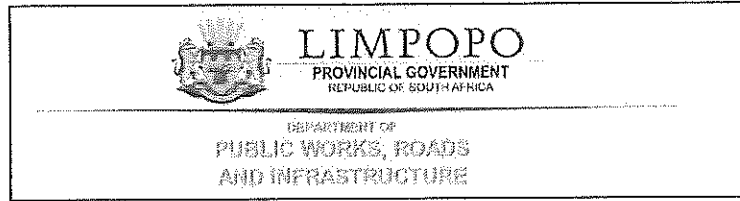


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DEPARTMENT OF  
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# THE CONTRACT

## **PART C1: AGREEMENT AND CONTRACT DATA**



**C1.1. FORM OF OFFER AND ACCEPTANCE (Failure of a Tenderer to complete and sign this form will invalidate the tender)**

**Offer (To be completed by the Tenderer and must be signed at the time of submission of the Tender)**

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

**CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO: CAPRICORN DISTRICT**

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the tender schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, signing this part of the Form of Offer and Acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

**THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS (CONTRACT PRICE)**

Rand (in words); R.....

.....

(in figures) R.....

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature(s) -----

Name(s) -----

Capacity -----

**For the tenderer:** -----

Name & signature of witness -----

Date -----

# Acceptance (To be completed by the Employer – not the Tenderer)

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the Consultant the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- Part C1            Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
- Part C2            Pricing Data
- Part C3            Scope of Work

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the *Employer* during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the *Employer's* agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the tenderer (now *Consultant*) within five working days of the date of such receipt notifies the *Employer* in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

## For the Employer

Signature .....

Name .....

Capacity .....

## Name and address of organization

## Signature and Name of Witness

Signature .....

Name .....

Capacity .....

## Schedule of Deviations

1 Subject .....

Details .....

.....  
.....  
.....

2 Subject .....

Details .....

.....  
.....  
.....

3 Subject .....

Details .....

.....  
.....  
.....

4 Subject .....

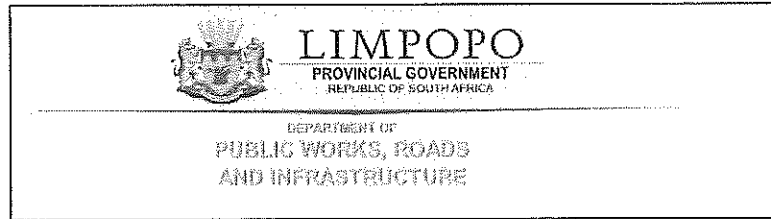
Details .....

.....  
.....  
.....

By the duly authorised representatives signing this agreement, the *Employer* and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the *Employer* during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

.....



## C1.2 CONTRACT DATA

1.	<p><b>Contract</b></p> <p><b>CONSTRUCTION OF NEW EMS SATELLITE STATION AT LEBOWAKGOMO: CAPRICORN DISTRICT</b></p> <p>The Appointment is under JBCC N/S Subcontractor Agreement for use with the JBCC PBA (Edition 4.1 Code 2101 March 2005) form of Contract with Preliminaries (Code 2103 May 2005) incorporating the State Provisions of C 41.0.</p>
2.	<p><b>Guarantees and surety</b></p> <p>Upon awarding of the bid, the bidder is require to provide surety, securities and/or guarantees from an accredited financial institution prior to the signing of the contract and commencement of works or arranged with the Main Contractor. The guarantees shall in the case of a fixed guarantee not exceed 10% of the contract price or, in the case of a variable guarantee not exceed 12, 5%, and shall be stated in the contract data.</p> <p>The bidder shall be entitled to a maximum of 21 days to secure such sureties as stated in clause 14.0 of the JBCC Principal Building Agreement. Failure to provide with a surety, securities and/or guarantees from an accredited financial institution within the stipulated period shall, upon notification in writing by the Main Contractor, nullify the award/acceptance letter of the bidder.</p> <p>Where the parties otherwise agree; include one or more of the following:</p> <ul style="list-style-type: none"> <li>o Guarantee issued by an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or a bank duly registered in terms of the Banks Act No 94 of 1990; or</li> <li>o A cash deposit paid in the name of employer; or</li> <li>o A payment reduction against payment certificates; or</li> <li>o Combination of (a) to (c) above.</li> </ul>
3.	<p><b>Payment</b></p> <p>The Contractors payments shall be submitted to the Principal Agent for processing. The Department's Agent shall review and certify the works done in line with scope of works and contract.</p>

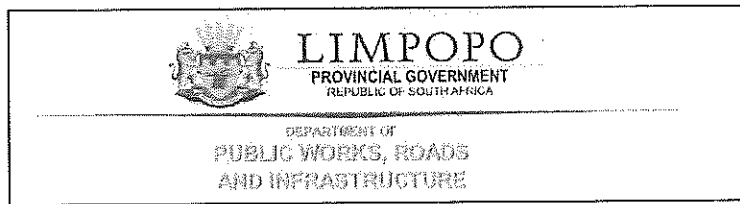


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## **PART C2: PRICING DATA**





## C2.1 Pricing Data

### C2.1.1 Pricing Instructions

- The Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Seventh Edition), 2015. Where applicable the:
  - a) civil engineering work has been drawn up in accordance with the provisions of the latest edition of SANS 1200 Standardised Specifications for Civil Engineering Works.
  - b) mechanical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Mechanical Work, published by the South African Association of Quantity Surveyors, July 2005).
  - c) electrical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Electrical Work, published by the South African Association of Quantity Surveyors, (July 2005).
- The agreement is based on the JBCC Series 2000 Principal Building Agreement, prepared by the Joint Building Contracts Committee, Edition 4.1, Code 2101, March 2005 (Public and Private Sector Compatible). The additions, deletions and alterations to the JBCC Principal Building Agreement as well as the contract specific variables are as stated in the Contract Data. Only the headings and clause numbers for which allowance must be made in the Bills of Quantities are recited
- Preliminary and general requirements are based on the JBCC Series 2000 Code 2103, May 2005 Addition preliminaries for the use of JBCC Series 2000. Only the headings and clause numbers for which allowance must be made in the Bills of Quantities are recited.
- It will be assumed that prices included in the Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to [www.stanza.org.za](http://www.stanza.org.za) or [www.iso.org](http://www.iso.org) for information on standards).
- The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
- The drawings listed in the Scope of Works used for the setting up of these Bills of Quantities are kept by the Principal Agent or Engineer and can be viewed at any time during office hours up until the completion of the works.
- Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted.
- The rates contained in the Bills of Quantities will apply irrespective of the final quantities of the different classes and kinds of work actually executed.

- Rates for work of similar description occurring in different sections of the Bills of Quantities shall be identical.
- An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
- Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable").
- The Contract Data and the standard form of contract referenced therein must be studied for the full extent and meaning of each and every clause set out in Section 1 (Preliminaries and General) of the Bills of Quantities.
- The Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Bills of Quantities, is at the Contractor's risk.
- The amount of the Preliminary and General Section to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract.
- Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 14 but taking into account the revised period for completing the works.
- The amount or items of the Preliminaries and General Section shall be adjusted to take account of the theoretical financial effect which changes in time or value (or both) have on this section. Such adjustments shall be based on adjustments in the following categories as recorded in the Bills of Quantities:
  - a) an amount which is not to be varied, namely Fixed (F)
  - b) an amount which is to be varied in proportion to the contract value, namely Value Related (V); and
  - c) an amount which is to be varied in proportion to the contract period as compared to the initial construction period excluding revisions to the construction period for which no adjustment to the contractor is not entitled to in terms of the contract, namely Time Related (T).
- Where no provision is made in the Bills of Quantities to indicate which of the three categories in 16 apply or where no selection is made, the adjustments shall be based on the following breakdown:
  - a) 10 percent is Fixed.
  - b) 15 percent is Value Related.
  - c) 75 percent is Time Related.
- The adjustment of the Preliminary and General Section shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminary and General Section shall exclude any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.

## C2.1.2 Unit of Measurements

The units of measurement described in the Bills of Quantities are metric units.

Abbreviations used in the Bills of Quantities are as follows:

Mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1 000 kg)
m <sup>2</sup>	=	square metre	No.	=	number
m <sup>2</sup> .pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	MegaNewton
m <sup>3</sup>	=	cubic metre	MN.m	=	MegaNewton-metre
m <sup>3</sup> .km	=	cubic metre-kilometre			
Prov sum	=	Provisional sum			

## C2.1.3 Locational Bills of Quantities

Section 2 of Volume 1 of these bills of quantities has the following location structure:

### T - Building Works

- T1 - Main Building
- T2 - Existing Building
- T3 - Guard House
- T4 - Pump Station
- T5 - Enviroloo Toilets
  - T51 - Type F4 Female Toilets
  - T52 - Type M2 Male Toilets
  - T53 - Type M3 Male Toilets

### U - External Works

- U1 - General Site Works



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DEPARTMENT OF  
PUBLIC WORKS, ROADS  
AND INFRASTRUCTURE

## **PART C2.2: BILLS OF QUANTITIES**

Item No		Quantity	Amount
	<p><b><u>PRELIMINARIES</u></b></p> <p><b><u>BILL NO 1</u></b></p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>MEANING OF TERMS "TENDER / TENDERER"</u></b></p> <p>Any reference to the words "Tender" or "Tenderer" herein and/or in any other documentation shall be construed to have the same meaning as the words "Bid" or "Bidder"</p> <p><b><u>PRELIMINARIES</u></b></p> <p>The JBCC Preliminaries Code 2103, May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1 Code 2101, March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or options are not applicable to the contract such modifications or corrections as are necessary are given under each relevant clause. Where an item is not relevant to this specific contract such item is marked "N/A" signifying "Not Applicable"</p> <p><b><u>PRICING OF PRELIMINARIES</u></b></p> <p>Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item</p> <p>Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities</p> <p>-----</p> <p style="text-align: right;">Carried to Collection</p>		
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>	R	

Item  
No

Quantity

Amount

**SECTION A: JBCC PRINCIPAL BUILDING AGREEMENT**

**DEFINITIONS**

1 **A1.0 DEFINITIONS AND INTERPRETATION**

Clause 1.0

Clause 1.1 Definition of "**Commencement Date**" is added:

"**COMMENCEMENT DATE**" means the date that the agreement, made in terms of the Form of Offer and Acceptance, comes into effect

Clause 1.1 Definition of "**Construction Guarantee**" is amended by replacing it with the following:

"**CONSTRUCTION GUARANTEE**" means a guarantee at call obtained by the contractor from an institution approved by the employer in terms of the employer's construction guarantee form as selected in the schedule

Clause 1.1 Definition of "**Construction Period**" is amended by replacing it with the following:

"**CONSTRUCTION PERIOD**" means the period commencing on the commencement date and ending on the date of practical completion

Clause 1.1 Definition of "**Corrupt Practice**" is added:

"**CORRUPT PRACTICE**" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution

Clause 1.1 Definition of "**Fraudulent Practice**" is added:

"**FRAUDULENT PRACTICE**" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practice among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition

Clause 1.1 Definition of "**Interest**" is amended by replacing it with the following:

"**INTEREST**" means the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999)

Carried to Collection

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Item No		Quantity	Amount
	<p>Clause 1.1 Definition of "<b>Principal Agent</b>" is amended by replacing it with the following:</p> <p>"<b>PRINCIPAL AGENT</b>" means the person or entity appointed by the <b>employer</b> and named in the <b>schedule</b>. In the event of a <b>principal agent</b> not being appointed, then all the duties and obligations of a <b>principal agent</b> as detailed in the <b>agreement</b> shall be fulfilled by a representative of the <b>employer</b> as named in the <b>schedule</b></p> <p>Clause 1.1 Definition of "<b>Security</b>" is amended by replacing it with the following:</p> <p>"<b>SECURITY</b>" means the form of security provided by the <b>employer</b> or <b>contractor</b>, as stated in the <b>schedule</b>, from which the <b>contractor</b> or <b>employer</b> may recover expense or loss</p> <p>Clause 1.6 is amended by replacing the words "prepaid registered post, telefax or e-mail" with "prepaid registered post or telefax"</p> <p>Clause 1.6.4 is amended by replacing it with the following:</p> <p>No clause</p> <p>Fixed: _____ Value: _____ Time: _____</p>		
	<p><b><u>OBJECTIVE AND PREPARATION</u></b></p>		
2	<p><b>A2.0 OFFER, ACCEPTANCE AND PERFORMANCE</b></p>		
	<p>Clause 2.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>		
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>	<p>Carried to Collection</p>	<p>R</p>

Item No		Quantity	Amount
3	<p><b>A3.0 DOCUMENTS</b></p> <p>Clause 3.0</p> <p>Clause 3.2.1 is amended by replacing "14.1" with "14.0"</p> <p>Clause 3.7 is amended by the addition of the following:</p> <p>The <b>contractor</b> shall supply and keep a copy of the <b>JBCC Series 2000 Principal Building Agreement</b> and Preliminaries applicable to this contract on the <b>site</b>, to which the <b>employer, principal agent and agents</b> shall have access at all times</p> <p>Clause 3.10 is amended by replacing the second reference to "<b>principal agent</b>" with the word "<b>employer</b>"</p> <p>Fixed: _____ Value: _____ Time : _____</p>	Item	
4	<p><b>A4.0 DESIGN RESPONSIBILITY</b></p> <p>Clause 4.0</p> <p>Clause 4.3 is amended by replacing it with the following:</p> <p>No clause</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
5	<p><b>A5.0 EMPLOYER'S AGENTS</b></p> <p>Clause 5.0</p> <p>Clause 5.1.2 is amended to include clauses 32.6.3, 34.3, 34.4 and 38.5.8</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
6	<p><b>A6.0 SITE REPRESENTATIVE</b></p> <p>Clause 6.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>	R	<p>Carried to Collection</p>



Item No		Quantity	Amount
7	<p><b>A7.0 COMPLIANCE WITH REGULATIONS</b></p> <p>Clause 7.0</p> <p>Note: A separate clause has been included in Section C : Specific Preliminaries of the <b>bills of quantities</b> for the <b>contractor</b> to have the opportunity to price for all the requirements of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification</p> <p>See clause C8 of Section C, Specific Preliminaries, in this regard</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
8	<p><b>A8.0 WORKS RISK</b></p> <p>Clause 8.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
9	<p><b>A9.0 INDEMNITIES</b></p> <p>Clause 9.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
10	<p><b>A10.0 WORKS INSURANCES</b></p> <p>Clause 10.0</p> <p>Clause 10.0 is amended by the addition of the following clauses:</p> <p><b>10.5 Damage to the Works</b></p> <p>(a) Without in any way limiting the <b>contractor's</b> obligations in terms of the contract, the <b>contractor</b> shall bear the full risk of damage to and/or destruction of the <b>works</b> by whatever cause during construction of the <b>works</b> and hereby indemnifies and holds harmless the <b>employer</b> against any such damage. The <b>contractor</b> shall take such precautions and security measures and other steps for the protection and security of the <b>works</b> as the <b>contractor</b> may deem necessary</p> <p>(b) The <b>contractor</b> shall at all times proceed immediately to remove or dispose of any debris arising from damage to or destruction of the <b>works</b> and to rebuild, restore, replace and/or repair the <b>works</b></p> <p>(c) The <b>employer</b> shall carry the risk of damage to or destruction of the <b>works</b> and materials paid for by the <b>employer</b> that is the result of the excepted risks as set out in 10.6</p>		
	<b>Carried to Collection</b>	R	
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>		

Item No		Quantity	Amount
(d)	Where the <b>employer</b> bears the risk in terms of this contract, the <b>contractor</b> shall, if requested to do so, reinstate any damage or destroyed portions of the <b>works</b> and the costs of such reinstatement shall be measured and valued in terms of 32.0 hereof		
	<b>10.6 Injury to Persons or loss of or damage to Properties</b>		
(a)	The <b>contractor</b> shall be liable for and hereby indemnifies the <b>employer</b> against any liability, loss, claim or proceeding whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever arising out of or in the course of or caused by the execution of the <b>works</b> unless due to any act or negligence of any person for whose actions the <b>employer</b> is legally liable		
(b)	The <b>contractor</b> shall be liable for and hereby indemnifies the <b>employer</b> against any liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the <b>site</b> , whether belonging to or under the control of the <b>employer</b> or any other body or person, arising out of or in the course of or by reason of the execution of the <b>works</b> unless due to any act or negligence of any person for whose actions the <b>employer</b> is legally liable		
(c)	The <b>contractor</b> shall, upon receiving a <b>contract instruction</b> from the <b>principal agent</b> , cause the same to be made good in a perfect and workmanlike manner at his own cost and in default thereof the <b>employer</b> shall be entitled to cause it to be made good and to recover the cost thereof from the <b>contractor</b> or to deduct the same from amounts due to the <b>contractor</b>		
(d)	The <b>contractor</b> shall be responsible for the protection and safety of such portions of the premises placed under his control by the <b>employer</b> for the purpose of executing the <b>works</b> until the issue of the <b>certificate of practical completion</b>		
(e)	Where the execution of the <b>works</b> involves the risk of removal of or interference with support to adjoining properties including land or structures or any structures to be altered or added to, the <b>contractor</b> shall obtain adequate insurance and will remain adequately insured or insured to the specific limit stated in the contract against the death of or injury to persons or damage to such property consequent on such removal or interference with the support until such portion of the <b>works</b> has been completed		
(f)	The <b>contractor</b> shall at all times proceed immediately at his own cost to remove or dispose of any debris and to rebuild, restore, replace and/or repair such property and to execute the <b>works</b>		
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item  
No

Quantity

Amount

**10.7 High risk insurance**

In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable subsurface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:

**10.7.1 Damage to the works**

The **contractor** shall, from the **commencement date** of the **works** until the date of the **certificate of practical completion** bear the full risk of and hereby indemnifies and holds harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary

When so instructed to do so by the **principal agent**, the **contractor** shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the **works** and to rebuild, restore, replace and/or repair the **works**, at the **contractor's** own costs

**10.7.2 Injury to persons or loss of or damage to property**

The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of, or caused by a catastrophic ground movement as mentioned above

The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract

**10.7.3** It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.7.1 and 10.7.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days** of the **commencement date** but before commencement of the **works**, submit to the **employer** proof of such insurance policy, if requested to do so

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Item No		Quantity	Amount
	<p>10.7.4 The <b>employer</b> shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the <b>contractor's</b> default of his obligations as set out in 10.7.1; 10.7.2 and 10.7.3. Such losses or damages may be recovered from the <b>contractor</b> or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the <b>employer</b> and the <b>contractor</b> and for this purpose all these contracts shall be considered one indivisible whole</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
11	<p><b>A11.0 LIABILITY INSURANCES</b></p> <p>Clause 11.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
12	<p><b>A12.0 EFFECTING INSURANCES</b></p> <p>Clause 12.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
13	<p><b>A13.0 No clause</b></p>	N/A	
14	<p><b>A14.0 SECURITY</b></p> <p>Clause 14.0</p> <p>Clauses 14.1 - 14.8 are amended by replacing them with the following:</p> <p>14.1 In respect of contracts with a <b>contract sum</b> up to R1 million, the <b>security</b> to be provided by the <b>contractor</b> to the <b>employer</b> will be a payment reduction of five per cent (5%) of the value certified in the <b>payment certificate</b> (excluding VAT)</p> <p>14.1.1 The payment reduction of the value certified in a <b>payment certificate</b> shall be <i>mutatis mutandi</i> in terms of 31.8(A)</p> <p>14.1.2 The <b>employer</b> shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the <b>employer</b> complies with the provisions of 33.4 in which event the <b>employer's</b> entitlement shall take precedence over his obligations to refund the payment reduction <b>security</b> or portions thereof to the <b>contractor</b></p>		
	<p style="text-align: right;">Carried to Collection</p> <p>Section No 1 Bill No 1 PRELIMINARIES</p>	R	

Item No		Quantity	Amount
	<p>14.2 In respect of contracts with a <b>contract sum</b> above R1 million, the <b>contractor</b> shall have the right to select the <b>security</b> to be provided in terms of 14.3, 14.4, 14.5, 14.6, or 14.7 as stated in the <b>schedule</b>. Such <b>security</b> shall be provided to the <b>employer</b> within twenty-one (21) <b>calendar days</b> from <b>commencement date</b>. Should the <b>contractor</b> fail to select the <b>security</b> to be provided or should the <b>contractor</b> fail to provide the <b>employer</b> with the selected <b>security</b> within twenty-one (21) <b>calendar days</b> from <b>commencement date</b>, the <b>security</b> in terms of 14.7 shall be deemed to have been selected</p> <p>14.3 Where <b>security</b> as a cash deposit of ten per cent (10%) of the <b>contract sum</b> (excluding VAT) has been selected:</p> <p>14.3.1 The <b>contractor</b> shall furnish the <b>employer</b> with a cash deposit equal in value to ten per cent (10%) of the <b>contract sum</b> (excluding VAT) within twenty-one (21) <b>calendar days</b> from <b>commencement date</b></p> <p>14.3.2 Within twenty-one (21) <b>calendar days</b> of the date of <b>practical completion</b> of the <b>works</b> the <b>employer</b> shall reduce the cash deposit to an amount equal to three per cent (3%) of the <b>contract value</b> (excluding VAT), and refund the balance to the <b>contractor</b></p> <p>14.3.3 Within twenty-one (21) <b>calendar days</b> of the date of <b>final completion</b> of the <b>works</b> the <b>employer</b> shall reduce the cash deposit to an amount equal to one per cent (1%) of the <b>contract value</b> (excluding VAT) and refund the balance to the <b>contractor</b></p> <p>14.3.4 On the date of payment of the amount in the final <b>payment certificate</b>, the <b>employer</b> shall refund the remainder of the cash deposit to the <b>contractor</b></p> <p>14.3.5 The <b>employer</b> shall be entitled to recover expense and loss from the cash deposit in terms of 33.0 provided that the <b>employer</b> complies with the provisions of 33.4 in which event the <b>employer's</b> entitlement shall take precedence over his obligations to refund the cash deposit <b>security</b> or portions thereof to the <b>contractor</b></p> <p>14.3.6 The parties expressly agree that neither the <b>employer</b> nor the <b>contractor</b> shall be entitled to cede the rights to the deposit to any third party</p> <p>14.4 Where <b>security</b> as a variable <b>construction guarantee</b> of ten per cent (10%) of the <b>contract sum</b> (excluding VAT) has been selected:</p> <p>14.4.1 The <b>contractor</b> shall furnish the <b>employer</b> with an acceptable variable <b>construction guarantee</b> equal in value to ten per cent (10%) of the <b>contract sum</b> (excluding VAT) within twenty-one (21) <b>calendar days</b> from <b>commencement date</b></p>		
	Carried to Collection		R
	Section No 1 Bill No 1 PRELIMINARIES		

Item  
No

Quantity

Amount

14.4.3 The **employer** shall return the variable **construction guarantee** to the **contractor** within fourteen (14) **calendar days** of it expiring

14.4.2 The variable **construction guarantee** shall reduce and expire in terms of the Variable **Construction Guarantee** form included in the invitation to tender

14.4.4 Where the **employer** has a right of recovery against the **contractor** in terms of 33.0, the **employer** shall issue a written demand in terms of the variable **construction guarantee**

14.5 Where **security** as a fixed **construction guarantee** of five per cent (5%) of the **contract sum** (excluding VAT) and a five per cent (5%) payment reduction of the value certified in the **payment certificate** (excluding VAT) has been selected:

14.5.1 The **contractor** shall furnish a fixed **construction guarantee** to the **employer** equal in value to five per cent (5%) of the **contract sum** (excluding VAT)

14.5.2 The fixed **construction guarantee** shall come into force on the date of issue and shall expire on the date of the last certificate of **practical completion**

14.5.3 The **employer** shall return the fixed **construction guarantee** to the **contractor** within fourteen (14) **calendar days** of it expiring

14.5.4 The payment reduction of the value certified in a **payment certificate** shall be in terms of 31.8 (A) and 34.8

14.5.5 Where the **employer** has a right of recovery against the **contractor** in terms of 33.0, the **employer** shall be entitled to issue a written demand in terms of the fixed **construction guarantee** or may recover from the payment reduction or may do both

14.6 Where **security** as a cash deposit of five per cent (5%) of the **contract sum** (excluding VAT) and a payment reduction of five per cent (5%) of the value certified in the **payment certificate** (excluding VAT) has been selected:

14.6.1 The **contractor** shall furnish the **employer** with a cash deposit equal in value to five per cent (5%) of the **contract sum** (excluding VAT) within twenty-one (21) **calendar days** from **commencement date**

14.6.2 Within twenty-one (21) **calendar days** of the date of **practical completion** of the **works** the **employer** shall refund the cash deposit in total to the **contractor**

14.6.3 The payment reduction of the value certified in a **payment certificate** shall be *mutatis mutandi* in terms of 31.8(A)

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PRELIMINARIES

Item No		Quantity	Amount
	<p>14.6.4 Where the <b>employer</b> has a right of recovery against the <b>contractor</b> in terms of 33.0, the <b>employer</b> may issue a written notice in terms of 33.4 or may recover from the payment reduction or may do both</p> <p>14.7 Where <b>security</b> as a payment reduction of ten per cent (10%) of the value certified in the <b>payment certificate</b> (excluding VAT) has been selected:</p> <p>14.7.1 The payment reduction of the value certified in a <b>payment certificate</b> shall be <i>mutatis mutandi</i> in terms of 31.8(B)</p> <p>14.7.2 The <b>employer</b> shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the <b>employer</b> complies with the provisions of 33.4 in which event the <b>employer's</b> entitlement shall take precedence over his obligations to refund the payment reduction or portions thereof to the <b>contractor</b></p> <p>14.8 Payments made by the guarantor to the <b>employer</b> in terms of the fixed or variable <b>construction guarantee</b> shall not prejudice the rights of the <b>employer</b> or <b>contractor</b> in terms of this <b>agreement</b></p> <p>14.9 Should the <b>contractor</b> fail to furnish the <b>security</b> in terms of 14.2, the <b>employer</b>, in his sole discretion and without notification to the <b>contractor</b>, is entitled to change the <b>contractor's</b> selected form of <b>security</b> to that of a ten per cent (10%) payment reduction of the value certified in the <b>payment certificate</b> (excluding VAT), whereafter 14.7 shall be applicable</p> <p>Fixed: _____ Value: _____ Time: _____</p> <p><b>EXECUTION</b></p> <p>15 <b>A15.0 PREPARATION FOR AND EXECUTION OF THE WORKS</b></p> <p>Clause 15.0</p> <p>Clause 15.1.1 is amended by replacing it with:</p> <p>No clause</p> <p>Clause 15.1.2 is amended by replacing it with:</p> <p>The <b>security</b> selected in terms of 14.0</p> <p>Clause 15.1 is amended by the addition of the following clause:</p> <p>15.1.4 An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), within twenty-one (21) <b>calendar days</b> of commencement date</p>	Item	
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>	Carried to Collection	R

Item No		Quantity	Amount
	<p>Clause 15.2.1 is amended by replacing it with the following clause:</p> <p>Give the <b>contractor</b> possession of the <b>site</b> within ten (10) <b>working days</b> of the <b>contractor</b> complying with the terms of 15.1.4</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
16	<p><b>A16.0 ACCESS TO THE WORKS</b></p> <p>Clause 16.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
17	<p><b>A17.0 CONTRACT INSTRUCTIONS</b></p> <p>Clause 17.0</p> <p>Clause 17.1.11 is amended by deleting the words "and the appointment of <b>nominated</b> and <b>selected subcontractors</b>"</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
18	<p><b>A18.0 SETTING OUT OF THE WORKS</b></p> <p>Clause 18.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
19	<p><b>A19.0 ASSIGNMENT</b></p> <p>Clause 19.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
20	<p><b>A20.0 NOMINATED SUBCONTRACTORS</b></p> <p>Clause 20.0</p> <p>Clause 20.1.3 is amended by replacing it with the following:</p> <p>No clause</p> <p>Note: See item B9.1 hereinafter for adjustment of attendance on <b>nominated subcontractors</b> executing work allowed for under provisional sums</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Carried to Collection</b>	R	
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>		



Item No		Quantity	Amount
21	<p><b>A21.0 SELECTED SUBCONTRACTORS</b></p> <p>Clause 21.0</p> <p>Clause 21 is amended by replacing it with:</p> <p>No clause</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
22	<p><b>A22.0 EMPLOYER'S DIRECT CONTRACTORS</b></p> <p>Clause 22.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
23	<p><b>A23.0 CONTRACTOR'S DOMESTIC SUBCONTRACTORS</b></p> <p>Clause 23.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b><u>COMPLETION</u></b>			
24	<p><b>A24.0 PRACTICAL COMPLETION</b></p> <p>Clause 24.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
25	<p><b>A25.0 WORKS COMPLETION</b></p> <p>Clause 25.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
26	<p><b>A26.0 FINAL COMPLETION</b></p> <p>Clause 26.0</p> <p>Clause 26.1.2 is amended by inserting "#" next to 26.1.2</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>		Carried to Collection	R

Item No		Quantity	Amount
27	<p><b>A27.0 LATENT DEFECTS LIABILITY PERIOD</b></p> <p>Clause 27.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
28	<p><b>A28.0 SECTIONAL COMPLETION</b></p> <p>Clause 28.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
29	<p><b>A29.0 REVISION OF DATE FOR PRACTICAL COMPLETION</b></p> <p>Clause 29.0</p> <p>Clause 29.2.5 is amended by replacing it with:</p> <p>No clause</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
30	<p><b>A30.0 PENALTY FOR NON-COMPLETION</b></p> <p>Clause 30.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b><u>PAYMENT</u></b>			
31	<p><b>A31.0 INTERIM PAYMENT TO THE CONTRACTOR</b></p> <p>Clause 31.0</p> <p>Clause 31.5.2 is amended by replacing "14.7.1" with "14.0"</p> <p><b>Alternative A</b></p> <p>31.8(A) Where a <b>security</b> is selected in terms of 14.1; 14.5 or 14.6, the value of the <b>works</b> in terms of 31.4.1 and <b>materials and goods</b> in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:</p> <p>Clause 31.8 is amended by replacing it with the following two alternative clauses:</p> <p>31.8(A).1 Ninety-five per cent (95%) of such value in interim <b>payment certificates</b> issued up to the date of <b>practical completion</b></p>		
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No	Quantity	Amount
<p>31.8(A).2 Ninety-seven per cent (97%) of such value in interim <b>payment certificates</b> issued on the date of <b>practical completion</b> and up to but excluding the date of <b>final completion</b></p> <p>31.8(A).3 Ninety-nine per cent (99%) of such value in interim <b>payment certificates</b> issued on the date of <b>final completion</b> and up to but excluding the <b>final payment certificate</b> in terms of 34.6</p> <p>31.8(A).4 One hundred per cent (100%) of such value in the <b>final payment certificate</b> in terms of 34.6 except where the amount certified is in favour of the <b>employer</b>. In such an event the payment reduction shall remain at the adjustment level applicable to the <b>final payment certificate</b></p> <p><b>Alternative B</b></p> <p>31.8(B) Where <b>security</b> as a payment reduction in terms of 14.7 has been selected, the value of the <b>works</b> in terms of 31.4.1 and <b>materials and goods</b> in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:</p> <p>31.8(B).1 Ninety per cent (90%) of such value in interim <b>payment certificates</b> issued up to the date of <b>practical completion</b></p> <p>31.8(B).2 Ninety-seven per cent (97%) of such value in interim <b>payment certificates</b> issued on the date of <b>practical completion</b> and up to but excluding the date of <b>final completion</b></p> <p>31.8(B).3 Ninety-nine per cent (99%) of such value in interim <b>payment certificates</b> issued on the date of <b>final completion</b> and up to but excluding the <b>final payment certificate</b> in terms of 34.6</p> <p>31.8(B).4 One hundred per cent (100%) of such value in the <b>final payment certificate</b> in terms of 34.6 except where the amount certified is in favour of the <b>employer</b>. In such an event the payment reduction shall remain at the adjustment level applicable to the <b>final payment certificate</b></p> <p>Clause 31.12 is amended by deleting the following:</p> <p>Payment shall be subject to the <b>employer</b> giving the <b>contractor</b> a tax invoice for the amount due</p> <p>Fixed: _____ Value: _____ Time: _____</p>		
<p>Section No 1 Bill No 1 PRELIMINARIES</p>	<p>Carried to Collection</p>	<p>R</p>

Item No		Quantity	Amount
32	<p><b>A32.0 ADJUSTMENT TO THE CONTRACT VALUE</b></p> <p>Clause 32.0</p> <p>Clauses 32.5.1, 32.5.4 and 32.5.7 are amended by the addition of the following at the end of the sentence:</p> <p>"due to no fault of the <b>contractor</b>"</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
33	<p><b>A33.0 RECOVERY OF EXPENSE AND LOSS</b></p> <p>Clause 33.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
34	<p><b>A34.0 FINAL ACCOUNT AND FINAL PAYMENT</b></p> <p>Clause 34.0</p> <p>Clause 34.1 is amended by removing "#" next to 34.1</p> <p>Clause 34.2 is amended by inserting "#" next to 34.2</p> <p>Clause 34.8 is amended by deleting the words "where <b>security</b> as a fixed <b>construction guarantee</b> in terms of 14.4 has been selected or where payment reduction has been applied in terms of 14.7.1"</p> <p>Clause 34.13 is amended by replacing "seven (7) <b>calendar days</b>" with "twenty-one (21) <b>calendar days</b>" and deleting the words "subject to the <b>employer</b> giving the <b>contractor</b> a tax invoice for the amount due"</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
35	<p><b>A35.0 PAYMENT TO OTHER PARTIES</b></p> <p>Clause 35.0</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Carried to Collection</b>	R	
	<p>Section No 1 Bill No 1 PRELIMINARIES</p>		

Item No		Quantity	Amount
	<u>CANCELLATION</u>		
36	<b>A36.0 CANCELLATION BY EMPLOYER - CONTRACTOR'S DEFAULT</b>		
	Clause 36.0		
	Clause 36.1 is amended by the addition of the following clauses:		
	36.1.3 refuses or neglects to comply strictly with any of the conditions of contract		
	36.1.4 estate being sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa		
	36.1.5 in the judgement of the <b>employer</b> , has engaged in <b>corrupt</b> or <b>fraudulent practices</b> in competing for or in executing the contract		
	Clause 36.3 is amended by removing the reference to "No clause" and replacing the words " <b>principal agent</b> " with " <b>employer</b> "		
	Clause 36.0 is amended by the addition of the following clause:		
	36.7 Notwithstanding any clause to the contrary, on cancellation of this <b>agreement</b> either by the <b>employer</b> or the <b>contractor</b> ; or for any reason whatsoever, the <b>contractor</b> shall on written instruction, discontinue with the <b>works</b> on a date stated and withdraw himself from the <b>site</b> . The <b>contractor</b> shall not be entitled to refuse to withdraw from the <b>works</b> on the grounds of any lien or right of retention or on the grounds of any other right whatsoever		
	Fixed: _____ Value: _____ Time: _____	Item	
37	<b>A37.0 CANCELLATION BY EMPLOYER - LOSS AND DAMAGE</b>		
	Clause 37.0		
	Clause 37.3.5 is amended by replacing "ninety (90)" with "one hundred and twenty (120)"		
	Clause 37.0 is amended by the addition of the following clause:		
	37.5 Notwithstanding any clause to the contrary, on cancellation of this <b>agreement</b> either by the <b>employer</b> or the <b>contractor</b> ; or for any reason whatsoever, the <b>contractor</b> shall on written instruction, discontinue with the <b>works</b> on a date stated and withdraw himself from the <b>site</b> . The <b>contractor</b> shall not be entitled to refuse to withdraw from the <b>works</b> on the grounds of any lien or right of retention or on the grounds of any other right whatsoever		
	Fixed: _____ Value: _____ Time: _____	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
38	<p><b>A38.0 CANCELLATION BY CONTRACTOR - EMPLOYER'S DEFAULT</b></p> <p>Clause 38.0</p> <p>Clause 38.5.4 is amended by replacing "ninety (90)" with "one hundred and twenty (120)"</p> <p>Clause 38.0 is amended by the addition of the following clause:</p> <p>38.7 Notwithstanding any clause to the contrary, on cancellation of this <b>agreement</b> either by the <b>employer</b> or the <b>contractor</b>; or for any reason whatsoever, the <b>contractor</b> shall on written instruction, discontinue with the <b>works</b> on a date stated and withdraw himself from the <b>site</b>. The <b>contractor</b> shall not be entitled to refuse to withdraw from the <b>works</b> on the grounds of any lien or right of retention or on the grounds of any other right whatsoever</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
39	<p><b>A39.0 CANCELLATION - CESSATION OF THE WORKS</b></p> <p>Clause 39.0</p> <p>Clause 39.3.5 is amended by the addition of the following at the end of the sentence:</p> <p>"within one hundred and twenty (120) <b>working days</b> of completion of such a report"</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
	<b><u>DISPUTE</u></b>		
40	<b>A40.0 DISPUTE SETTLEMENT</b>		
	Clause 40.0		
	Clause 40.2.2 is amended by replacing "one (1) year" with "three (3) years"		
	Clause 40.6 is amended by removing the reference to:		
	No clause		
	Clause 40.7.1 is amended by replacing "(10)" with "(15)" and by the addition of the following:		
	Whether or not mediation resolves the dispute, the parties shall bear their own costs concerning the mediation and equally share the costs of the mediator and related costs		
	Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>SUBSTITUTE PROVISIONS</u></b>		
41	<b>A41.0 STATE CLAUSES</b>		
	Clause 41.0		
	Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>CONTRACT VARIABLES</u></b>		
42	<b>A42.0 THE SCHEDULE</b>		
	Clause 42.		
	Fixed: _____ Value: _____ Time: _____	Item	
	42.1.1 Employer: Department of Public Works, Roads & Infrastructure, Limpopo Provincial Government 43 Church Street, Polokwane, 0699 Private Bag X9490, Polokwane, 0700 Tel: 015 284 7000 Fax: 015 2847030		
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
41.1.2	Principal Agent: The Creative Axis Architects Agent's Service: Architects Suite 2, 76 Hans van Rensburg Street, Polokwane, 0699 Tel: 015 297 0909 Fax: 086 612 3925 E-mail: <a href="mailto:raj@creativeaxis.co.za">raj@creativeaxis.co.za</a>		
41.1.3	Agent (2) NRM Quantity Surveyors Agent's service: Quantity Surveyors 14 Challoner Close Street, Bendor, Polokwane 0699 Tel: 082 421 9697 Fax: 086 452 3004 E-mail: <a href="mailto:reubenmphaki@gmail.com">reubenmphaki@gmail.com</a>		
41.1.2	Agent (3) Sky High Consulting Agents service: Civil & Structural Engineers CC No 5 Loca Plana Building 22 Peace Street, Tzaneen, 0850 Tel: 015 307 6961 Fax: 086 540 1430 E-mail: <a href="mailto:taurai@shconsultiong.co.za">taurai@shconsultiong.co.za</a>		
42.1.4	Agent (4) Mabhoko Consulting Agent's service: Electrical & Mechanical Engineers 70 A Bendor Drive, Bendor Park, Polokwane 0699 Tel: 060 464 4465 E-mail: <a href="mailto:mabhoko45@gmail.com">mabhoko45@gmail.com</a>		
<b>42.2</b>	<b><u>CONTRACT DETAILS</u></b>		
42.2.1	Works Description:		
	<p><i>The works described in these Bills of Quantities comprises alterations of existing offices, the erection and completion of a new EMS Satellite Station, Guard House, Pump Station, Enviroloo Toilets at Lebowakgomo BA including all external works, civil works and electrical installation.</i></p>		
	<p><i>The buildings are single storey with brick walls, face brick walls externally and plastered and painted walls internally, ceilings and roof sheeting on timber trusses.</i></p>		
	<b>Carried to Collection</b>	R	
Section No 1 Bill No 1 PRELIMINARIES			



Item No		Quantity	Amount
42.2.2	<p>Site Description:</p> <p><i>The site is Erf 34, Lebowakgomo BA Lepelle-Nkumpi Local Municipality, Limpopo Province Co-ordinates: Latitude: 24°19'7.96'S Longitude: 29°28'51.56'E</i></p>		
42.2.3	Work or installations by direct contractors:		
42.2.4	Specific options that are applicable to a State organ only:		
	(1) Interest rate legislation:	Yes	
	(2) Lateral support insurance to be effected by the contractor:	N/A	
	(3) Payment will be made for materials and goods:	Yes	
	(4) Dispute resolution by litigation:	Yes	
	(5) Extended defects liability period applicable to the following elements:	N/A	
42.2.5	Possession of the site is to be given on:		
	<i>Date to be determined</i>		
42.2.6	Period for the commencement of the works after the contractor takes possession of the site:		
	<i>Within seven (7) working days</i>		
42.2.7	The date for practical completion and the penalty per calendar day for the works in sections:		
	Date: <i>Within sixteen (16) calendar months, inclusive of builders' holidays, after the date of site handover</i>		
	Penalty: <i>0.05% of the contract value inclusive of value added tax</i>		
	<b>Carried to Collection</b>		
Section No 1 Bill No 1 PRELIMINARIES			R

Item No		Quantity	Amount
42.2.8	The date for practical completion and the penalty per calender day for the works in sections:  <b>Section 1:</b> Date: 12 Months Penalty: 0.05% 1. New EMS building 2. Guard House 3. Pump Station 4. Enviroloo Toilets 5. External works 6. Civil works 7. Electrical installation  <b>Section 2:</b> Date: 4 Months Penalty: 0.05% 1. Alterations of existing Offices	YES	
42.2.9	The law applicable to this agreement shall be that of:  <b>Republic of South Africa</b>		
<b>42.3</b>	<b><u>INSURANCES</u></b>		
42.3.1	Contract works insurance:  To be effected by: <b>Contractor</b> For the sum of: <b>Contract amount plus 20%</b> With a deductible of: <b>As determined by the contractor's insurance company</b>		
42.3.2	Supplementary insurance is required:	No	
42.3.3	Public liability insurance:  To be effected by: <b>Contractor</b> For the sum of: <b>R 10 000 000-00</b> With a deductible of: <b>As determined by the contractor's insurance company</b>	Yes	
42.3.4	Support insurance to be effected by the employer:	No	
<b>42.4</b>	<b><u>DOCUMENTS</u></b>		
42.4.1	Waivers of contractor's lien or right of continuing possession is required:	Yes	
	Carried to Collection	R	
Section No 1 Bill No 1 PRELIMINARIES			

Item No		Quantity	Amount
42.4.2	Construction document copies to be supplied to the contractor free of charge:		
	<i>Three (3) copies of each</i>		
42.4.3	Bills of quantities drawn up in accordance with:		
	<i>Standard System of Measuring Building Work 7th Edition</i>		
42.4.4	On acceptance of the tender the bills of quantities is to be submitted:		
	<i>Within seven (7) working days</i>		
42.4.5	JBCC Engineering General Conditions are to be included in the documents:		
		<b>No</b>	
42.4.6	The contract value is to be adjusted using CPAP:		
		<b>Yes</b>	
	Base month of indexes: <i>Month prior to tender closing</i>		
42.4.7	Details of changes made to the provision of JBCC standard documentation:		
	<i>Clause 3, 4, 5 10, 14, 15, 17, 20, 21, 26, 29, 31, 32, 34, 36, 37, 38, 39, 40</i>		
	<i>All post-tender information for this section will be determined once tender is awarded</i>		
	<b>Carried to Collection</b>	<b>R</b>	
Section No 1 Bill No 1 PRELIMINARIES			

Item No		Quantity	Amount
<b>42.5</b>	<b><u>CONTRACT DETAILS</u></b>		
42.5.1	<b>Contractor:</b>		
	Postal address:		
	.....		
	Tel:		
	.....		
	Fax:		
	.....		
	Tax/VAT Registration number:		
	.....		
	Physical address:		
	.....		
	.....		
42.5.2	The accepted <b>contract sum</b> , inclusive of tax, is:		
	R.....		
	Amount is words:		
	.....		
	.....		
	.....		
42.5.3	The latest day of the month for the issue of an interim <b>payment certificate</b> :		
	<i>[31.3]</i>		
	.....		
	Section No 1		
	Bill No 1		
	PRELIMINARIES		
	<b>Carried to Collection</b>	R	

Item No		Quantity	Amount
42.5.4 [32.12]	The preliminaries amounts shall be paid in terms of: <i>(*Delete the not elected option):</i>		
-	Alternative A:  YES/NO		
-	Alternative B:  YES/NO		
42.5.5 [32.12]	The preliminaries amounts shall be adjusted in terms of: <i>(*Delete the not elected option):</i>		
-	Alternative A:  YES/NO		
-	Alternative B:  YES/NO		
42.5.6 [3.1]	Not applicable/No clause:		
42.5.7 [31]	The security to be provided by the contractor: <i>(*Delete the not elected option):</i>		
-	Alternative A:  YES/NO		
-	Alternative B:  YES/NO		
42.5.8 [29.7.2]	The annual holiday period after the commencement date of the <b>construction period:</b>		
	From:  ..... to .....		
	<b>Carried to Collection</b>	R	
Section No 1 Bill No 1 PRELIMINARIES			

Item No	42.6 DOCUMENTS	Quantity	Amount
42.6.1 Contract documents marked and annexed hereto:	<i>(*Delete the not elected option)</i>		
-	Priced <b>bills of quantities:</b> Document marked as: .....	YES/NO	
-	<b>Lump sum document:</b> Document marked as: .....	YES/NO	
-	<b>Guarantee:</b> Document marked as: .....	YES/NO	
-	<b>Contract drawings:</b> Document marked as: .....	YES/NO	
-	<b>Other documents:</b> (*If "Yes", specify:) .....	YES/NO	
42.7 DISPUTE RESOLUTION	Not applicable/No clause		
Section No 1 Bill No 1 PRELIMINARIES	Carried to Collection	R	

Item No		Quantity	Amount
42.8	<p><b>SIGNATURES OF THE CONTRACTING PARTIES</b></p> <p>- This done and signed at ..... on ..... Name of signatory: ..... For and behalf of the <b>Employer</b> who by signature hereof warrants authorisation hereto: ..... As Witness: .....</p> <p>- This done and signed at ..... on ..... Capacity of signatory: ..... For and behalf of the <b>Contractor</b> who by signature hereof warrants authorisation hereto: ..... As Witness: .....</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No 1 Bill No 1 PRELIMINARIES</p>		R

Item No		Quantity	Amount
	<b><u>SECTION B: JBCC PRELIMINARIES</u></b>		
	<b><u>B1.0 DEFINITIONS AND INTERPRETATION</u></b>		
43	<p><b>B1.1 Definitions and interpretation</b></p> <p>See also clause A1.0 of Section A for additional and/or amended definitions which shall apply equally to this Section</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b><u>B2.0 DOCUMENTS</u></b>		
44	<p><b>B2.1 Checking of documents</b></p> <p><i>These bills of Quantities:</i></p> <p><i>(1) contain pages and annexes as indexed, and;</i></p> <p><i>(2) are in multiple procurement format, i.e. all trades are fully measured with minor budgetary allowances.</i></p> <p><i>Items in these bills of quantities are to be read and priced in conjunction with and the descriptions regarded as amplified by the Construction Specifications - General Specifications, PW371-A and Construction Specifications - Particular Specifications, PW371-B, as recommended and published by the Department of Public Works and no claim arising from brevity of description of items fully described in the said Preambles for Trades will be entertained</i></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
45	<p><b>B2.2 Provisional bills of quantities</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	N/A	
46	<p><b>B2.3 Availability of construction documentation</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
47	<p><b>B2.4 Interests of agents</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
48	<p><b>B2.5 Priced documents</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		



Item No		Quantity	Amount
49	<p><b>B2.6 Tender submission</b></p> <p><i>Notwithstanding anything contained in this clause, tender shall be valid for a period of one hundred and eighty (180) days from the closing date of tender.</i></p> <p>Clause 2.6 is amended by replacing "JBCC Form of Tender" with "Form of Offer and Acceptance C1.1"</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b><u>B3.0 THE SITE</u></b>			
50	<p><b>B3.1 Defined works area</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
51	<p><b>B3.2 Geotechnical investigation</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
52	<p><b>B3.3 Inspection of the site</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
53	<p><b>B3.4 Existing premises occupied</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
54	<p><b>B3.5 Previous work - dimensional accuracy</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
55	<p><b>B3.6 Previous work - defects</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
56	<p><b>B3.7 Services - known</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
57	<p><b>B3.8 Services - unknown</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
58	<b>B3.9 Protection of trees</b> Fixed: _____ Value: _____ Time: _____	Item	
59	<b>B3.10 Articles of value</b> Fixed: _____ Value: _____ Time: _____	Item	
60	<b>B3.11 Inspection of adjoining properties</b> Fixed: _____ Value: _____ Time: _____	Item	
<b><u>B4.0 MANAGEMENT OF CONTRACT</u></b>			
61	<b>B4.1 Management of the works</b> Fixed: _____ Value: _____ Time: _____	Item	
62	<b>B4.2 Programme for the works</b> Fixed: _____ Value: _____ Time: _____	Item	
63	<b>B4.3 Progress meetings</b> Fixed: _____ Value: _____ Time: _____	Item	
64	<b>B4.4 Technical meetings</b> Fixed: _____ Value: _____ Time: _____	Item	
65	<b>B4.5 Labour and plant records</b> Fixed: _____ Value: _____ Time: _____	Item	
<b><u>B5.0 SAMPLES, SHOP DRAWINGS AND MANUFACTURERS' INSTRUCTIONS</u></b>			
66	<b>B5.1 Samples of materials</b> Fixed: _____ Value: _____ Time: _____	Item	
67	<b>B5.2 Workmanship samples</b> Fixed: _____ Value: _____ Time: _____	Item	
		Carried to Collection	R
Section No 1 Bill No 1 PRELIMINARIES			

Item No		Quantity	Amount
68	<b>B5.3 Shop drawings</b> Fixed: _____ Value: _____ Time: _____	Item	
69	<b>B5.4 Compliance with manufacturers' instructions</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B6.0 TEMPORARY WORKS AND PLANT</u></b>		
70	<b>B6.1 Deposits and fees</b> Fixed: _____ Value: _____ Time: _____	Item	
71	<b>B6.2 Enclosure of the works</b> Fixed: _____ Value: _____ Time: _____	Item	
72	<b>B6.3 Advertising</b> Fixed: _____ Value: _____ Time: _____	Item	
73	<b>B6.4 Plant, equipment, sheds and offices</b> Fixed: _____ Value: _____ Time: _____	Item	
74	<b>B6.5 Main notice board</b> Fixed: _____ Value: _____ Time: _____	Item	
75	<b>B6.6 Subcontractors' notice board</b> Fixed: _____ Value: _____ Time: _____	Item	
76	<b>B7.1 Location</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B7.0 TEMPORARY SERVICES</u></b>		
77	<b>B7.2 Water</b> Fixed: _____ Value: _____ Time: _____	Item	
78	<b>B7.3 Electricity</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
79	<b>B7.4 Telecommunication facilities</b> Fixed: _____ Value: _____ Time: _____	Item	
80	<b>B7.5 Ablution facilities</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B8.0 PRIME COST AMOUNTS</u></b>		
81	<b>B8.1 Responsibility for prime cost amounts</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B9.0 ATTENDANCE ON N/S SUBCONTRACTORS</u></b>		
82	<b>B9.1 General attendance</b> Fixed: _____ Value: _____ Time: _____	Item	
83	<b>B9.2 Special attendance</b> Fixed: _____ Value: _____ Time: _____	Item	
84	<b>B9.3 Commissioning - fuel, water and electricity</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B10.0 FINANCIAL ASPECTS</u></b>		
85	<b>B10.1 Statutory taxes, duties and levies</b> Fixed: _____ Value: _____ Time: _____	Item	
86	<b>B10.2 Payment for preliminaries</b> Fixed: _____ Value: _____ Time: _____	Item	
87	<b>B10.3 Adjustment of preliminaries</b> Clauses B10.3.1 and B10.3.2 are amended by replacing "within fifteen (15) working days of taking possession of the site" with "when submitting his priced bills of quantities / lump sum document" Fixed: _____ Value: _____ Time: _____	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
88	<b>B10.4 Payment certificate cash flow</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B11.0 GENERAL</u></b>		
89	<b>B11.1 Protection of the works</b> Fixed: _____ Value: _____ Time: _____	Item	
90	<b>B11.2 Protection / isolation of existing / sectionally occupied works</b> Fixed: _____ Value: _____ Time: _____	Item	
91	<b>B11.3 Security of the works</b> Fixed: _____ Value: _____ Time: _____	Item	
92	<b>B11.4 Notice before covering work</b> Fixed: _____ Value: _____ Time: _____	Item	
93	<b>B11.5 Disturbance</b> Fixed: _____ Value: _____ Time: _____	Item	
94	<b>B11.6 Environmental disturbance</b> Fixed: _____ Value: _____ Time: _____	Item	
95	<b>B11.7 Works cleaning and clearing</b> Fixed: _____ Value: _____ Time: _____	Item	
96	<b>B11.8 Vermin</b> Fixed: _____ Value: _____ Time: _____	Item	
97	<b>B11.9 Overhand work</b> Fixed: _____ Value: _____ Time: _____	Item	
98	<b>B11.10 Instruction manuals and guarantees</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
99	<b>B11.11 As built information</b> Fixed: _____ Value: _____ Time: _____	Item	
100	<b>B11.12 Tenant installations</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b><u>B12.0 SCHEDULE OF VARIABLES</u></b>		
101	<b>B12.1 Schedule of variables</b> Fixed: _____ Value: _____ Time: _____	Item	
	<p>This <b>schedule</b> contains all variables referred to in this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of these <b>Preliminaries</b></p> <p>Spaces requiring information must be filled in, shown as "not applicable" or deleted and not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross-referenced to the applicable clause of the <b>schedule</b>. Key cross reference clauses are italicised in [ ] brackets</p> <p><b>12.1 PRE-TENDER INFORMATION</b></p> <p><b>12.1.1 Provisional bills of quantities</b> [2.2] <i>The quantities are provisional</i> <span style="float: right;">No</span></p> <p><b>12.1.2 Availability of construction documentation</b> [2.3] <i>Construction documentation is complete</i> <span style="float: right;">Yes</span></p>		
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Amount
12.1.3 [2.4]	<p>Interests of agents Details:</p> <p><b>Principal Agent and Architects:</b> The Creative Axis Architects Suite 2, 76 Hans Van Rensburg Street Polokwane 0699 Tel: 015 297 0909 Fax: 086 612 3925 E-mail: <a href="mailto:raj@creativeaxis.co.za">raj@creativeaxis.co.za</a></p>		
42.1.3	<p><b>Quantity Surveyors:</b> NRM Quantity Surveyors 14 Challoner Close Street, Bendor, Polokwane, 0699 Tel: 082 421 9697 Fax: 086 452 3004 E-mail: <a href="mailto:reubenmphaki@gmail.com">reubenmphaki@gmail.com</a></p>		
42.1.3	<p><b>Civil &amp; Structural Consultants:</b> Sky High Consulting no 5 Loca Plana Building 22 Peace Street Tzaneen 0850 Tel: 015 307 6961 Fax: 086 540 1430 E-mail: <a href="mailto:info@shconsulting.co.za">info@shconsulting.co.za</a></p>		
42.1.4	<p><b>Electrical Consultants:</b> Mabhoko Consulting Services 70 A Bendor Drive, Bendor Park Bendor Park Polokwane 0699 Tel: 015 060 464 4465 E-mail: <a href="mailto:mabhoko45@gmail.com">mabhoko45@gmail.com</a></p>		
12.1.4 [3.1]	<p><b>Defined works area</b> Details:</p> <p><i>The works described in these Bills of Quantities comprises alterations of existing offices, the erection and completion of a new EMS Satellite Station, Guard House, Pump Station, Enviroloo Toilets at Lebowakgomo BA including all external works, civil works and electrical installation.</i></p> <p><i>The buildings are single storey with brick walls, face brick walls externally and plastered and painted walls internally, ceilings and roof sheeting on timber trusses.</i></p>		
Section No 1 Bill No 1 PRELIMINARIES	Carried to Collection	R	

Item No		Quantity	Amount
12.1.5 [3.2]	<p><b>Geotechnical investigation</b> Details:</p> <p>The complete Geotechnical Report of the site is available from the consulting Civil Engineers office Sky High Consulting no 5 Loca Plana Building 22 Peace Street Tzaneen, 0850</p>		
12.1.6 [3.4]	<p><b>Existing premises occupied</b> Specific requirements:</p> <p>Existing premises are occupied by EMS officials and they will be relocated to the new buildings on completion. The <b>Contractor</b> shall execute the <b>works</b> with as little noise and disturbance as possible.</p>	Yes	
12.1.7 [3.5]	<p><b>Previous work - dimensional accuracy</b> Details:</p>	N/A	
12.1.8 [3.6]	<p><b>Previous work - defects</b> Details:</p>	N/A	
12.1.9 [3.7]	<p><b>Services - known</b> Details:</p> <p>Existing services and points of connection are shown on the site plan and will be pointed out on site by the <b>principal agent</b> on the date possession of the site is given</p>		
12.1.10 [3.9]	<p><b>Protection of trees</b> Specific requirements:</p>		
12.1.11 [3.11]	<p><b>Inspection of adjoining properties</b> Specific requirements:</p>		
12.1.12 [6.2]	<p><b>Enclosure of the works</b> Specific requirements:</p> <p>Areas where work is taking place shall be at all times be blocked off by appropriate means</p>		
Carried to Collection		R	
Section No 1 Bill No 1 PRELIMINARIES			



Item No		Quantity	Amount
12.1.13	<p><b>Offices</b> [6.4.3] Specific requirements:</p> <p>The <b>contractor</b> shall provide, maintain and remove on completion of the works an office for the exclusive use of the <b>principal agent</b>, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times</p>		
12.1.14	<p><b>Main notice board</b> [6.5] Specific requirements:</p> <p>The <b>contractor</b> shall provide, erect where directed, maintain and remove on completion of the <b>works</b> a notice board size 3 x 3m as type Drawing GEN 063, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. The board shall be securely fixed to hoarding, where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted ivory white and the bead and 12mm wide dividing lines dark green. All wording shall be inscribed in dark green as per the coat of arms for SA. All wording shall be inscribed in dark green painted sans serif lettering</p>		
12.1.15	<p><b>Subcontractors' notice board</b> [6.6] A notice board is required</p>	Yes	
	Specific requirements:		
12.1.16	<p><b>Water</b> [7.2] Option A (by contractor)</p>	Yes	
	Option B (by employer - free of charge)	No	
	Option C (by employer - metered)	No	
12.1.17	<p><b>Electricity</b> [7.3] Option A (by contractor)</p>	Yes	
	Option B (by employer - free of charge)	No	
	Option C (by employer - metered)	No	
	<b>Carried to Collection</b>	R	
Section No 1 Bill No 1 PRELIMINARIES			

Item No		Quantity	Amount
12.1.18	<b>Telecommunications</b>		
[7.4]	Telephone	Yes	
	Facsimile	Yes	
	E-mail	Yes	
12.1.19	<b>Ablution facilities</b>		
[7.5]	Option A (by contractor)	Yes	
	Option B (by employer)	No	
12.1.20	<b>Protection of existing/sectionally occupied works</b>		
[11.2]	Protection is required	Yes	
12.1.22	<b>Protection of the works</b>		
[11.1]	Specific requirements:		
12.1.21	<b>Special attendance</b>		
[9.2]	Subcontractor (1) details:		
	Subcontractor (2) details:		
	Subcontractor (3) details:		
	Subcontractor (4) details:		
12.1.23	<b>Disturbance</b>		
[11.5]	Specific requirements:		
	<i>The contractor shall keep the site, structures, etc well watered during operations to prevent dust and shall provide and erect and remove on completion of the works all necessary temporary dust screens all to the satisfaction of the principal agent</i>		
12.1.24	<b>Environmental disturbance</b>		
[11.6]	Specific requirements:		
12.2	<b>POST-TENDER INFORMATION</b>		
Section No 1	<b>Carried to Collection</b>		
Bill No 1			
PRELIMINARIES			

Item No		Quantity	Amount
12.2.1	<b>Payment of preliminaries</b>		
[10.2]	Option A (prorated) (yes/no)	Yes	
	Option B (calculated) (yes/no)	No	
12.2.2	<b>Adjustment of preliminaries</b>		
[10.3]	Option A (three categories) (yes/no)	Yes	
	Option B (detailed breakdown) (yes/no)	No	
12.2.3	<b>Additional agreed preliminaries items</b>		
	Details:		
<b><u>SECTION C: SPECIFIC PRELIMINARIES</u></b>			
Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item			
102	<b>Clause C1 - Contract drawings</b>	Item	
The drawings issued with the tender documents do not comprise the complete set but serve as a guide only for tendering purposes and for indicating the scope of the work to enable the tenderer to acquaint himself with the nature and extent of the <b>works</b> and the manner in which they are to be executed			
Should any part of the drawings not be clearly understood by the the tenderer he shall, before submitting his tender, obtain clarification in writing from the <b>principal agent</b>			
Fixed: _____ Value: _____ Time: _____			
103	<b>Clause C2 - General Preambles</b>	Item	
The document "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B" obtainable on the Department's website ( <a href="http://www.publicworks.gov.za/">http://www.publicworks.gov.za/</a> under "Consultants Guidelines"), and shall be read in conjunction with the <b>bills of quantities</b> and be referred to for the full descriptions of work to be done and materials to be used			
Fixed: _____ Value: _____ Time: _____			
<b>Carried to Collection</b>		R	
Section No 1 Bill No 1 PRELIMINARIES			

Item No		Quantity	Amount
104	<p><b>Clause C3 - Site instructions</b></p> <p>All site instructions issued on site shall be recorded in writing within seven (7) calendar days in site instruction book (A4 size and triplicate carbon format), which is to be provided and maintained by the contractor. The said site instruction book shall be kept on site at all times for the exclusive use of recording site instructions only</p> <p>Site instructions may be issued by the architect or any of the consultants only. Copies of the site instructions are to be submitted to the architect and quantity surveyor within seven (7) calendar days of such recording in the site instruction book</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
105	<p><b>Clause C4 - Trade Names</b></p> <p>Wherever a trade name for any product has been described in the <b>bills of quantities</b>, the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the <b>principal agent</b> being obtained prior to the closing date for submission of tenders</p> <p>If prior written approval for an alternative product is not obtained, the product described shall be deemed to have been tendered for</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
106	<p><b>Clause C5 - Overtime</b></p> <p>Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the contractor unless the principal agent has specifically authorized and indicated in writing, prior to the execution thereof, that costs for such overtime will to be borne by the employer</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
107	<p><b>Clause C6 - As-built drawings</b></p> <p>The position of construction breaks and the extent of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
108	<p><b>Clause C5 - Labour record</b></p> <p>At the end of each week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
109	<p><b>Clause C6 - Plant record</b></p> <p>At the end of each calendar week the contractor shall provide the principal agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
110	<p><b>Clause C7 - Non-Cession of monies</b></p> <p>The contractor shall not cede nor assign his rights or claims to any monies due or to become due to him under this contract</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>		<p>Carried to Collection</p>	<p>R</p>

Item No		Quantity	Amount
	<p><b>Clause C8 - Occupational Health and Safety Act</b></p> <p>The <b>contractor</b> shall comply with all the requirements set out in the Construction Regulations, 2003 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as well as all new occupational health and safety acts requirement regarding the compliance of Covid 19</p> <p>It is required of the <b>contractor</b> to thoroughly study the <b>latest</b> Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the <b>bills of quantities / lump sum document</b>.</p> <p>The <b>contractor</b> must take note that compliance with the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the <b>principal agent</b>, notwithstanding the provisions of clause A31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress <b>payment certificate</b> until the <b>contractor</b> provides satisfactory proof of compliance. The <b>contractor</b> shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment.</p> <p>Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.</p>		
111	<b>Part A - OHS Act:Compliance - Implementation of the Health and Safety - Construction Health &amp; Safety Documentation</b>		
112	<p><b>Clause C8.1.1 - Prepare and compile site specific Health and Safety Plan as per Occupational Health and Safety Act and Regulations</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
113	<p><b>Clause C8.1.2 - Allow for the preparation and compilation of the site specific health and safety file, and a health and safety working file</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
114	<p><b>Clause C8.1.3 - Appointment of a Registered Construction Health and Safety Officer for the duration of the Contract as per Section 8(5) of the Construction Regulations 2014</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
115	<b>Part B - OHS Act:Compliance - Implementation of the Health and Safety - Personal Protective Equipment</b>		
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
116	<b>Clause C8.2.1 - Foot protection (steel toe cap, gum boots, etc)</b> Fixed: _____ Value: _____ Time: _____	Item	
117	<b>Clause C8.2.2 - Clothing (Overalls Depicting Contractors Company name/identification)</b> Fixed: _____ Value: _____ Time: _____	Item	
118	<b>Clause C8.2.3 - Glove (leather, PVC, Acid Resistant, etc) Item</b> Fixed: _____ Value: _____ Time: _____	Item	
119	<b>Clause C8.2.4 - Head Protection: Hardhats with air vents Colour Coded - Supervisory (Red) Labour (Green)</b> Fixed: _____ Value: _____ Time: _____	Item	
120	<b>Clause C8.2.5 - Ear protection ( earmuffs with 30% protective value) Item</b> Fixed: _____ Value: _____ Time: _____	Item	
121	<b>Clause C8.2.6 - Eye Protection (Face Shield, Goggles, Spectacles, etc)</b> Fixed: _____ Value: _____ Time: _____	Item	
122	<b>Clause C8.2.7 - Visibility (luminous high visibility safety vests/ jackets/ bibs/ etc)</b> Fixed: _____ Value: _____ Time: _____	Item	
123	<b>Clause C8.2.8 - Harness(double stranded safety harness with pylon hooks)</b> Fixed Fixed: _____ Value: _____ Time: _____	Item	
124	<b>Clause C8.2.9 - Portable ladders A-frame, extendable, length, material, etc.</b> Fixed Fixed: _____ Value: _____ Time: _____	Item	
125	<b>Clause C8.2.9 - Portable ladders A-frame, extendable, length, material, etc.</b> Fixed: _____ Value: _____ Time: _____	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		

Item No		Quantity	Amount
126	<p><b>Clause C8.2.10 - Barricading/ Demarcation (Supply, Install &amp; Removal)</b> Demarcation perimeter (fence, shade netting, corrugated iron, shutter board, hard Barricade etc)</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Part C - OHS Act: Compliance - Implementation of the Health and Safety - Occupational Medical Surveillance</b>		
127	<p><b>Clause C8.3.1 - Entry Medical Examinations by a SASOHN registered Occupational Health Nurse or a SASOM registered Occupational Medical practitioner</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
128	<p><b>Clause C8.3.2 - Exit Medical Examination</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
129	<p><b>Clause C8.3.3 - Provision of a first aid kit</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
130	<p><b>Clause C8.3.4 - Provision of a fire-fighting measures</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Part D - OHS Act: Compliance - Implementation of the Health and Safety - Education, Training and Signage</b>		
131	<p><b>Clause C8.4.1 - Health and safety induction site access cards</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
132	<p><b>Clause C8.4.2 - Basic First Aid training level one</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
133	<p><b>Clause C8.4.3 - Health and Safety representative</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
134	<p><b>Clause C8.4.4 - Construction (fire fighting. General information, prohibitory, mandatory, warning, hazchem, photo luminescent, etc)</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
	<b>Carried to Collection</b>	R	
	Section No 1 Bill No 1 PRELIMINARIES		



Item No		Quantity	Amount
135	<p><b>Clause C8.4.5 - Health and Safety information display board in site office (emergency evacuation flow diagram, emergency contact numbers, electrical, general, etc)</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
136	<p><b>Clause C8.4.6 -Health and Safety charts (OHS Act, Basic Conditions of Employment Act)</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
137	<p><b>Part E - OHS Act: Compliance - Implementation of the Health and Safety - Covid-19 Compliance Management</b></p>		
138	<p><b>Clause C8.5.1 - Covid - 19 related signage and posters</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
139	<p><b>Clause C8.5.2- 2 x 3ply cloth masks</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
140	<p><b>Clause C8.5.2- Hand sanitizers with 70% alcohol content</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
141	<p><b>Clause C8.5.3 Decontamination agent / surface sanitizers</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
142	<p><b>Clause C8.5.4 Surgical Gloves (for security and cleaning team)</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
143	<p><b>Clause C8.5.5 Non-contact thermometers</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
144	<p><b>Clause C8.5.6 Physical barriers to ensure social distancing (Compliance to Section 22 of the Covid-19 OHS Directive)</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
145	<p><b>Clause C9 - Viewing of the hospital areas</b></p> <p>The <b>site</b> is situated in a EMS area and the tenderer must arrange with the responsible EMS staff to obtain permission to enter the <b>site</b> for tendering purposes</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
146	<p><b>Clause C10 - Commencement of Works in EMS Areas</b></p> <p>As the <b>works</b> falls within EMS area the <b>contractor</b> must give the responsible staff member notice before commencement of the <b>works</b>. Should the <b>contractor</b> fail to make such arrangements, admission to the <b>site</b> may be refused and any additional costs will be for the <b>contractor's</b> account</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
147	<p><b>Clause C11 - Entrance Permits to EMS Areas</b></p> <p>As the <b>works</b> falls within a EMS area the <b>contractor</b> shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under the control of the Principal, or chief security officer</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
148	<p><b>Clause C12 - Security Check of Personnel</b></p> <p>The <b>principal agent</b> may require the <b>contractor</b> to have his personnel and workmen, or a certain number of them, security classified</p> <p>In the event of the <b>principal agent</b> requesting the removal of a person or persons from the <b>works</b> for security reasons, the <b>contractor</b> shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the <b>works</b> and the <b>site</b> and/or to any document or information relating to the <b>works</b></p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
149	<p><b>Clause C13 - HIV/Aids Awareness</b></p> <p>It is required of the <b>contractor</b> to thoroughly study the HIV/AIDS Specification (PW 1544) of the Department that must be read together with and is deemed to be incorporated under this Section of the <b>bills of quantities</b>. Provision for pricing of HIV/AIDS awareness is made under items C10.1 to C10.5 hereafter and it is explicitly pointed out that all requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained</p> <p>The <b>contractor</b> must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the <b>principal agent</b>, notwithstanding the provisions of Clause A 31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress <b>payment certificate</b> until the <b>contractor</b> provides satisfactory proof of compliance. The <b>contractor</b> shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
150	<p><b>Clause C13.1 - Awareness Champion</b></p> <p>Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
151	<p><b>Clause C13.2 - Awareness Workshop</b></p> <p>Selection and appointment of a competent Service Provider approved by the <b>principal agent</b>, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b>Carried to Collection</b>		R	
<p>Section No 1 Bill No 1 PRELIMINARIES</p>			

Item No		Quantity	Amount
152	<p><b>Clause C13.3 - Posters, booklets, videos, etc.</b></p> <p>Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the <b>construction period</b>, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
153	<p><b>Clause C13.4 - Access to Condoms</b></p> <p>Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the <b>construction period</b>, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
154	<p><b>Clause C13.5- Monitoring</b></p> <p>Monitoring HIV/AIDS awareness of workers, providing the <b>principal agent</b> with access to information including making available all reports, thoroughly completed and reflecting the correct information, for the duration of the <b>construction period</b> and close out, all in accordance with the HIV/AIDS Specification</p> <p>Fixed: _____ Value: _____ Time: _____</p>	Item	
<b><u>SUMMARY OF CATAGORIES</u></b>			
Category : Fixed _____			
Category : Value _____			
Category : Time _____			
Section No 1 Bill No 1 PRELIMINARIES		<b>Carried to Collection</b>	R

Section No 1  PRELIMINARIES AND GENERAL  Bill No 1  PRELIMINARIES  <u>COLLECTION PAGE</u>		
	Page No	Amount
Total Brought Forward from Page No.	1	
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Section No 1 Bill No 1 PRELIMINARIES	Carried Forward	R

Section No 1 PRELIMINARIES AND GENERAL Bill No 1 PRELIMINARIES <u>COLLECTION PAGE</u>		
	Page No	Amount
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<b>Carried Forward</b>	R	
Section No 1 Bill No 1 PRELIMINARIES		

Section No 1 PRELIMINARIES AND GENERAL Bill No 1 PRELIMINARIES <u>COLLECTION PAGE</u>		
	Page No	Amount
<b>Brought Forward</b>	R	
Total Brought Forward from Page No.	40	
	41	-----
	42	-----
	43	-----
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	48	-----
<b>Carried to Final Summary</b>	R	
Section No 1 Bill No 1 PRELIMINARIES		

Item  
No

Quantity

Rate

Amount

**BILL NO 1**

**ALTERATIONS (PROVISIONAL)**

**PREAMBLES**

For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"

**NOTE**

All prices/rates to be net, excluding Value Added Tax

**SUPPLEMENTARY PREAMBLES**

**STRUCTURAL WORK TO BE DEMOLISHED:**

Where structures which support existing roof structures are to be demolished the contractor must provide temporary support until new supporting structures are in place

**OLD MATERIALS TO BECOME THE PROPERTY OF THE CLIENT**

Old materials from alteration, except where described to be re-used or handed over, become the property of the client

**OLD MATERIALS TO BE CARTED AWAY:**

Old materials from the alteration, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site

**OLD MATERIALS NOT TO BE RE-USED:**

None of the old materials are to be used for new work except where specifically described being set aside for re-use

Carried to Collection

R

Section No 2  
Bill No 1  
ALTERATIONS (PROVISIONAL)



Item No		Quantity	Rate	Amount
	<b>HANDING OVER OF MATERIALS:</b>			
	Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor			
	<b>DEALING WITH HAZARDOUS MATERIALS</b>			
	All hazardous materials, e.g. Asbestos, etc, must be removed and disposed off site by a specialist firm as per government regulations and environmental laws			
	-----			
	<b><u>TEMPORARY BARRIERS, SCREENS, ETC</u></b>			
	<u>Temporary barriers, screens, etc including removal:</u>			
1	Shade netting barrier 2000mm high formed of steel channel section rails, etc. T2 : 67	m	67	
	<b><u>REMOVAL OF EXISTING WORK</u></b>			
	<u>Taking up and removing paving bricks:</u>			
2	Paving bricks aprons around the building T2 : 93	m2	93	
	<u>Take out and remove doors, windows, etc including thresholds, sills, etc and prepare to receive new doors, frames, windows, etc. (all elsewhere measured):</u>			
3	Timber single door size 813 x 2032mm high T2 : 10	No	10	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 1 ALTERATIONS (PROVISIONAL)			

NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Rate	Amount
	<u>Taking down and removing roofs, floors, panelling, ceilings, partitions, etc:</u>			
4	Gypsum plasterboard ceilings including cornices, timber bandering, etc T2 : 94	m2	94	
	<u>Take out and remove sundry joinery work, fittings, etc, from brick wall:</u>			
5	Timber skirtings T2 : 85	m	85	
6	Pinning board size 5000 x 1000mm high T2 : 3	No	3	
7	Sink unit size 1500mm long T2 : 1	No	1	
	<u>Taking out and removing sanitary fittings, tanks, geysers, etc, including disconnecting from pipes, traps, etc and making good floor and wall finishes (making good tiling and paintwork elsewhere):</u>			
8	Vitreous china WC pan with cistern and flush pipe T2 : 2	No	2	
9	Vitreous china wash hand basin T2 : 2	No	2	
	<u>Taking out/off and removing glass and mirrors:</u>			
10	Glass from steel windows, including cleaning out rebates and preparing for new glass T2 : 3	m2	3	
11	Mirror 450 x 600mm high from wall T2 : 2	No	2	
	<u>Hack up and removing vinyl tiles including removing mortar bed or adhesive from concrete or brickwork and preparing surfaces for new screed, plaster, tile finish, etc:</u>			
12	Tiles to floors T2 : 80	m2	80	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 1 ALTERATIONS (PROVISIONAL)			

Item No		Quantity	Rate	Amount
	<u>Hacking up/off and removing ceramic tiles including removing mortar bed or adhesive from concrete or brickwork and preparing surfaces for new screed, plaster, tile finish, etc:</u>			
13	Tiles to walls T2 : 35	m2	35	
	<b><u>MAKING GOOD OF FINISHES ETC</u></b>			
	<u>Making good face brickwork:</u>			
14	Wash down existing face bricks wall with approved soap/acid and pressure hose T2 : 117	m2	117	
	<b><u>REPAIR OF "KLIP-LOK" ROOF COVERING</u></b>			
15	Allow the sum of R 50,000.00 (Fifty Thousand Rand) for sealing of joints between sheets, including replacing missing roof bolts, fixing flashing and strips, prepare to receive paint (paint else where measured) T2 : 1.00	Item		50,000.00
	<b><u>GENERAL ALLOWANCES</u></b>			
16	Provide the amount of R 5,000.00 (Five Thousand Rand) for the replacement and/ or service of window furniture where needed T2 : 1.00	Item		5,000.00
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 1 ALTERATIONS (PROVISIONAL)			

Section No 2  BUILDING WORKS  Bill No 1  ALTERATIONS (PROVISIONAL)  <u>COLLECTION PAGE</u>			
	Page No		Amount
Total Brought Forward from Page No.	52		
	53		
	54		
	55		
Carried Forward to Summary of Section No. 2		R	
Section No 2 Bill No 1 ALTERATIONS (PROVISIONAL)			

Item No		Quantity	Rate	Amount
	<p><b><u>BILL NO 2</u></b></p> <p><b><u>FOUNDATIONS - ALL TRADES</u></b> <b><u>(PROVISIONAL)</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Nature of ground</u></b></p> <p>For nature of ground see "Notes to Tenderers"</p> <p><b><u>Subterranean water</u></b></p> <p>No subterranean water is expected</p> <p><b><u>Soil poisoning and insecticide</u></b></p> <p>All soil poisoning and insecticide to be applied under a ten year guarantee by an approved firm of Specialists</p> <p><b><u>Excavation for working space in rock</u></b></p> <p>Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be</p> <p><b><u>Carting away of excavated material</u></b></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>			
	<b>Carried to Collection</b>			
	<p>Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)</p>		R	

Item No		Quantity	Rate	Amount
	<b><u>Filling</u></b>			
	Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material			
	-----			
	<b><u>EARTHWORKS</u></b>			
	<b><u>SITE CLEARANCE ETC</u></b>			
	<u>Site clearance</u>			
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc T1 : 875    T3 : 20    T4 : 36    T51 : 182 T52 : 182    T53 : 91	m2	1,386	
2	Stripping average 75mm thick layer topsoil and depositing excavated material to prescribed stock piles on site for later use. T1 : 875    T3 : 20    T4 : 36    T51 : 182 T52 : 182    T53 : 91	m2	1,386	
	<b><u>REMOVAL OF TREES ETC</u></b>			
	<u>Taking out and removing, grubbing up roots and filling in holes</u>			
3	Tree stump exceeding 200mm and not exceeding 500mm girth T1 : 1	No	1	
	<b><u>EXCAVATIONS ETC</u></b>			
	<u>Excavation in earth not exceeding 2m deep</u>			
4	Trenches T1 : 89    T3 : 10    T4 : 4    T51 : 18 T52 : 15    T53 : 7	m3	143	
5	Pit T51 : 42    T52 : 32    T53 : 20	m3	94	
6	For aprons thickening T51 : 2    T52 : 2    T53 : 1	m3	5	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			
				R

Item No		Quantity	Rate	Amount
7	Holes T1 : 16      T3 : 2	m3	18	
	<u>Extra over trench and hole excavation in earth for excavation, in:</u>			
8	Soft rock T1 : 8      T3 : 2      T4 : 1      T51 : 8 T52 : 8      T53 : 3	m3	30	
9	Hard rock T1 : 4      T3 : 1      T4 : 0      T51 : 4 T52 : 4      T53 : 2	m3	15	
	<u>Extra over all excavations for carting away:</u>			
10	Surplus material from the excavations to a dumping site to be located by the Contractor T1 : 76      T3 : 2      T4 : 3      T51 : 11 T52 : 9      T53 : 4	m3	105	
	<u>Risk of collapse of excavations:</u>			
11	Sides of trench and hole excavations not exceeding 1,5m deep T1 : 332      T3 : 40      T4 : 8      T51 : 99 T52 : 101      T53 : 35	m2	615	
	<u>Keeping excavations free of water:</u>			
12	Keeping excavations free of water T1 : 1.00	Item		
	<b><u>FILLING ETC</u></b>			
	<u>Earth filling obtained from the excavations compacted to 93% Mod AASHTO density in layers not exceeding 150mm thick:</u>			
13	In backfilling to trenches, etc. T1 : 45      T3 : 6      T4 : 1      T51 : 15 T52 : 14      T53 : 8	m3	89	
14	Under floors, steps, pavings, etc. T1 : 56      T3 : 4      T51 : 10      T52 : 11 T53 : 5	m3	86	
	<b>Carried to Collection</b>			
				R
	Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			

Item No		Quantity	Rate	Amount
	<u>Earth filling supplied by the Contractor compacted to 93% Mod AASHTO density in layers not exceeding 150mm thick:</u>			
15	Under floors, steps, pavings, etc. T1 : 190      T3 : 5      T4 : 3	m3	198	
	<u>50mm thick coarse river sand filling supplied by the contractor</u>			
16	Under floors etc T1 : 19      T3 : 1      T4 : 0      T51 : 3 T52 : 3      T53 : 1	m3	28	
	<u>Compaction of surfaces:</u>			
17	Compaction of ground surface under floors, etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density T1 : 380      T3 : 10      T4 : 9      T51 : 23 T52 : 25      T53 : 12	m2	459	
18	Compaction of ground surface to pits etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density T51 : 51      T52 : 47      T53 : 26	m2	124	
19	Compaction of ground surface to aprons etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density T51 : 49      T52 : 52      T53 : 25	m2	126	
	<u>Prescribed density tests on filling:</u>			
20	Modified AASHTO Density test T1 : 5      T3 : 4      T4 : 4      T51 : 8 T52 : 8      T53 : 4	No	33	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			
				R



Item No		Quantity	Rate	Amount
	<b><u>SOIL POISONING</u></b>			
	<u>Soil insecticide:</u>			
21	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming T1 : 380    T3 : 10    T4 : 11    T51 : 23 T52 : 25    T53 : 12	m2	461	
22	To bottom of concrete aprons T51 : 49    T52 : 52    T53 : 25	m2	126	
23	To bottoms and sides of trenches, etc. T1 : 509    T3 : 54    T4 : 21    T51 : 152 T52 : 148    T53 : 78	m2	962	
	<b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b>			
	<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
	<u>15MPa/20mm concrete</u>			
24	Surface blinding under footings and bases T1 : 4    T3 : 0    T4 : 0	m3	5	
	<u>25MPa/19mm concrete</u>			
25	Bases T1 : 6	m3	6	
	<b><u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
	<u>25MPa/19mm Concrete, in:</u>			
26	Strip footings T1 : 32    T3 : 3    T4 : 1    T51 : 6 T52 : 6    T53 : 3	m3	51	
27	Ditto, but surface bed in pit T51 : 4    T52 : 3    T53 : 3	m3	10	
28	Bases T1 : 2    T3 : 1	m3	3	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			
				R

Item No		Quantity	Rate	Amount
29	Plinth T4 : 1	m3	1	
30	Slabs T4 : 0    T51 : 4    T52 : 3    T53 : 2	m3	9	
<b><u>TEST BLOCKS</u></b>				
31	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional) T1 : 6    T3 : 2    T4 : 3    T51 : 18 T52 : 18    T53 : 9	No	56	
<b><u>FORMWORK, ETC. TO CONCRETE</u></b>				
<u>Permanent formwork to soffits:</u>				
32	Slabs propped up not exceeding 1.5m high T51 : 15    T52 : 8    T53 : 4	m2	27	
33	Leave or form 500mm diameter opening in top of floor slab T51 : 8    T52 : 4    T53 : 3	No	15	
<b><u>REINFORCEMENT</u></b>				
<u>Mild steel reinforcement to structural concrete work</u>				
34	8mm Diameter bars T1 : 1.58    T3 : 0.10	t	1.68	
<u>High tensile steel reinforcement to structural concrete work</u>				
35	16mm Diameter bars T1 : 0.85    T3 : 0.10	t	0.95	
36	12mm Diameter bars T1 : 0.72    T3 : 0.10	t	0.82	
37	10mm Diameter bars T1 : 1.03    T3 : 0.10    T4 : 0.15	t	1.28	
38	8mm Diameter bars T1 : 0.50    T3 : 0.26	t	0.76	
<b>Carried to Collection</b>				R
Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)				

Item No		Quantity	Rate	Amount
<b><u>MASONRY</u></b>				
<b><u>BRICKWORK IN FOUNDATIONS</u></b>				
<u>Brickwork in approved NFX hard burnt clay bricks (15MPa nominal compressive strength) in class I mortar:</u>				
39	One-brick walls T1 : 170 T3 : 16 T4 : 8 T51 : 28 T52 : 29 T53 : 16	m2	267	
40	One brick walls in pit T51 : 49 T52 : 28 T53 : 19	m2	96	
41	4Half brick corbelling in pit T51 : 42 T52 : 25 T53 : 16	m	83	
42	Piers T1 : 1 T3 : 1	m3	2	
<b><u>BRICKWORK SUNDRIES</u></b>				
<u>Joint forming material in movement joints:</u>				
43	10mm thick bitumen impregnated softboard built in vertically between brick walls as the work proceeds, including all cutting and waste T1 : 1	m2	1	
<u>Brickwork reinforcement:</u>				
44	150mm Wide reinforcement built in horizontally T1 : 510 T3 : 72 T4 : 24 T51 : 462 T52 : 316 T53 : 105	m	1,489	
<b><u>FACE BRICKWORK</u></b>				
<u>Approved face bricks (purchase price of R 6 500.00/1000 VAT excluded, delivered to site) pointed with recessed horizontal and vertical joints:</u>				
45	Extra over brickwork for face brickwork T1 : 85 T3 : 6 T51 : 17 T52 : 17 T53 : 8	m2	133	
<b>Carried to Collection</b>				R
Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)				

Item No	WATERPROOFING	Quantity	Rate	Amount
46	<u>JOINT SEALANTS, ETC.</u> <u>"Sikaflex-35SL" polyurethane elastomer joint sealing compound, bond breaker, primer, etc., in:</u> 10 x 15mm wide vertical expansion joint, including raking out softboard for a depth of 15 mm (Softboard elsewhere) T1 : 6	m	6	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			

Section No 2 BUILDING WORKS Bill No 2 FOUNDATIONS (PROVISIONAL) <u>COLLECTION PAGE</u>			
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Carried Forward to Summary of Section No. 2			R
Section No 2 Bill No 2 FOUNDATIONS (PROVISIONAL)			

Item No		Quantity	Rate	Amount
	<b><u>BILL NO 3</u></b>			
	<b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles refer to "Specifications of Materials and Methods to be used", PW 371			
	<b><u>NOTE</u></b>			
	All prices/rates to be net, excluding Value Added Tax			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Cost of tests</u></b>			
	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 on the tests to the Architect. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect. (Test cubes are measured separately)			
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	<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
	<u>20MPa/19mm concrete</u>			
1	Aprons cast in panels T1 : 7      T2 : 8      T3 : 2      T4 : 2 T51 : 4      T52 : 5      T53 : 2	m3	30	
2	Steps T1 : 2	m3	2	
3	Thickening down apron on edge 110mm deep x 200mm wide T1 : 78      T2 : 50      T3 : 22      T4 : 20 T51 : 57      T52 : 57      T53 : 43	m	327	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 3 CONCRETE, FORMWORK AND REINFORCEMENT			

Item No		Quantity	Rate	Amount
<b><u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>				
<u>25MPa/19mm Concrete, in:</u>				
4	Surface beds laid in panels on waterproofing T1 : 32      T3 : 1      T4 : 1	m3	34	
5	Ramps T1 : 2	m3	2	
<b><u>TEST BLOCKS</u></b>				
6	Making and testing a set of three concrete strength test cubes, each 150 x 150 x 150mm, sending them to an approved laboratory for testing and paying all charges in connection therewith (Provisional) T1 : 10      T3 : 2      T4 : 1	No	13	
<b><u>CONCRETE SUNDRIES</u></b>				
<u>Finishing top surfaces of concrete smooth with a wooden float:</u>				
7	Surface beds, slabs, etc. T1 : 376      T3 : 10      T4 : 9      T51 : 65 T52 : 50      T53 : 28	m2	538	
<u>Finishing top surfaces of concrete to an evenly ribbed non-slip surface</u>				
8	Aprons cast in panels T1 : 78      T2 : 46      T3 : 20      T4 : 24 T51 : 49      T52 : 51      T53 : 25	m2	293	
9	Ramps T1 : 26	m2	26	
<b><u>FORMWORK, ETC. TO CONCRETE</u></b>				
<u>Smooth formwork to soffits:</u>				
10	Slabs propped up not exceeding 1.5m high T4 : 1	m2	1	
<b>Carried to Collection</b>				
Section No 2 Bill No 3 CONCRETE, FORMWORK AND REINFORCEMENT				R

Item No		Quantity	Rate	Amount
	<u>Rough formwork to:</u>			
11	Edges, risers, etc. not exceeding 300mm wide or high T1 : 78    T2 : 50    T3 : 22    T4 : 12 T51 : 75    T52 : 66    T53 : 29	m	332	
	<b><u>MOVEMENT, EXPANSION JOINTS, ETC.</u></b>			
12	20mm Thick expansion joint formed of two layers of 10mm thick bitumen impregnated softboard built in vertically between adjacent concrete surface beds and brickwork to form vertical expansion joint not exceeding 300mm high or wide, including all cutting and waste T1 : 33	m	33	
	<b><u>PRECAST CONCRETE</u></b>			
13	500 x 500mm pyramid-shaped concrete coping to top of brick columns T3 : 3	No	3	
	<b><u>REINFORCEMENT</u></b>			
	<u>Mesh reinforcement:</u>			
14	Mesh Ref. No. 193 fabric reinforcement laid in surface beds, etc. lapped minimum 150mm along edges and ends (Measured net) T1 : 402    T3 : 10    T4 : 9    T51 : 65 T52 : 65    T53 : 30	m2	581	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 3 CONCRETE, FORMWORK AND REINFORCEMENT			R



Section No 2 BUILDING WORKS Bill No 3 CONCRETE, FORMWORK AND REINFORCEMENT <u>COLLECTION PAGE</u>			
	Page No		Amount
Total Brought Forward from Page No.	66		
	67		
	68		
<b>Carried Forward to Summary of Section No. 2</b>			R
Section No 2 Bill No 3 CONCRETE, FORMWORK AND REINFORCEMENT			

Item No	<b><u>BILL NO 4</u></b>	Quantity	Rate	Amount
	<b><u>MASONRY</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<b><u>NOTE</u></b>			
	All prices/rates to be net, excluding Value Added Tax			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>BRICKWORK</u></b>			
	<b><u>Sizes in descriptions</u></b>			
	Where sizes in descriptions are given in brick units, "one-brick" shall represent the length and "half-brick" the width of a brick			
	<b><u>Face bricks</u></b>			
	Bricks shall be ordered timeously to obtain uniformity in size and colour			
	<b><u>Pointing</u></b>			
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.			
	-----			
	<b><u>SUPERSTRUCTURE</u></b>			
	<u>Brickwork of approved NFP bricks in class II mortar:</u>			
1	Piers T1 : 2      T3 : 1	m3	3	
2	Square shaped piers T51 : 2      T52 : 2      T53 : 1	m3	5	
3	Half-brick walls T1 : 177      T3 : 9      T51 : 44      T52 : 35 T53 : 17	m2	282	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 4 MASONRY			
				R

Item No		Quantity	Rate	Amount
4	Half brick wall in beamfilling T1 : 77      T3 : 1      T51 : 9      T52 : 9 T53 : 5	m2	100	
5	One-brick walls T1 : 425      T3 : 31      T4 : 23      T51 : 79 T52 : 79      T53 : 50	m2	687	
6	One brick wall in beamfilling T1 : 10	m2	10	
<b><u>BRICKWORK SUNDRIES</u></b>				
<u>Joint forming material in movement joints:</u>				
7	10mm thick bitumen impregnated softboard built in vertically between brick walls as the work proceeds, including all cutting and waste T1 : 3      T4 : 1	m2	4	
<u>Brickwork reinforcement:</u>				
8	75mm Wide reinforcement built in horizontally (Provisional) T1 : 843      T3 : 84      T51 : 133      T52 : 105 T53 : 66	m	1,231	
9	150mm Wide reinforcement built in horizontally (Provisional) T1 : 1479      T3 : 186      T4 : 69      T51 : 237 T52 : 237      T53 : 149	m	2,357	
<u>"Fabcon" prestressed fabricated lintels:</u>				
10	100 x 70mm Lintels in lengths not exceeding 3m long T1 : 2      T3 : 1      T51 : 18      T52 : 10 T53 : 7	m	38	
11	Ditto, but exceeding 3m and not exceeding 4,5m long T1 : 3	m	3	
<u>Turning pieces</u>				
12	230mm Wide turning piece to lintels etc T1 : 53      T3 : 5      T4 : 2      T51 : 7 T52 : 7      T53 : 4	m	78	
<b>Carried to Collection</b>				
Section No 2 Bill No 4 MASONRY				R

Item No		Quantity	Rate	Amount
	<u>Galvanised wire ties etc</u>			
13	6mm Diameter roof tie 3m girth bent double with one end fixed to timber and other end built into brickwork (Provisional) T1 : 430    T3 : 10    T4 : 6    T51 : 32 T52 : 32    T53 : 16	No	526	
	<b><u>FACE BRICKWORK</u></b>			
	<u>Approved face bricks (purchase price of R 6 500.00/1000 VAT excluded, delivered to site) pointed with recessed horizontal and vertical joints:</u>			
14	Extra over brickwork for face brickwork T1 : 298    T3 : 50    T4 : 23    T51 : 125 T52 : 115    T53 : 29	m2	640	
15	Extra over brickwork for face brickwork in beamfilling T51 : 9    T52 : 9    T53 : 5	m2	23	
16	Fair raking and cutting T51 : 4    T52 : 4    T53 : 2	m	10	
	<u>Brick-on-edge header course copings, sills, etc. of approved face bricks (purchase price of R 6 500.00/1000 VAT excluded, delivered to site) pointed with recessed horizontal and vertical joints:</u>			
17	110mm Copings on top of half brick walls T51 : 8    T52 : 8    T53 : 4	m	20	
18	220mm Copings on top of one brick walls T1 : 13    T51 : 2    T52 : 2    T53 : 1	m	18	
19	Extra over brickwork for brick on edge lintel pointed on both sides 220mm girth T1 : 22    T3 : 5    T51 : 7    T52 : 7 T53 : 4	m	45	
20	Ditto, but pointed on exposed face 220mm girth T1 : 34	m	34	
21	One-brick wide sloping header course sill pointed on exposed face 220mm girth T1 : 21    T3 : 5    T51 : 4    T52 : 4 T53 : 2	m	36	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 4 MASONRY			R

Item No		Quantity	Rate	Amount
22	Fair cutting and fitting around pipe not exceeding 100mm diameter. T51 : 8    T52 : 4    T53 : 2	No	14	
<b><u>FIBRE-CEMENT WINDOW SILLS</u></b>				
<u>Natural grey sills in single lengths bedded in class I mortar including metal fixing lugs etc</u>				
23	15 x 150mm Wide sills set flat and slightly projecting T1 : 18    T3 : 5    T51 : 4    T52 : 4 T53 : 2	m	33	
Carried to Collection				R
Section No 2 Bill No 4 MASONRY				

Section No 2 BUILDING WORKS Bill No 4 MASONRY <u>COLLECTION PAGE</u>			
	Page No		Amount
Total Brought Forward from Page No.	70		
	71		
	72		
	73		
<p style="text-align: center;">Carried Forward to Summary of Section No. 2</p> Section No 2 Bill No 4 MASONRY		R	

Item No	<b><u>BILL NO 5</u></b>	Quantity	Rate	Amount
	<p><b><u>WATERPROOFING</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>General</u></b></p> <p>Damp-proofing and waterproofing are measured net and descriptions shall be deemed to include for laps, cutting and waste, dressing in and sealing with a suitable sealant where necessary</p> <p><b><u>Waterproofing to flat concrete roofs</u></b></p> <p>Waterproofing to flat concrete roofs shall be laid under a ten year guarantee by an approved firm of Specialists, all in accordance with the materials supplied and methods employed by the Manufacturer</p> <p>-----</p> <p><b><u>DAMP-PROOFING OF WALLS AND FLOORS</u></b></p> <p><u>One layer of 375 micron "Plastall Gundle Brickgrip DPC" or similar approved embossed damp proof course:</u></p>			
1	<p>On walls</p> <p>T1 : 54      T3 : 6      T4 : 3      T51 : 9</p> <p>T52 : 9      T53 : 4</p>	m2	85	
	<p><u>One layer of 250 micron "Plastall Gundle Gunplas USB Green" or similar approved waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape":</u></p>			
2	<p>On earth filling under surface beds</p> <p>T1 : 380      T3 : 10      T4 : 11      T51 : 23</p> <p>T52 : 25      T53 : 12</p>	m2	461	
	<b>Carried to Collection</b>			
	<p>Section No 2 Bill No 5 WATERPROOFING</p>			
				R

Item No	JOINT SEALANTS, ETC.	Quantity	Rate	Amount
3	<p><u>"Sikaflex-35SL" polyurethane elastomer joint sealing compound, bond breaker, primer, etc., in:</u></p> <p>10 x 15mm wide vertical expansion joint, including raking out softboard for a depth of 15 mm (Softboard elsewhere)</p> <p>T1 : 33</p>	m	33	
	<b>Carried to Collection</b>			R
	<p>Section No 2 Bill No 5 WATERPROOFING</p>			



Section No 2 BUILDING WORKS Bill No 5 WATERPROOFING <u>COLLECTION PAGE</u>			
	Page No		Amount
Total Brought Forward from Page No.	75		
	76		
<p style="text-align: center;">Carried Forward to Summary of Section No. 2</p> Section No 2 Bill No 5 WATERPROOFING		R	

Item No	Quantity	Rate	Amount
<p><b><u>BILL NO 6</u></b></p>			
<p><b><u>ROOF COVERINGS</u></b></p>			
<p><b><u>PREAMBLES</u></b></p>			
<p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p>			
<p><b><u>NOTE</u></b></p>			
<p>All prices/rates to be net, excluding Value Added Tax</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>General</u></b></p>			
<p>All roof coverings, etc., to be with a covering of Z275 galvanising. All holes to be drilled and not punched</p>			
<p>Where described as with "Chromadek" finish, all sheets, flashings, etc., shall be with "Chromadek" silicone polyester paint for exterior use</p>			
<p>Roof manufacturing and erection must be done by a specialist. A written 10-year guarantee certificate must be issued on completion thereof</p>			
<p><b><u>Sizes</u></b></p>			
<p>All items are measured net unless otherwise described</p>			
<p><b><u>Flashings and trimming plates, etc.</u></b></p>			
<p>Prices to include for all cutting and waste and relevant fixing material, unless otherwise described</p>			
<p>All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable</p>			
<p>All items are measured net unless otherwise described</p>			
<p>-----</p>			
<p><b>Carried to Collection</b></p>			
<p>Section No 2 Bill No 6 ROOF COVERINGS, ETC</p>			
			R

Item No		Quantity	Rate	Amount
	<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
	<u>0.58mm "Brownbuilt" galvanised troughed sheet steel with "Chromadek" finish one side, fixed to roof members as described complete under a ten year guarantee by an approved firm of Specialists, all in accordance with the materials supplied and methods employed by the Manufacture:</u>			
1	Roof covering with pitch not exceeding 25 degrees fixed to timber purlins T1 : 518    T3 : 22    T4 : 16    T51 : 78 T52 : 78    T53 : 39	m2	751	
	<u>0.58mm "Brownbuilt" galvanised troughed sheet steel with "Chromadek" finish one side, fixed to roof members as described complete under a ten year guarantee by an approved firm of Specialists, all in accordance with the materials supplied and methods employed by the Manufacture:</u>			
2	Roof covering with pitch not exceeding 25 degrees fixed to structural steel T1 : 68    T51 : 4    T52 : 4    T53 : 2	m2	78	
3	Side cladding fixed vertically to steel members T1 : 38	m2	38	
4	Extra on last for 75 degree crank to form 105 degree internal angle, including suitable rib caps to all ribs along crank. (Crank approximately 671mm from edge) T1 : 73	m	73	
	<b><u>SUNDRY ITEMS</u></b>			
	<u>0.6mm thick Galvanised sheet iron, with "Chromadek" one side, in:</u>			
5	Ridge capping 550mm girth 3 times bent and notched on site to suit roof profile T1 : 26    T3 : 6	m	32	
6	Hip capping 550mm girth 3 times bent and notched on site to suit roof profile T1 : 34    T51 : 20    T52 : 20    T53 : 10	m	84	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 6 ROOF COVERINGS, ETC			R

Item No		Quantity	Rate	Amount
7	Gable trim 580mm girth T1 : 23 T3 : 8	m 31		
8	Valley gutter 350mm girth and 5 times bent T1 : 6	m 6		
9	Internal corner flashing 616mm girth 3 times bent longitudinally T1 : 1	m 1		
10	Louvre flashing 150mm girth T51 : 14 T52 : 14 T53 : 7	m 35		
11	Ditto, but external corner flashing T1 : 2	m 2		
12	Drip flashing 231mm girth 3 times bent T1 : 97	m 97		
	<u>Sundries:</u>			
13	Polyethelene moulded narrow and broad ribbed closers fitted into ribs of "Brownbuilt" roofing and sealed with pitch T1 : 30	m 30		
	<b><u>ROOF AND WALL INSULATION</u></b>			
	<u>"Isover" Aerolite non-combustible light weight fibre</u> <u>Glasswool thermal ceiling insulation:</u>			
14	135mm thick flexible non-combustible glasswool thermal insulation laid loose on top of 76 x 50mm purlins fixed strictly to manufacturer' specification complete with cut cranking on edge with chromadek ribcaps on each rib and external corner trim at vertical corner joints T1 : 518 T3 : 22 T4 : 16 T51 : 78 T52 : 78 T53 : 39	m2 751		
	<b>Carried to Collection</b>			
	Section No 2 Bill No 6 ROOF COVERINGS, ETC			
			R	

	Page No		Amount
Section No 2			
BUILDING WORKS			
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ROOF COVERINGS, ETC			
<u>COLLECTION PAGE</u>			
Total Brought Forward from Page No.	78		
	79		
	80		
Carried Forward to Summary of Section No. 2		R	
Section No 2			
Bill No 6			
ROOF COVERINGS, ETC			

Item  
No

Quantity

Rate

Amount

**BILL NO 7**

**CARPENTRY AND JOINERY**

**PREAMBLES**

For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"

**NOTE**

All prices/rates to be net, excluding Value Added Tax

**PREFABRICATED TIMBER ROOF TRUSSES**

**Trusses**

All trusses are to be fabricated in a factory by Specialists approved by the Architect

Refer to drawings bind in the back of these bills of quantities for the roof plan and detail drawings of trusses

**Trusses should be handled and erected in accordance with "SANS 10243" as specified**

**Timber**

Timber for trusses to be South African softwood and shall be in accordance with the grades as defined in SABS Specification No 563 or as defined in SABS Specification No 1245

**Metal connector plates**

The metal connector plates shall be fabricated out of not less than 1mm thick drawn quality galvanised steel

The steel shall have a minimum yield strength of 228 MPa and a minimum ultimate tensile strength of 330 MPa. The corrosion resisting coating shall be not less than 275 g/my class C hot dipped galvanising as per SABS 934 before stamping

The permissible load to be transmitted in the South African pine by the connector plates shall be obtained from the results of tests carried out by a recognised authority such as the National Timber Research Institute of the CSIR

Carried to Collection

R

Section No 2  
Bill No 7  
CARPENTRY AND JOINERY

Item  
No

Quantity

Rate

Amount

**Truss construction**

The trusses shall be constructed with the jigs specially designed to provide correct cambers and pitches

All joints are to be close fitted butt joints and made by precision pressing of the metal connector plates into each side of the joint simultaneously

**Prices**

Prices to include for the supply of all timber of the required grade and type, including all cutting and waste, cutting to exact length and end angles necessary to manufacture the respective truss types, the supply of all connector plates, prefabrication of the trusses in a jig, checking the completed truss for quality, loading up, transporting to the site of the works, (cost of girder trusses to include cost of required metal truss hangers) and:

1. 1.1 Unloading and storing under cover and protecting from the weather, or
  - 1.2 handing over to others for unloading and storing as in 1.1 above
2. Hoisting up and erecting the trusses at the required truss centres, truly plumb and square on top of wall plates, all in accordance with site instructions for erection, bracing and holding down and connections supplied by the truss fabricator for use by:
  - 2.1 themselves (when responsible for erection)
  - 2.2 others (where applicable)
3. Such site supervision as deemed necessary by the fabricator of the trusses to ensure that all the erection details have been complied with to his satisfaction

**Truss loading**

The trusses shall be designed for a live load of 0,5 KN/my and a wind load in accordance with SABS 0160

Carried to Collection

R

Section No 2  
Bill No 7  
CARPENTRY AND JOINERY

Item No	Quantity	Rate	Amount
<p><b><u>Truss design</u></b></p> <p>All trusses shall be designed under the supervision of a Registered Professional Engineer (in accordance with the draft SABS 0163 Code of Practice for the Design of Timber Structure) &amp; SABS 0160 "Loadings"</p>			
<p><b><u>Truss spacing and pitch</u></b></p> <p>The truss centres and pitches shall be as described</p>			
<p><b><u>Design and guarantee</u></b></p> <p>Both the design and guarantee for the prefabricated timber roof construction complete, (excluding battens and/or purlins) to be designed, constructed and delivered to site by an approved firm of specialists, under a written guarantee, which shall be lodged with the Architect for approval before the work is commenced</p>			
<p><b><u>Design system</u></b></p> <p>The Contractor is to take note that the design system as documented in this section of the bill is based on the "TRi design 3000" system</p>			
<p><b><u>The following is applicable in respect of roof trusses</u></b></p> <p>Trusses to be with a 15 degree pitch. The dead load consists of 0,6mm "Brownbuilt" galvanised troughed sheet steel roof covering with "Chromadek" finish, purlins at approximately 1000mm centres, 32mm "Isoboard" insulation, 12,5mm "Gyprex" suspended ceilings in a "Donn" grid system and/or 4mm "Everite" nailed-up ceilings. All references given in the descriptions are related to specific type of trusses based on the above-mentioned system. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained by actual measurements taken on the site before design or fabrication commences</p> <p>-----</p>			
<p>Carried to Collection</p>			R
<p>Section No 2 Bill No 7 CARPENTRY AND JOINERY</p>			



Item No	<u>ROOF ETC</u>	Quantity	Rate	Amount
	<u>Allow for the preparation and submission of the following documents in respect of all buildings:</u>			
1	Detailed shop drawings indicating truss sizes, truss positions, bracings, etc. to be submitted for approval prior the commencement of any fabrication T1 : 1.00	Item		
2	Submission of design certificate indicating the licensed programme used, SABS specifications adhered to, general procedures and loadings adopted, etc. T1 : 1.00	Item		
3	Inspection of the whole pre-fabricated roof truss construction upon completion, necessary additional supervision and inspections required until all defective work is made good and for the subsequent issuing of a guarantee certificate accordingly T1 : 1.00	Item		
	<u>PREFABRICATED TIMBER ROOF TRUSSES</u>			
	<u>The following trusses shall be "Mitek" or other approved engineering designed roof trusses manufactured from sawn S.A.Pine as described at average 1000mm to support 0.58mm thick Brownbuilt Kliplock roof covering with rhinoboard and and fibre cement ceilings under, including hoisting and fixing in position approximately 3000mm above natural ground level</u>			
	<u>EMS Building</u>			
4	Provide the sum of R 250,000.00 (Two Hundred and Fifty Thousand Rand) for the roof construction to double pitched roof with no hipped ends for <b>ems building</b> , designed, supplied and erected complete in position T1 : 1.00	Item		250,000.00
5	Profit T1 : 1.00	Item		
6	Attendance T1 : 1.00	Item		
	<b>Carried to Collection</b>			
	Section No 2 Bill No 7 CARPENTRY AND JOINERY			
			R	

NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Rate	Amount
	<u>Guard House</u>			
7	Provide the sum of R 10,000.00 (Ten Thousand Rand) for the roof construction to double pitched roof with no hipped ends for <b>guard house</b> , designed, supplied and erected complete in position T3 : 1.00	Item		10,000.00
8	Profit T3 : 1.00	Item		
9	Attendance T3 : 1.00	Item		
	<u>Enviroloo Toilets</u>			
10	Provide the sum of R 60,000.00 (Sixty Thousand Rand) for the roof construction to double pitched roof with no hipped ends for five <b>enviroloo toilets</b> , designed, supplied and erected complete in position T53 : 1.00	Item		60,000.00
11	Profit T53 : 1.00	Item		
12	Attendance T53 : 1.00	Item		
	<u>Sawn softwood:</u>			
13	38 x 76mm Bracings, binders, etc. T1 : 70    T3 : 6    T51 : 11    T52 : 11 T53 : 6	m	104	
14	50 x 76mm Purlins T1 : 637    T3 : 34    T4 : 14    T51 : 96 T52 : 96    T53 : 48	m	925	
15	38 x 114mm Wall plate T1 : 93    T3 : 10    T51 : 32    T52 : 32 T53 : 16	m	183	
16	38 x 114mm Cross bracing T1 : 112    T3 : 11    T51 : 32    T52 : 32 T53 : 16	m	203	
17	38 x 152mm Rafters T4 : 13	m	13	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 7 CARPENTRY AND JOINERY			R

Item No		Quantity	Rate	Amount
	<u>Sundries:</u>			
18	Two coats carbolinium on sawn timbers T1 : 120    T3 : 3    T4 : 5    T51 : 34 T52 : 34    T53 : 17	m2	213	
19	Galvanised "Hurricane" clip at rafter and purlin intersections, fully nailed (Provisional) T4 : 8	No	8	
	<u>SKIRTINGS</u>			
	<u>Wrought meranti:</u>			
20	19 x 76mm Skirting, including 19mm quadrant bead nailed T1 : 24    T3 : 6	m	30	
	<u>EAVES, VERGES, ETC</u>			
	<u>Pressed fibre-cement</u>			
21	15 x 225mm Pressed fibre cement fascias and barge boards including galvanised steel H-profile jointing strips T1 : 99    T3 : 19    T4 : 16    T51 : 44 T52 : 44    T53 : 22	m	244	
	<u>DOORS, ETC.</u>			
	<u>Wrought meranti doors hung to steel frames (Steel frames, ironmongery and paint measured elsewhere)</u>			
22	44mm Framed batten door 813 x 2032mm high with top rail, stiles, middle ledge and bottom ledge and filled in with 20mm V-jointed one side boarding and including bracing and flush back T1 : 3    T2 : 2    T3 : 2    T51 : 4 T52 : 4    T53 : 2	No	17	
23	44mm Framed batten door 1613 x 2032mm high with top rail, stiles, middle ledge and bottom ledge and filled in with 20mm V-jointed one side boarding and including bracing and flush back T1 : 1	No	1	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 7 CARPENTRY AND JOINERY			
			R	

Item No		Quantity	Rate	Amount
	<u>Solid core doors with masonite finish and concealed hardwood edges hung to steel frames (Steel frames, ironmongery and paint measured elsewhere)</u>			
24	40mm Door 762 x 2032mm high T1 : 2	No 2		
25	40mm Door 813 x 2032mm high T1 : 10 T2 : 6 T3 : 1	No 17		
	<u>Undercut Solid chipcore flush doors with 3.2mm tempered hardboard covering on both sides with concealed hardwood edge hung to steel frames (Steel frames, ironmongery and paint measured elsewhere)</u>			
26	40mm Door 813 x 1932mm high T1 : 5 T2 : 2 T51 : 8 T52 : 4 T53 : 3	No 22		
	<u>Solid core woodern door, double swing, with 20 minutes fire resistance 100mm wide x 300mm hung viewing panel (georgian wire glass) and with smoke seal hung to steel frame (Steel frames, ironmngery and paint measured elsewhere)</u>			
27	40mm Door 1613 x 2100mm high T1 : 1	No 1		
	<b><u>JOINERY SUNDRIES</u></b>			
	Tenderers are referred to architects' drawings at the back of these bills of quantities for tender purposes			
	<b><u>KITCHEN CUPBOARDS</u></b>			
	<u>"Cupboard Connections" or similar approved kitchen cupboards plugged</u>			
	Kitchen cupboards are to be manufactured of 16mm particle board with 0,8mm melamine finish on both sides and edges. Tops are to be of 32mm water resistant particle board with 1,2mm "Formica" type high pressure decorative laminate finish to top with balancing veneer to underside. Edges of tops are to be finished with matching laminate (edges of tops are to be half-round post-formed with laminate wrapped around)			
	Doors to be of 16mm particle board with 0,8mm melamine finish on both sides and postformed edges			
	Doors are to be hung on "Hettich" hinges			
	<b>Carried to Collection</b>		R	
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NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
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Item No		Quantity	Rate	Amount
	Drawers are to be fitted with telescopic runners			
	Doors and drawers are to be fitted with approved handles			
28	F450/1 floor unit 450 x 600 x 880mm high T1: 1	No	1	
29	F600/1 floor unit 600 x 600 x 880mm high T1: 1	No	1	
30	F600 Sink unit 600 x 600 x 880mm high T1: 1	No	1	
31	F900 Sink unit 900 x 600 x 880mm high T1: 1	No	1	
32	FCU900 Corner unit 900 x 600 x 880mm high T1: 1	No	1	
33	F3490 floor unit 3490 x 600 x 880mm high T1: 1	No	1	
	<u>Counters, worktops etc.</u>			
34	Reception counter 2200mm long x 600mm wide to Guard House, comprising 32mm veneered particle board top with "Formica" laminate on one side and moulded hardwood edge strips, 22mm veneered particle board shelf and necessary timber bearers etc fixed to brickwork (refer to Counter Detail on drawing No 500-GH at the back of these bills of quantities) T3: 1	No	1	
	<u>Granite Tops</u>			
35	40mm polished black granite top with half bullnose edge 2900mm long x 600mm wide to Kitchen (refer to Kitchen cupboard Detail on drawing No 600 at the back of these bills of quantities) T1: 1	No	1	
36	40mm polished black granite top with half bullnose edge 3490mm long x 900mm wide to Kitchen (refer to Kitchen cupboard Detail on drawing No 600 at the back of these bills of quantities) T1: 1	No	1	
	<b>Carried to Collection</b>			
	Section No 2			
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Item No	<u>SHELVES</u>	Quantity	Rate	Amount
	<u>"Shelco shelving or similar approved" with standard epoxy powder coated finish</u>			
37	Garage shelving 4200mm long x 600mm wide , comprising of 6 x1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities) T1 : 1	No	1	
38	Medical store shelving 4080mm long x 600mm wide , comprising of 6 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities) T1 : 2	No	2	
39	Equipment store shelving 4260mm long x 600mm wide , comprising of 6 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities) T1 : 2	No	2	
40	Surgical store shelving 2280mm long x 600mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities) T1 : 2	No	2	
	<b>Carried to Collection</b>		R	
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Item No		Quantity	Rate	Amount
41	Surgical store shelving 2000mm long x 600mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brickwork (refer to Shelving Detail on drawing No 600 at the back of these bills of quantities) T1 : 1	No	1	
42	Gate house shelving 1827mm long x 455mm wide , comprising of 3 x 1830mm long WB double slot wall bands plugged upright with heavy duty 380mm shelf brackets, and 22mm Laminated Glulam wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish fixed to brackets (refer to Shelving Detail on drawing No 500-GH at the back of these bills of quantities) T3 : 1	No	1	
<b><u>BUDGETARY ALLOWANCE</u></b>				
43	Provide the sum of R 30,000.00 (Thirty Thousand Rand) for the supply and installation of kitchen cupboards, granite top finish, shelving and counter T2 : 1.00	Item		30,000.00
<b>Carried to Collection</b>				R
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BUILDING WORKS

Bill No 7

CARPENTRY AND JOINERY

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Bill No 7

CARPENTRY AND JOINERY



Item No		Quantity	Rate	Amount
	<p><b><u>BILL NO 8</u></b></p> <p><b><u>CEILING, PARTITIONS AND ACCESS FLOORING</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Descriptions</u></b></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at maximum 600mm centres, and where described as "bolted", these bolts have been given elsewhere</p> <p><b><u>Finishes to suspended ceilings</u></b></p> <p>All finishes to be applied at the factory during the manufacturing process and to be delivered on site "pre-finished" as described. No applying of finishes on site will be allowed</p> <p><b><u>Fixing of electrical light fittings, diffusers, panels, etc. to suspended ceilings</u></b></p> <p>Electrical light fittings, diffusers, panels, etc. generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognizance thereof)</p> <p>-----</p> <p style="text-align: right;"><b>Carried to Collection</b></p> <p>Section No 2 Bill No 8 CEILING, PARTITIONS AND ACCESS FLOORING</p>			
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Item No		Quantity	Rate	Amount
<b><u>CEILING TIMBERS, BEADS, INSULATION, ETC</u></b>				
<u>Meranti:</u>				
1	19mm Quadrant beads T1 : 168	m	168	
2	19 x 76mm Cornices nailed T1 : 271	m	271	
<u>"Glasswool" insulation</u>				
3	50mm Glasswool insulation closely fitted and laid on top of branderung between roof timbers etc T51 : 30 T52 : 30 T53 : 14	m2	74	
<b><u>NAILED UP CEILINGS</u></b>				
<u>6mm "Everite Nutec" fibre-cement boards with H-type pressed steel jointing strips:</u>				
4	Ceilings including 38 x 38mm S.A pine branderung at 450mm centres in one direction T1 : 116 T3 : 10 T51 : 30 T52 : 30 T53 : 14	m2	200	
5	Extra over ceiling for 600 x 600mm hinged pressed metal trap door including all necessary ironmongery T1 : 1 T3 : 1 T51 : 2 T52 : 2 T53 : 2	No	8	
<u>Gypsum:</u>				
6	75mm cornice nailed at 450mm centres T1 : 22 T3 : 22 T51 : 32 T52 : 32 T53 : 23	m	131	
<b><u>SUSPENDED CEILINGS</u></b>				
<u>600 x 600 x 12.5mm Thick "Masonite" fine fissured acoustic panel on "Donn" T38 pre-finished exposed tee suspended grid system, including main and cross tees, necessary hangers, holding down clips, etc.:</u>				
7	Ceilings suspended not exceeding 1m below soffit of timber trusses (trusses at average 1200mm centres) T1 : 198	m2	198	
<b>Carried to Collection</b>				
Section No 2 Bill No 8 CEILINGS, PARTITIONS AND ACCESS FLOORING				R

Item No		Quantity	Rate	Amount
8	Ceilings suspended not exceeding 1m below soffit of steel trusses (trusses at average 1200mm centres) T2 : 95	m2	95	
	<u>"Donn" cornices to suspended ceilings:</u>			
9	LSM25 Pre-finished cornices nailed to brickwork: T1 : 177	m	177	
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Bill No 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

Item No	Quantity	Rate	Amount
<p><b><u>BILL NO 9</u></b></p>			
<p><b><u>IRONMONGERY</u></b></p>			
<p><b><u>PREAMBLES</u></b></p>			
<p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p>			
<p><b><u>NOTE</u></b></p>			
<p>All prices/rates to be net, excluding Value Added Tax</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>Finishes to ironmongery</u></b></p>			
<p>Where applicable are indicated by suffixes in accordance with the following list:</p>			
<p>BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded</p>			
<p><b><u>Fixing of door locks, handles, flush bolts, etc.</u></b></p>			
<p>Fixing of all door locks, handles, flush bolts, etc. shall be regarded as fixing and/or fitting to timber door leaves, unless specifically otherwise indicated</p>			
<p><b><u>Proprietary items</u></b></p>			
<p>Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p>			
<p>Carried to Collection</p>			
<p>Section No 2 Bill No 9 IRONMONGERY</p>			
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Item No		Quantity	Rate	Amount
	<p>Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered</p> <p>On request returnable samples are to be provided to the principal agent for consideration</p> <p>-----</p> <p><b><u>HINGES, BOLTS, ETC.</u></b></p> <p><u>"Assa Abloy" or similar approved:</u></p>			
1	<p>37651AS Paraplegic Facility Indicator Bolt AS T1 : 1.0</p>	Pairs	1.0	
2	<p>AL8208-150AS Art 208C91 L/Flush bolt 150mm T1 : 3</p>	No	3	
3	<p>AL8208-180AS/MD Flush bolt for metal doors T1 : 4</p>	No	4	
4	<p>AL8208-225AS Art 208C91 L/Flush bolt 225mm T1 : 1</p>	No	1	
5	<p>CZ692TL-73SC Radius Furniture Bathroom LH T1 : 2.0 T2 : 1.0 T51 : 4.0 T52 : 4.0 T53 : 2.0</p>	Pairs	13.0	
6	<p>CZ692TR-73SC Radius Furniture Bathroom RH T1 : 3.0 T2 : 1.0 T3 : 1.0 T51 : 4.0 T53 : 1.0</p>	Pairs	10.0	
	<p><b><u>CATCHES, CABIN HOOKS, ETC</u></b></p> <p><u>In accordance with "Halstead" catalogue:</u></p>			
7	<p>No. 166 SC 150mm long cabin hook and eye T1 : 2 T3 : 1 T51 : 4 T52 : 4 T53 : 2</p>	No	13	
	<p><b><u>LOCKS</u></b></p> <p><u>"Assa Abloy" or similar approved:</u></p> <p>The following locks are to be suitable for master key operation:</p> <p style="text-align: center;"><b>Carried to Collection</b></p>			
	<p>Section No 2 Bill No 9 IRONMONGERY</p>			

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Item No		Quantity	Rate	Amount
8	2X18SCGMK Double Cylinder Profile GMK SC T1 : 12    T2 : 7    T51 : 4    T52 : 4 T53 : 2	No	29	
9	2X18SCMKD Double Cylinder Profile MKD SC T3 : 2	No	2	
10	2X19SCGMK Knob Cylinder Profile GMK SC T1 : 2	No	2	
11	2X20SCGMK Single Cylinder Profile GMK SC T1 : 2    T2 : 1	No	3	
12	L-2215-78SS/SL Mortice Sash Lock - Stainless Steel T1 : 12    T2 : 7    T3 : 2    T51 : 4 T52 : 4    T53 : 2	No	31	
13	QR35X85MM-SS Roller Latch & Deadbolt Lock - Stainless Steel T1 : 2	No	2	
14	2657-78SS Mortice Latch - Stainless Steel T1 : 2	No	2	
15	L-2115-78SS Euro Cylinder Deadlock - Stainless Steel T1 : 2    T2 : 1	No	3	
16	2915SC 2915 Rebate Set - Satin Chrome - For 2115 & 2215 Lock T1 : 2	No	2	
17	22314-76/8SS UNION 314 W/C 8mm Lock - Stainless Steel T1 : 5    T2 : 2    T3 : 1    T51 : 8 T52 : 4    T53 : 3	No	23	
18	UN335071000000 UNION 50MM PADLOCK GMK T1 : 3	No	3	
<b><u>HANDLES</u></b>				
<u>"Assa Abloy" or similar approved :</u>				
19	CZ692-05SC Radius Furniture Profile T1 : 12.0    T2 : 7.0    T3 : 2.0    T51 : 4.0 T52 : 4.0    T53 : 2.0	Pairs	31.0	
<b>Carried to Collection</b>				
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Item No			Quantity	Rate	Amount
20	CZ692-06SC Radius Furniture Blank T1 : 2.0	Pairs	2.0		
21	AL5512-300BBAS 300mm Pull Handle BTB T1 : 3.0	Pairs	3.0		
22	AL5D66-06AS Dove Pull Handle On Backplate Blank - 152 X 152mm Plate T1 : 2 T2 : 1	No	3		
23	PHD-CF-225-22SS SS BT Handle with Flange Fixing - 225mm Centres 22mm Diameter T1 : 2	No	2		
<b><u>DOOR CLOSERS, FLOOR SPRINGS, ETC</u></b>					
<u>"Assa Abloy" or similar approved:</u>					
24	DC500 Cam action closer EN1-4 SIL T1 : 3 T2 : 1	No	4		
<b><u>SUNDRIES</u></b>					
<u>"Coir" or similar approved:</u>					
25	1200 x 950 x 18mm Vinyl black weather mat laid loose in and including Genesis surround T1 : 2	No	2		
<u>"Assa Abloy" or similar approved:</u>					
26	AL582RT-05AS 821RT/C91 Escutcheon Profile T1 : 2.0	Pairs	2.0		
27	AL8721AS Hat & Coat Hook T3 : 2	No	2		
28	AL8730AS Door stop, plugged T1 : 17 T2 : 8 T3 : 1	No	26		
29	AL8722AS Coat Hook Rubber Tipped T1 : 5 T2 : 2 T51 : 8 T52 : 4 T53 : 3	No	22		
30	8005SS Hat & Coat Hook T1 : 1	No	1		
31	8852SC Dust proof strike, plugged T1 : 4	No	4		
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Item No		Quantity	Rate	Amount
	<b><u>BATHROOM FITTINGS</u></b>			
	<u>"Duravit Karree" or similar approved:</u>			
32	Chrome bath towel rail (code: 0099591000) overall size 600mm, plugged and screwed to walls T1: 5      T2: 2      T3: 1	No	8	
	<u>"Hi-Tech" or similar approved:</u>			
33	32mm diameter grade 304 stainless steel horizontal shower rail (code:20) with vinyl shower curtain, plugged and screwed to walls with stainless steel screws T1: 2	No	2	
	<u>"Franke Rodan" or similar approved:</u>			
34	RODX672 0,8mm thick satin finished stainless steel double toilet roll holders with spindle system (code: 2120101), size 144 x 138mm high for 2 rolls maximum 129mm diameter with cylinder lock with standard Franke key, plugged and screwed to wall with stainless steel screws T1: 4      T2: 2      T3: 1      T51: 8 T52: 4      T53: 3	No	22	
35	RODX605 0,8mm thick satin finished stainless steel waste bin (code: 2120087), size 355 x 168 x 460mm high with capacity of 23 litres and cylinder lock and standard Franke key, plugged and screwed to wall with stainless steel screws T1: 3      T2: 2      T3: 1      T51: 4 T52: 4      T53: 2	No	16	
36	BHM6P polished stainless steel double arm soap rack (code: 2120089), size 163 x 100mm deep, plugged and screwed to the wall with stainless steel screws T1: 3      T2: 2      T3: 1      T51: 4 T52: 4      T53: 2	No	16	
37	HF2400HD 1,2/1,5mm thick satin finished stainless steel automatic hands free hand dryer (code: 2500001), size 280 x 207 x 245 high with 2 vandal proof lock screws and key wrench, plugged and screwed to the wall with stainless steel screws, 200W motor connected to 230/240 volt power supply with 5 year warranty T1: 3      T2: 2      T3: 1	No	6	
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
	<u>"Kimberly Clark" or similar approved:</u>			
38	Rolled hand towel dispenser colour white (code: 07375000), overall size 374 x 297 x 248mm high plugged T1 : 3      T2 : 2      T3 : 1      T51 : 4 T52 : 4      T53 : 2	No	16	
39	"Kimberly Clark" SQ2 code 405607B white lockable toilet roll holder T51 : 8      T52 : 4      T53 : 3	No	15	
40	Hand cleanser and sanitizer cassette 1L colour white code: 6948000), overall size 235 x 116 x 114mm high plugged T1 : 3      T2 : 2      T3 : 1      T51 : 4 T52 : 4      T53 : 2	No	16	
	<u>"Franke stainless steel" or similar approved:</u>			
41	CNTXBR 32mm diameter satin finished cistern back rail (Code: 2510014), size 750 x 260mm with Franke Fine grip surface plugged and screwed to the wall with stainless steel screws T1 : 1	No	1	
42	CNTX21 32mm diameter satin finished angle bar (Code: 2510008), size 415 x 95 x 415mm with franke grip surface, plugged and screwed to the wall with stainless steel screws T1 : 1	No	1	
	<u>Approved:</u>			
43	Female she-bin T51 : 8      T53 : 2	No	10	
	<b><u>LETTERS, NAMEPLATES, ETC.</u></b>			
	<u>"Assa Abloy" or similar approved:</u>			
44	152 x 152mm engraved plate E01 (code : SS5066-06SSE01) T1 : 1	No	1	
45	152 x 152mm engraved plate E05 (code : SS5066-06SSE05) T1 : 1      T2 : 1	No	2	
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
46	152 x 152mm engraved plate E06, (code: SS5066-06SSE06) T1: 4 T2: 4	No 8		
47	152 x 152mm engraved plate E14, (code: SS5066-06SSE14) T1: 1	No 1		
48	152 x 152mm engraved plate E15, (code: SS5066-06SSE15) T1: 2	No 2		
49	152 x 152mm engraved plate E10, (code: AL5066-06ASE10) T1: 1 T52: 4 T53: 1	No 6		
50	152 x 152mm engraved plate E11, (code: AL5066-06ASE11) T1: 1 T51: 4 T53: 1	No 6		
51	152 x 152mm engraved plate E12, (code: AL5066-06ASE12) T2: 1	No 1		
	<u>Photoluminescent plate:</u>			
52	150 x 150mm "Fire Hose Reel" T1: 1 T2: 1	No 2		
53	150 x 150mm "Running Man" T1: 5 T2: 2	No 7		
54	150 x 150mm "Electrical hazard door sign" T1: 1 T2: 1	No 2		
55	150 x 150mm "Fire extinguisher" T1: 4 T2: 4	No 8		
56	150 x 150mm "Emergency exit route sign" (straight) T1: 3 T2: 1	No 4		
57	150 x 150mm "Emergency exit route sign" (right) T1: 1 T2: 1	No 2		
58	150 x 150mm "Emergency exit route sign" (left) T1: 1 T2: 1	No 2		
59	150 x 150mm "Arrow sign" (down) T1: 3 T2: 1	No 4		
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
60	150 x 75mm " Exit route sign" T1: 5 T2: 1	No 6		
<b><u>CORNER PROTECTORS, PUSH PLATES, KICK PLATES, ETC</u></b>				
<u>"Assa Abloy" or similar approved:</u>				
61	SS5089-300W Kick Plate 300X800mm Works T1: 10 T2: 2	No 12		
62	SP-300X900SSKP UNION SS KICK PLATE 300H X 900W T1: 2	No 2		
63	AL5066L-05AS Push Plate LH Profile - 152 X 152mm T1: 1 T2: 1	No 2		
64	AL5066R-05AS Push Plate RH Profile - 152 X 152mm T1: 1	No 1		
<b><u>VENETIAN BLINDS</u></b>				
<u>"Windovert" or similar approved Space Blue horizontal aluminium venetian roll-up blinds with 35mm slats, fitted and plugged within the window reveal; complete with top track, brackets, operating chains, tilt rods, etc; the installation to be executed by a specialist subcontractor</u>				
65	533 x 654mm High blinds T1: 7 T3: 3	No 10		
66	533 x 949mm High blinds T2: 3	No 3		
67	1022 x 1264mm High blind T1: 16 T2: 2 T3: 3	No 21		
68	1511 x 949mm High blind T1: 1	No 1		
69	2000 x 1246mm High blinds T2: 3	No 3		
<b>Carried to Collection</b>				
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Item No	<u>PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC.</u>	Quantity	Rate	Amount
	<u>"Vitrex" or similar approved:</u>			
70	White non-magnetic writing board 1000 x 1200mm high plugged T1:3 T2:4	No	7	
71	PFX Stain Shield fibre, size 2400 x 1200 x 9mm thick needlepunch 2.5m wide broadloom carpet, with SABS Class 3 fire rating screwed fixed to walls T1:3 T2:4	No	7	
	<u>STEEL LOCKERS</u>			
	<u>Approved steel lockers with standard baked enamel finish:</u>			
72	Two doors heavy duty steel locker 300 x 450 x 1800mm high with hasp and staple for padlock (Tier openings 230 x 420 x 795mm high )weight: 16.3kg T1:9 T2:6	No	15	
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Item No	<b><u>BILL NO 10</u></b>	Quantity	Rate	Amount
	<b><u>METALWORK</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<b><u>NOTE</u></b>			
	All prices/rates to be net, excluding Value Added Tax			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Primer</u></b>			
	All surfaces of steelwork to be painted with one coat approved factory primer before leaving the workshop of the Manufacturer and all scratches, chips or blemishes to be made good on site after erection. All rates tendered must make provision for this as no claim will afterwards be entertained			
	<b><u>Rebates of door frames</u></b>			
	Frames are, unless otherwise described, double rebated and suitable for 40mm thick doors			
	<b><u>Striking plates for door frames</u></b>			
	Unless otherwise described all striking plates to be of chromium-plated type			
	-----			
	<b><u>WELDED SCREENS, GATES, ETC</u></b>			
	<b><u>Security screens, gates, etc.:</u></b>			
1	380mm wide x 30mm deep rectagrid T4 : 1	m2	1	
2	Purpose made square hallow section mild steel security gate, size 813 x 2032mm High T51 : 4    T52 : 4    T53 : 2	No	10	
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
	<b><u>PRESSED STEEL DOOR FRAMES, ETC.</u></b>			
	<u>1,6mm Double rebated frames suitable for half brick wall, for:</u>			
3	Door 762 x 2032mm high with one stile prepared for striking plate of mortice lock T1 : 2	No	2	
4	Door 813 x 2032mm high with one stile prepared for striking plate of mortice lock T1 : 15      T3 : 1      T51 : 8      T52 : 4 T53 : 3	No	31	
	<u>1,6mm Double rebated frames suitable for one wall, for:</u>			
5	Door 813 x 2032mm high with one stile prepared for striking plate of mortice lock T1 : 3      T3 : 2      T51 : 4      T52 : 4 T53 : 2	No	15	
6	Double door 1613 x 2032mm high, with top rail prepared for keep of barrel bolt T1 : 1	No	1	
7	Double door 1613 x 2100mm high, with top rail prepared for keep of barrel bolt T1 : 1	No	1	
	<b><u>PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u></b>			
8	Purpose made transformer double door , size 1850 x 1940mm high with louvred ventilation panels with insect proof screens and rebated frame suitable for one brick wall T4 : 1	No	1	
	<b><u>PRESSED STEEL LOUVRES</u></b>			
9	Purpose made louvre panel size 900 x 500mm high with insect proof screen fixed to brick wall T4 : 3	No	3	
	<b>Carried to Collection</b>			
	Section No 2 Bill No 10 METALWORK			
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Item No		Quantity	Rate	Amount
	<b><u>STEEL WINDOWS, DOORS, ETC.</u></b>			
	<u>Standard domestic type steel windows:</u>			
10	Window type NE1, size 533 x 654mm high with standard burglar bars BB1 T1 : 7 T3 : 3	No 10		
11	Window type NC1, 533 x 949mm high with standard BB1 burglar bars T51 : 8 T52 : 8 T53 : 4	No 20		
12	Window type ND2, 1022 x 1264mm high with standard BB1 burglar bars T3 : 3	No 3		
13	Window type ND7, size 1022 x 1264mm high with standard burglar bars BB1 T1 : 16	No 16		
14	Window type ND11, size 1511 x 949mm high with standard burglar bars BB1 T1 : 1	No 1		
	<b><u>STEEL ROLLER SHUTTERS ETC</u></b>			
	<u>"Roll-Up Serranda Series 1500" powder coated chain operated with 75 x 0.8mm thick endlocked slatted curtain steel roller shutters with overhead box 360mm high including canopy cover, standard bottom rail, 75mm wide guides, extruded aluminium T-bar with rubber seal, powder coated ancillary components including 4.5mm thick end plates, guide rails, slide bolt and guide lock, fixed to brickwork and concrete lintel</u>			
15	Chain operated slatted roller shutter for 3000 x 3400mm high opening with guide locks T1 : 2	No 2		
	<b><u>ALUMINIUM WINDOWS, DOORS, ETC.</u></b>			
	<b><u>Factory glazing</u></b>			
	All glazing carried out in manufacturers's factory must be in accordance with the specified types. Manufacturing of frames must provide for glass, vinyl extrusions cut off sharp at corners and these are to line up with frame/glass rebates			
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
	<p><b><u>Ironmongery</u></b></p> <p>Doors, etc. are to be fitted with the necessary locks, etc., as described elsewhere in this document and locks are to be suitable for master key operation</p> <p><b><u>Building in</u></b></p> <p>The doors, etc., must be set up and built in position in concrete or brickwork and all joints sealed with approved colour matching silicon sealant, to be left completely watertight and prices should include therefore</p> <p>On completion of all other work the doors, etc., are to be adjusted as necessary and rendered in a complete and satisfactory state of repair and in working order</p> <p><b><u>Protection</u></b></p> <p>Doors, etc., must, wherever practicable, be erected as near to the end of the contract period as possible to minimise the danger of deterioration and all work must be protected by covering up with temporary casings against damage, deterioration or discolouration caused by mortar droppings, varnish, wax, paint, etc., all to the entire satisfaction of the Architect</p> <p><b><u>Hinges</u></b></p> <p>Each door leaf is to be fitted with three hinges</p> <p><b><u>ALUMINIUM DOORS</u></b></p> <p><u>Natural anodised aluminium doors and sidelights glazed with 6mm clear PVB laminated safety glass plugged to brickwork or concrete:</u></p>			
16	<p>Double door 1300 x 2100mm high with 400 x 2100mm high sidelight on one side (Refer to drawing No 800 Revision A)) T1:1</p>	No	1	
17	<p>Double door 3000 x 2100mm high with 600 x 2100mm high sidelight on each side (Refer to drawing No 800 Revision A)) T1:1</p>	No	1	
	<b>Carried to Collection</b>			R
	<p>Section No 2 Bill No 10 METALWORK</p>			

Item No		Quantity	Rate	Amount
<b>SHOWER CUBICLE DOORS</b>				
<u>Natural anodised aluminium shower cubicle doors with sliding gear, cleats, stops, etc. and 6mm toughened obscure safety glass plugged to tiled walls:</u>				
18	Pivot door 900 x 1800mm high T1:2	No	2	
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METALWORK

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METALWORK

Item No		Quantity	Rate	Amount
	<b><u>BILL NO 11</u></b>			
	<b><u>STRUCTURAL STEELWORK</u></b>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<u>Descriptions</u>			
	Descriptions of bolts shall be deemed to include nuts and washers			
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete			
	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			
	Allowance for work shop drawings from the steel manufacturers will be required for approval before manufacturing			
	-----			
	<b><u>The following in Washbay attached to main building manufactured with steel columns, beams and purlins</u></b>			
	<u>Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete</u>			
1	254 x 254 x 73mm x 6.2kg/m H section columns T1 : 1.39	t	1.39	
2	203 x 133 x 25mm x 25.3kg/m I section beam T1 : 0.40	t	0.40	
3	225 x 75 x 20 x 2.5mm x 7.29kg/m Lipped channel purlins T1 : 0.95	t	0.95	
4	80 x 80 x 8mm x 9.63kg/m angle section bracings T1 : 0.13	t	0.13	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 11 STRUCTURAL STEEL			

Item No		Quantity	Rate	Amount
	<p><u>Spot priming defects in pre-primed surfaces with red oxide metal primer, one coat universal undercoat and two coats "Super Universal Enamel" paint (NY-1/G) on steel</u></p>			
5	On members of lattice columns and beams T1 : 16	m2	16	
	<p><u>(End of washbay)</u></p> <p><u>The following in Equipment Washbay attached to main building manufactured with steel columns, beams and purlins</u></p> <p><u>Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete</u></p>			
6	75 x 75 x 3.5mm x 7.53kg/m Hollow section columns T1 : 0.18	t	0.18	
7	25 x 25 x 3mm x 1.06kg/m equal leg angle in roof truss T1 : 0.36	t	0.36	
8	65 x 50 x 6mm 5.16kg/m unequal leg Angle in roof truss T1 : 0.02	t	0.02	
9	100 x 75 x 20 x 2mm x 4.32kg/m Lipped channel purlins T1 : 0.17	t	0.17	
	<p><u>Spot priming defects in pre-primed surfaces with red oxide metal primer, one coat universal undercoat and two coats "Super Universal Enamel" paint (NY-1/G) on steel</u></p>			
10	On members of lattice columns and beams T1 : 10	m2	10	
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Item No		Quantity	Rate	Amount
	<b><u>BILL NO 12</u></b>			
	<b><u>PLASTERING</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<b><u>NOTE</u></b>			
	All prices/rates to be net, excluding Value Added Tax			
	<b><u>SUPPLEMENTARY PREAMBLES</u></b>			
	<b><u>Textured finishes</u></b>			
	All specialist plaster wall finishes are to be applied to the satisfaction of the Architec and executed by an approved firm of Specialists, all strictly in accordance with the materials supplied and methods employed by the Manufacturer			
	<b><u>Preparatory work for textured finishes</u></b>			
	Textured finishes to be applied to plaster (plaster elsewhere)			
	All surfaces are to be inspected and approved by the Architect before any work is commenced with			
	<b><u>Prices for textured finishes</u></b>			
	Prices are to include for all priming, preparatory work, etc.			
	-----			
	<b><u>SCREEDS</u></b>			
	<b><u>Cement plaster screeds steel trowelled on concrete:</u></b>			
1	30mm Thick on floors and landings T1 : 244	m2	244	
2	30mm Thick on floors in sunk panels T1 : 62	m2	62	
3	Average 35mm thick on floors to falls and currents T1 : 51	m2	51	
	<b>Carried to Collection</b>			R
	Section No 2 Bill No 12 PLASTERING			



Item No		Quantity	Rate	Amount
	<u>Cement plaster screeds wood trowelled on concrete:</u>			
4	30mm Thick on floors and landings T3 : 7    T51 : 30    T52 : 30    T53 : 14	m2	81	
	<b><u>GRANOLITHIC</u></b>			
	<u>Untinted wood floated granolithic on concrete:</u>			
5	30mm Thick to floors T3 : 3	m2	3	
	<b><u>INTERNAL PLASTER</u></b>			
	<u>1:4 Cement plaster on brickwork, on:</u>			
6	On pits walls T51 : 58    T52 : 29    T53 : 22	m2	109	
7	Walls T1 : 1013    T3 : 49    T4 : 24    T51 : 123 T52 : 112    T53 : 40	m2	1,361	
8	Narrow widths T1 : 10    T3 : 2    T4 : 0    T51 : 3 T52 : 3    T53 : 1	m2	19	
	<b><u>EXTERNAL PLASTER</u></b>			
	<u>1:4 Cement plaster on brickwork, on:</u>			
9	Walls T1 : 58	m2	58	
10	Narrow widths T1 : 7	m2	7	
	<b><u>FLOOR AND WALLS SEALERS</u></b>			
	<u>Minimum two coats approved epoxy coat:</u>			
11	On internal textured plaster walls and floors in pit T51 : 70    T52 : 35    T53 : 26	m2	131	
	<b>Carried to Collection</b>			
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Item No	<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC.</u>	Quantity	Rate	Amount
12	6 x 32mm Flat section brass dividing strips between different floor finishes (In No. 5 lengths) T1 : 4	m	4	
13	50 x 50 x 3mm Thick angle section cast into concrete surface bed including welded 20 x 3mm thick x 250mm long flat section with fish tail ends at 500mm centres T4 : 12	m	12	
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**BILL NO 13**

**TILING**

For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"

**NOTE**

All prices/rates to be net, excluding Value Added Tax

**SUPPLEMENTARY PREAMBLES**

**Patterns**

Unless otherwise described, tiles shall be laid with continuous joints in both directions

**Fixing**

Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding

Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles

**Prices**

Prices are to include for all square cutting and waste, cleaning off on completion and protection from injury. Areas are measured net to face of bare brickwork and concrete. Any additional area caused by the thickness of tiling and screed are to be allowed for in prices

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Section No 2  
Bill No 13  
TILING

Item No		Quantity	Rate	Amount
	<b><u>WALL TILING</u></b>			
	<u>200 x 200 x 5mm White glazed ceramic tiles fixed with approved adhesive to plaster (plaster elsewhere) and flush jointed with white waterproofed grout on:</u>			
1	Walls T1 : 193    T2 : 25    T3 : 11    T51 : 4 T52 : 4    T53 : 2	m2	239	
2	On narrow widths T1 : 2    T2 : 1    T3 : 1	m2	3	
	<b><u>FLOOR TILING</u></b>			
	<u>600 x 600 x 9,5mm "Porcelain tiles" at a prime cost of R350.00 per square meter fixed to screed (screed elsewhere) with adhesive and flush pointed with grout to internal screed, on:</u>			
3	Floors T1 : 235    T2 : 95    T3 : 7    T51 : 30 T52 : 30    T53 : 14	m2	411	
4	Skirting 100mm high of cut floor tiles T1 : 168    T2 : 85    T3 : 7    T51 : 50 T52 : 42    T53 : 26	m	379	
	<b><u>SUNDRIES</u></b>			
	<u>"Kirk" or similar approved aluminium corner protectors, stair nosings, expansion joint strips, etc:</u>			
5	15mm Depth M-Trim aluminium straight edge trim code ASE150 T1 : 19    T3 : 2    T51 : 4    T52 : 4 T53 : 2	m	31	
6	15mm Depth M-Trim aluminium movement joint code AMJ150 T1 : 25	m	25	
	<b>Carried to Collection</b>			
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BUILDING WORKS

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TILING

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Item No		Quantity	Rate	Amount
	<p><b><u>BILL NO 14</u></b></p> <p><b><u>PLUMBING AND DRAINAGE (PROVISIONAL)</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>PVC pipes and fittings</u></b></p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><b><u>Copper pipes</u></b></p> <p>Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016</p> <p><b><u>Excavations</u></b></p> <p>Prices for all excavations must include for necessary staging and for the risk of collapse of excavation side and also keeping excavations free from water</p>			
	<b>Carried to Collection</b>			
	<p>Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)</p>		R	

Item No	Quantity	Rate	Amount
<p><b><u>Compacting</u></b></p> <p>Where filling is described as:</p> <ul style="list-style-type: none"> <li>- filling in general: "compacted" shall mean compacted to 90% Mod. AASHTO density, unless otherwise described</li> <li>- filling for all types of pipes described as "under solid floors, etc.,": "compacted" shall mean approved backfilling stabilized with 5% lime and compacted to 90% Mod. AASHTO density, unless otherwise described</li> <li>- filling for all types of pipes where described as "under roads, paving, etc.,": "compacted" shall mean approved gravel back filling stabilized with 5% lime and compacted to 90% Mod. AASHTO density, unless otherwise described</li> </ul> <p><b><u>Stainless steel basins, sinks, wash troughs, urinals, etc.</u></b></p> <p>Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be type 304 (18/8)</p> <p><b><u>Waste unions</u></b></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings</p> <p><b><u>Sealing of all joints</u></b></p> <p>Sanitary fittings to be sealed watertight with an approved silicon sealant along all junctions with walls, tiled surfaces, vanity slabs, work tops, etc.</p> <p>-----</p> <p style="text-align: right;"><b>Carried to Collection</b></p> <p>Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)</p>			
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Item No		Quantity	Rate	Amount
<b><u>RAINWATER DISPOSAL</u></b>				
<u>0.8mm Aluminium seamless</u>				
1	125 x 125mm Eaves gutters fixed to roof sheeting with clips T1 : 99    T3 : 11    T51 : 44    T52 : 44 T53 : 22	m	220	
2	Extra over fascia gutter for stopped end T1 : 2    T3 : 4	No	6	
3	Extra over fascia gutter for angle T1 : 6	No	6	
4	Extra over eaves gutter for outlet for 100mm diameter pipe T1 : 19    T3 : 2    T51 : 8    T52 : 8 T53 : 4	No	41	
5	100mm Diameter rainwater pipes T1 : 63    T3 : 5    T51 : 24    T52 : 24 T53 : 12	m	128	
6	Extra over for bend T1 : 19	No	19	
7	Extra over for shoe T1 : 19    T3 : 2    T51 : 8    T52 : 8 T53 : 4	No	41	
8	Extra over rainwater pipe for eaves or plinth offset 600mm projection T1 : 19    T3 : 2    T51 : 8    T52 : 8 T53 : 4	No	41	
<b><u>SANITARY FITTINGS</u></b>				
<u>"Franke" stainless steel or similar approved:</u>				
9	Grade 403 17/10 wash trough 540 x 430 x 348mm deep with sloped front, wash ridges and 40mm waste outlet T1 : 1	No	1	
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Item No		Quantity	Rate	Amount
	<u>"City Metal" stainless steel or similar approved:</u>			
10	Trendline Model 900 x 460 SEB Grade 304 18/10 polished stainless steel single end bowl drop on sink, overall size 900 x 460mm with one 350 x 460 x 140mm deep bowl, fitted onto cupboard T1 : 1	No 1		
11	Model DSG 535 x 455mm drip sink fixed with stainless steel fixing brackets T1 : 1	No 1		
	<u>"Vaal" or similar approved:</u>			
12	560 x 405mm "Flamingo" No 7007 white vitreous china lavatory basin with integrated overflow, one tap hole, 32mm "Cobra" No 309 chromium-plated anti-theft plug with spindle, one 15mm "Nova" No 292 chromium-plated basin mixer, "Vaal" No 8448Z0 bolts fixed to brickwork, etc. T1 : 3      T2 : 2      T3 : 1      T51 : 4 T52 : 4      T53 : 4	No 18		
13	Low level pedestal WC suite comprising "Aquasave" No 750151 vitreous china washdown closet with "Masterbilt" double flap white plastic resin finished seat, 6 litre cistern, all necessary fixing components and fixing to brickwork, etc. T1 : 3      T2 : 2      T3 : 1	No 6		
14	Low level pedestal WC suite comprising "Protea Paraplegic" code 750200 white vitreous china pan "Masterbilt" double flap white plastic resin finished seat, 9 litre cistern code 710533 with purpose made CP side flush lever, all necessary fixing components and fixing to brickwork, etc. T1 : 1	No 1		
15	900 x 900mm White porcelain enamelled "Quadri-Form" code 2001 shower tray laid on brickwork and sealed watertight along all junction with walls, etc. T1 : 2	No 2		
	<b>Carried to Collection</b>			
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Item No		Quantity	Rate	Amount
16	610 x 385 x 310mm "Lavatera" code 704001 top inlet white vitreous china wall hung bowl urinal, 38mm chromium-plated domical grating and waste complete with 20mm "Cobra" "Flushmaster Junior" No FJ 6.000 flushing valve and FJT5.4 chromium-plated flushpipe and spreader, two "Vaal" No 8127 wall brackets and fixing to brickwork, etc. T1 : 1	No	1	
<b><u>ENVIRO-LOO TOILET SYSTEMS</u></b>				
17	Supply and install Enviroloo Industrial Standard seat system complete, all in accordance with the materials supplied and methods employed by the Manufacturer (BPI1040) T51 : 8      T52 : 4      T53 : 3	No	15	
<b><u>URINAL AND EVAPORATIVE TANK SYSTEM</u></b>				
18	Supply and install Enviroloo two (2) Pan Urinal system complete, all in accordance with the materials supplied and methods employed by the Manufacturer (ABS) T53 : 1	No	1	
19	Supply and install Enviroloo four (4) Pan Urinal system complete, all in accordance with the materials supplied and methods employed by the Manufacturer (ABS) T52 : 2	No	2	
<b><u>WASTE UNIONS, TRAPS, ETC.</u></b>				
<u>Stainless steel</u>				
20	GTS 1l/sec-1200 x 500 x 450mm Stainless steel grease trap with removable basket and 110mm inlet and outlet as supplied by Enviro traps or similar and approved. T1 : 2	No	2	
21	SDT 500 - GTS 500 (500 x 500 x 500mm) Stainless steel sand trap with mentis grating and 110mm outlet as supplied by Enviro traps or similar and approved. T1 : 2	No	2	
<u>"Cobra" or silar approved:</u>				
22	40mm No 310 CP Sink waste union T1 : 1	No	1	
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NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Rate	Amount
23	40mm No 316 CP Sink waste union T1 : 2	No	2	
24	32mm No 303 CP Basin waste union T1 : 3 T2 : 2	No	5	
25	40mm No 373 CP Shower waste with 75mm shower grating T1 : 2	No	2	
26	32 x 40mm No 345CP bottle trap T1 : 3 T2 : 2 T3 : 1 T51 : 4 T52 : 4 T53 : 2	No	16	
27	40 x 40mm No 365/40 Chromium-plated bottle trap T1 : 2	No	2	
28	40 x 300mm Sink combinations for double bowl with deepseal "P" trap T1 : 1	No	1	
<b><u>TAPS, VALVES, ETC.</u></b>				
<u>"Cobra" or similar approved:</u>				
29	15mm No 832/350F Angle regulating valve with 350mm long flexible service connection T1 : 6 T2 : 4 T3 : 2 T51 : 4 T52 : 4 T53 : 4	No	24	
30	15mm No 058CP Extension piece T1 : 1	No	1	
31	20mm No 056CP Extension piece T1 : 1 T2 : 4	No	5	
32	15mm No 1003/125 RB Fullway gate valve T1 : 3 T2 : 1	No	4	
33	15mm No 266/041/10 Sink mixer T1 : 1	No	1	
34	15mm No 211CP Pillar tap T1 : 6 T2 : 4 T3 : 1 T51 : 4 T52 : 4 T53 : 4	No	23	
35	20mm No 206CP biptap T1 : 1 T2 : 2	No	3	
<b>Carried to Collection</b>				
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Item No		Quantity	Rate	Amount
<b><u>SANITARY PLUMBING</u></b>				
<u>PVC pipes:</u>				
36	50mm Diameter pipes T1 : 24    T3 : 3    T51 : 9    T52 : 9 T53 : 5	m	50	
37	50mm in ground "under solid floors, etc.", including excavations not exceeding 1m deep, filling in and compacting T1 : 9    T3 : 4    T51 : 9    T52 : 9 T53 : 5	m	36	
38	110mm Diameter pipes T1 : 16    T3 : 3	m	19	
39	110mm Diameter pipes in ground "under solid floors, etc.," including excavations not exceeding 1m deep, filling in and compacting T1 : 1    T3 : 3    T51 : 48    T52 : 48 T53 : 36	m	136	
40	110mm x 5mm long uPVC pipes to connect tanks T51 : 6    T52 : 2    T53 : 2	No	10	
<u>Extra over PVC pipes for fittings:</u>				
41	50mm BSP adaptor T1 : 6    T3 : 1    T51 : 4    T52 : 4 T53 : 2	No	17	
42	50 x 40mm Reducer T1 : 12	No	12	
43	50mm Bend T1 : 22    T3 : 1	No	23	
44	110mm Ditto T1 : 4    T3 : 1    T51 : 4    T52 : 4 T53 : 2	No	15	
45	50mm Access bend T1 : 3    T51 : 6    T52 : 6    T53 : 3	No	18	
46	110mm Ditto T1 : 5	No	5	
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Item No		Quantity	Rate	Amount
47	50mm Junction T1 : 7    T3 : 1    T51 : 2    T52 : 2 T53 : 1	No 13		
48	50mm Access junction T1 : 1	No 1		
49	110mm Ditto T1 : 6    T3 : 2    T51 : 4    T52 : 2 T53 : 3	No 17		
50	110 x 50mm Reducing junction T1 : 4    T3 : 1    T51 : 2    T52 : 2 T53 : 1	No 10		
51	110 x 50 x 50mm Double junction T1 : 1	No 1		
52	110mm Pan connector T1 : 5    T3 : 1	No 6		
53	50mm Vent cowl T1 : 3	No 3		
54	110mm Ditto T1 : 4	No 4		
55	50mm Vent valve T1 : 3	No 3		
56	110mm Ditto T1 : 4	No 4		
	<u>uPVC gulleys</u>			
57	110mm Gully exceeding 500mm and not exceeding 750mm deep, including excavations, pre-cast concrete surrounds etc. T51 : 2    T52 : 2    T53 : 1	No 5		
	<b>(End of extras)</b>			
	<b><u>WATER SUPPLIES</u></b>			
	<u>Class 10 HDPE type IV pipes</u>			
58	15m Pipes laid in and including trenches not exceeding 1m deep T51 : 20    T52 : 20    T53 : 10	m 50		
	<b>Carried to Collection</b>			
	Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)			

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Item No		Quantity	Rate	Amount
59	22mm Pipes laid in and including trenches not exceeding 1m deep T51 : 40    T52 : 40    T53 : 20 <u>Extra over Class 10 HDPE type IV pipes for "?" fittings</u>	m	100	
60	15mm Fittings T51 : 8    T52 : 8    T53 : 2	No	18	
61	22mm Fittings T51 : 10    T52 : 10    T53 : 5	No	25	
62	15mm Reducer T51 : 4    T52 : 4    T53 : 2	No	10	
63	22mm Reducer T51 : 4    T52 : 4    T53 : 2	No	10	
64	15mm Bend T51 : 6    T52 : 6    T53 : 3	No	15	
65	22mm Bend T51 : 4    T52 : 4    T53 : 2	No	10	
66	15mm Threaded adaptor T51 : 4    T52 : 4    T53 : 2	No	10	
67	22mm Threaded adaptor T51 : 4    T52 : 4    T53 : 2	No	10	
	<u>Class "O" copper pipes:</u>			
68	15mm Diameter pipes T1 : 69    T3 : 6    T51 : 4    T52 : 4 T53 : 2	m	85	
69	22mm Ditto T1 : 89    T51 : 3    T52 : 3    T53 : 2	m	97	
	<u>Extra over Class "O" copper pipes for capillary fittings:</u>			
70	15mm Fittings T1 : 64    T3 : 6    T51 : 12    T52 : 12 T53 : 6	No	100	
71	22mm Ditto T1 : 72    T51 : 6    T52 : 6    T53 : 3	No	87	
	<u>(End of extra over)</u>			
	<b>Carried to Collection</b>			
	Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)			
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Item No		Quantity	Rate	Amount
	<u>Copper service pipes:</u>			
72	15mm Service pipe 375mm girth T1: 16 T3: 2	No 18		
	<u>Sundries:</u>			
73	450 x 450mm Cast iron stopcock box including brick chamber below not exceeding 750mm deep internally. T1: 2	No 2		
	<b><u>ELECTRIC WATER HEATERS</u></b>			
	<u>'Kwikot' or similar approved:</u>			
74	5,5kW Standard heat pump code: HP-005 size 540 x 430 x 348mm deep T1: 1	No 1		
75	200 Litre horizontally in roof space electric water heater code: EF200-2D-I T1: 1	No 1		
76	"Cobra Watertech" PB1.10RB vacuum breaker T1: 1	No 1		
77	PA1.1RB "Kwikflo" 400 kPa pressure reducing valve T1: 1	No 1		
78	PA3.132 "Masterflo 1" pressure reducing valve T1: 1	No 1		
	<u>0,6mm Galvanised sheet</u>			
79	1200 x 600mm Drip tray with 100mm high upstand with top edge bent over all round including 50mm diameter overflow pipe 2000mm long approximately 3m above ground level T1: 1	No 1		
	<b><u>FIRE APPLIANCES, ETC.</u></b>			
	<u>"Chubb" or similar approved:</u>			
80	4.5kg DCP extinguisher with brackets screwed and including hardwood backboard plugged T1: 2	No 2		
	<b>Carried to Collection</b>		R	
	Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)			



NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Rate	Amount
81	9kg DCP extinguisher with brackets screwed and including hardwood backboard plugged T1: 2 T2: 4	No 6		
82	"Safex" first aid rotary continuous hydraulic hose reel complete with wall brackets, 25mm chromium-plated control valve, 30m length of 20mm four-ply rubber and canvas non-kinkable hose, chromium plated nozzle, cock and nozzle bracket, chromium plated swivelling roller guide and bolted to brackets to wall and jointed to copper T1: 1 T2: 1	No 2		
<b><u>TESTING</u></b>				
83	Allow for testing the whole internal plumbing and drainage installation as directed by the Architect and for retesting after taking out and replacing all defective work to his entire satisfaction. The Contractor is to provide all testing apparatus and labour and is to follow the Architects instructions implicitly	Item		
<b>Carried to Collection</b>				
Section No 2 Bill No 14 PLUMBING AND DRAINAGE (PROVISIONAL)				R

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BUILDING WORKS

Bill No 14

PLUMBING AND DRAINAGE (PROVISIONAL)

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Bill No 14

PLUMBING AND DRAINAGE (PROVISIONAL)

Item No		Quantity	Rate	Amount
	<b><u>BILL NO 15</u></b>			
	<b><u>GLAZING</u></b>			
	<b><u>PREAMBLES</u></b>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<b><u>NOTE</u></b>			
	All prices/rates to be net, excluding Value Added Tax			
	-----			
	<b><u>GLAZING</u></b>			
	<u>6.38mm Clear laminated safety glass to steel with putty:</u>			
1	Panes not exceeding 0,5m <sup>2</sup> T1 : 1	m2	1	
2	Panes exceeding 0,1m <sup>2</sup> and not exceeding 0,5m <sup>2</sup> T3 : 1	m2	1	
3	Panes exceeding 0,5m <sup>2</sup> and not exceeding 2m <sup>2</sup> T1 : 20      T2 : 2      T3 : 4	m2	26	
	<u>6.38mm "Pacific" frosted laminated safety glass to steel with putty:</u>			
4	Panes not exceeding 0,5m <sup>2</sup> T1 : 2      T2 : 2	m2	4	
5	Panes exceeding 0,5m <sup>2</sup> and not exceeding 2m <sup>2</sup> T51 : 4      T52 : 4      T53 : 5	m2	13	
	<b><u>TOPS, SHELVES, DOORS, MIRRORS, ETC.</u></b>			
	<u>Chilli-B Stainless steel mirror 1mm thick or "Similar Approved" holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete:</u>			
6	Mirror size 600 x 500mm high FR-CHRH601 plugged with four screws to wall T1 : 3      T2 : 2      T3 : 1      T51 : 4 T52 : 4      T53 : 2	No	16	
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**BILL NO 16**

**PAINTWORK**

**PREAMBLES**

For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"

**NOTE**

All prices/rates to be net, excluding Value Added Tax

**SUPPLEMENTARY PREAMBLES**

**Paint**

All paint, complete with undercoat, primer, etc., to be used strictly in accordance with the manufacturer's specification. Only paint which bears the described trade names will be permitted on site. No substitution will be allowed

**Colours**

Unless otherwise described paintwork on ceilings shall be deemed to be in the "White" colour group and paintwork on all other components shall be deemed to be in the "Pastel" colour group in accordance with the Natural Colour System (NCS) adopted by the SA National Standards

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**PAINTWORK, ETC. TO NEW WORK**

**ON PLASTER**

Two coats approved washable PVA paint, undercoat, primer, etc. to:

1	Internal walls	m2	1,170	
	T1 : 829      T3 : 45      T4 : 24      T51 : 121			
	T52 : 111      T53 : 40			

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Bill No 16  
PAINTWORK

Item No		Quantity	Rate	Amount
<b><u>ON FIBRE-CEMENT</u></b>				
<u>Two coats approved acrylic PVA paint, undercoat, primer, etc., to:</u>				
2	Ceilings and cornices T1 : 116    T3 : 10    T51 : 30    T52 : 30 T53 : 15	m2	201	
3	Fascia and barge boards T1 : 23    T3 : 4    T4 : 4    T51 : 10 T52 : 10    T53 : 5	m2	56	
4	Sills, rails, etc. not exceeding 300 mm girth T3 : 2    T51 : 4    T52 : 4    T53 : 2	m	12	
<b><u>ON METAL</u></b>				
<u>Two coats approved alkyd enamel paint, undercoat, primer, etc., to:</u>				
5	Transformer door and frame T4 : 4	m2	4	
6	Door frames T1 : 41    T3 : 4    T51 : 18    T52 : 13 T53 : 8	m2	84	
7	Steel windows with burlar bars T1 : 47    T3 : 10    T4 : 1    T51 : 8 T52 : 8    T53 : 4	m2	78	
8	Steel gates and frames T51 : 13    T52 : 13    T53 : 7	m2	33	
9	Rails, bars, pipes, etc. not exceeding 300mm girth T1 : 2	m	2	
<b><u>ON WOOD</u></b>				
<u>Prepare, stop with approved wood stopping and paint two coats approved eggshell enamel paint, undercoat, primer, etc., to:</u>				
10	Doors T1 : 68    T2 : 29    T3 : 3    T51 : 29 T52 : 14    T53 : 11	m2	153	
<b>Carried to Collection</b>				
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Item No		Quantity	Rate	Amount
	<u>Prepare, stop with approved wood stopping, sand down lightly between coats, paint three coats "Plascon Woodcote X44" polyurethane varnish, to:</u>			
11	Doors T1 : 18      T2 : 7      T3 : 7      T51 : 7 T52 : 7      T53 : 4	m2	50	
12	Skirtings, rails, etc. not exceeding 300mm girth T1 : 295      T3 : 6	m	301	
	<u>ON PVC</u>			
	<u>Two coats approved high gloss enamel paint, undercoat, primer, etc., to:</u>			
13	Internal pipes T1 : 1	m2	1	
14	Ditto, but not exceeding 300mm girth T1 : 4	m	4	
15	External pipes T1 : 2	m2	2	
16	Ditto, but not exceeding 300mm girth T1 : 1	m	1	
	<u>PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK</u>			
	<u>PREPARATORY WORK TO EXISTING SURFACES</u>			
	Previously painted plastered surfaces			
	All existing painted surfaces must be sanded and thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	Previously painted metal surfaces			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<b>Carried to Collection</b>			R
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Item No		Quantity	Rate	Amount
	<p>Previously painted wood surfaces</p> <p>Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth</p> <p><b><u>ON INTERNAL FLOATED PLASTER SURFACES</u></b></p> <p><u>Two coats approved washable PVA paint, undercoat, primer, etc., to:</u></p>			
17	<p>Walls T2 : 273</p>	m2	273	
	<p><b><u>ON METAL SURFACES</u></b></p> <p><u>Two coats approved alkyd enamel paint, undercoat, primer, etc., to:</u></p>			
18	<p>Door frames T2 : 14</p>	m2	14	
19	<p>Windows T2 : 15</p>	m2	15	
	<p><b><u>ON ROOF SHEETINGS</u></b></p> <p><u>Roof paint., to:</u></p>			
20	<p>Roof sheetings T2 : 176</p>	m2	176	
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Item No		Quantity	Rate	Amount
	<p><b><u>BILL NO 1</u></b></p> <p><b><u>PARKING, DRIVEWAYS AND WALKWAYS (PROVISIONAL)</u></b></p> <p><b><u>PREAMBLES</u></b></p> <p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b></p> <p>The Contractor is referred to the previous Section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described</p> <p><b><u>Relevant SABS 1200 specifications</u></b></p> <p>The construction of paved parking, access roads, etc. shall be done with materials specified and according to methods prescribed by the following Standardized Specification for Civil Engineering Construction:</p> <p>SABS 1200 AA General (Small Works) SABS 1200 C Site clearance SABS 1200 DM Earthworks (Roads, Sub-grade) SABS 1200 M Roads (General) SABS 1200 ME Sub-base</p> <p>SABS 1200 MF Base SABS 1200 MFL Base (Light pavement structures) SABS 1200 MJ Segmented paving SABS 1200 MK Kerbing and channelling SABS 1200 MMAncillary roadworks</p> <p style="text-align: right;"><b>Carried to Collection</b></p> <p>Section No 3 Bill No 1 PARKINGS, DRIVEWAYS AND WALKWAYS</p>			
			R	

Item No		Quantity	Rate	Amount
	<p>The aforesaid specifications for Standardized Specification for Civil Engineering Construction were drawn up to cover activities normally encountered on civil engineering work, which is equally applicable on the filling details and requirements prescribed for this project</p> <p>All the specifications referred to above, although not issued with these Bills of Quantities, shall be deemed to form part of this document and shall be considered as applying to the performance of work to be completed in terms of this Section</p> <p>The Contractor shall obtain a copies of the said specifications from the South African Bureau of Standards and be kept on site at all times</p> <p><b><u>Measurement and payment</u></b></p> <p>Measurement and payment clauses as described in the above-mentioned specifications, Standardized Specification for Civil Engineering Construction, shall not apply to the work as set out in this Bill</p> <p>-----</p> <p><b><u>EARTHWORKS</u></b></p> <p><b><u>EXCAVATIONS</u></b></p> <p>1 Bulk excavation in pickable earth to reduce ground level below paving and set aside for later use m3 148</p> <p>2 Ditto, but cart away excavated material to a dumping place to be found by the contractor (cut to spoil) m3 50</p> <p>3 Extra over excavation for excavation in soft rock m3 3</p> <p>4 Ditto, but in hard rock m3 2</p> <p>5 Rip and scarify ground level to a depth of 150mm and consolidate to 90% mod. AASHTO density (minimum CBR 3) m2 496</p> <p><b><u>WEED KILLERS, INSECTICIDES, ETC</u></b></p> <p>6 Weed-killing treatment of surface under paving m2 495</p>			
	<b>Carried to Collection</b>			
	<p>Section No 3 Bill No 1 PARKINGS, DRIVEWAYS AND WALKWAYS</p>			R

Item No		Quantity	Rate	Amount
7	Ant poison treatment ditto	m2	495	
	<b><u>LAYER WORK</u></b>			
	The following to be natural selected gravel layers evenly spread and consolidated in layers and dimensions as specified and on the drawings. All thicknesses to be consolidated thicknesses.			
	Where described as "imported" the gravel to be supplied and carted on by the contractor from an approved borrow pit			
8	150mm Imported selected natural gravel course consolidated to 95% mod. AASHTO density	m2	496	
9	150mm Imported subbase stabilized with and including 3% lime/slagment and consolidated to 95% mod. AASHTO density	m2	495	
10	Allow for compaction tests as required by the Engineer	No	8	
	<b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b>			
	<b><u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
11	Mass concrete (25MPa) in 60 x 60mm edge filler strip finished smooth on top with a wood float, including all excavation, formwork, etc	m	5	
	<b><u>PRE-CAST CONCRETE</u></b>			
	<b><u>PRE-CAST CONCRETE PAVING</u></b>			
12	60mm Thick double interlocking (DZZ) precast red coloured concrete paving blocks laid in a herringbone pattern on and including 20mm sand founding layer and covered with sandlayer and sweep into joints	m2	495	
13	Circular cutting to paving	m	84	
	<b>Carried to Collection</b>			
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	PARKINGS, DRIVEWAYS AND WALKWAYS			
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Item No		Quantity	Rate	Amount
	<p><b><u>PRE-CAST CONCRETE KERBING</u></b></p> <p><u>25MPa precast concrete kerbs finished smooth on all exposed surfaces with top angles rounded and bedded in cement mortar in 1m lengths</u></p>			
14	Barrier kerb (SABS 927 fig 7) with and including 150 x 150 x 300mm concrete haunching at back of each joint including excavation, backfilling, etc	m	181	
15	Ditto, but circular on plan not exceeding 4m radius	m	42	
	Carried to Collection			R
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PARKINGS, DRIVEWAYS AND WALKWAYS

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Bill No 1

PARKINGS, DRIVEWAYS AND WALKWAYS

Item No	Quantity	Rate	Amount
<p><b><u>BILL NO 2</u></b></p>			
<p><b><u>CARPORTS (ALL TRADES)</u></b></p>			
<p><b><u>PREAMBLES</u></b></p>			
<p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p>			
<p><b><u>NOTE</u></b></p>			
<p>All prices/rates to be net, excluding Value Added Tax</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b></p>			
<p>The Contractor is referred to the previous Section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described</p>			
<p><b><u>Structural steelwork</u></b></p>			
<p>All structural steelwork shall comply with SANS 2001-CS1 or SANS 10162 and SANS 14713 as applicable. Structural fasteners shall comply with SANS 10094</p>			
<p>Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified with 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</p>			
<p>The contractor shall be responsible for the preparation of all shop detail drawings</p>			
<p><b><u>Descriptions</u></b></p>			
<p>Descriptions of bolts shall be deemed to include nuts and washers</p>			
<p><b>Carried to Collection</b></p>			
<p>Section No 3 Bill No 2 CARPORTS, ETC</p>			
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Item No	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete  Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete  ----- <b><u>EARTHWORKS</u></b> <b><u>EXCAVATIONS ETC</u></b> <u>Excavation in earth not exceeding 2m deep</u>	Quantity	Rate	Amount
1	Holes	m3	7	
	<u>Extra over trench and hole excavation in earth for excavation, in:</u>			
2	Soft rock	m3	1	
3	Hard rock	m3	1	
	<u>Extra over all excavations for carting away:</u>			
4	Surplus material from the excavations to a dumping site to be located by the Contractor	m3	7	
	<u>Risk of collapse of excavations:</u>			
5	Sides of trench and hole excavations not exceeding 1,5m deep	m2	24	
	<u>Keeping excavations free of water:</u>			
6	Keeping excavations free of water	Item		
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Item No		Quantity	Rate	Amount
	<b><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></b>			
	<b><u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u></b>			
	<u>25MPa/19mm Concrete, in:</u>			
7	Bases	m3	7	
	<b><u>TEST BLOCKS</u></b>			
8	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6	
	<b><u>REINFORCEMENT</u></b>			
	<u>Mild steel reinforcement to structural concrete work</u>			
9	8mm Diameter bars	t	0.05	
	<u>High tensile steel reinforcement to structural concrete work</u>			
10	5mm Diameter bars	t	0.03	
11	9mm Diameter bars	t	0.02	
	<b><u>ROOF COVERINGS</u></b>			
	<b><u>PROFILED METAL SHEETING AND ACCESSORIES</u></b>			
	<u>0.58mm thick 700mm cover Klip-lok 700 Chromadek Z275 spelter ISQ550 Dove Grey finish top coat and Pebble Grey backing coat roof sheeting, fixed at MAX 1200mm centres and eaves and ridge purlins at MAX 1200mm centres using KL700 plus clips fixed with 10No.11 x 45mm long self-drilling wafer head PH2 screws, type 17 drill point fasteners, all in accordance with the manufacturer's specifications</u>			
12	Roof covering with pitch not exceeding 25 degrees fixed to structural steel	m2	257	
	<b>Carried to Collection</b>			
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	CARPORTS, ETC			

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Item No		Quantity	Rate	Amount
	<b><u>STRUCTURAL STEELWORK</u></b>			
	<b><u>STEEL STRUCTURE TO CARPORT</u></b>			
	<u>The following in Six Staff Carports, Three Ambulance Carports and one Minibus Carport manufactured with steel columns, beams, purlins</u>			
	<u>Welded portal frames with flat bearer, gusset and connection plates and angle cleats, bolted to concrete</u>			
13	203 x 133 x 25mm x 25.30kg/m I section columns	t	1.23	
14	203 x 133 x 25mm x 25.30kg/m I section beams	t	1.13	
15	175 x 75 x 4.5mm x 11.71kg/m Lipped channel purlins	t	3.12	
16	80 x 80 x 8mm x 9.63kg/m angles equal leg bracings	t	0.30	
17	50 x 6.0mm x 2.36kg/m Plate	t	0.35	
	<b><u>PAINTWORK ETC TO NEW WORK</u></b>			
	<u>Spot priming defects in pre-primed surfaces with red oxide metal primer, one coat universal undercoat and two coats "Super Universal Enamel" paint (NY-1/G) on steel</u>			
18	On members of lattice columns and beams	m2	132	
	<b><u>PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK</u></b>			
	<u>Remove rust completely by appropriate means, spot priming defects in pre-primed surfaces with red oxide metal primer, one coat universal undercoat and two coats "Super Universal Enamel" paint (NY-1/G) on steel</u>			
19	On members of lattice columns and beams	m2	48	
	<b><u>(End of Six Staff Carports, Three Ambulance Carports and one Mini-bus Carport)</u></b>			
	<b>Carried to Collection</b>			
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EXTERNAL WORKS

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CARPORTS, ETC

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Bill No 2

CARPORTS, ETC

Item No	Quantity	Rate	Amount
<p><b><u>BILL NO 3</u></b></p>			
<p><b><u>FENCING AND GATES</u></b></p>			
<p><b><u>PREAMBLES</u></b></p>			
<p>For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"</p>			
<p><b><u>NOTE</u></b></p>			
<p><b><u>NOTE</u></b></p>			
<p>All prices/rates to be net, excluding Value Added Tax</p>			
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p>			
<p><b><u>Supplementary preambles and full descriptions of materials, items, work, etc.</u></b></p>			
<p>The Contractor is referred to the previous Section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described</p>			
<p><b><u>Fencing</u></b></p>			
<p>Fencing to be done by a company with ISO 9001 accreditation</p>			
<p>Shop drawings for both gates and panels to be submitted to the principal agent prior to fixing for approval</p>			
<p>A ten year anti-corrosion guarantee to be provided</p>			
<p>The contractor must provide a Certificate of Compliance for material and installation issued by either the manufacturer and/or the civil engineer</p>			
<p><b>Carried to Collection</b></p>			
<p>Section No 3 Bill No 3 FENCING AND GATES</p>			
			R

Item No	Quantity	Rate	Amount
<p><b><u>Gates</u></b></p> <p>Gates shall be of type, size and material as specified and shall be fixed to gate posts unless otherwise described</p> <p>All gates shall be hot dipped galvanised</p> <p><b><u>Materials</u></b></p> <p>All materials to be used for this work shall be new, of sound quality and suitable for their intended purposes. The use of second hand/grade material will not be permitted</p> <p><b><u>Clearing the fence line</u></b></p> <p>Although the clearing of the line fence is measured elsewhere under "general site clearance", it will be regarded the Contractor's responsibility to ensure that the ground surface along the fence line is at all times throughout the contract period kept and maintained cleared for a width of not less than 1m wide on each side of the fence and shall include for the digging up and removal of all rubbish, debris, vegetation, shrubs, bush, trees not exceeding 200mm diameter girth, etc., including levelling of the ground to ensure that the maximum and minimum clearances (as specified hereinafter) between the bottom strand and the ground is not exceeded</p> <p>All excessive surface irregularities shall be graded so that the fence will follow the general contour of the ground</p> <p>The cleared ground shall be kept clean and maintained throughout the construction period</p> <p><b><u>Concrete</u></b></p> <p>Concrete bases shall be placed in neatly formed excavations and shall be well rammed around posts and stays. The top of concrete bases shall be at a level of 25mm below ground level</p>			
<p>Carried to Collection</p>			R
<p>Section No 3 Bill No 3 FENCING AND GATES</p>			

Item No		Quantity	Rate	Amount
	<p><b><u>Tendered rates</u></b></p> <p>Tendered rates shall include for the supply and delivery of all materials, labour, erection of fence, all earthwork activities, concrete, shuttering, tools, plant, paintwork and anything else necessary to complete the fence</p> <p>No additional claims in this regard will afterwards be entertained</p> <p>-----</p> <p><b><u>CLEAR VU FENCING</u></b></p> <p><u>Clear Vu or similar approved fencing</u></p>			
1	2100mm High Clear Vu or similar approved fencing formed of galvanised high density anti climbing and anti cut pressed mesh panel formed of 4mm diameter horizontal and vertical high tensile wires galvanised with Alu-Galv coating with apperture size 76,2mm x 12,7mm and reinforcing V-section ribs, bolted with vandal resistant bolts and clamping plates to and including 85 x 45mm taper locking post 2700mm high including locking recess mechanism at 3382mm centres with sealed caps and 30 x 3 x 250mm long angle section base anchors with posts bedded in and including 15Mpa Concrete bases size 400 x 400 x 600mm deep with bitumen coated 400mm clear vu underdig including all excavations, etc as per the manufacturers instructions	m	818	
2	100mm High galvanised "Castle" type spike rail, botled to 50mm wide Clear Vu or similar approved mesh fencing flange	m	818	
3	1000 x 2100mm High Clear Vu or similar approved pedestrian gate comprising of 40 x 40mm angle section palings with "Castle" spikes on top welded to 50 x 40 x 3mm rectangular tubing fixed to 200 x 100 x 6mm flanges with 120mm heavy duty hinges including fixing to wall with 4 x 12mm rawl bolts with and including lock	No	1	
	<b>Carried to Collection</b>			R
	Section No 3 Bill No 3 FENCING AND GATES			

NEW EMS SATELLITE STATION AT LEBOWAKGOMO BA  
TENDER NO.: LDPWRI-B/20051

Item No		Quantity	Rate	Amount
4	5000 x 2100mm High Clear Vu or similar sliding gate comprising of 40 x 40mm angle section palings with "Castle" spikes on top welded to 50 x 40 x 3mm rectangular tubing fixed to 200 x 100 x 6mm flanges in one full leaf to match fencing complete with sliding mechanism, rail, track, lock, etc.	No	1	
5	6000 x 2100mm Ditto	No	1	
<b>Carried to Collection</b>				R
Section No 3 Bill No 3 FENCING AND GATES				

Section No 3 EXTERNAL WORKS Bill No 3 FENCING AND GATES <u>COLLECTION PAGE</u>			
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Section No 3 Bill No 3 FENCING AND GATES			



Item No	<u>BILL NO. 4</u>	Quantity	Rate	Amount
	<u>SITE SERVICES (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "Construction Specifications - General Specification, PW371-A" and "Construction Specifications - Particular Specification, PW371-B"			
	<u>NOTE</u>			
	All prices/rates to be net, excluding Value Added Tax			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Supplementary preambles and full descriptions of materials, items, work, etc.</u>			
	The Contractor is referred to the previous Section(s) for supplementary preambles and full descriptions of materials, items, work, etc. which shall be regarded to be equally applicable for work described in this Bill, unless specifically otherwise described			
	<u>STORMWATER DRAINAGE</u>			
	<u>uPVC pipes</u>			
1	110mm Pipes laid in and including excavation not exceeding 1m deep	m	125	
2	110mm Pipes laid in and including excavation exceeding 1m not exceeding 2m deep	m	30	
	<u>Extra over uPVC pipes for fittings</u>			
3	110mm Bend	No	16	
4	110mm Access bend	No	8	
5	110mm Junction	No	12	
	<b>Carried to Collection</b>			R
	Section No 3 Bill No 4 SITE SERVICES			

Item No		Quantity	Rate	Amount
6	110mm Access junction <u>Class 50D concrete pipes laid on class C bedding</u> <u>Junction boxes, catchpits, etc.</u>	No	7	
7	150mm Pipes laid in and including excavation not exceeding 1m deep, filling in and compacted	m	35	
8	Catchpit 600 x 600mm exceeding 500mm and not exceeding 750mm deep internally <u>Gratings, covers, etc</u>	No	8	
9	600 x 600 Cast iron grid and frame <u>(End of stormwater drainage)</u> <b><u>FRENCH DRAIN</u></b> <u>The following in one french drain (percolation trenches)</u>	No	8	
10	French drain 4500mm long x 1500wide x 2300mm deep extreme including all necessary excavation complete with and including 110mm diameter porous pvc pipe 4000mm long and lay debium membrane to sides and bottom of trench and backfilled with dump rock, 19mm stones surround to pvc pipe, sand and gravel material including carting away of surplus materials from the excavations. <u>(End of the following in one french drain)</u>	No	2	
<b>Carried to Collection</b>				
Section No 3 Bill No 4 SITE SERVICES				R

Section No 3 EXTERNAL WORKS Bill No 4 SITE SERVICES <u>COLLECTION PAGE</u>			
	Page No		Amount
Total Brought Forward from Page No.	157		
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Carried Forward to Summary of Section No. 3			R
Section No 3 Bill No 4 SITE SERVICES			

Bill No	Section No 3 EXTERNAL WORKS <u>SECTION SUMMARY - EXTERNAL WORKS</u>	Page No	Amount
1	PARKINGS, DRIVEWAYS AND WALKWAYS	146	
2	CARPORTS, ETC	151	
3	FENCING AND GATES	156	
4	SITE SERVICES	159	
	Carried to Final Summary		R
	Section No 3		

Item No		Quantity	Rate	Amount
	<p><b><u>BILL NO 1</u></b></p> <p><b><u>PROVISIONAL SUMS</u></b></p> <p><b><u>NOTE</u></b></p> <p>All prices/rates to be net, excluding Value Added Tax</p> <p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Cash discount</u></b></p> <p>No cash discount. All provisional sums are "NET"</p> <p><b><u>Fuel, power and water for commissioning plant</u></b></p> <p>The cost of water, power and fuel for the commissioning of plant shall be borne by the Selected or Nominated Sub-contractor appointed for the relevant selected or nominated sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved</p> <p><b><u>Profit</u></b></p> <p>Provisional sums are net and do not include builder's discount. The Contractor may allow next to "Profit" items for any profit he might consider necessary</p> <p><b><u>Attendance</u></b></p> <p>It will be expected from the Contractor to render all general attendance and, if specifically so described, special attendance services to each relevant Specialist, all in accordance with Clauses B9.1 and B9.2 in the "Preliminaries" section</p> <p>Tenderers are also urged to thoroughly acquaint themselves with the content of Clauses B9.1 and B9.2 in the "Preliminaries" section for the definitions and adjustment of "Attendance" and "Special Attendance" respectively</p>			
	<b>Carried to Collection</b>			R
	<p>Section No 4 Bill No 1 PROVISIONAL SUMS</p>			

Item No		Quantity	Rate	Amount
	<p>The item "Attendance" which follows each of the provisional sums for Nominated and/or Selected Sub-contractors' work, shall be deemed to cover all the Contractor's costs incurred in providing free of charge to the Nominated and/or Selected Sub-contractors, the following:</p> <ol style="list-style-type: none"> <li>1 The services as set out in clause B9.1 in the "Preliminaries" section</li> <li>2 Making good in all trades and cleaning down and removal of rubbish on completion</li> </ol> <p>The Contractor may allow next to "Attendance" items for the recovery of such costs he might consider necessary</p> <p><b><u>Selected and nominated sub-contracts</u></b></p> <p>These scheduled allowances are for work to be executed under separate selected and/or nominated sub-contracts by firms of Specialists to be nominated by the Employer</p> <p>All provisional sums cover the supply and installation of material, equipment, plant, etc., including the commissioning thereof, where applicable</p> <p><b><u>Money provisions</u></b></p> <p>The scheduled allowances for money provisions are to be used at the discretion of the Employer and to be adjusted where applicable or to be deducted in whole or in part if not required</p> <p>-----</p> <p><b><u>SELECTED SUB-CONTRACTS</u></b></p> <p><u>Electrical Works:</u></p> <ol style="list-style-type: none"> <li>1 Provide the sum of R 3,379,649.57 (Three Million Three Hundred and Seventy Nine Thousand Six Hundred and Forty Nine Rand and Fifty Seven Cents) for electrical works to be executed complete by a firm of specialists to be selected by the Principal Agent</li> <li>2 Profit</li> </ol>			
		Item		3,379,649.57
		Item		
	<b>Carried to Collection</b>		R	
	Section No 4 Bill No 1 PROVISIONAL SUMS			

Item No		Quantity	Rate	Amount
3	Attendance	Item		
	<u>Landscaping:</u>			
4	Provide the sum of R 100,000.00 (One Hundred Thousand Rand) for landscaping to be executed complete by a firm of specialists to be selected by the Principal Agent	Item		100,000.00
5	Profit	Item		
6	Attendance	Item		
	<b><u>MONEY PROVISIONS</u></b>			
	<u>Community Liaison Officer:</u>			
7	Provide the sum of R 75,000.00 (Seventy Five Thousand Rand) for the monthly payment of the community liaison officer (over the full construction period), The <b>contractor</b> to note that monthly payslips and proof of payment to be provided to the Principal Agent	Item		75,000.00
	<u>Contingencies:</u>			
8	Provide the sum of R 1,550,000.00 (One Million Five Hundred and Fifty Thousand Rand) for for contingencies to be used as directed and deducted in whole or in part if not required	Item		1,550,000.00
	<u>Special Conditions:</u>			
9	Provide the sum of R 1,500,000.00 (One Million Five Hundred Thousand Rand) for fluctuations in costs (Contract Price Adjustment Provisions) as set out in Item 42.4.6, Section 1, "Preliminaries"	Item		1,500,000.00
	<b>Carried to Collection</b>		R	
	Section No 4 Bill No 1 PROVISIONAL SUMS			

Section No 4

PROVISIONAL SUMS

Bill No 1

PROVISIONAL SUMS

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1	PRELIMINARIES AND GENERAL	51	
2	BUILDING WORKS	141	
3	EXTERNAL WORKS	160	
4	PROVISIONAL SUMS	164	
	SUB-TOTAL		R
	<u>CIVIL WORKS</u>		
	Civil Works (Net amount, exclusive of Value Added Tax, to be brought forward from Summary, Civil Works Bills of Quantities)	Item	
	NET TOTAL, EXCLUSIVE OF VAT		R
	ADD VAT @ 15%		R
	Carried to Form of Tender		R

# CIVIL WORKS

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>SCHEDULE A : PLATFORM EARTHWORKS AND ROADS</b>				
1300	<b>CONTRACTORS ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS</b>				
B13.01	<b>The contractors general obligations :</b>				
	(a) Fixed obligations	Lump sum	1.00		
	(b) Value-related obligations	Lump sum	1.00		
	(c) Time-related obligations	Month	5.00		
1300	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b><u>CLEAR AND GRUBBING</u></b>				
17.01	<b>Clearing and grubbing</b>				
	(a) Normal areas:				
	(i) Within the entire EMS site including EMS internal roads and Building platforms	ha	0.60		
	(ii) In borrow pits				
17.02	<b>Removal and grubbing of large trees and tree stumps:</b>				
	(a) Girth exceeding 1m up to and including 2m	No	15.00		
	(b) Girth exceeding 2m up to and including 3m	No	4.00		
1700	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>18.00</b>	<b><u>DAYWORKS</u></b>				
<b>B18.01</b>	<b>Labourers</b>				
	(i) Unskilled	hour	Rate only		
	(ii) Semi-skilled	hour	Rate only		
	(iii) Skilled	hour	Rate only		
	(iv) Survey assistants	hour	Rate only		
<b>B18.02</b>	Foreman	hour	Rate only		
<b>B1.03</b>	Tipper truck				
	(i) 3 - 5 ton	hour	Rate only		
	(ii) 5.1 - 10 ton	hour	Rate only		
<b>B1804</b>	Loader (0.5m3 bucket)	hour	Rate only		
<b>B18.05</b>	Grader (CAT 14G or similar)	hour	Rate only		
<b>B18.06</b>	Vibratory roller (as per 33.04(b)(i))	hour	Rate only		
<b>B18.07</b>	Grid roller (as per 33.04(b)(iii))	hour	Rate only		
<b>B18.08</b>	Walk behind roller (Bomag BW90)	hour	Rate only		
<b>B18.09</b>	Air compressor, 4m3/min, complete with drills	hour	Rate only		
<b>B18.10</b>	Waterpump including all necessary hoses	hour	Rate only		
<b>B18.11</b>	Concrete mixer (0.3m3)	hour	Rate only		
<b>B18.12</b>	Trench vibrating roller or pad 0.6m width	hour	Rate only		
<b>B18.13</b>	Backactr, 0.3m3	hour	Rate only		
<b>B18.14</b>	Tracked excavator 20t	hour	Rate only		
<b>B18.15</b>	Watercart, 500l	hour	Rate only		
<b>B18.16</b>	Allow provisional for purchase of materials	Prov Sum	1.00	110,000.00	
<b>B18.17</b>	Handling cost and profit	%	110,000.00	10%	
<b>1,800</b>	<b>TOTAL SCHEDULE C: (CARRIED TO TENDER SUMMARY)</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b><u>DRAIN</u></b>				
<b>21.01</b>	<b>Excavation for open drains:</b>				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m <sup>3</sup>	220		
	(ii) Exceeding 1,5m and up to 3,0m	m <sup>3</sup>	33.00		
	(b) Extra over subitem 21.01(a) for excavation in hard material, irrespective of depth	m <sup>3</sup>	55.00		
<b>21.03</b>	<b>Excavation for subsoil drainage systems:</b>				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m <sup>3</sup>	180		
	(b) Extra over subitem 21.03(a) for excavation in hard material, irrespective of depth	m <sup>3</sup>	45		
<b>21.04</b>	<b>Impermeable backfilling to subsoil drainage systems</b>	m <sup>3</sup>	650.00		
<b>21.06</b>	<b>Natural permeable material in subsoil drainage systems (crushed stone):</b>				
	(b) Crushed stone obtained from commercial sources ( no overhaul):				
	(ii) Coarse grade stone (19mm nominal size aggregate)	m <sup>3</sup>	60.00		
<b>21.07</b>	<b>Natural permeable material in subsoil drainage systems (sand):</b>				
	(b) Sand from commercial sources (no overhaul)	m <sup>3</sup>	60.00		
<b>2100</b>	<b>TOTAL CARRIED FORWARD</b>				

2100	AMOUNT BROUGHT FORWARD				
ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
21.08	<b>Pipes in subsoil drainage systems:</b>				
	(b) Unplasticized PVC pipes and fittings, normal duty, complete with couplings:				
	(i) 150mm diameter, perforated	m	150.00		
B21.09	<b>Polyethylene sheeting, 0,25mm thick, or similar approved material, for lining subsoil drainage systems</b>	m <sup>2</sup>	450.00		
21.10	<b>Synthetic-fibre filter fabric:</b>				
	(a) Non-woven needle punched type:				
	(i) Kaymat U24 or approved equivalent	m <sup>2</sup>	450.00		
21.12	<b>Concrete outlet structures, manhole boxes, junction boxes and cleaning eyes for subsoil drainage systems:</b>				
	(a) Outlet structures	No.	4.00		
21.13	<b>Concrete caps for subsoil drain pipes</b>	No.	4.00		
21.17	<b>Test flushing of pipe subsoil drains</b>	No.	4.00		
B21.20	<b>Galvanized wire mesh, 250 x 250mm, at the outlets of subsoil drainage systems. Mesh 10mm x 10mm x 2,5mm wire diameter</b>	No.	4.00		
2100	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (R)
<b>22.00</b>	<b>PREFABRICATED CULVERTS</b>				
<b>22.01</b>	<b>Excavation:</b>				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 2m	m <sup>3</sup>	396.00		
	(ii) Exceeding 2m up to 3,0m	m <sup>3</sup>	79.20		
	(b) Extra over subitem 22.01(a) for excavation in hard material irrespective of depth	m <sup>3</sup>	39.60		
<b>22.02</b>	<b>Backfilling:</b>				
	(a) Using the excavated material	m <sup>3</sup>	59.40		
	(b) Using imported selected material	m <sup>3</sup>	59.40		
	(c) Extra over subitems 22.02(a) and 22.02(b) for soil cement backfilling (5% cement)	m <sup>3</sup>	11.88		
<b>22.03</b>	<b>Concrete pipe culverts:</b>				
	(b) On Class B bedding:				
	(i) 600mm dia. (Class 75D)	m	220.00		
	(iv) 450mm dia. (Class 75D)	m	15.00		
<b>22.05</b>	<b>Portal and rectangular culverts:</b>				
	(i) 2400mm x 2100mm	m	Rate Only		
	(ii) 2100mm x 2100mm	m	Rate Only		
	(iii) 2400mm x 2400mm	m	Rate Only		
	(iv) 3000mm x 3000mm	m	Rate Only		
<b>22.07</b>	<b>Cast in situ concrete and formwork:</b>				
	(b) In floor slabs for portal or rectangular culverts including formwork, joints and Class U2 finish for:				
	(i) Class 25/19 concrete	m <sup>3</sup>	24.00		
	(c) In inlet and outlet structures, catchpits, manholes, thrust and anchor blocks, excluding formwork but including Class U2 surface finish:				
	(i) Class 25/19 concrete	m <sup>3</sup>	10.00		
	(d) Formwork of concrete under subitem 22.07(c)				
	(i) Class F1 surface finish	m <sup>2</sup>	75.00		
<b>22.08</b>	<b>Concrete backfill for culverts, Class 15/19</b>	m <sup>3</sup>	Rate Only		
<b>22.10</b>	<b>Steel reinforcement:</b>				
	(a) Mild steel bars	t	Rate Only		
	(b) High-tensile steel bars	t	0.85		
	(c) High tensile steel mesh:	t	1.00		
<b>22.11</b>	<b>Dowels for joining old &amp; new concrete</b>	kg	Rate only		
<b>22.12</b>	<b>Removing existing concrete:</b>				
	(b) Reinforced concrete	m <sup>3</sup>	Rate only		
<b>22.17</b>	<b>Manholes, catchpits, precast inlet and outlet structures</b>				
	(b) Catchpits as per Engineer's drawing	No	10.00		
<b>2200</b>	<b>TOTAL CARRIED TO SUMMARY</b>				



ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
23.00	<b>CONCRETE KERBING, CONCRETE CHANNELLING OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS</b>				
23.01	<b>Concrete kerbing: (Class 25/19 Pre cast concrete)</b>				
	(a) Precast barrier kerbs SABS 927 (1969) fig 3 dwg	m	650.00		
23.02	<b>Concrete kerbing-channelling combination (Class 25/19 Pre cast concrete in channel):</b>				
	(a)(i) Prefabricated mountable kerbs SABS 927 (1969) fig 8 dwg	m	500.00		
	(ii) Class 20/19 cast in-situ concrete in channel (200x80)mm	m	1 150.00		
23.06	<b>Inlet, outlet, transition and similar structures (measured by components):</b>				
	(a) Concrete (Class 20/19)				
	(i) In side inlets	m <sup>3</sup>	20.00		
	(ii) in transition and outlet structures	m <sup>3</sup>	4.00		
	(iii) Energy breaker blocks	m <sup>3</sup>	4.00		
	(b) Formwork:				
	(i) Class F1 surface finish	m <sup>2</sup>	540.00		
23.07	<b>Trimming of excavations for concrete-lined open drains:</b>				
	(a) In soft material	m <sup>2</sup>	585.00		
	(b) In hard material	m <sup>2</sup>	30.00		
23.08	<b>Concrete lining for open drains:</b>				
	(a) Cast in situ concrete V-drain (Class 25/19)	m <sup>3</sup>	69		
23.12	<b>Steel reinforcement:</b>				
	(c) Welded steel fabric REF. S193 (High-tensile steel)	kg	1 448		
23.16	<b>Concrete edge beams, 150mm x 150mm (class 30/19 concrete)</b>	m	40.00		
B23.17	<b>Budgetary Allowance</b> Allow the sum of R 500 000.00 ( Five hundred Thousand Rands) For unforeseeable Circumstances	item	1.00	500 000.00	
2300	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>BORROW MATERIAL</b>				
31.01	Removal of excess overburden	m <sup>3</sup>	Rate only		
31.03	Finishing-off borrow areas in:				
	(b) Intermediate material	ha	Rate only		
	(c) Soft material	ha	Rate only		
31.00	Import Materials from Commercial Sources				
	(b) G5 Material or better material	m <sup>3</sup>	2 259.00		
B31.04	Compensation to landowners:				
	(a) Prime cost sum for compensation to landowners	P.C. sum	Rate only		
	(b) Handling costs and profit in respect of subitem B31.04(a) above	%	Rate only		
B31/55.02	Fencing of borrow pits	km	Rate only		
3100	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>33.00</b>	<b>MASS EARTHWORKS</b>				
<b>33.01</b>	<b>Cut and borrow to fill</b> Materials for fill from commercial sources (material to be G6 or better) (a) Material in compacted layer thicknesses of 200mm and less: (i) Compacted to 90% of modified AASHTO density	m <sup>3</sup>	500		
<b>33.02</b>	<b>Extra over item 33.01 for excavating and breaking down material in:</b> (a) Intermediate excavation	m <sup>3</sup>	432		
	(b) Hard excavation	m <sup>3</sup>	108		
<b>33.04</b>	<b>Cut to spoil, including free-haul up to 2,5km. Material obtained from:</b> (a) Soft excavation	m <sup>3</sup>	825		
	(b) Intermediate excavation	m <sup>3</sup>	536		
	(c) Hard excavation	m <sup>3</sup>	75		
<b>33.03</b>	<b>Cut and borrow to fill (Materials from commercial sources)</b> (a) Material in compacted layer thicknesses of 200mm and less: (ii) Compacted to 90% of modified AASHTO density	m <sup>3</sup>	125		
<b>33.04</b>	<b>Overhaul in excess of 2.5km</b>	m <sup>3</sup> -km	4	125.00	
<b>33.07</b>	<b>Removal of unsuitable material (including free haul of 0.5km)</b> (a) In layer thicknesses of 200mm and less  (ii) Stable material	m <sup>3</sup>	450		
<b>33.09</b>	Material bladed to windrow	m <sup>3</sup>	383		
<b>33.10.</b>	<b>Roadbed preparation and the compaction of material</b> (a) Compaction to 90% of modified AASHTO density	m <sup>3</sup>	660		
<b>33.13</b>	<b>Finishing-off cut and fill slopes, medians and interchange areas:</b> (a) Cut slopes	m <sup>2</sup>	650		
	(b) Fill slopes	m <sup>2</sup>	1 200		
<b>B33.15</b>	Budgetary Allowance Allow the sum of R 500 000.00 (Five Hundred Thousand Rands) For unforeseeable Circumstances	item	1	500 000.00	
<b>3300</b>	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
34.00	<b>PAVEMENT LAYERS OF GRAVEL MATERIAL</b>				
34.01	<b>Pavement layers constructed from gravel taken from commercial sources (G5 or better)</b>				
	(a) Gravel selected layers compacted to: (i) 93% of modified AASHTO density (150mm)	m <sup>3</sup>	825.00		
	(d) Gravel subbase (chemically stabilized material) compacted to: (i) 95% of modified AASHTO density (150mm)	m <sup>3</sup>	750		
	(f) Gravel base (chemically stabilized material) compacted to: (i) 98% of modified AASHTO density (150mm)	m <sup>3</sup>	750		
	(g) Gravel shoulders compacted to: (i) 95% of modified AASHTO density (200mm)	m <sup>3</sup>	68		
3400	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
35.00	<b>STABILIZATION</b>				
35.01	<b>Chemical stabilization extra over unstabilized compacted layers:</b>				
	(a) Base layer, 150mm thick	m <sup>3</sup>	825.00		
	(b) Subbase layer, 150mm thick	m <sup>3</sup>	750.00		
35.02	<b>Chemical stabilizing agent:</b>				
	(a) Ordinary portland cement	t	99.23		
	(b) Slaked road lime	t	Rate only		
35.04	<b>Provision and application of water for curing</b>				
		kl	1 024.00		
35.13	<b>Extra over item</b>				
	35.01 for trial sections	m <sup>2</sup>	200.00		
3500	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
51.00	<b>PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION</b>				
51.01	Stone pitching (b) Grouted stone pitching	m <sup>2</sup>	100.00		
5100.00	TOTAL CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>ROAD SIGNS</b>				
56.01	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:				
	(i) Area not exceeding 2m <sup>2</sup>	m <sup>2</sup>	2.00		
	(ii) Area exceeding 2m <sup>2</sup> but not exceeding 10m <sup>2</sup>	m <sup>2</sup>	Rate only		
56.02	Extra over item 56.01 for using:				
	(a) Background of retro-reflective material:				
	(i) Class 1	m <sup>2</sup>	2.00		
56.03	Road sign supports (over-head road sign structures excluded):				
	(a) Steel tubing				
	"D"-shaped steel tubing profile				
	(i) 75mm diameter and 3.5mm wall thickness	t	0.50		
56.05	Excavating and backfilling for road sign supports (not applicable for kilometre posts)	m <sup>3</sup>	Rate only		
56.06	Extra over item 56.05 for cement-treated soil backfill	m <sup>3</sup>	Rate only		
56.09	Dismantling and storing road signs with a surface area of:				
	(a) Up to 2m <sup>2</sup>	No	Rate only		
	(b) Exceeding 2m <sup>2</sup> but not 10m <sup>2</sup>	No	Rate only		
B56.10	Danger plates (Types W401 and W402)				
	(a) Size 200mm x 800mm at stormwater culverts	No	2.00		
	(b) Size 300mm x 1200mm at bridge structures	No	Rate only		
5600	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b><u>ROAD MARKINGS</u></b>				
57.02	<b>Retro-reflective road-marking paint:</b>				
	(a) White lines (broken or unbroken):				
	(i) 100mm wide	km	0.30		
	(b) Yellow lines - 100mm width				
	(ii) 150mm wide	km	0.35		
	(d) White lettering and symbols	m <sup>2</sup>	Rate only		
	(e) Yellow lettering and symbols	m <sup>2</sup>	Rate only		
	(f) Transverse lines, painted island and arrestor bed markings (any colour)	m <sup>2</sup>	Rate only		
57.06	<b>Setting out and premarking the lines (excluding traffic island markings, lettering and symbols)</b>	km	Rate only		
B57.07	<b>Re-establishing the painting unit: At the end of the maintenance period</b>	Lump Sum	Rate only		
5700	<b>TOTAL CARRIED TO SUMMARY</b>				



ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
59.00	<u>FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS</u>				
59.01	Finishing the road and road reserve:				
	(a) Single carriageway road	km	1.00		
5900	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (R)
<b>7300</b>	<b><u>CONCRETE BLOCK PAVING FOR ROADS</u></b>				
<b>7301</b>	<b>Concrete block paving</b>				
	(a) Supply and install new Interlocking paving blocks laid on 25mm sand bed (i) 80mm thick class 25/19	m <sup>2</sup>	5 503.00		
73.02	(b) Cast insitu concrete edge and intermediate beams (i) Class 25/19 concrete	m <sup>3</sup>	35		
73.02	Provision of approved herbicide				
	a) Provision of materials and ant poison	m <sup>2</sup>	5 503.00		
<b>7300</b>	<b>TOTAL CARRIED TO SUMMARY</b>				

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
81.00 81.02	<b>TESTING MATERIALS AND WORKMANSHIP</b> (for use by the engineer)	Prov Sum	1.00	120 000.00	
8100	<b>TOTAL FOR SECTION 8100 CARRIED TO SUMMARY</b>				
<b>TOTAL SCHEDULE A : PLATFORM EARTHWORKS AND ROADS CARRIED TO SUMMARY</b>					

PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SANS 1200 DB	<b>EARTHWORKS (WATER PIPE TRENCHES)</b>				
	<b>EXCAVATION AND BACKFILLING</b>				
8.3.2	a) Excavate in all materials, backfill and compact to 90% mod AASHTO density, and dispose of surplus and unsuitable materials within the free haul distance for trenches				
	.1 Up to 0.9m wide				
	.1 Up to 1.50m deep	m <sup>3</sup>	1 698		
	2 Up to 2.50m deep	m <sup>3</sup>	110		
	3 Up to 3.50m deep	m <sup>3</sup>	16		
8.3.2	(b) Extra over items 8.3.2 (a) for				
	.1 Intermediate excavation	m <sup>3</sup>	547.29		
	.2 Hard rock excavation	m <sup>3</sup>	100.00		
8.3.2	(c) Excavate unsuitable material from trench bottom, dispose within the free haul distance, and re-fill with suitable imported material compacted to 90% mod AASHTO density				
		m <sup>3</sup>	123.93		
	<b>EXCAVATION ANCILLARIES</b>				
8.3.3	.1 Make up deficiency in backfill materia				
	(c) By importation from commercial sources	m <sup>3</sup>	500.00		
SCHEDULE B	<b>CARRIED FORWARD</b>				

SCHEDULE B	AMOUNT BROUGHT FORWARD				
PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
8.3.4	<b>PIPE BEDDING</b> Selected granular material for bedding cradle for pipes from:				
	a) Trench excavation	m <sup>3</sup>	309.83		
	b) Borrow from commercial source	m <sup>3</sup>	250.00		
8.3.5	<u>Provision of selected fill material for pipe blanket</u>				
	a) Trench excavation	m <sup>3</sup>	1 588.14		
8.3.6	19mm Stone from commercial source if requested by Engineer	m <sup>3</sup>	103.50		
8.3.7	Encase the pipe with 15MPa concrete	m <sup>3</sup>	11.06		
8.3.7	Bidim type U14	m <sup>2</sup>	100.00		
SANS 1200 L	<b>MEDIUM PRESSURE PIPELINES</b>				
	<b>PIPELINES</b>				
8.2.1	(a) <u>Supply, lay, joint, bed (class B bedding) and test disinfect uPVC spigot and socket water pipes with molded rubber rings to SABS 966-1 Class 9 pipes</u>				
	.1 75mm Diameter	m	420.00		
	.2 110mm Diameter	m	150.00		
	.3 160mm Diameter	m	650.00		
	.4 200mm Diameter	m	160.00		
8.2.2	<u>Extra over items 8.2.1(a) for supply, install, bed and test the following fittings, including cutting of pipes, couplings, etc</u>				
8.2.2	(a) .1 <u>uPVC Class 12 pressure long radius bends</u>				
	75 mm diam. 11 1/4 0 deg.	no	3.00		
	110 mm diam. 11 1/4 0 deg.	no	Rate Only		
	160 mm diam. 11 1/4 0 deg.	no	7.00		
	200 mm diam. 11 1/4 0 deg.	no	3.00		
	75 mm diam. 22 1/2 0 deg.	no	2.00		
	110 mm diam. 22 1/2 0 deg.	no	Rate Only		
	160 mm diam. 22 1/2 0 deg.	no	4.00		
	200mm diam. 22 1/2 0 deg.	no	3.00		
	75 mm diam. 45 0 deg.	no	3.00		
	110 mm diam. 45 0 deg.	no	2.00		
	160 mm diam. 45 0 deg.	no	3.00		
	200 mm diam. 45 0 deg.	no	Rate Only		
SCHEDULE B	<b>TOTAL CARRIED FORWARD</b>				

SCHEDULE B		AMOUNT BROUGHT FORWARD			
PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	75 mm diam. 90 0 deg.	no	6.00		
	110 mm diam. 90 0 deg.	no	Rate Only		
	160 mm diam. 90 0 deg.	no	11.00		
	200 mm diam. 90 0 deg.	no	2.00		
	<b>Tee pieces (Equal and Reducing)</b>				
	75 x 75	no	2.00		
	110 x 110	no	Rate Only		
	160 x 160	no	5.00		
	110 x 75	no	Rate Only		
	160 x 110	no	Rate Only		
	200 x 110	no	Rate Only		
	200 x 200	no	2.00		
	<b>Reducers (Male and Female)</b>				
	110 x 75	no	2.00		
	160 x 110	no	Rate Only		
	200 x 110	no	2.00		
	200 x 160	no	5.00		
	<b>Saddles</b>				
	75 x 2"	no	Rate Only		
	110 x 2"	no	Rate Only		
	160 x 2"	no	Rate Only		
	200 x 2"	no	Rate Only		
	<b>End Caps</b>				
	75 mm	no	Rate Only		
	110 mm	no	Rate Only		
	160 mm	no	Rate Only		
	200 mm	no	Rate Only		
SCHEDULE B	TOTAL CARRIED FORWARD				

SCHEDULE B		AMOUNT BROUGHT FORWARD			
PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<b>VALVES</b>				
8.2.3	(a) Isolation Valves Gate Valve assemblies for supplying, Installing and testing. Precast Concrete Chamber and couplings included				
	i) 75mm dia mPVC main	no	3.00		
	ii) 160mm dia mPVC main				
	iii) 200mm dia mPVC main	no	4.00		
8.2.5	(a) <u>Extra over items 8.2.1(a) for cutting of pipe and installing joints with machined collars and special couplings</u>				
	.1 Cut into and connect to existing upto 110mm dia class 12 uPVC pipeline main	no	1.00		
	<b>ANCILLARIES</b>				
8.2.11	<u>Anchor/thrust blocks and pedestals in strength concrete 25Mpa/19mm, including all formwork, reinforcement, etc</u>				
8.2.11	(b) <u>Measured per m<sup>3</sup></u> .1 Thrust blocks	m <sup>3</sup>	7.84		
8.2.13	<u>Valve chambers</u>				
8.2.13	(a) Valve chambers  .1 Brick manhole As per drawing	no	4.00		
	(c) Fire hydrants as per drawing	no	3.00		
8.2.17	Concrete Pipe Markers	no	9.00		
SCHEDULE B	<b>TOTAL CARRIED FORWARD</b>				

SCHEDULE B		AMOUNT BROUGHT FORWARD			
PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
10.2	<b>PUMP STATION</b> Supply and installation of pumps associated mechanical and electrical works (As per Mechanical Eng. Design)				
	ii) Running and standby pumps from Ground reservoir to Fire Hydrants line (Qmin = 25 l/s)	Prov Sum	1.00	R200 000.00	
10.3(b)	WATER QUALITY TESTING AND ANALYSIS	Prov Sum	1.00	R45 000.00	
11	<b>RESERVIORS</b>				
11.1	<b>WATER SUPPLY GROUND RESERVOIR</b> Supply, deliver to site and erect pressed steel tank of 360kl capacity, galvanized steel tank	Prov Sum	1.00	R735 000.00	
11.2	<b>ELEVATED PRESSED STEEL TANK</b> Supply, deliver to site and erect elevated pressed galvanized pressed steel tank of 200 kl capacity, complete with 15m suitable stand, galvanized steel roof, access ladders (inside and outside), outlet, inlet and scour connections complete with bolts plus float control valve	Prov Sum	1.00	R1 155 000.00	
	<u>Handling fee for item 10.2-item 11.2.</u>	%	2 135 000.00	10%	
SCHEDULE B	<b>TOTAL CARRIED FORWARD</b>				



SCHEDULE B	AMOUNT BROUGHT FORWARD				
PAY REF	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
12	<b>FOUNDATIONS FOR PRESSED STEEL TANKS</b>				
12.1	<b>Excavation for Foundations:</b>				
	(a) Excavating Soft Material situated within the following Depth ranges below the surface level:				
	(i) 0m up to 2.5m	m <sup>3</sup>	90.00		
	(ii) Exceeding 2.5m up to 3,0m	m <sup>3</sup>	-		
	(b) Extra over subitem 12.0(a) for excavation in hard material irrespective of depth				
		m <sup>3</sup>	30.00		
12.2	<b>Concrete for Foundations:</b>				
	Grade 30MPa/19mm in tank foundations				
		m <sup>3</sup>	110.00		
12.3	<b>Formwork for foundations:</b>				
	Formwork of concrete under subitem 12.2				
	(i) Class F1 surface finish	m <sup>2</sup>	350.00		
12.4	<b>Steel reinforcement for foundations:</b>				
	(a) Mild steel bars	t	0.20		
	(b) High-tensile steel bars	t	0.50		
	(c) High tensile steel mesh:	t	0.40		
SCHEDULE B	<b>TOTAL CARRIED TO SUMMARY</b>				

SCHEDULE C: SEWER SERVICES						
ITEM NO.	PMT.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
<b>SEWER SERVICES</b>						
Schedule 2:Excavation						
2	SABS 1200DB					
2.1	PSC	<b>SITE CLEARANCE</b>				
2.1.1	PS C 8.2.1	Clear and grub (2,5 m wide strip)	m2	75.00		
2.2	SABS1200DB	<b>PIPE TRENCHES</b>				
2.2.1	DB 8.3.2	<b>Excavation</b>				
	PS DB 8.3.2 (a)	Hand excavation in all materials for trenches on sidewalks, backfill, compact and dispose of surplus material within 0,5 km for 160 - 250 mm diameter and smaller uPVC pipes and trench widths of 700 mm (min) and trench depths of:				
2.2.1.1		a) Exceeding 0,0m up to 1,5m	m <sup>3</sup>	35.00		
		b) Exceeding 1,5m up to 2.5m	m <sup>3</sup>	400.00		
		c) Exceeding 2,5 up to 5m	m <sup>3</sup>	350.00		
2.2.1.2	PS DB 8.3.2(b)	Extra-over item DB 8.3.2(a) for: a) Hard rock excavation	m <sup>3</sup>	157.00		
2.2.1.4	PS DB 8.3.2(c)	Excavation of unsuitable material from trench bottoms	m <sup>3</sup>	40.50		
2.2.1.5	PS DB 8.3.2(d)	Excavation by hand to expose existing services	m <sup>3</sup>	180.00		
2.2.2	8.3.3	<b>Excavation Ancillaries</b>				
	8.3.3.1	Make up deficiency in backfill material				
2.2.2.1		a) from other necessary excavations on site	m <sup>3</sup>	505.95		
2.2.2.2		b) by importation from designated borrow pits	m <sup>3</sup>	177.08		
2.2.2.3		c) by importation from commercial or off site source selected by the contractor	m <sup>3</sup>	61.98		
2.2.2.5	PS DB 8.3.3.3 8.3.3.4	Compaction in Road Reserve Additional overhaul for imported backfill material	m <sup>3</sup>	Rate Only		
2.2.3	8.3.4	<b>Particular Items</b>				
2.2.3.1	PS DB 8.3.4(a)	Shore trench	m	750.00		
2.2.3.2	PS DB 8.3.4(b)	Control of ground water	m	200.00		
2.2.4	8.3.5	<b>Existing Services</b>				
	PS DB 8.3.5(a)	Services that intersect the trench				
		Water mains up to 110 mm diam.	No.	7.00		
		Telephone cables / Low voltage cables	No.	10.00		
		Escom electricity over-head cables	No.	10.00		
	PS DB 8.3.5(b)	Services that adjoin a trench				
		Telephone cables / Low voltage cables	m	2.00		
		Escom electricity over-head cables	m	2.00		
<b>SCHEDULE C</b>		<b>TOTAL CARRIED FORWARD</b>				

SCHEDULE C		AMOUNT BROUGHT FORWARD				
ITEM NO.	PMT.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3	SABS PSLB 1200LB	Schedule 3: Bedding				
3.1	8.2.1	Provision of bedding from trench excavation				
3.1.1	8.2.1	Available from trench excavations within 0.5 km				
3.1.2		a) Selected granular material	m <sup>3</sup>	145.00		
3.1.3		b) Selected fill material	m <sup>3</sup>	587.00		
3.1.1	8.2.2	Imported from				
3.1.1.1	8.2.2.1	Other necessary excavations within 0.5 km				
		a) Selected granular material	m <sup>3</sup>	43.50		
		b) Selected fill blanket	m <sup>3</sup>	43.50		
3.1.1.1.2	8.2.2.2	Borrow pits (provisional)				
		a) Selected granular material	m <sup>3</sup>	29.00		
		b) Selected fill material	m <sup>3</sup>	29.00		
3.1.1.1.3	8.2.2.3	Commercial sources (provisional)				
		a) Selected granular material	m <sup>3</sup>	Rate Only		
		b) Selected fill material	m <sup>3</sup>	Rate Only		
3.1.1.1.4	8.2.3	Concrete bedding Class 20/19 (Provisional)	m <sup>3</sup>	4.35		
3.1.3	PS LB 8.2.5	Overhaul of material for bedding, cradle and selected fill blanket				
3.1.3.1		a) Selected granular material	m <sup>3</sup> .km	Rate Only		
		b) Selected fill material	m <sup>3</sup> .km	Rate Only		
3.1.4	8.2.8	Compaction of trench bottom	m <sup>2</sup>	628.00		
SCHEDULE C		TOTAL CARRIED FORWARD				

SCHEDULE C		BALANCE BROUGHT FORWARD				
ITEM NO.	PMT.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4	SABS 1200LD -1982	SCHEDULE 4: SEWER PIPEWORK				
4.1	8.2.1	Pipes Supply, handle, lay, and bed (class 34), complete with all fittings, test and disinfect PVC pipe; conforming to SABS 791 pipes in the following diameters;				
		a) 110mm dia	m	220,00		
		b) 160mm dia	m	280,00		
5	SABS 1200 LD-1982	SCHEDULE 5: MANHOLES				
5.1	8.2.3	MANHOLES				
	8.2.3.1	Manholes provision complete as per detail drawing inclusive of excavation, construction complete with short pipes and flexible couplings as per details on drawing				
		a) Exceeding 0,0m up to 1,5m	No	1		
		b) Exceeding 1,5m up to 2,0m	No	3		
		c) Exceeding 2,0 up to 2,5m	No	5		
		d) Exceeding 2,5 up to 3,0m	No	2		
5.2	8.2.4	Extra over Backdrops as per drawing	No	Rate Only		
5.3	8.2.5	Inspection Chamber complete as per drawing	No	Rate Only		
6	SABS 1200 L	SCHEDULE 5: ERF CONNECTIONS (sewer)				
5.1	PS LF 8.2.1	Provide and install erf connection complete as per drawing details of the following types;				
		(inclusive of excavation, backfilling, supply and laying of the Y- Junction and connecting pipe line up to existing house connection )				
5.1.1		a) Type 1: Simple house connection, sewer within stand boundary, 1,2m up to 2,5m	No	14		
8	8.2.8	ANCHOR BLOCKS				
		a) As per drawing	No	Rate Only		
9	8.2.9	MARKER POSTS	No	4		
	8.2.11	Connection to existing Sewer	No	3		
	8.2.12	Raising or lowering of Existing manholes	No.	Rate Only		
<b>TOTAL SCHEDULE C: CARRIED TO SUMMARY</b>						

**CONSTRUCTION OF LEBOWAKGOMO EMS BUILDING AND SERVICES**  
**CONTRACT No. PROF/11026**  
**CIVIL WORK BILL OF QUANTITIES**  
**SUMMARY OF SCHEDULE OF QUANTITIES**

SECTION	DESCRIPTION	AMOUNT
<b>SCHEDULE A</b>	<b>PLATFORM EARTHWORKS AND ROADS</b>	
1300	Establishment and General Obligations	
1700	Clearing and Grubbing	
1800	Dayworks	
2100	Drains	
2200	Prefabricated culverts	
2300	Concrete kerbing, concrete channelling, open concrete chutes and concrete linings for open drains	
3100	Borrow Materials	
3300	Mass Earthworks	
3400	Pavement Layers of Gravel Material	
3500	Stabilisation	
5100	Pitching, Stonework and Protection against Erosion	
5600	Road signs	
5700	Road Markings	
5900	Finishing the Road and Road Reserve and treating old roads	
7300	Concrete Block Paving for roads	
8100	Testing Materials and Workmanship	
<b>TOTAL SCHEDULE A : PLATFORM EARTHWORKS AND ROADS</b>		
<b>TOTAL SCHEDULE B : WATER SUPPLY SERVICES</b>		
<b>TOTAL SCHEDULE C : SEWER SERVICES</b>		
<b>SUB TOTAL</b>		
<b>AMOUNT CARRIED FORWARD TO FINAL SUMMARY OF BUILDING B.O.Q (EXCLUSIVE OF VAT)</b>		

PART C3: SCOPE OF WORK

<u>C3.1</u>	<u>DESCRIPTION OF WORKS</u> .....	3
<u>C3.2</u>	<u>ENGINEERING</u> .....	7

## DESCRIPTION OF WORKS

The civils work on the project entails the following.

### BULK EARTH WORKS

- Remove topsoil with grass and roots to a depth of 150mm – 200mm and cut to spoil
- Cut material below topsoil to a minimum depth of 300mm to 800mm achieve the required levels as determined on site. Unsuitable material to be spoiled, suitable material G6 and G7 to be stockpiled for reuse later.
- Rip in-situ material (formed by the excavation of a minimum depth of 450mm and scarify and compact 150mm material to 90% MOD AASHTO.
- Reuse stockpiled material as general fill and/or import G6 or better material and compact to 93% MOD AASHTO to the final earthwork's levels proposed

### ROAD WORKS AND PARKING

- The access road is approximately 203m in length with 80mm interlocking concrete paved width of 8m (inclusive of pedestrian walkways). The staff and ambulance parking areas also have interlocking paving concrete blocks with a total area of approximately 5503.00m<sup>2</sup>
- Excavate the pavement to roadbed level
- In-situ Reconstruction of the roadbed by scarifying and compacting up to 90% MOD ASHTTO
- Construct 150mm subbase layer of natural gravel imported from commercial sources
- The base layer will consist of a 150mm Cement stabilised gravel layer
- Provide 80mm interlocking concrete blocks.
- Install kerbs and channelling
- Introduce road marking and sign posting

Treatment of in-situ subgrade:	Remove existing material to a minimum depth of 300mm to 800mm or as determined on site. Unsuitable material to be spoiled, suitable material G7 and G6 to be stockpiled for reuse later.  Rip and re-compact 150 mm material to be minimum G10 at 90% modified AASHTO density.
Selected Layer:	150mm G6 material compacted to 93% modified AASHTO density. Material before stabilization to be G6 or better and stabilised at 2.5% cement.
Sub Base:	150mm G5-G6 material compacted to 93% modified AASHTO density. Material before stabilization to be G6 or better and stabilised at 2.5% cement.
Base:	150mm C4 material compacted to 95% modified AASHTO density.

	Material before stabilization to be G6 or better and stabilized at 2.5% - 3% cement.
Surfacing:	80 mm concrete interlocking paving blocks underlain by 25 mm sand. The reason of using the 80mm instead of the 60mm is the intensity of the ambulances coming in and out of the EMS and clinic

#### WATER SERVICES:

- Connection works to the existing municipal supply system
- Geo-hydrological survey works for the prospecting of a borehole to be undertaken by a nominated Subcontractor
- Drilling and equipping of a borehole
- Construction of a pump station capable of supplying 25.673l/s with a head of 15m
- Construction of an elevated pressed steel tank of 200kl (Tank height of 15m) and a ground storage tank of 360kl
- Construction of the internal water reticulation of the EMS facility consisting of 110mm and 75mm uPVC pipes.
- Installation of fire hydrants.

#### SEWER SERVICES:

- Sewer reticulation lines of 160mm diameter PVC pipes
- Connection works to the existing municipal supply system

#### STORMWATER SERVICES

- Construction of concrete pipes, of 450mm and 600 diameters;
- Construction of grid inlets.
- Construction of storm water manholes.
- Construction of storm water channels; and
- Construction of sub surface drainage



The employer desires to fulfil his plan to create Emergency Medical Services accommodation.

The client intends to ensure maximum generation of employment in the process of delivering the final product for the end user by adopting labour intensive construction methods.

"Labour Intensive works comprise the activities described in the Labour-Intensive Specification. Such works shall be constructed using local workers who are temporarily employed in terms of this scope of works"

### **C3.1.2 Overview and Location of Works**

The project is essentially construction of the civil services for the EMS facility. The site Lebowakgomo EMS is located at Lepelle-Nkumpi Local Municipality in the southern part of the Limpopo Province. The geographical position of the site is 24° 19' 26" south and 29° 28' 50.12" east and is at an average height of 1023 metres above sea level.

### **C3.1.3 Extent of Works**

The project is intended to be labour-intensive as far as practically possible for job creation in line with the objectives of the Employer and legislation of the Republic of South Africa.

### **C3.1.5 Temporary Works**

Throughout the period of a temporary trafficable route will have to be provided for the vehicle traffic. All routes to be constructed for this purpose will be gravel roads which will always have to be kept in good riding quality and in an environmentally friendly state. All such detours will be scarified and closed at the end of the construction period.

### **C3.1.6 General Information**

#### **C3.1.6.1 Drawings**

The reduced drawings contained in Annexures that form part of the tender document shall be used for tender purposes only. Further drawings are to be provided on an on-going basis by the Engineer.

The Contractor will be supplied with an unreduced 0,05 mm thick transparent polyester print of each of the drawings. These polyester prints are issued free of charge and the Contractor shall make any additional prints he may require at his own cost.

Any information in the possession of the Contractor, which the resident Engineer requires to complete the as-built drawings, shall be supplied to the resident Engineer before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Engineer. The Engineer will supply all figured dimensions omitted from the drawings.

#### C3.1.6.2 Power, Water Supply and Other Services

The Contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

#### C3.1.6.3 Contractor's Camp Site and Security

The Contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the Contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of potable water.

Provision is made in these specifications for the erection of a security fence around the site offices. The Contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

#### C3.1.6.4 Additional Requirements for Construction Activities

C3.1.6.4.1 The Contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.6.4.2 The Contractor shall submit proposals in connection with directional signs to the Engineer for approval.

#### C3.1.6.5 Programme Requirements for Construction Activities

The Contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

#### C3.1.6.6 Construction in Confined Areas

It may be necessary for the Contractor to work in confined areas. In certain areas the width of the fill material and pavement layers may reduce to zero and the working space may be confined. The method of construction in these confined areas depends on the Contractor's construction plant. However, the Contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and amounts tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

#### C3.1.7 Labour Regulations

**C3.1.7.1 Payment for the labour-intensive component of the works**

Payment for works identified in clause 2.3 "the Extent of the Project" in the Project Specifications as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

**C3.1.7.2 Applicable labour laws**

Refer to Annexure C5.3 and C5.4

**ENGINEERING****C3.2.1 Design**

- (a) The **Employer** is responsible for the design of the permanent Works as reflected in these Contract Documents unless otherwise stated.
- (b) The **Contractor** is responsible for the design of the temporary Works and their compatibility with the permanent Works.
- (c) The **Contractor** shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

**C3.2.2 Employer's Design**

- (a) Detail description of Works
- (b) General Works
- (c) Sign Gantries. E.g.

**C3.2.3 Contractor's Design**

Where Contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional Engineer's design certificate.

**C3.2.4 Design procedures**

All designs and modifications thereto shall be communicated in writing and the Contractor and Engineer shall maintain master lists to record and track all transactions.

### C3.3 PROCUREMENT

#### PREFERENTIAL PROCUREMENT POINT SYSTEM POLICY

#### C3.3.1 Construction

#### C3.4.1 STANDARD SPECIFICATIONS

- (a) The following specifications shall apply for the construction of the Works on bulk earth works, roads and storm water services.
- (i) The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998).

The Contractor may purchase copies of Volume (i) from the South African Institution of Civil Engineers.

SAICE		Tel : (011) 805-5947
Waterfall Park	/ Postnet Suite 81	Fax : (011) 805-5971
Howick Gardens	/ Private Bag X65	
Vorna Valley	/ Halfwayhouse	Contact Person : Angeline Aylward
Becker Street	/ 1685	
Midrand		

- (b) SABS or BS Specifications and Codes of Practice

Wherever any reference is made to the South African Bureau of Standards (SABS) and the British Standards Specification (BSS) in either these Bill of Quantities or the Specification of Materials and Methods to be Used (OOG-001E), this reference shall be deemed to read "SABS or equivalent standard" and BS or equivalent standard" respectively.

- (c) Various other specifications specified in the COLTO Standard Specifications or the Project Specifications.
- (d) Latest Sabita Manual, Manual 25 entitled "*Quality Management in the Handling and Transport of Bituminous Binders*".

### C3.4.2 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

#### C3.4.2.1 General Conditions of Contract Referred to in the Standard Specifications

The references to the General Conditions of Contract appearing in the COLTO Standard Specifications refer to the COLTO General Conditions of Contract which is superseded in this contract by the General Conditions of Contract for Construction Works 2010, Second Edition. The corresponding clause in the latter document pertaining to the reference in the COLTO Standard Specifications is listed in the table below.

Clause No. in the Standard Specifications	Clause No. in COLTO General Conditions	Equivalent Clause No. in General Conditions of Contract 2010
1202	15	5.6.1
1206	14	Deleted
1209	52	6.10.1
1210	54	5.14.1
1212(1)	49	6.8
1215	45	5.12.1
1217	35	8.2
1303	49	6.8
1303	53	6.11
1303	12	5.3
1303	45	5.12.1
1403	40(1)	6.5
1505	40	6.5
31.03	40	6.5
3204(b)	40	6.5
3303(b)	2	3
5803(c)	40	6.5
5805(d)	40	6.5
6103(c)	40	6.5
Item 83.03	22	5.15
ALL SECTIONS	48	6.6

#### C3.4.2.2 Amendments to the Standard Specifications

There are no amendments to the Standard Specifications as issued by the Committee of Land Transport Officials (COLTO).

### C3.4.2.3 Project Specifications Relating to Standard Specifications

This part of the project specifications deals with matters relating to the standard specifications. Where reference is made in the standard specifications to the project specifications this part shall also contain the relevant information e.g. the requirements where a choice of materials or construction methods are provided for the standard specifications.

In certain clauses the standard specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications and amendments of the standard specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or a new payment item, which does not form part of a clause or a payment item in the standard specifications and is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.

Clauses and pay items referring to labour intensive methods are prefixed by L in the project specifications.

Clauses and pay items referring to emerging Contractors are prefixed by E in the project specifications.

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## **1200. : GENERAL REQUIREMENTS AND PROVISIONS**

### **B1202 SERVICES**

Add the following to the fifth paragraph:

"Provision is made in the bill of quantities for payment for searching and exposing of known or unknown services as well as the relocation and/or protection of existing services. Any moving of existing services which may be required within the proclaimed road reserve will be undertaken by the relevant service authorities or by a selected Subcontractor if so ordered by the Engineer."

### **B1204 PROGRAMME OF WORK**

#### **(a) General requirements**

Amend the word "network" in the fourth line of the first paragraph to read as "bar (Gantt) chart".

Add the following after the third paragraph:

"The bar-chart programme to be provided by the Contractor shall show the various activities in such detail as may be required by the Engineer. Progress in terms of the programme shall be updated monthly by the Contractor in accordance with the progress made by the Contractor.

In compiling the programme of work, the Contractor shall indicate and make due allowance for the following, as specified elsewhere in the contract documents:

- The requirements regarding the accommodation of traffic and areas that may be occupied at any time for construction purposes (as indicated on the drawings and specified in Section 1500 of the specifications)
- Requirements regarding the training of labourers and Emerging Contractors (EC's).
- The requirements for work to be undertaken by labourers and work to be undertaken by EC's.

#### **(b) Programme of work for rehabilitation work**

Amend the word "network" in the fourth line of the second paragraph to read as "bar (Gantt) chart".

### **B1205 WORKMANSHIP AND QUALITY CONTROL**

Add the following to the third paragraph:

"The Engineer shall, however, undertake acceptance control tests for the judgement of workmanship and quality, without accepting any obligations vested with the Contractor in terms of the contract with specific reference to quality of materials and workmanship. Such acceptance control test done by the Engineer shall not relieve the Contractor of his obligations to maintaining his own quality control system."

Add the following at the end of this clause:

"The Engineer shall, for the purpose of acceptance control on products and workmanship, assess test results and measurements in accordance with the provisions of section 8300 of the standard specifications. Where small quantities of work are involved, a lot shall mean a full day's production for a



specific item of work subject to acceptance control testing."

**B1206 THE SETTING-OUT OF THE WORK AND PROTECTION OF BEACONS**

Add the following:

"The Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith."

The Contractor shall take care that property beacons, trigonometrical survey beacons or setting-out beacons are not displaced or destroyed without the consent of the Engineer. Property beacons and trigonometrical survey beacons that have been displaced or destroyed shall be replaced by a registered land surveyor, who shall certify such replacement.

The cost of replacing all beacons displaced or destroyed during the Contract without the consent of the Engineer shall be borne by the Contractor."

**B1209 PAYMENT**

**(b) Rates to be inclusive**

Add the following:

"VAT shall be excluded from the rates and provided for as a lump sum in the Summary of Bill of Quantities".

**(e) Materials on the site**

Add the following:

"In addition, the Engineer may at his sole discretion also allow payments under "Materials on Site" in respect of any construction materials if stored off-site providing that:

- (a) The site selected for this purpose is approved by the Engineer
- (b) Such land is physically separated from any production plant or operation
- (c) Only materials for use under this contract is stockpiled on such land
- (d) The Contractor has provided proof of an agreement with the owner of such land that the owner has no claim whatsoever on any materials stockpiled on such land
- (e) Materials obtained by the Contractor for or on behalf of emerging Subcontractors (SMME's) shall remain the responsibility of the Contractor after payment has been made in respect of materials on site."

**B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL**

Add the following after the first paragraph of this clause:

"For the purposes of this contract, extension of time resulting from abnormal rainfall or other forms of inclement weather shall be determined according to the requirements of Method ii (critical-path method)."

### Method (ii) (Critical path method)

Delete "(based on a five-day working week)" in the fifth and sixth lines of the second paragraph of the description of this method.

Delete the last sentence of the second paragraph of the description of this method and replace with the following:

"The value of "n" shall be taken as three (3) working days per calendar month.

If normal rainy or inclement weather, resulting in delays, occurs for less than three (3) working days in any calendar month, the difference between the three (3) working days and the actual number of working days on which normal rainy or inclement weather occurred, shall be ignored and not accumulated for the duration of the contract period for the purposes of determining an extension of time due to normal rainy weather, nor due to any other reason.

Items of work on the critical path of the programme of work which are subject to climatic limitations, shall also be considered for extension of time if such items of work are delayed by e.g. cold weather, high winds or other inclement weather conditions.

In this regard, reference shall be made to weather limitations specified for the application of various bituminous products. However, for months during which seal-work cannot be undertaken in terms of the specifications, no extension of time shall be claimed for.

Rainfall records for Weather Station.

MONTH	AVERAGE RAINFALL (mm)
JANUARY	85.1
FEBRUARY	63.9
MARCH	57.6
APRIL	35.8
MAY	10.3
JUNE	2.9
JULY	2.7
AUGUST	2
SEPTEMBER	4.8
OCTOBER	41.2
NOVEMBER	95.8
DECEMBER	96
YEAR	497.9

**B1217 PROTECTION OF THE WORKS AND REQUIREMENTS TO BE MET BEFORE CONSTRUCTION OF NEW WORK ON TOP OF COMPLETED WORK IS COMMENCED**

Add the following subclause:

"(h) No concrete kerbing or concrete drains directly adjoining the bituminous surfacing shall be constructed prior to the completion of the bituminous surfacing."

**B1222 USE OF EXPLOSIVES**

Add the following subclause:

"(h) Where blasting operations are undertaken in close proximity of temporary deviations, the Contractor shall implement all such safeguarding measures as may be required and instructed by the Engineer."

**B1224 THE HANDING-OVER OF THE ROAD RESERVE**

Add the following:

"The total length of the road reserve between the specified limits of construction will be handed over to the Contractor on the commencement date. Reference shall, however, be made to the requirements of section 1500 of these specifications where limitations in respect of work-areas are specified. In the event of the non-adherence by the Contractor in terms of the mentioned specifications, the Engineer shall withdraw such sections of the road reserve as may be justified to ensure suitable progress of the works or safe passage of traffic."

**B1229 SABS CEMENT SPECIFICATIONS**

Replace the last paragraph of this clause with the following:

"Where reference is made in this specification or the standard specifications to the cement specifications, e.g. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

**SABS ENV 197-1: Cement-composition, specifications and conformity criteria.**

Part 1: Common cements.

Furthermore, where reference is made in this specification or the standard specifications to the different cement types, the following new names/types shall apply:

Old product nomenclature	Typical new product nomenclature	
	Cement type	Cement strength class
OPC	CEM I	32,5
	CEM I	32,5R
RHC	CEM I	42,5
	CEM I	42,5R
LASRC	No provision made	No provision made
PC15SL	CEM III/A-S	32,5

Old product nomenclature	Typical new product nomenclature	
	Cement type	Cement strength class
	CEM II/A-S	32,5R
	CEM II/A-S	42,5
PC15FA	CEM II/A-V	32,5
	CEM II/A-V	32,5R
	CEM II/A-W	32,5
	CEM II/A-W	32,5R
RH15FA	CEM II/A-V	42,5
	CEM II/A-V	42,5R
	CEM II/A-W	42,5
	CEM II/A-W	42,5R
PBFC	CEM III/A	32,5
	CEM III/A	32,5R
PFAC	CEM II/B-V	32,5
	CEM II/B-W	32,5
RH30SL	CEM II/B-S	32,5R
	CEM II/B-S	42,5
RH40SL	CEM III/A	32,5R
	CEM III/A	42,5

CEM I 32,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members."

Add the following new clauses:

#### **B1232 SUBCONTRACTOR S**

Over and above the stipulations of clause 6 of the General Conditions of Contract 2004, regarding subletting of part of the works, it is a condition of the contract that an approved Subcontractor shall not sublet part of his work, covered in his appointment by the main Contractor, to another Subcontractor without the consent and approval of the Engineer. Subletting shall in all cases be critically considered by the Engineer.

In addition to the provisions of clause 6 of the general conditions of contract regarding subcontracting of the works, it is a requirement of this contract that an approved Subcontractor shall not further subcontract work subcontracted to him by the main Contractor, to another Subcontractor without the consent and approval of the Engineer. Subcontracting shall in all cases be critically considered by the Engineer. The Engineer reserves the right to limit the extent or the volume of work subcontracted by the Contractor, should he deem it necessary in terms of progress or quality of workmanship.

**B1233 WORKMEN'S COMPENSATION ACT**

All labour employed on the site shall be covered by the Compensation for Occupational Injuries and Deceases Act (COIDA). The Contractor shall pay in full, including the payment of the necessary levies, such amounts, as are due in terms of the Act. The Contractor at the commencement of the contract shall resolve the manner in which Workmen's Compensation will be handled. Amounts paid by the Contractor shall not be included in the wage rates but shall be covered by the Contractor to be deemed as included in his General Obligations rates in Section 1300 of the Bill of Quantities.

Add the following clause:

**B1234 MINE HEALTH AND SAFETY ACT 1996, ACT 29 OF 1996****(a) Introduction**

The main objective of this Act is to protect the health and safety of persons at mines. This specification is therefore aimed at promoting health and safety specifically at borrow pits. Borrow pits are classified as mines.

**(b) General Provisions**

The Contractor shall be responsible for controlling his operations at every borrow pit where material is being excavated to ensure compliance with all the requirements of the Mine Health and Safety Act, 1996. The Contractor shall also ensure that the works, shaping and finishing off of the borrow pit are done in accordance with the provisions as specified in section 3100 of the COLTO Standard Specifications and this Act. The Contractor shall also comply to the requirements as set out in C3.4.3.2 Environmental Management Plan.

The minimum requirements for operations at borrow pits are:

- Borrow pits are worked in such a way that the health and safety of employees and the public will not be endangered.
- A monthly report shall be submitted to the Engineer on health and safety aspects at the borrow pits.
- The Contractor shall appoint a manager to manage the borrow pits in accordance with the Mine Health and Safety Act.
- The Contractor shall take the necessary steps to ensure that the work area of the borrow pits are safe at all times. This shall include items such as the provision of fencing and security guards.

**(c) Duties of the Manager**

The minimum duties of the manager supervising the activities at borrow pits shall be:

- Maintain a healthy and safe borrow pit environment.
- Identify hazards and related risks to which persons and employees are exposed.
- Establish a health and safety policy that

- o Describes the organisation of work.
- o Contains aspects concerning the protection of the employees and other persons' health and safety.
- o Contains a risk analysis.
- Supply and erect the necessary safety and warning signs.

Add the following pay items and change the clause number.

### B12.35 MEASUREMENT AND PAYMENT

Add the following items:

"ITEM	UNIT
<b>B12.01</b>	<b>Excavation</b>
	Excavating material within the following depth ranges below ground level for the exposing of/or searching for services
(a)	0m to 2m
	(i) soft material cubic metre (m <sup>3</sup> )
	(ii) hard material cubic metre (m <sup>3</sup> )
(b)	Extra over item B12.01(a) for excavation by means of hand tools such as picks, crowbars and pneumatic tools or mechanical breakers in close vicinity of services where no machine excavation is permitted
	(i) soft material cubic metre (m <sup>3</sup> )
	(ii) hard material cubic metre (m <sup>3</sup> )

Measurement and payment shall be as specified for item 22.01 in the standard specifications.

ITEM		UNIT
B12.02	<b>Backfilling</b>	
	(a) Using the excavated material	cubic metre (m <sup>3</sup> )
	(b) Using imported selected material	cubic metre (m <sup>3</sup> )

Measurement and payment shall be as specified for item 22.02 in the standard specifications.

ITEM		UNIT
B12.03	(a) Allow a provisional sum for existing services to be relocated and/or protected as ordered by the Engineer	provisional sum
	(b) Handling costs and profit in respect of subitem B12.03(a) above	percentage (%)

Measurement and payment shall be in accordance with the general conditions of contract."

ITEM		UNIT
B12.05	(a) Mine Health and Safety obligations	Month
	(b) Special information signs	Prime Cost Sum (PC Sum)
	(c) Provision of security guards	Prime Cost Sum (PC Sum)
	(d) Handling cost and profit in respect of sub-item B12.05(b) and (c)	Percentage (%)

Payment of the rate per month for sub-item B12.05(a) shall include full compensation for all the Contractor's obligations relevant to the Mine Health and Safety Act.

The prime cost sums shall be paid in accordance with the provisions of the General Conditions of Contract. The tendered percentage is a percentage of the amount spent under the prime cost items, which shall include full compensation for the profit in connection with providing the specified service.

**1300. : CONTRACTOR'S ESTABLISHMENT ON SITE AND  
GENERAL OBLIGATIONS**

**B1302 GENERAL REQUIREMENTS**

**(a) Camps, constructional plant and testing facilities**

Add the following:

"The Contractor shall, at each area where work is being undertaken, provide on a daily basis at least one (1) portable chemical latrine unit per thirty (30) workers for use by construction workers employed on the project. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the satisfaction of the Engineer. No separate payment shall be made for this requirement and shall be deemed to be included in the rates tendered for the Contractor's time-related obligations."

**B1303 PAYMENT**

**ITEM**

**UNIT**

**B13.01 The Contractor's general obligations:** (As specified)

Add the following after the fifth paragraph:

"The combined total tendered for sub-items (a), (b) and (c) shall not exceed 15% of the tender sum, excluding VAT.

Should the Contractor be of the opinion that 15% is inadequate to cover his costs in terms of section 1300, he shall indicate separately with his tender where such costs have been allowed for in his tender. If no such indication is given, the Contractor shall not at any stage during the contract for any reason whatsoever claim additional compensation under this item."



**1700. : CLEARING AND GRUBBING****B1702 DESCRIPTION OF WORK****a) Clearing**

Add the following:

"Clearing shall include the removal of material to a thickness of up to 450mm in-situ material as ordered by the Engineer. No payment shall be made for temporary stockpiling of topsoil material in the case where this material is applied as topsoil after completion of road side slopes.

Should the required depth exceed 450mm, the total volume of material removed shall either be classified as "temporary stockpiling of topsoil" or "unsuitable roadbed material" or "cut to spoil" whichever is applicable as allowed for in the standard specifications. In these cases no payment shall be made for clearing and grubbing.

Clearing as described shall in all cases be undertaken in such a manner that the topsoil is preserved and not contaminated with other debris or rubbish. Cross-sections for the determination of earthworks quantities shall be taken after clearing (topsoil or unsuitable roadbed material) and roadbed preparation if applicable.

Payment for gabion boxes and mattresses which have to be removed and the material sorted and stacked shall be made under section 5200"

**B1703 EXECUTION OF WORK****(a) Areas to be cleared and grubbed**

Add the following:

"Apart from normal clearing and grubbing, the fill embankments of the existing roads are also to be cleared and grubbed over the areas where the new horizontal alignment coincides with the alignment of the existing road, or where repairs are required to the fill embankments of the approaches of bridges. Provision is made for separate payment for clearing and grubbing of the existing fill embankments where conventional machinery might be suitable to undertake the work due to the steep side slopes of the embankments. An additional pay-item is allowed for in the bill of quantities for this type of clearing and grubbing which may have to be undertaken by hand or similar manner."

**B1704 MEASUREMENT AND PAYMENT**

Change item 17.01 to read as follows:

ITEM		UNIT
B17.01	Clearing and grubbing of:	
	a) Normal areas:	
	i) Within the road reserve	hectare (ha)
	ii) In borrow pits	hectare (ha)
	b) Existing fill embankments with Slopes steeper than 1:4	hectare (ha)

Measurement and payment for sub-items (a) and (b) shall be as specified for item 17.01 of the standard specifications. Where distinction is made for clearing and grubbing existing fill embankments with slopes steeper than 1:4 (vertical : horizontal), payment shall be made under item B17.01."

**1800. : DAYWORK SCHEDULE**

Note: This is a new section added to the Standard Specifications.

Add the following:

**B1801 SCOPE**

This section covers the listing of daywork items for use in determining payment for work which cannot be quantified in specific pay item "units" in the bill of quantities or work ordered by the Engineer during the construction period which was not foreseen at tender stage for which no applicable rate exists in the schedule or for work of a special or different character warranting special payment as decided by the Engineer.

**B1802 ORDERING OF DAYWORK**

No daywork shall be undertaken unless specific written authorisation is obtained from the Engineer.

**B1803 MEASUREMENT AND PAYMENT**

The Engineer may order the following daywork items:

ITEM	DESCRIPTION	UNIT
B18.01	Labourers:	
	(i) Unskilled	Hour (h)
	(ii) Semi-skilled	Hour (h)
B18.02	(iii) Skilled	Hour (h)
B18.03	Foreman	Hour (h)
	Tipper trucks:	Hour (h)
B18.04	(i) 3 – 5 ton	Hour (h)
B18.05	(ii) 5,1 – 10 ton	Hour (h)
B18.06	Loader (0,5m <sup>3</sup> )	Hour (h)
B18.07	Grader (CAT 140G or similar)	Hour (h)
	LDV	Hour(h)
	Compaction Rollers:	Hour (h)
B18.08	(i) Vibrator roller	Hour(h)
	(ii) Tamping roller	Hour(h)
	(iii) Grid roller	Hour(h)
	Hand Controlled Compactors	Hour(h)
B18.09	(i) Pedestrian roller (Bomag BW90)	Hour(h)
B18.10	(ii) Vibratory plate	Hour(h)

	(iii) Rammers Water truck (min 10000 l) Dozer (D7 or similar)	
--	---------------------------------------------------------------------	--

The unit of measurement shall be the actual number of hours worked by labourers or foremen or an item of plant.

The tendered rates shall include full compensation for all cost items including overheads, head-office expenses and profits as described in subclause 40(3) of the general conditions of contract and shall be subject to contract price adjustment as provided for in the contract.

The mark-ups on daywork items in accordance with the Appendix to the Tender shall not be applicable on daywork items listed in the bill of quantities in terms of the above specifications. In the event of new daywork rates being requested for items not appearing in the bill of quantities, then the provisions of the general conditions of contract and the Appendix to the Tender shall apply.

Prior to the commencement of any work by the labourers described under item B18.01, the Contractor must obtain written consent from the Engineer regarding the classification and composition of all labourers in terms of "unskilled" and "skilled" labourers required for the work as ordered by the Engineer."

**2100. : DRAINS****B2103 BANKS AND DYKES**

Add the following:

"Mitre banks at culvert inlets should be considered at such a skew angle that it guides the water into the inlet with a minimum loss of velocity (energy)."

**B2104 SUBSOIL DRAINAGE****(a) Materials****(i) Pipes**

Delete the last sentence of the fifth paragraph and substitute it with the following:

"Perforation for 100mm pipes shall be spaced in two rows, one on each side of the vertical centre line of the pipe, and at one third of the circumference. The perforation for the 150mm pipes shall be spaced in four rows, two as described for 100mm pipes, and the other two rows at two thirds of the circumference."

**(ii) Synthetic-fibre filter fabric**

Add the following:

"All filter fabric shall be a non-woven needle punched type material and must be approved by the Engineer. Filter fabrics shall have a minimum co-efficient of permeability of  $3 \times 10^{-3}$  m per second."

**B2107 MEASUREMENT AND PAYMENT**

Change item 21.09 to read as follows:

ITEM	UNIT
B21.09 Polyethylene sheeting, 0,25mm thick, or similar approved material, for lining subsoil draining systems	square metre (m <sup>2</sup> )

Measurement and payment shall be as specified for item 21.09 in the standard specifications."

Add the following new items:

## **2200. : PREFABRICATED CULVERTS**

### **B2201 SCOPE**

Add the following:

"All rectangular culverts with spans from 0,9m up to and including 2,4m shall be constructed with precast units.

The attention of the Contractor is drawn to the fact that information given on the plans, longitudinal sections or drainage schedules may have to be altered to suit actual site conditions and, therefore, the Contractor shall only construct these culverts after the Engineer has verified the information on the drawings from detail surveys taken on site by the Contractor as directed by the Engineer.

Precast units shall be ordered by the Contractor from actual measurements of length acquired on the site and not from lengths stated in the drainage schedule or from the bill of quantities.

No precast units shall be ordered until the Engineer has satisfied himself that the proposed units have been manufactured to the required tolerances and loading standards. The Engineer must be given the opportunity to load test units if he considers this necessary".

### **B2203 MATERIALS**

#### **(f) Skewed Ends**

Delete the second and third paragraphs and substitute with the following:

"Precast portal and rectangular culverts placed on a skew shall be supplied with cast in situ skewed ends as shown on the drawings. In situ skew ends are to be constructed simultaneously with the wingwalls and headwalls".

### **B2204 CONSTRUCTION METHODS**

Add the following:

"In all cases where soft founding materials is classified as suitable for culvert bedding construction, the in situ material shall be ripped, moistened and compacted to 90% or 93% modified AASHTO density. The depth of preparation and compaction of founding material shall be as indicated on the drawings or as specified by the Engineer. Allowance for measurement and payment for this work is made in the bill of quantities under this section."

#### **(c) Excavation by hand**

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the Engineer shall authorise the supplementary payment to the Contractor for such work at the tendered rates for excavation by hand should he be satisfied that the Contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01."

**B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD**

Add the following subclauses:

**"(c) Excavation by hand**

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the Engineer shall authorise the supplementary payment to the Contractor for such work at the tendered rates for excavation by hand should he be satisfied that the Contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01.

**(d) Drainage of excavations**

The Contractor shall apply suitable, effective drainage and dewatering methods for preventing the ingress of water into the excavation and to keep them dry.

Drainage measures, with the exception of pumping, shall be maintained until the backfilling has been completed. Between various construction stages, pumping may be interrupted in consultation with the Engineer.

Any draining or pumping of water shall be done in a manner as will preclude the concrete or materials or any part thereof from being carried away.

Allowance for measurement and payment for dewatering and keeping dry of culvert excavations is made in the schedule in this section".

**B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS****B2210(b)(i) Cast in situ invert slabs**

Replace with the following:

"In accordance with the drawings, transverse construction joints are required in cast in situ concrete invert slabs for portal culverts. In addition, longitudinal construction joints as shown on the drawings, between the invert slabs of each of the barrels of multiple culverts are required. Allowance for measurement and payment for a Class F1 surface finish and soft board in these joints is made in the bill of quantities. No payment shall be made for formwork on the outside edges of invert slabs (closest to excavated face).

All culverts (precast as well as in situ) shall be constructed with an in situ reinforced concrete floor laid on a 75mm concrete screed".

Delete subclause B.2210(b)(ii) : "Prefabricated floor slabs."

**B2211 BACKFILLING OF PREFABRICATED CULVERTS**

Change the last sentence in the fourth paragraph to read "90% or 93% as shown on the drawings or as directed by the Engineer."

**B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES****(b) Concrete work**

Add the following:

"The type of surface finish for in situ concrete in the culverts shall be as indicated on the drawings. Generally all exposed faces shall be of Class F2 formwork and faces covered by backfill shall be Class F1. The top of parapet walls and wingwalls shall be finished to a Class U2 surface finish."

**(h) Prefabricated inlet and outlet structures**

Add the following:

"The use of precast concrete inlets and outlets as described in clause 2212(h), shall not be allowed under any circumstances. Cast in situ concrete wingwall type inlets and outlets shall be constructed as indicated on the drawings and shall be in accordance with section 6000 of the Standard Specifications. Allowance for measurement and payment for wingwall type inlets and outlets is made in the schedule in this section."

**B2218 MEASUREMENTS AND PAYMENT**

Add the following:

ITEM	UNIT
B22.01 (c) Extra over subitem B22.01(a) for excavation by hand using hand tool	cubic metre (m <sup>3</sup> )

Measurement shall be as specified for pay item 22.01 of the standard specifications.

The tendered rate shall include full compensation for carrying out the excavations by hand where circumstances prevent the use of mechanical excavators.

ITEM	UNIT
B22.07 (f) Formwork for joints in cast in situ concrete invert slabs	
(i) Transverse construction joints (type indicated)	square metre (m <sup>2</sup> )
(ii) Longitudinal joints (as per drawing)	metre (m)

Measurement and payment shall be as specified in item 22.07 of the standard specifications with the exception that formwork for construction joints in cast in situ invert slabs in trench conditions as indicated on the drawings, shall be measured and paid for in accordance with section 6200 of the standard specifications. No payment shall be made for formwork to the outside edges of invert slabs (closest to excavated face)."

Add the following to pay item 22.08:

"In addition to the requirements for measuring concrete backfill to rectangular culverts as specified for item 22.08, the following shall apply:

Concrete backfill shall be measured to the actual dimensions of the precast units, i.e. actual volumes



between ribs and haunches shall be taken into account. For the purpose of calculating concrete backfill quantities, the horizontal dimensions of the concrete backfill on the outside of the culvert(s) (closest to excavated face), shall be taken as 100mm maximum irrespective of what type or make of precast portal is used or the actual width of the excavation.

The width of the concrete backfill between portals in the case of multiple culverts, shall be taken as 80mm for precast units with a leg height of 1500mm and 100mm for precast units with a leg height exceeding 1500mm. The vertical dimensions, in both cases, shall be equal to the height of the portal".

Add the following new items:

ITEM	UNIT
B22.29    Tie bars for joining in situ concrete invert slabs to inlet and outlet structures, as indicated on the drawings (Type, diameter and length indicated)	Number (No.)

The unit of measurement shall be the number of tie bars installed as specified and indicated on the drawings.

The tendered rate shall include full compensation for supply and installation of the tie bars.

ITEM	UNIT
B22.30    a)    Preparation and compaction of in-situ bedding material to 90% of Mod. AASHTO density (depth indicated)	cubic metre (m <sup>3</sup> )
b)    Extra over sub-item B22:30(a) for compaction to 93% of Mod. AASHTO density (depth indicate)	cubic metre (m <sup>3</sup> )

The unit of measurement shall be the cubic metre of material ripped and compacted as specified.

The tendered rate shall include full compensation for the ripping of the in-situ material to the specified width and depth, wetting of the material to such an extent that the specified density can be achieved.

**2300 : CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND  
CONCRETE LININGS FOR OPEN DRAINS**

**B2301 SCOPE**

Add the following:

"The position and length of the following types of concrete kerbs and channels are indicated on the geometric layout plans, typical drawings and on the drainage plans.

- Type A : In situ concrete channel, 0,8m wide on fills  
 Type B : Precast concrete kerbing, semi-mountable (SABS 927-1969)  
 Type C : In situ concrete kerbing at intersections  
 Edge beam : In situ concrete kerbing at farm access and bus stops  
 Type E, F1 & F2 : In situ concrete "V"-shaped channels in side drains and open drains."

**B2302 MATERIAL**

Add the following new subclauses:

**(e) Metal pipes**

"Metal pipes down side slopes shall comply with the requirements of clause 2203 of the standard specifications."

**B2304 CONSTRUCTION**

**(d) Slip form kerbing**

Add the following:

"Slip-form kerbing shall under no circumstances be allowed."

**(e) Cast in situ kerbs and channels**

Add the following:

"Forming and templates used to form joints between alternate sections shall be of steel plate of which the thickness shall not be less than 5mm."

Add the following new subclauses:

**(i) Construction sequence**

Replace paragraphs (i), (ii) and (iii) with the following:

"In all cases where kerbing and/or channelling adjoin the bituminous surface of the road, the kerbing and/or channelling may only be constructed after the bituminous surface has been completed.

Before commencing with the kerbing and/or channelling, the surfacing and the base, shall be accurately cut to line with a mechanical saw to a minimum depth of 75mm. After excavation the concrete shall then be cast against the cut surface without formwork.

All material outside the cut line must be carefully removed to the required thickness of concrete without damaging the edge before commencing with the casting of the concrete. No payment shall be made for repair work as instructed by the Engineer to damage caused by the cutting/excavating process of surfacing and base layers. Any concrete spill onto the surfacing shall immediately be removed and cleaned. Where so required by the Engineer, the Contractor shall, without any additional compensation, paint emulsion over the stained surface.

Add the following subclause:

**(k) Formwork and finish**

"Formwork and finish of concrete kerbs shall comply with the requirements of section 6200. All visible edges on the sides or at joints of cast in situ concrete kerbs or channels shall be rounded with a rounding tool."

**3100. : BORROW MATERIALS**

**B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES**

Add the following to sub-clause 3102(a):

"Arrangements regarding to access to borrow pits and the alignment of haul roads shall be made between the Contractor and the owners of the land on which borrow pits are situated. The Engineer's representative on site shall be present at all such negotiations, which shall be confirmed in writing by the Contractor. All costs involved with such negotiations as well as the requirements contained in clause 3102 and clause 1225 of the specifications shall be borne entirely by the Contractor."

**B3103 OBTAINING BORROW MATERIALS**

**(a) General**

Add the following:

"The expropriation and compensation for land from which borrow materials is obtained shall be negotiated and paid for by the employer."

**(b) Use of borrow materials**

Add the following to the second paragraph of this subclause:

"Compensation to owners and arrangements with owners for taking material from alternative borrow pits proposed by the Contractor shall be the Contractor's responsibility and entirely at his own expenses."

**B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS**

**(c) Excess overburden**

Add the following:

"All excess overburden removed at borrow pits shall be replaced over the entire area of the borrow pit after initial shaping has been undertaken in an even layer. Payment for this requirement shall be deemed to be included in pay item 31.01

(f) Protecting borrow pits

Add the following:

"It is a requirement of the contract that each borrow pit or pits shall be provided with fencing around the perimeters, including a access gate, of the borrow areas, including the supply of danger warning signage fixed to the fencing, visible at all sides approaching the borrow pit area. The fencing shall be erected prior to entering the land for borrowing purposes and shall on final finishing of the borrow areas as specified by the employer, be dismantled and removed or left in-place as instructed by the employer. Payment for fencing around borrow pits shall be made in accordance with the stipulations of section 5500 in these specifications."

In addition to fencing, Security Guards shall be supply on a 24 hour, 7 days a week basis, with full time communication to the Site Manager or site camp for the duration of the contract and activities at the borrow pits."

Add the following new subclause:

(h) Haul roads

Haul roads to designated borrow pits along the road shall be constructed along alignments as instructed by the Engineer and shall be maintained at the Contractor's own cost to the satisfaction of the Engineer."

**B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS**

Add the following to this clause:

"Should the employer, Engineer or any other authority approved by the Engineer, require a higher standard of shaping and finishing off of borrow pits than specified in the standard specifications, measurement and payment for such extra work shall be made using daywork items as scheduled under this section."

**B3108 MEASUREMENT AND PAYMENT**

Change item 31.01 to read as follows:

"ITEM	UNIT
<b>B31.01 Excess overburden :</b>	
(a) Depth up to and including 0,5m	cubic meter (m <sup>3</sup> )
(b) Depth exceeding 0,5m and up to 1,0m	cubic meter (m <sup>3</sup> )

Measurement and payment shall be as specified for item 31.01 of the standard specifications with the abovementioned depth ranges applicable."

Add the following new item:

"ITEM	UNIT
<b>B31.04 Compensation to landowners:</b>	
(a) Prime cost sum for compensation to landowners	prime cost (PC) sum
(b) Handling cost and profit in respect of sub-item B31.04(a) above	percentage (%)

Measurement and payment shall be in accordance with the provisions of clause 48(2) of the general conditions of contract. Payment to the landowner shall be made within fourteen (14) days after such order has been given by the Engineer. The Contractor shall provide detailed proof of payment before payment shall be certified to the Contractor.

The tendered percentage is an extra over percentage on the amount actually spent under sub-item B31.04(a) which shall include full compensation for the handling costs and profit of the Contractor."

**3300. : MASS EARTHWORKS****B3305 TREATING THE ROADBED****(a) Removing unsuitable material**

Add the following to the third paragraph:

"For the purpose of this contract, excavation and removal of in-situ clayey material over areas where the road is in a fill condition, shall be classified as removal of unsuitable material, irrespective of the stability or moisture condition of the in-situ material".

**(c) Preparing and compacting the roadbed**

Delete the last sentence of the first paragraph "if necessary, roadbed.....depth of compaction" and replace as follows:

"Where demarcated by the Engineer, prior to the roadbed being scarified, the excess in situ material forming part of the present roadway, and within the limits of the roadbed, and in close proximity of the layer works, but falling within the limits of the layer works, shall be bladed to controlled level in order to achieve the required level and necessary depth of compaction."

**B3307 FILLS****(c) Constructing a pioneer layer**

Add the following to the first paragraph:

"For the purpose of this contract, pioneer layers shall be completed by means of eight-pass roller compaction using vibratory rollers as specified in subclause 3304(b) of the standard specifications."

**(d) Benching**

Add the following:

"Benching of fill and pavement layer material is required to be undertaken into the existing fill embankments and pavement layers. No additional payment shall be made over and above the normal pay items applicable to earthworks and pavement layers where benching is required for widening of the existing road formation. Benching shall be undertaken as shown on the drawings.

It is a requirement that benching shall always be started at the bottom of the existing fill progressing to the top of the formation. The dimensions and details of benching are shown on the drawings."

**B3308 FINISHING THE SLOPES****(d) General**

Add the following:

"Where existing cut and fill slopes are excessively eroded or where slippages occurred in slopes, the slopes are to be reinstated by means of backfilling with suitable gravel material. All loose material and vegetation shall first be removed from the eroded cut and fill slopes before backfilling may commence from the bottom of the cut or fill. The backfill material shall be benched into the existing slopes and compacted to 90% of modified AASHTO density, using suitable small compaction equipment e.g. Bomag walk-behind rollers or hand-held compaction tools. Benching shall be executed to the dimensions shown on the drawings. Upon completion of the backfilling operation the cut and fill slopes shall be neatly finished as specified."

**B3312 MEASUREMENT AND PAYMENT**

Add the following sub-item to item 33.10:

"ITEM	UNIT
B33.10 (e) Extra over sub-items 33.10(a), (b) and (d) for blading to controlled levels (existing road)	cubic metre (m <sup>3</sup> )

The unit of measurement in respect of the material bladed as specified in subclauses 33.05 (c) shall be the cubic metre of material bladed, measured in the original position before blading, in accordance with the method of average end areas.

The tendered rate shall include full compensation for blading of such material to level.

Only material bladed on the instruction of the Engineer for exposing the underlying roadbed material for treatment will be measured and paid for as described above."

**3400. : PAVEMENT LAYERS OF GRAVEL MATERIAL****B3402 MATERIALS****(a) General**

Add the following:

"Material requirements for gravel pavement layers are in accordance with TRH4 and shall be indicated on the drawings."

**B3405 CONSTRUCTION TOLERANCES****(e) Cross-section**

Delete the second paragraph and replace with the following:

"The normal crossfall of the road wearing course where the road is in a straight horizontal alignment, is specified as 3% as shown on the drawings.

At any cross-section the measured crossfall between any two points shall at least be 2,8% and not more than 3,5%. At any cross-section the actual level at any point shall not be higher than 10mm above the computed level from the cross-section as specified and the actual level, if lower than the computed level, shall not be lower by more than that derived from the specifications for longitudinal grade and crossfall deviations."

**(f) Surface regularity**

Add the following:

"Where transverse construction joints in base layers are made between newly and previously constructed sections, the Contractor shall exercise level control at such joints by installing level poles at 5m intervals on either side of the joint of the layer covering at least a 30m length into the newly constructed section."

**B3406 QUALITY OF MATERIALS AND WORKMANSHIP**

Add the following:

"Test results and measurements shall be assessed by the Engineer according to the provisions of Section 8300 of the standard specifications".



**5600. : ROAD SIGNS****B5601 SCOPE**

"This section also covers the supply and erection of permanent danger plates at culverts and bridges at the locations indicated on the drawings or as directed by the Engineer."

**B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS****(a) Road signboards**

Add the following:

"The Contractor shall make every effort to ensure that signboards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Engineer with a 100mm x 150mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

**(a) (ii) Steel profile road signboards**

Add the following:

"Where the letter or legends cross the horizontal joints of the sign panels, the letter shall be cut on the joint and both ends folded around the radius."

Retro-reflective material to adjoining Chromadek panels on a sign shall be practical visual match of the specified colour."

**B5604 ROAD SIGN FACES AND PAINTING**

Add the following new subclause:

**"(e) Application of retro-reflective material**

All sign faces shall be faced with diamond grade retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified for aluminium section in Clause 5603(d) of the Standard Specification, and of Clause B5603(a)(ii) of this, project Specification."

**B5605 STORAGE AND HANDLING**

Add the following:

"The following shall not be allowed on the sign face:

Drilling of holes, except for the fastening of overlays

Application of any form of adhesive

Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material

Covering the sign face with an impermeable material that does not allow free circulation of air."

**B5606 ERECTING ROAD SIGNS**

**(c) Erection**

Add the following:

"After erection the signboard shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material's manufacturer.

All vegetation obstructing the new or replaced sign board shall be removed and disposed of as instructed by the Engineer."

**B5608 DISMANTLING, STORING AND RE-ERECTING EXISTING ROAD SIGNS**

Add the following:

"Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

Dismantling shall include sign panels and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Pay items are provided in the Bill of Quantities. Payment will differentiate between different types of sign panels."

**B5609 MEASUREMENT AND PAYMENT****ITEM****UNIT**

B56.01 Road sign boards with painted or coloured semi-matt background. Symbols, lettering, and borders in diamond grade retro-reflective material, where the sign board is constructed from:

Amend the last two lines of the second paragraph to read:

"completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists' view of the new or replaced sign board."

Add the following pay items:

"ITEM	UNIT
<b>B56.10</b> <b>Danger plates at culverts/structures</b>	
(a)     Type A at stormwater culverts (size indicated)	number (No.)
(b)     Type B at bridges (size indicated)	number (No.)

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings.

The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings."

"ITEM	UNIT
<b>B56.11</b> <b>Replace marker boards on existing kilometre posts</b>	number (No)

The unit of measurement shall be the number of reference marker boards provided and attached to existing kilometre posts in accordance with the drawings.

The tendered rate shall include full compensation for the manufacturing and supplying of the completed marker boards, for attaching the marker board to existing posts along the route and for all materials equipment, labour, nuts and bolts necessary for attaching the marker board as specified."

The tendered rate shall include full compensation for all the labour and material, painting, retro-reflective material, posts, excavation, backfilling, etc. as may be necessary for completing the work in accordance with the details shown on the drawings."

**5700. : ROAD MARKINGS****B5706 SETTING OUT THE ROAD MARKINGS**

Add the following:

"Where road markings are to be replaced after milling/overlay seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement of milling or other operations which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Engineer before the Contractor commences with the road marking."

**B5707 APPLYING THE PAINT**

Add the following:

"The Contractor's establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be onsite or is required to move within the site."

**B5711 GENERAL**

Insert the following into the last sentence of the last paragraph between "black paint" and "or chemical paint remover":

", bituminous emulsion, slurry"

Add the following to the last paragraph:

"Where black paint is used, it shall be matt."

Add the following new clause:

**"B5715 REMOVAL OF EXISTING ROAD STUDS**

The existing road studs shall be removed from the road surface prior to milling."

**B5714 MEASUREMENT AND PAYMENT**

ITEM

UNIT

**B57.06 Setting out and pre-marking the lines (excluding traffic island markings, lettering and symbols)**

Add the following:

"Referencing of existing barrier lines and other road marking lines prior to milling and other operations, shall be included in the tendered rate for setting out and pre-marking."

ITEM

UNIT

B57.05 Roadstuds

Add the following after the first sentence of the second paragraph:

"No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period or the maintenance period."

**5900. : FINISHING THE ROAD AND ROAD RESERVE AND TREATING  
OLD ROADS****B5902 FINISHING THE ROAD AND ROAD RESERVE**

Add the following to the first paragraph:

"The Contractor shall pay special attention to the collection and removal of all waste materials originating from the construction activities. All materials trimmed or excavated from the road shall be collected and removed from the road reserve to the satisfaction of the Engineer.

This requirement shall be deemed to be incorporated in the tendered rates for item 59.01 of the bill of quantities or such other items as the Contractor may decide upon.

The Engineer may order additional finishing of the road reserve which will entail the collection and disposal of loose rocks etc. Payment for this work will be made under daywork items included in section 5900 of the bill of quantities as described in section 1800 of these project specifications."

#### 4. CONSTRUCTION OF WATER AND SEWER SERVICES

##### 4.1 Works Specifications

##### 4.1.1 Applicable SABS Standardised Specifications

The applicable standardised specifications for this Contract shall be the following:

SABS 1200	A	-	General
SABS 1200	C	-	Site Clearance
SABS 1200	D	-	Earthworks
SABS 1200	DB	-	Earthworks (Pipe Trenches)
SABS 1200	G	-	Concrete
SABS 1200	HA	-	Structural Steelwork
SABS 1200	L	-	Medium Pressure Pipeline
SABS 1200	LB	-	Bedding

The following variations to standardised specifications and additional clauses are applicable to this Contract and are contained in the "Annexure to the Scope of Work".

PSA	General
PSAB	General - Engineer's Office
PSC	Site Clearance
PSDB	Earthworks (Pipe Trenches)
PSG	Concrete
PSHA	Structural Steelwork (Small Works)
PSL	Medium Pressure Pipelines
PSLB	Bedding (Pipes)

##### Particular Specifications

The following Particular Specifications are applicable to this Contract and are contained in the "Annexure to the Scope of Work".

PA	Trimming of Site
PB	Building Work
POHAS	Occupational Health and Safety

##### 4.2 Plant and Materials

All materials used in the Works shall, where such mark has been awarded for a specific type of material, bear the SABS mark.

##### 4.3 Construction Equipment

The Contractor's equipment for construction shall be adequate for the purpose required, of modern design and in good condition to carry out the works expeditiously. Should the Engineer be of the opinion that the equipment in use is in any way unsuitable for carrying out the works in a manner or at a rate commensurate with the

requirements of the contract, he shall have the right to call on the Contractor at any time during the progress of the works to provide such additional or improved equipment as may be necessary to meet these requirements.

The Employer makes no provision in this contract for financial assistance to the Contractor for the acquisition of plant, machinery and equipment.

#### 4.4 Existing Services

##### 4.4.1 Care of Existing Services

It is to be noted that construction work will be done adjacent to or traversing existing services. Prior to commencement of any constructional work in the aforesaid affected area, the Contractor shall satisfy the Engineer that all necessary precautions with respect to setting out procedures have been taken by the Contractor to evade the existing services.

The Contractor shall, before starting any excavations, carefully search and probe the terrain for any existing services or indications of the presence of such services. A payment item is included in the Schedule of Quantities for excavations, by hand to locate known and unknown services. If other methods are to be used, the cost thereof is to be included in the Preliminary and General payment items.

In addition if the proposed new service(s) crosses underneath overhead power lines belonging to Eskom as well as underground pipelines and communication cables belonging to Telkom, the Contractor shall have to comply with all the requirements laid down by the relevant authorities when working in the vicinity thereof. The Contractor shall be responsible for checking the locations of all such services with representative of the relevant authorities to ensure that no damage is caused by construction operations.

Work executed within the road reserve of provincial or local roads shall be carried out strictly in accordance with the requirements laid down by the relevant provincial or local authorities. These include the use of traffic signs, flagmen and other requirements as applicable.

As the above work entails working in or close to an already developed enclosure, special care must be taken so as not to disturb the functioning of the existing facilities.

##### 4.4.2 Connection to Existing Services

Prior to connection of new services to existing services, the Contractor shall ensure that the constructed services are clean and free of foreign matter and shall subsequently request the Engineer, in writing, to inspect such Works. Only upon written approval of the Engineer, may connections to existing services be made.



#### 4.4.3 Contractor to Notify Relevant Authority and the Engineer of Damaged Service

In the event of any service being damaged or accidentally disconnected for any reason, the Contractor shall immediately contact the relevant authority for instructions and shall report the occurrence to the Engineer in writing. The report shall include the reasons for the occurrence of the incident. When instructed the damage is to be repaired as soon as possible to the approval of the Engineer and Authority. The Contractor will be held responsible for paying all costs incurred by the Service owner or himself as result of each incident where the relevant service was clearly identified beforehand.

#### 4.5 Site Establishment

##### 4.5.1 Services and Facilities provided by the Employer.

###### a) **Water**

The Contractor must make their own arrangements in consultation with the local authority with regards to the supply of water for own use and for construction.

###### b) **Electricity / power supply**

Power supply is available on site.

The Contractor shall be responsible for making his own arrangements to connect to the water, electric power, and other services that he may require for construction purposes.

The costs of making such arrangements, for meeting the conditions imposed and for the metered consumption shall be paid by the Contractor, and his tender will be held to include for all such requirements throughout the duration of the Contract. All water including that used for testing will be charged for at the prevailing tariffs.

##### 4.5.2 Facilities Provided by the Contractor

The Contractor will be required to make his own arrangements for the provision of a suitable construction camp, offices and workshops. He shall be responsible for all negotiations with the relevant authorities and he shall comply with all requirements, imposed by those authorities. Suitable sites available will be pointed out during the site inspection.

Should the Contractor require additional storage sites outside of the designated areas he will be responsible for making his own arrangements at his own cost for such offices.

The facility shall be properly fenced around the perimeter. Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition. The costs associated with the provision of these items shall be borne by the Contractor. The Contractor will be required to remove all facilities and restore the site to its original condition on completion of the Works.

#### 4.5.3 Other Facilities and Services

##### a) Latrine and Ablution Facilities

It will be required of the Contractor to provide temporary toilets and ablution facilities for his staff for the currency of the contract, to the standards laid down by the Authorities.

##### b) Housing of Contractor's Staff

The Contractor shall make his own arrangements for the housing of his supervisory staff.

##### c) Security

The Contractor will be responsible for providing adequate security for the Works and for the site establishment. All costs associated with the provision of watchmen shall be borne by the Contractor.

#### 4.5.4 Name Boards

The Contractor shall provide for the installation of one name board. The size design and contents shall be as indicated on the detail drawing.

#### 4.6 Site Usage

The Employer expects the Contractor, his staff or agents to maintain good public relations with landowners, other Contractors and members of the public at all time.

Access to the site will be arranged by the Employer with the Contractor. The Contractor shall submit a list of all his staff to the Employer for the purpose of access control.

#### 4.7 Permits and Way Leaves

No way leaves are required on the project.

#### 4.8 Alterations, Additions, Extensions and Modifications to Existing Works

The Contractor shall verify all levels, alignment and dimensions of existing structures or components thereof prior to the commencement of any work to determine the compatibility with the proposed works. The Contractor shall notify the Employer's Agent of any discrepancies.

#### 4.9 Water for Construction Purposes

The Contractor shall make provision for procuring, transporting and storing of water for construction purposes at his own cost.

#### 4.10 Survey Control and Setting Out of the Works

##### 4.10.1 Survey Control

###### (a) Geometric Control

The Benchmark Control and topographical survey for the Works has been established. The Contractor is to check the Benchmarks and existing levels prior to construction and bring any discrepancies to the attention of the Engineer.

###### (b) Preservation and Replacement of Beacons and Pegs

The Contractor shall protect and preserve all survey marks. Any survey marks disturbed or removed without prior written consent of the Engineer, shall be replaced by a Registered Land Surveyor at the expense of the Contractor.

Any errors in construction levels or positions resulting from use of disturbed benchmarks shall be made good by the Contractor at his expense.

##### 4.10.2 Setting out of the Works.

###### a) Setting out

The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract Data or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

###### b) Construction Tolerance Control

The Contractor will be required to issue to the Engineer in writing certification of construction accuracy at each of the following construction phases, before continuing with the next phase of construction:

- i) Setting out of Works.
- ii) Centre-line positions and levels to top of concrete floors, footings/bases.
- iii) Centre lines of pipelines and invert levels.

The Contractor shall only continue with the next phase of construction when directed by the Engineer in writing.

Should any item or section of the Works be constructed outside the limits of tolerance specified, instruction for remedial, or other measures will be issued by the Engineer. The Contractor will not be permitted to continue with the next phase of construction until remedial work has been completed to the satisfaction of the Engineer.

No claim for loss in material, production or time resulting from the Contractor's work being constructed outside the limits of tolerance specified, will be entertained.

## 5. MANAGEMENT

### 5.1 Management of the Works

#### 5.1.1 Planning and Programming

The Contractor shall supply within the period stated in the Contract Data a suitable and realistic construction programme, cash flow diagram, and critical path diagram for the consideration of the Engineer. This programme shall show the proposed scheduling and methods of execution of the Works and the resources to be allocated to each item or phase of the work. Quantities proposed for execution during each week and the anticipated cash-flow based upon these quantities should be shown, due allowance being made for price escalations and retention moneys.

The programme shall make provision for the accommodation of other Contractor's requirements. It will be required from the Contractor to liaise with other Contractors to ensure continuous co-ordination and execution of the scheduled work.

## 6. ANNEXURES

Standard Forms to be used during currency of Contract:

Requisition for Final Checking of Work; Requisition for Checking of Earthworks

Requisition for Checking Prior to Concrete Pour; Test Certificate for Water

SPECIFICATIONSCONTENTS

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**PSA GENERAL**

This portion contains essential clauses and data and additional clauses required to augment the standardised specifications to suit the nature of this Contract.

**PSA1 SPECIFICATION DRAWINGS (Clause 2.7)**

Specification Drawings are included in this document as Annexures to the Project and Particular Specifications. Where such Specification Drawings depict items and standard structures according to lay-outs and details differing from those shown in the Standardized Specifications, the lay-outs and details shown in the Annexures to the Project and Particular Specifications shall prevail.

**PSA2 QUALITY (Clause 3.1)**

All material used in the Works shall, where such mark has been awarded for a specific type of material, bear the SABS mark.

**PSA3 PREVENTION OF DUST AND NOISE NUISANCE (Clause 5.6)**

The Contractor is particularly required to take all necessary precautions, including watering where appropriate, to prevent dust blowing from construction material and spoil heaps and/or ground stripped of vegetation cover. The Contractor shall take necessary steps to limit noise during school activities.

**PSA4 TOLERANCES**

**PSA4.1 Methods of Specifying (Clause 6.1)**

- Tolerances for final earthwork levels : 25 mm ±
- Tolerances for final earthwork reference
- Positions (X & Y Plane as per the L.O. system) : 25 mm ±

**PSA4.2 Degrees of Accuracy (Clause 6.2)**

The Degree of Accuracy of II shall generally apply to this contract, with the following exceptions:

Elements or components above foundations ..... I

**PSA5 TESTING (Clause 7)**

**PSA5.1** All test results obtained by the Contractor in the course of his process control of the Works shall be submitted to the Engineer or his Representative prior to requesting inspection of the relevant portions of the Works. Any request for inspection shall be submitted on the prescribed forms appended as annexures to these Specifications.

PSA5.2 The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Engineer to order suspension of the works without additional remuneration in terms of Clause 39 of the Conditions of Contract or for him to recommend termination to the Employer in terms of Clause 55 thereof.

**PSA6 PAYMENT (Clause 8.2)**

Monthly progress payment certificates shall be submitted to the Engineer's Representative on site on the last working day of the calendar month in which the work was done to allow for reconciliation of all quantities, rates, extensions and additions in the certificate. Upon approval by the Engineer's Representative, the certificate shall be submitted in typed form to the Engineer before or on the 7th day of each month following the month of measurement, together with the required number of copies, for certification. It will be assumed that the Contractor has made adequate provision in the prices tendered for manufacture/supply, delivery, assembly, installation and commissioning of all necessary aids required to execute the contract. The certificates shall be according to the standard format included in the annexures to these specifications. Special attention shall be given to the requirements set out in Special Condition of Contract 49(1).

Where day works have been instructed by the Engineer, the Contractor shall submit the returns to the Engineer for signature and approval within twenty-four (24) hours of the end of the working day on which the work was executed. Day work returns shall be submitted on forms included in the annexures to the Specifications.

**PSA7 SUMS STATED PROVISIONALLY (Clause 8.5)**

PSA7.1 A provisional amount has been included in Bill 1 for materials to be used during the execution of day works.

In addition to the abovementioned amount, provision is made for a mark-up on the materials to be used during the execution of day works. Payment made shall be regarded as full compensation for overheads, charges and profit on the materials to be used when executing day works.

PSA7.2 A Provisional Sum has been included in Bill 1 for contingencies. No percentage mark up will be applicable to any payments made in this regard other than those included in prices for variation determined in terms of Clause 36 of the Conditions of Contract.

PSA8 INSTRUCTIONS BY THE ENGINEER

Site instructions by the Engineer, addressed to the Contractor at his office on the site, will be numbered consecutively and will be deemed to have been received by the Contractor's Representative unless a break in the sequence of numbers is brought to the notice of the Engineer in writing immediately.

PSA9 SITE RECORD BOOK/DIARY

An approved quality A4-size, triplicate copy, Site Record Book/Diary shall be kept in the Contractor's site office and be accessible to the Engineer at all times.

A summary of each working day's events shall be recorded in this book, including inter alia, plant and machinery, movement of materials, construction work completed or undertaken (e.g., volume of concrete cast, mass of reinforcement fixed, length of cabling erected, etc.)

Daily entries shall be initialled both by the Resident Engineer / Engineer / Engineer's Representative at the close of the day's activities, or immediately prior to the start of construction activity on the following working day.

Compliance with these requirements is deemed to be included in the Contractor's tendered rates.

PSA10 CONSTRUCTION

PSA10.1 Survey

PSA10.1.1 Setting out of the works

The Benchmark Control and topographical survey for the works has been established. The Contractor is to check the Benchmarks and existing levels by staking prior to construction and bring any discrepancies to the attention of the Engineer.

PSA10.1.2 Preservation and Replacement of Beacons and Pegs

The Contractor shall protect and preserve all survey marks. Any survey marks disturbed or removed without prior written consent of the Engineer, shall be replaced by a Registered Land Surveyor at the expense of the Contractor.



PSA10.1.3 Setting-out and Construction Tolerance Control

The Contractor will be required to issue to the Engineer in writing certification of construction accuracy at each of the following construction phases, before continuing with the next phase of construction:

1. Setting out of Works
2. Trench excavation
3. Reservoir positions

The Contractor shall only continue with the next phase of construction when directed by the Engineer in writing.

Should any item or section of the Works be constructed outside the limits of tolerance specified, instruction for remedial, or other measures will be issued by the Engineer. The Contractor will not be permitted to continue with the next phase of construction until remedial work has been completed to the satisfaction of the Engineer.

No claim for loss in material, production or time resulting from the Contractor's work being constructed outside the limits of tolerance specified, will be entertained.

PSA10.2 Quality Assurance

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The Engineer shall be entitled to audit any aspect of the system.

Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design (if specified) and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.

The Contractor shall:

1. supply a Quality Plan and Quality Programme at the time of tendering, both of which are subject to acceptance by the Engineer,
2. maintain Quality Control records in accordance with the Quality Plan during execution of the contract. Such records shall be available to the Engineer or his representative at each Quality Surveillance visit,
3. mark or securely label each component with a unique identification and
4. carry out such tests as are required to ensure compliance with the Specification

**PSC SITE CLEARANCE**

**PSC1 SCOPE (Clause 1.1)**

The scope of the work shall also include:

- a) Clear and grub the area of the works. Include for material, rubble and debris, temporary stockpiling (if necessary) and dispose of neatly on site as directed by the Engineer.
- b) Remove and grub all trees and tree stumps regardless of girth. (No tree shall be removed without the express approval of the Engineer).
- c) A 3.0 m clearance has been allowed around the effective centre line outer limits of the pipeline. Should the Contractor require more space due allowance shall be made in his rate for this item.

**PSC2 DISPOSAL OF MATERIAL (Clause 3.1)**

All rubble, debris and waste material shall be disposed of neatly on site as directed by the Engineer.

**PSC3 PRESERVATION OF TREES (Clause 5.2.3)**

No trees shall be cut down without the express approval of the Engineer.

**PSC4 CONSERVATION OF TOPSOIL (Clause 5.6)**

Topsoil shall be preserved and restored over the backfill.

**PSC5 LANDSCAPE PRESERVATION AND CONSERVATION OF FLORA (Clause 5.7)**

All flora outside the designated 3.0 m clearance line defined under the preceding Clause PSC1 shall be preserved.

Any damage of whatever nature shall be made good to the Engineer's instructions and at the Contractor's own expense.

The cost of preservation shall be deemed included in the Tenderer's rates.

**PSC6 MEASUREMENT & PAYMENT**

**PSC6.1 Transport and Disposal of Materials and Debris on Site**

The rate shall cover all cost for temporary stockpiling on site (if necessary); and disposing of neatly on site to the Engineer's site instructions.

PSDB EARTHWORKS (Pipe Trenches)

PSDB1 COMPACTION IN AREAS SUBJECT TO TRAFFIC LOADS (Sub clause 5.7.2)

All road crossings and those areas designated by the Engineer as being areas subject to traffic loads shall be compacted in accordance with SABS 1200DB clause 5.7.2, that is, trenches are to be backfilled in layers of compacted thickness not exceeding 150mm and shall be compacted to 93% of MOD AASHTO density in the case of no-cohesive soils.

PSDB2 REINSTATEMENT OF GRAVEL SURFACING OF ROADS

Where roads with a gravel surface is to be crossed, the gravel excavated on a road crossing is to be stored separately and re-used during the reinstatement of the road crossing as per SABS 1200DB clause 3.6.2. Where there is some loss of material during excavation the Engineer will indicate material, from the pipe trench excavations and within 0,5km that can be used to supplement the lost material.

PSDB3 DEPTH OF TRENCHES EXCAVATIONS

Unless otherwise specified, all water supply pipes shall be laid with a cover of 900mm and the trench depth shall be such to provide this cover.

PSDB4 BACKFILL

PSDB4.1 Approval

Following the inspection by the Engineer with respect to the grade, direction and line as well the successful testing of the pipeline the Contractor shall promptly refill trenches and excavations.

PSDB4.2 Material and Method

Material used for backfilling shall be either selected granular material, selected backfill material or main fill as specified in SABS 1200 LB: Bedding (Pipes) with the backfill profile as described for the specific type of bedding.

The pipe must be supported underneath and on the side by placing prisms of the bedding material underneath the pipe. The backfill material shall then be punned around the pipe until a cover above the pipe of at least 100mm is reached. Only then may backfill with the selected material commence.

The selected material shall be brought up in 150mm layers, uniformly moistened to the optimum moisture content to attain the specified compaction. After reaching a cover of 300mm above the pipe, filling with the main fill may commence.

The degree of compaction shall in all cases be at least 90% of the modified AASHTO density.

**PSDB4.3**      **Finishing off**

The backfill shall be mounded to a height of 100mm above ground level with gaps allowed at regular intervals for cross drainage. Sufficient topsoil shall be set-aside during excavation so that it may be reinstated to form not less than the upper 150mm layer of the backfill material. Any surplus material shall then be levelled off adjacent to the pipeline.

**PSDB5**      **LIMIT ON OPEN TRENCHES**

The maximum length of any individual trench which may be left open before the pipeline is laid is 500m.

The maximum length of time that a trench may be left open before it is backfilled, leaving all joints open for testing purposes is 4 days.

Non-compliance with this requirement is cause for an instruction for all work on the project to be stopped until this requirement is complied with.

**PSG**      **CONCRETE (Structural)**

**PSG1**      **MATERIALS**

**PSG1.1**      **CEMENT (Clause 3.2.1)**

All Cement to be used shall conform to SABS EN 197-1. Only CEM I 42,5 cement shall be used in construction of the Works.

**PSG1.2**      **STORAGE OF CEMENT (Clause 3.2.3)**

A first-in-first out circulation shall be followed to ensure that no cement shall be older than two (2) months from the date of manufacture.

**PSG1.3**      **AGGREGATES (Clause 3.4.1)**

The maximum size of the coarse aggregate shall be 20 mm unless otherwise indicated on the drawings.

**PSG2 PLANT**

**PSG 2.1 FORMWORK**

**PSG2.1.1 Finish (Clause 4.5.2)**

All concrete, save for water retaining structures against which earth will be backfilled, shall be finished rough.

All exposed concrete surfaces shall be finished smooth to Degree of Accuracy I, (Subclause 6.2.3), unless otherwise indicated on the drawings.

**PSG2.1.2 Ties (Clause 4.5.3)**

No system leaving holes through the walls will be permitted. Ferrules shall be of the permanent sacrificial type.

Sacrificial holes formed in reinforced concrete walls during the fixing of formwork shall be repaired with 1:3 cement-sand mortar. All grouting material shall be thoroughly punned in.

**PSG2.1.3 Chamfers (New Clause 4.5.4)**

All rectangular edges or corners shall be chamfered off to 20 mm x 20 mm unless otherwise indicated on the drawings.

The scheduled prices for formwork shall include for forming of chamfers.

**PSG3 CONSTRUCTION**

**PSG3.1 REINFORCEMENT**

**PSG3.1.1 Fixing Tolerances (Clause 5.1.2)**

Reinforcement shall be positioned as shown on the drawings (read together with the bending schedules) and maintained in those positions within the tolerances given in Clause 6.2 to degree of accuracy I, unless otherwise indicated on the drawings.

**PSG3.2 FORMWORK**

**PSG3.2.1 Classification of Special Finishes (Clause 5.2.1)**

**PSG3.2.1.1 Rubbed surface finish**

Where a rubbed surface finish is specified or scheduled the surface shall first be treated as a smooth finish as specified in SABS 1200 G subclause 5.2.1(b).

After sufficient time has elapsed to allow the mortar to set, the surface shall be saturated by water. Rubbing shall then be carried out with a medium coarse carborundum stone and a small amount of mortar until all form marks, projections and irregularities are removed and a uniform surface obtained.

Leaving the paste produced by the rubbing in place, rubbing shall be continued with a fine carborundum stone and water. Rubbing shall be continued until the entire surface is of a smooth even texture and uniform colour. After the final rubbing the surface shall be washed down to remove surplus paste and powder.

### PSG3.3 HOLES, CHASES AND FIXING BLOCKS (Clause 5.3)

Substitute the contents of the clause with:

#### a) General

Holes, recesses and boxed-out openings shall be allowed in concrete structures, as specified, for the subsequent installation of mechanical equipment and/or pipework.

#### b) Preparation of openings for the installation of equipment

Before commencing the positioning in holes of any pipes/specials the Contractor shall:

- i) Remove all shuttering and boxing remaining in the holes;
- ii) Make any alterations required to the position and shape of the holes;
- iii) Thoroughly clean the sides of the holes so as to obtain a satisfactory bond surface for the new concrete; and
- iv) Free all surfaces of the pipes/specials of all coatings, and thoroughly scrape and clean the pipes/specials.
- v) Apply a wet-to-dry concrete adhesive (two component, solvent free, polysulphide modified epoxy compound) immediately before grouting.

#### c) Grouting of voids

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. Where a watertight seal is required, the concrete shall constitute a non-ferrous, non shrink grout. The grout shall be worked around the puddle flange, if any, and the pipe barrel or body of the special, and shall be vibrated in layers so as to obviate any falling away from pipe/special surface of the concrete already placed. The whole shall, when set, form a dense, homogeneous, and waterproof mass. A spare vibrator with an independent power source shall be kept in readiness to ensure continuity of placing in the event of the breakdown of the duty vibrator.

Smooth formwork that has been suitably strengthened for use with a vibrator shall be provided for facing the concrete around each pipe/special.

PSG3.4 PIPES AND CONDUITS EMBEDDED IN CONCRETE (Clause 5.4)

Except with the written approval of the Engineer, no pipes other than those shown on the drawings shall be embedded in concrete, and the approval of the Engineer for the position of all services to be embedded shall be obtained before concreting commences. The clear space between pipes of any kind embedded in reinforced concrete and the clear space between such pipes and reinforcement shall not at any point be less than:

- i) 40 mm; or
- ii) 5 mm plus the maximum size of coarse aggregate,

Whichever is the greater?

PSG3.5 CONCRETE

PSG3.5.1 QUALITY

PSG3.5.1.1 No-fines Concrete (New Clause 5.5.1.8)

a) Scope

This section covers the manufacture and placing of no-fines concrete used in the Works.

b) Materials

Cement, aggregate and water shall comply with the requirements of Clause 3 of SABS 1200G, read together with sub-clause PSG1.1 herein.

c) Classes of No-Fines Concrete

No-fines concrete shall be classified by the prefix NF and the size of aggregate to be used. Class NF 19 means a no-fines concrete with a 19 mm nominal size aggregate.

The volume of aggregate per 50 kg of cement for each class of concrete shall be as follows:

Class	Aggregate per 50 kg cement
NF 38	0,33m <sup>3</sup>
NF 19	0,30m <sup>3</sup>
NF 13	0,27m <sup>3</sup>

d) Batching and Mixing

Cement shall be measured by mass or full pockets of 50 kg each and aggregate shall be measured by volume in approved measuring boxes or barrows.

The quantity of water added shall be just sufficient to form a smooth grout which will adhere to and coat completely each and every particle of aggregate, and which is just wet enough to ensure that at periods of contact of aggregate the grout will run together to form a small fillet to bond the aggregate together. The mix shall contain no more than 20 litres of water per 50 kg of cement.

Mixing shall be carried out in an approved batch type mechanical mixer, but small quantities may be hand mixed.

e) Placing

No-fines concrete shall be placed in accordance with the procedure agreed to by the Engineer. It shall be placed in its final position within 30 minutes of mixing.

The concrete shall be worked sufficiently to ensure that it completely fills the space to be concreted and that adjacent aggregate particles are in contact with one another. Excessive tamping or ramming shall be avoided and under no circumstances shall the concrete be vibrated.

f) Curing

All no-fines concrete shall be protected from the elements and loss of moisture. Protection against loss of moisture shall be accomplished by one or more of the following:

- a) Retaining formwork in place.
- b) Covering exposed surfaces with sacking or other approved material kept continuously wet.
- c) Covering exposed surfaces with plastic sheeting.

No-fines concrete shall be cured for at least 7 days.

g) Covering of No-Fines Layer

In the event that no-fines concrete is to be covered by concrete, the undermentioned procedures shall be followed:



Before second stage concrete is cast on the no-fines, the surface shall be covered with building paper to prevent mortar from the wet concrete entering the no-fines layer. The building paper shall be properly protected against unnecessary damage before the concrete is cast.

h) Permeability of the No-fines Layer

After the no-fines concrete has been cured, the layer shall be tested for permeability by the continuous sprinkling of water over the entire area with approved sprinklers. The layer shall be considered acceptable if no water is ponding on the surface and if the water is running freely into the drainage system.

PSG3.5.2 **COMPACTION (Clause 5.5.6.3)**

Delete the words:

"or (if approved) by spading, rodding or forking".

PSG3.5.3 **CONCRETE SURFACE FINISH (Clause 5.5.10.2)**

Delete the words:

"Degree of Accuracy II" and substitute with: "Degree of Accuracy I unless otherwise indicated on the drawings".

PSG3.5.4 **WATERTIGHT CONCRETE (Clause 5.5.11)**

Add to Clause 5.5.11 the following:

a) Definition (Clause 2.3)

For purposes of this Contract, all reservoirs, chambers and manholes will be regarded as water retaining structures.

b) Construction joints

i) General

Construction joints in the reinforced concrete walls shall consist only of horizontal joints. If under abnormal conditions a vertical construction joint is unavoidable it may only be constructed with the approval of the Engineer.

Construction joints shall only be placed at intervals shown on the drawings or as directed by the Engineer. The exact position of construction joints shall be marked on the formwork in order to obtain truly horizontal joints.

A sealant using an approved PVC water stop (waterbar) shall be placed, as specified, at all construction joints.

ii) **Preparation of Surface**

Prior to placing any further concrete, the joint must be clean, damp and free of laitance. During the period when the concrete has set but is still green all loose material shall be removed, without disturbing the aggregates, by light brushing. Where this is not possible, or if the concrete has already set, the surface film shall be removed by mechanical means appropriate to the degree of hardness of concrete so as to expose the aggregate over the entire surface and leave a sound, irregular surface.

c) **Ferrule Cup Holes**

No system leaving holes passing through the walls will be permitted. Ferrules shall be of the permanent sacrificial type.

Holes formed in reinforced concrete walls during the fixing of formwork shall be repaired on the waterside face with an approved epoxy or non-shrink grout. On the dry face the holes left in the concrete shall be repaired with 1:3 cement-sand mortar. All grouting material shall be thoroughly punned in.

**PSG4 TOLERANCES**

**PSG4.1 PERMISSIBLE DEVIATIONS**

**PSG4.1.1 Specified PDs (Clause 6.2.3)**

The following permissible deviations for location of holding down bolts shall apply:

(a) the centre line of a holding-down bolt from its designated location in plan:

plus 1 mm, minus 1 mm

(b) the top of the bolt from its designated elevation:

plus 5 mm, minus 3 mm

**PSHA STRUCTURAL STEELWORK**

All Structural Steelwork on this Contract shall be carried out in accordance with SABS 1200H and 1200HC, save as may be amended or added to in this addendum to Variations to the Standardized Specifications.

- PSHA1 MATERIALS
- PSHA1.1 STRUCTURAL STEEL (Clause 3.1)
- Steel grade shall be 300 W
- PSHA1.2 TUBULAR STEEL
- Tubular steel shall comply with the relevant requirements of BS 4848, Hot-rolled Structural Steel Sections, Part 2 : Hollow Sections and BS 6363, Welded Cold-formed Steel Structural Hollow Sections.
- PSHA2 CONSTRUCTION (Clause 5)
- PSHA2.1 DRAWINGS AND SHOP DETAILS (Clause 5.1.3)
- The Engineer will provide shop details.
- PSHA3 FABRICATION (Clause 5.2)
- PSHA3.1 CUTTING (Clause 5.3)
- Manual flame cutting of steelwork will not be permitted by the Engineer.
- No oxy-acetylene or gas cutting will be permitted on site without the Engineer's approval.
- Manual flame cutting and oxy-acetylene or gas cutting on site shall be cause for rejection of relevant steel elements.
- Edges of machine flame-cut plates shall be dressed to remove notches and burrs.
- PSHA3.2 HOLES FOR FASTENERS (Clause 5.2.4)
- PSHA3.2.1 Sub-clause 5.2.4.3)
- Holes for holding-down bolts shall not be flame-cut.
- PSHA4 ASSEMBLY (Clause 5.3)
- PSHA4.1 WELDING (Sub-clause 5.3.4)
- Welding shall be done in accordance with the relevant recommendations of SABS 0162, BS5135 and AWS D1.1-81.
- Welding shall be minimum grade B welding.
- The qualification of welders shall be in accordance with the relevant clauses of the above standards, and specifically SABS 044 Part III and shall be Grade 1 welders. Grade 2 welders will be permitted only with the Engineers written approval.

The Contractor shall provide evidence, acceptable to the Engineer, that welding procedures and welders have been tested in accordance with the requirements of AWS D1.1-81.

No welding shall be permitted on site without the express approval of the Engineer, with the exception of those details shown on the drawings as Site Welded.

**PSHA4.2 MARKING (Sub-clause 5.3.8)**

Erection marking of steelwork shall not, under any circumstances be done by welding. The system of marking shall be to the Engineers approval.

**PSHA4.3 PROTECTIVE TREATMENT (Sub-clause 5.3.9)**

No painting on site shall be carried out in inclement weather, or when humidity or frost is liable to cause wet or damp conditions on the surfaces to be painted.

**PSHA4.3.1 WIRE BRUSHING**

Steelwork after fabrication shall be wire-brushed to remove all rust, mill-scale and any other deleterious elements.

Within 4 h after the completion of wire-brushing, one coat of red-oxide primer shall be applied to the relevant steelwork to provide a dry film of thickness between 25 and 30  $\mu\text{m}$ . The primer shall be applied by means of an agitated pressure pot spray or, in the case of small areas only, by brush.

After the erection of steelwork, all areas where the primer coat has been damaged shall be touched up as specified above.

**PSHA4.3.2 SAND BLASTING**

Steelwork after fabrication shall be subjected to abrasive blast cleaning to a finish equal to or better than Sa 2½ of SIS 05 59 00.

Steelwork Scheduled for Painting (unless otherwise specified on the drawings)

Within 4 hours after the completion of blast cleaning, steelwork scheduled or shown on the drawings to be painted shall receive one coat of a two-pack ethyl silicate inorganic zinc primer applied to the relevant steelwork to provide a dry film of thickness between 60 and 80  $\mu\text{m}$ . The primer shall be applied by means of an airless spray or, in the case of small areas only, by brush.

Steelwork Scheduled for Galvanizing (unless otherwise specified on the drawings)

Within 4 hours after the completion of blast cleaning, steelwork scheduled or shown on the drawings to be galvanized shall be galvanized in accordance with the requirements of SABS 763.

The thickness of the coat shall conform to the thickness specified in SABS 763 to the type of article. The repair to galvanizing damaged by welding or other means shall be carried out on site in accordance with the recommendations given in Appendix C of SABS 763. Member and assembled units that are too large to be dipped in the galvanizing bath may be zinc-sprayed, provided that they are cleaned as recommended in Appendix C of SABS 763 and provided that the coating gives protection to the steelwork at least equal to that afforded by the galvanizing specified above.

**PSHA4.4 SETTING-OUT (Clause 5.4)**

The setting out of all Holding-down bolts shall be accurately checked by the Contractor. Any discrepancies in excess of the permissible deviations of the positions of these bolts shall be reported immediately to the Engineer.

The Contractor shall not be permitted to make any relevant adjustments to the steelwork without the Engineers approval.

**PSHA5 ERECTION (Clause 5.5)**

**PSHA5.1 PROCEDURE (Clause 5.5.1)**

Fourteen days before commencing erection of steelwork on site, the Contractor shall submit to the Engineer, for his general scrutiny and information, full details of the erection procedure and methods of erection.

**PSHA5.2 GROUTING OF SUPPORTS (Clause 5.6)**

Grouting shall be carried out by the Contractor in accordance with Sub-clause 5.5.13 and 8.7 of SABS 1200G.

Non-shrink grouting shall be used throughout.

**PSHA5.3 PROTECTIVE TREATMENT (Sub-clause 5.3.9)**

After the erection of the steelwork, all areas where the primer coat has been damaged shall be touched up as specified in PSH 4.3.

Steelwork Scheduled for Wire Brushing (unless otherwise specified on the drawings)

Provided that the primer is fully cured, as proved by a coin hardness test, an intermediate coat of an approved high build epoxy shall then be applied to provide a dry film of thickness between 100 - 130  $\mu\text{m}$ . The paint shall be applied by means of an airless spray or a brush.

After erection one coat of an approved Polyurethane applied to provide a dry film of thickness of 35  $\mu\text{m}$ . The paint shall be applied by means of an airless spray or a brush.

The total dry film thickness of the paint, intermediate and primer coats shall be between 190 and 235  $\mu\text{m}$ .

Steelwork Scheduled for Sand Blasting (unless otherwise specified on the drawings)

Provided that the primer is fully cured, as proved by a coin hardness test, an intermediate coat of an approved high build epoxy shall then be applied to provide a dry film of thickness between 100 - 130  $\mu\text{m}$ . The paint shall be applied by means of an airless spray or a brush.

After erection one coat of an approved Polyurethane applied to provide a dry film of thickness of 35  $\mu\text{m}$ . The paint shall be applied by means of an airless spray or a brush.

The total dry film thickness of the paint, intermediate and primer coats shall be between 190 and 235  $\mu\text{m}$ .

**PSHA6 TESTING (Clause 7)****PSHA6.1 INSPECTION (Clause 7.2)**

The Engineer must be notified, at least 72 h beforehand of the completion of the fabricated steelwork at the Contractors workshops, to enable him to make an inspection if he so desires.

The fabricated steelwork, thus to be inspected shall be in its prepared specified state immediately before the application of shop painting or galvanizing.

Any steelwork delivered to site without the Engineers prior approval and found to be defective and not fabricated in accordance with the Specification, will be returned to the Contractors works, at his own cost for remedial work.

**PSHA6.2 TEST CERTIFICATES (Clause 7.1)**

The Contractor shall supply the Engineer with the following test certificates:

- a) Certificate, issued by the Contractor's Quality Assurance Division, confirming that all manufactured components were inspected and measured to conform with the requirements of the Drawings and Specifications, prior to delivery to site.
- b) Certificate, issued by an authorised representative of the SABS or alternative authority approved by the Engineer, confirming that all welding on structural steel components complies with the drawings and specification. This certification shall be completed prior to any application of corrosion protection.

Costs relating to the foregoing inspections and issuing of certificates shall be included in the rates for the relevant scheduled item of the Schedule of Quantities.

PSL MEDIUM PRESSURE PIPELINES

PSL1 MATERIALS

PSL1.1 GRADE OF STEEL (Clause 3.4)

All steel piping and fittings shall be electrically welded low carbon steel pipes in accordance with the requirements of SABS 719-1971 and BS 534-1966. Where non-standard specials have been detailed on the drawings, such dimensions shall be adhered to. All flanged pipes and fittings shall have flanges as specified, and shall be supplied complete with all packings, nuts, bolts and washers. Steel piping shall be made from Grade B steel. Viking Johnson couplings complete with all seals, bolts, nuts, etc. shall be used where detailed. Where new installations couple up with existing the Contractor shall ascertain what the flange drillings are of all existing fittings prior to any placement or order and shall confirm this information with the Engineer.

PSL1.2 PVC Pipes (Clause 3.7.1)

uPVC pipes and fittings shall be fitted with spigot and socket rubber ring joints and shall comply with the relevant requirements of SABS 966 Part 1 for all pipe sizes.

PSL1.3 HDPE Pipes (Clause 3.7.2)

Polyethylene pipes and fittings to comply with SANS ISO 4427 and the HDPE material used for the pipe manufacture to be PE80. Only pipes manufactured by a member of the South African Plastic Pipe Manufacturer's Association may be supplied.

PSL1.4 DUCTILE IRON PIPES (new sub-clause)

a) Materials standard

All ductile iron pipes shall be manufactured from iron in compliance with ISO 2531 standard, with spigot/socket push-fit joint.

The coefficient designating the thickness class shall be K8.

The mean iron wall thickness for the specified 350 DN Ductile Iron Pipe shall be 6,8 mm, with no upper tolerance limit and a lower tolerance limit of minus 1,65 mm.

The outside diameter of the pipes shall be identical, whatever the wall thickness class specified.

b) Quality Assurance

The model for quality assurance in production shall be ISO 9002.

c) Design Pressure

The design pressure is 20 Bar.

d) Allowable Test Pressure

The test pressure for field testing shall be 1,5 times the design pressure.



e) Pipe Cement Mortar Lining

The internal protection for the pipes shall be a blast furnace cement mortar lining, applied by a centrifugal process in the factory, to specification ISO 4179.

The mortar lining thickness shall be 5 mm nominal, with a lower limit tolerance of minus 2 mm.

f) Pipe External Coating

The external coating of ductile iron pipes shall be metallic zinc and bituminous paint, in conformity with ISO 8179-1. It shall consist of a minimum layer thickness of 200 g/m<sup>2</sup> sprayed metallic zinc, covered with a bituminous paint finish (acting as pore-sealer), applied to a minimum thickness of 100 microns.

PSL2 **PIPE COUPLINGS (Additional to clause 3.7)**

PSL2.1 PVC pipes shall be supplied with factory fitted "rubber ring type" couplings. PVC pipe fittings shall be PVC or Spheroidal Graphite (SG) Iron, aluminium fittings are not allowed.

PSL2.2 **Fittings for HDPE pipe**

Fittings shall be of the compression type where tightening of the unit causes the thrust ring to push against the gasket, causing it to deform evenly towards the centreline of the fitting to, exerting pressure against the inserted pipe.

All fittings with a threaded female off take will be fitted with a reinforcing ring.

All fittings shall be pressure-rating PN16.

Saddles will be supplied with galvanized bolts and nuts.

The materials used in the manufacture of the fitting will comply with the following:

Body, nut and thrust ring	-	Virgin polypropylene, UV stabilized
Clamp ring	-	Acetylic resin (POM)
Gaskets	-	Food safe rubber with Shore hardness 70
Reinforcing rings	-	Stainless steel

The fittings shall hold Acceptance Certificates from recognised quality control bodies in South Africa (JASWIC 594) and at least from two other countries in the European Union.

**PSL3 VALVES (Clause 3.10)**

**PSL3.1 Gate Valves**

All gate valves to comply with SABS 664, waterworks application, be clockwise closing have a non-rising spindle and be plain thrust collared. Valves and flanges (if any) to be to the class specified.

Valves to be operated by either handwheel, cap top and tee-key or extended spindle and handwheel/tee-key. Operator to be specified.

Valves to be flanged or spigot ended as specified.

**PSL3.2 Threaded Full-way Gate Valves**

The valves shall be of the dezincified brass type with brass gate and body, non-rising spindle and BSP threaded socket ends. The valve shall conform to SABS 776/1965 Class 125. The valves shall be able to withstand a working pressure of 1 600kPa.

**PSL3.3 Air Valves**

The air vent valve shall be of the compact single chamber design with solid cylindrical HDPE control floats housed in a tubular stainless-steel body with epoxy powder coated mild steel ends or stainless-steel ends secured by means of stainless steel tie rods.

The valve shall have an integral anti-shock orifice mechanism which shall operate automatically to limit transient pressure rise or shock induced by closure to 1.5 times valve rated working pressure. The intake orifice area shall be equal to the nominal size of the valve i.e., a 150mm (6") valve shall have a 150mm (6") intake orifice.

Large orifice sealing shall be affected by the flat face of the control float seating against a nitrile rubber 'O' ring housed in a dovetail groove circumferentially surrounding the orifice.

Discharge of pressurised air shall be controlled by the seating and unseating of a small orifice nozzle on a natural rubber seal affixed into the control float. The nozzle shall have a flat seating land surrounding the orifice so that damage to the rubber seal is prevented.

The valve construction shall be proportioned with regard to material strength characteristics, so that deformation, leaking or damage of any kind does not occur by submission to twice the designed working pressure.

The valve design shall incorporate an over pressure safety feature that will fail without an explosive effect, such as is normally the case when highly compressed air is released suddenly. The feature shall consist of easily replaceable components such as gaskets, seals or the like.

Connection to the valve inlet shall be facilitated by a screwed BSP (ISO R7) or NPT male end (DN25 & DN50 only) or a flanged end conforming to PN10, 16, 25 or 40 ratings

of BS4504 or SABS 1123 Standards or ANSI B16.1 Class 125 and Class 250 and ANSI B16.5 Class 300 Standards.

Flanged ends for DN80 and DN100 valves shall be supplied with the requisite number of stainless-steel screwed studs inserted for alignment to the specified standard. Nuts and washers to be included.

A 1/4" BSP/NPT Test/Bleed Cock to be provided if specified.

**PSL3.4 Valve Spindles**

All extended valve spindles shall be supplied at both ends with cast iron tops for valve key operation. The spindle shall be fitted into the valve box with a bearing for easy operation.

The lengths of extended spindles are to suit the dimensions of their installation positions, all spindles supported at 4m max. intervals.

**PSL4 STEEL FLANGES (Clause 3.8.3)**

PSL4.1 All flanges to be drilled as specified.

**PSL5 CORROSION PROTECTION (Clause 3.9)**

**PSL5.1 General**

No separate payment will be made for work described in this sub-section.

Before painting or the application of anti-rust compounds all metal elements shall be cleaned of all rust, scale, grease and any substance deleterious to subsequent operations.

All steel surfaces shall then be treated in accordance with one of the following methods as specified.

**PSL5.2 Galvanising**

Where galvanising is specified it shall be carried out by the hot dip process to provide a minimum mass of zinc coating of 650 g/sq.m of surface area galvanised.

**PSL5.3 Epoxy Tar**

The epoxy tar to be used shall comply with the specifications of SABS 801 Type 2. It shall be applied in three coats, with either one or two coats being applied in the workshop. After installation any scratch or chip marks shall be touched up and the whole item covered with a further coat (or two coats) of epoxy tar to give a total final thickness of not less than 0,5mm.

**PSL5.4 Epoxy Enamel**

Epoxy enamel shall be 'Crown Cebestos; Copon EP 2300'. It shall be applied in the workshop by spraying to a final enamel thickness of not less than 0,30mm. After installation any chips or scratch marks shall be made good on site with brush applied epoxy enamel.

**PSL5.5 Painting**

All ungalvanised components of structural steelwork, fencing or any other components of steel or iron to be used in this contract for which no galvanising or other treatment has been specified, shall be painted in accordance with the following specifications.

- a) Apply one prime coat of Red Lead paint to SABS 312 Type II Grade II and one coat of Zinc chromate primer to SABS 679 Type I.
- b) Subsequently apply: Undercoat to SABS 681 Type I.
- c) Subsequently apply: Final gloss enamel coat SABS 630 Grade I. (Colour as specified).

**PSL5.6 Schedule of Corrosion Protection**

Steel pipework

- . 300 mm DN and smaller : Internal
- : External
- . Extra over on external surfaces of pipework above ground or pipe work inside building
- . Pipe straps
- . Valves

Galva-nising	Epoxy Tar	Epoxy Enamel	Painting
(x)		x	
(x)		x	
			x
			x
	x		

Notes:

(x) : Applicable to standard galvanized steel pipework and fittings (50 mm dia and smaller)

**PSL6 HANDLING AND RIGGING (Clause 4.1)****PSL6.1 Transportation**

Pipes and valves shall be protected during transportation and handling against damages caused by impact, dropping, etc. Special care shall be taken during transportation to protect pipes. Rubber lined vertical posts shall be spaced on the sides of transporting vehicles to provide adequate support to the loaded pipes. All pipes shall be inspected for defects immediately before laying and faulty pipes or pipes which have suffered damage which would affect their serviceability shall not be used in the Works.

**PSL6.2 Off-loading and storage**

Pipes which cannot be off-loaded by hand shall only be lifted by means of suitably approved broad band slings. The use of wire, chains, hooks, crowbars and similar items shall not be permitted, and the pipes, fittings and specials shall not be handled in such a manner as could cause damage to occur.

Pipes, fittings and specials shall at no time be laid, stacked or rolled directly into the ground but shall be supported on suitable padded cradles or other approved material near each end of the pipe, fittings or special. Particular care shall be taken where pipes with fitted couplings are handled or stacked to prevent any pressure on the couplings. Where loose AC-couplings are provided the couplings shall be stored flat on their sides and under no condition be rolled or stored in an upright position.

All PVC-pipework as well as the rubber sealing rings in pipe couplings shall be protected from the elements to prevent deterioration of the pipework.

No concessions will be made in the above regard and failure on the Contractor's part to comply shall be considered just cause for the Engineer to order such part of the works to be closed down.

When the pipes are to be stored on site it is essential that the storage be as level as possible and clearing of any objects which may cause damage to the pipes. When a load of pipes arrives, ensure that a representative of the manufacturer is present to supervise the off-loading.

**PSL6.3 Inspection on delivery**

The Engineer's Representative will thoroughly inspect all pipes, fittings and specials delivered to the site but his acceptance of same as being in good condition shall not relieve the Contractor of any of his obligations or responsibilities under this Contract.

Materials rejected by the Engineer shall be removed from the site and shall be replaced by other approved materials by the Contractor at his own expense.

**PSL7 SETTING OUT (Clause 4.2)**

Alignment of the pipes may be done either by means of infra-red sighting equipment or by sight rails. The following method should be followed if alignment is to be done by sight rails:

Prior to the preparation of the pipe bedding, the Contractor is to erect sight rails of 38mm x 150mm timber at intervals of a maximum of 60m or at points of change of pipe gradient, whichever may be the lesser. These shall be supported by wooden posts on each side firmly fixed on solid ground and the rails shall be accurately placed in position as regards alignment and invert level of the proposed trench. The centre line of the trench (i.e. pipeline) shall be denoted on each sight rail, both back and front by a single vertical line drawn thereon, and the rail on either side of the centre line painted in two contrasting colours. The Contractor shall also provide boning rods of an appropriate length marked in even decimetres for use in the fixing of the trench bottom to the correct line and level.

**PSL8 LAYING AND JOINTING**

**PSL8.1 Approval of trenches and bedding**

No pipe laying shall commence on any particular section until the Engineer has approved of the trenches and bedding. No pipes shall be laid in trenches with free standing water.

**PSL8.2 Positioning pipes and fittings**

The pipes shall be laid true to the lines, levels and grades shown on the drawings, or ordered by the Engineer, to within the specified tolerances.

**PSL8.3 Jointing**

All valves and fittings are to be checked beforehand to ensure their operational order prior to connection in the line.

The ends of laid pipes shall be suitably closed by means of approved caps, or as shown on the drawings, to prevent the ingress of soil or other matter. After the pipes have been laid, they shall be inspected and checked by the Engineer for grade, direction and line, to the specified tolerances.

**PSL9 LEGEND AND NODAL DESCRIPTIONS**

Descriptions of each pipeline node, giving details of the required fittings and the sequence of assembly, as well as legend explaining the codes used in the nodal descriptions will be supplied to the successful Tenderer.

**PSL10 TEST PRESSURE (Clause 7.3.1.2)**

The maximum working pressure head for the purposes of clause 7.3.1.2 shall be taken as the working pressure of the specified pipe or such working pressure indicated by the Engineer for the particular designed pipe reach.

- PSL11            MEASUREMENT AND PAYMENT
- PSL11.1        Principles
- a)      Measurement of the specials and valves shall be as per the appropriate items in SABS 1200L i.e. Items 8.2.2 and 8.2.3.
- b)      Measurement of the pipes shall be as per item 8.2.1 in SABS 1200 L.
- PSLB            BEDDING (Pipes)
- PSLB1           MATERIALS (Subclause 3)
- PSLB1.1        Selected Granular Material (Subclause 3.1)
- Selected granular material shall be regarded as a clean river sand or any other granular, non-cohesive material of an acceptable nature and a P.I. less than 6. Stones shall not be in excess of 20 mm. Selected granular material might occur in-situ, be imported or selected from trench excavation.
- PSLB1.2        Selected Fill Material (Subclause 3.2)
- Selected fill material shall be material that has a P.I. less than 10 and does not contain vegetation or stones exceeding 30 mm. Selected fill material might occur in-situ, be imported or selected from trench excavations.
- PSLB1.3        Ordinary Backfilling
- Ordinary backfilling will consist of material excavated and, if so approved by the Engineer, of material imported from other parts of the trench or borrowed from adjacent to the trench on the downhill side. All material above the selected fill blanket (drawing SABS LB-1) will be measured as ordinary backfill.
- PSLB2           BEDDING (Subclause 3.3)
- PSLB2.1        Rigid Pipes
- All steel and AC pipes for water supply will be regarded as being rigid and shall be bedded in a class C bed detailed on attached drawing 8100.91.1C, unless otherwise specified.
- PSLB2.2        Flexible pipes
- uPVC and polythene pipes will be regarded as being flexible and shall be bedded as detailed on attached drawing 8100.2006.1 OR 2.
- PSLB3           TOLERANCES
- PSLB3.1        Moisture Content and Density (Subclause 6.1)
- Degree of accuracy II shall prevail.

PARTICULAR SPECIFICATIONS

## PA TRIMMING OF SITE

## PA1 SCOPE

This work shall consist of the finishing of the entire site affected by the Contractor's operations before the issue of the Completion Certificate.

## PA2 REQUIREMENTS

After completion of the work covered by this Contract, the entire area affected by the Contractor's operations shall be finished off and cleared up and all loose rock shall be removed, if required, and disposed of as directed by the Engineer.

Under no circumstances shall the Contractor use machines for trimming.

All loose stones, roots or other waste matter exposed on fill or excavation slopes, which are liable to become loosened shall be removed and all debris and muck from clearing operations shall be disposed of and the area affected by the Contractor's operations and all camp sites left in a neat and presentable manner.

All falsework, temporary supports and structures, casting yards or platforms and equipment shall be removed from the site and from all ground occupied by the Contractor in connection with the work. All parts of the work and adjacent ground shall be left in a neat and presentable condition, all to the satisfaction of the Engineer.



**C3.4.3 PROJECT SPECIFICATIONS ; ADDITIONAL SPECIFICATIONS**

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- C3.4.3.1 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS
- C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN
- C3.4.3.3 PROVISION OF STRUCTURED TRAINING
- C3.4.3.4 PROVISION OF THE TEMPORARY WORKFORCE

### C3.4.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993 : HEALTH AND SAFETY SPECIFICATION

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ANNEXURE 1:	MEASURING INJURY EXPERIENCE
ANNEXURE 2:	EXECUTIVE SHE RISK MANAGEMENT REPORT
ANNEXURE 3:	LIST OF RISK ASSESSMENTS

#### Introduction

In terms of the Construction Regulation 4(1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, Department of Public works, as the Client, is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective tenderer.

The Client's further duties are as in C3.5.1.3.1.1. below and in the Construction Regulations, 2003.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the Department of Public works achieve an acceptable level of OH&S performance. This document forms an integral part of the Contract and Principal and other Contractors should make it part of any Contracts that they may have with Contractors and/or Suppliers.

Compliance with this document does not absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the health & safety of his employees and those of his Mandataries.

#### Scope

Development of a health & safety specification that addresses all aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that Principal Contractors and other Contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable.

## General Occupational Health & Safety Provisions

### (a) Hazard Identification & Risk Assessment (Construction Regulation 7)

#### (i) Risk Assessments

Annexure 3 contains a list of Risk Assessment headings that have been identified by Department of Public works as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is offered as an assistance to Contractors intending to tender.

Based on the Risk Assessments, the Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the OH&S aspects of the construction.

The Risk Assessments, together with the site-specific OH&S rules must be submitted to the Department of Public works before mobilisation on site commences.

Despite the Risk Assessments listed in Annexure 3, the Principal Contractor is required to conduct a baseline Risk Assessment and the aforesaid listed Risk Assessments must be incorporated into the base-line Risk Assessment. The baseline Risk Assessment must further include the Standard Working procedures (SWP) and the applicable Method Statements based on the Risk Assessments.

All out-of-scope work must be associated with a Risk Assessment.

#### (ii) Review of Risk Assessments

The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the Contract work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client, other Contractors and all other concerned-parties with copies of any changes, alterations or amendments as contemplated in above.

### (b) Legal Requirements

All Contractors entering into a Contract with the Department of Public works shall, as a minimum, comply with the

- Occupational Health & Safety Act and Regulations (Act 85 of 1993). A current, up-to-date copy of the OHS Act must be available on site at all times
- Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993). The principal Contractor will be required to submit a letter of Registration and "good-standing" from the Compensation Insurer before being awarded the Contract. A current, up-to-date copy of the COID Act must be available on site at all times.
- Where work is being carried out on mines' premises the Contractor will have to comply with the Mine Health & Safety Act and Regulations (Act. 29 of 1996) and any other OH&S requirements that the mine may specify. A current, up-to-date copy of the OHS Act must be available on site at all times.

## (c) Structure and Responsibilities

## (i) Overall Supervision and Responsibility for OH&amp;S

\* It is a requirement that the Principal Contractor, when he appoints Contractors (Sub-Contractors) in terms of Construction Regulations 5(3), (5), (9), (10) and (12) he includes an OHS Act Section 37(2) agreement: "Agreement with Mandatary" in his agreement with such Contractors.

\* Any OH&S Act (85/1993), Section 16(2) appointee/s as detailed in his/her/their respective appointment forms

## (ii) Further (Specific) Supervision Responsibilities for OH&amp;S

The Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations. Below is a list of identified appointments and may be used to select the appropriate appointments for the current contract:

	Ref. Section/Regulation in OHSAct
Batch Plant Supervisor	(Construction Regulation 6(1))
Construction Vehicles/Mobile Plant/Machinery Supervisor	(Construction Regulation 21)
Demolition Supervisor	(Construction Regulation 12)
Drivers/Operators of Construction Vehicles/Plant	(Construction Regulation 21)
Electrical Installation and Appliances Inspector	(Construction Regulation 22)
Emergency/Security/Fire Coordinator	(Construction Regulation 27)
Excavation Supervisor	(Construction Regulation 11)
Explosive Powered Tool Supervisor	(Construction Regulation 19)
Fall Protection Supervisor	(Construction Regulation 8)
First Aider	(General Safety Regulation 3)
Fire Equipment Inspector	(Construction Regulation 27)
Formwork & Support work Supervisor	(Construction Regulation 10)
Hazardous Chemical Substances Supervisor	(HCS Regulations)
Incident Investigator	(General Admin Regulation 29)
Ladder Inspector	(General Safety Regulation 13A)
Lifting Equipment Inspector	(Construction Regulation 20)
Materials Hoist Inspector	(Construction Regulation 17)
OH&S Committee	(OHS Act Section 19)
OH&S Officer	(Construction Regulation 6(6))
OH&S Representatives	(OHS Act Section 17)
Person Responsible for Machinery	(General Machinery Regulation 2)
Scaffolding Supervisor	(Construction Regulation 14)
Stacking & Storage Supervisor	(Construction Regulation 26)
Structures Supervisor	(Construction Regulation 9)
Suspended Platform Supervisor	(Construction Regulation 15)
Tunneling Supervisor	(Construction Regulation 13)

Vessels under Pressure Supervisor	(Vessels under Pressure Regulations)
Working on/next to Water Supervisor	(Construction Regulation 24)
Welding Supervisor	(General Safety Regulation 9)

The appointments must be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information must be communicated and agreed with the appointees.

Copies of appointments must be submitted to the Department of Public works together with concise CV's of the appointees. All appointments must be officially approved by Department of Public works. Any changes in appointees or appointments must be communicated to Department of Public works forthwith.

The Principal Contractor must, furthermore, provide Department of Public works with an organogram of all Contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

In addition, Department of Public works may require that a Traffic Safety Officer be appointed for any project.

(iii) Designation of OH&S Representatives (Section 18 of the OHS Act)

OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

(iv) Duties and Functions of the OH&S Representatives (Section 19 of the OHS Act)

The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor.

OH&S representatives must be included in accident/incident investigations.

OH&S representatives must attend all OH&S committee meetings.

(v) Appointment of OH&S Committee (Section 20 of the OHS Act)

The Principal Contractor must establish an OH&S Committee consisting of all the designated OH&S Representatives together with a number of management representatives that are not allowed to exceed the number of OH&S representatives on the committee and a representative of the Client who shall act as the chairman without a vote. The members of the OH&S committee must be appointed in writing.

The OH&S Committee must meet minimum monthly and consider, at least, the following Agenda:

1. Opening & Welcome
2. Present/Apologies/Absent
3. Minutes of previous Meeting

4. Matters Arising from the previous Minutes
5. OH&S Reps Reports
6. Incident Reports & Investigations
7. Incident/Injury Statistics
8. Other Matters
9. Endorsement of Registers and other statutory documents by a representative of the Principal Contractor
10. Close/Next Meeting

(d) Administrative Controls and the Occupational Health & Safety File

(i) The OH&S File (Construction Regulation 5 (7))

As required by Construction Regulation 5(7), the Principal Contractor and other Contractors will each keep an OH&S File on site containing the following documents as a minimum:

- \* Notification of Construction Work (Construction Regulation 3.)
- \* Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- \* Proof of Registration and good standing with a COID Insurer (Construction Regulation 4 (g))
- \* OH&S Programme agreed with the Client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5 (1))
- \* Copies of OH&S Committee and other relevant Minutes
- \* Designs/drawings (Construction Regulation 5 (8))
- \* A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 9)
- \* Appointment/Designation forms as per (a)(i) & (ii) above.
- \* Registers as follows:
  - \* Accident/Incident Register (Annexure 1 of the General Administrative Regulations)
  - \* OH&S Representatives Inspection Register
  - \* Asbestos Demolition & Stripping Register
  - \* Batch Plant Inspections
  - \* Construction Vehicles & Mobile Plant Inspections by Controller
  - \* Daily Inspection of Vehicles, Plant and other Equipment by the Operator/ Driver/User
  - \* Demolition Inspection Register
  - \* Designer's Inspection of Structures Record
  - \* Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools)
  - \* Excavations Inspection

- \* Explosive Powered Tool Inspection, Maintenance, Issue & Returns Register (incl. cartridges & nails)
- \* Fall Protection Inspection Register
- \* First Aid Box Contents
- \* Fire Equipment Inspection & Maintenance
- \* Formwork & Support work Inspections
- \* Hazardous Chemical Substances Record
- \* Ladder Inspections
- \* Lifting Equipment Register
- \* Materials Hoist Inspection Register
- \* Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.)
- \* Scaffolding Inspections
- \* Stacking & Storage Inspection
- \* Inspection of Structures
- \* Inspection of Suspended Platforms
- \* Inspection of Tunnelling Operations
- \* Inspection of Vessels under Pressure
- \* Welding Equipment Inspections
- \* Inspection of Work conducted on or Near Water
- \* All other applicable records

Department of Public works will conduct an audit on the OH&S file of the Principal Contractor from time-to-time.

(e) OH&S Goals & Objectives & Arrangements for Monitoring & Review of OH&S Performance

The Principal Contractor is required to maintain a CIFR of at least 8 (See Annexure 1. to this document: "Measuring Injury Experience) and report on this to Department of Public works on a monthly basis

(f) Notification of Construction Work (Construction Regulation 3.)

The Principal Contractor must, where the Contract meets the requirements laid down in Construction Regulation 3, within 5 working days, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure A in the Construction Regulations) for the purpose. A copy must be held on the OH&S File and a copy must be forwarded to Department of Public works for record keeping purposes.

## (g) Training, Awareness and Competence

The contents and syllabi of all training required by the Act and Regulations are to be included in the Principal Contractor's OH&S Plan.

## (i) General Induction Training

All members of Contractor's Site management as well as all the persons appointed as responsible for OH&S in terms of the Construction and other Regulations will be required to attend a general induction session by the Client

All employees of the Principal and other Contractors to be in possession of proof of General Induction training.

## (ii) Site Specific Induction Training

The Principal Contractor will be required to develop Contract work project specific induction training based on the Risk Assessments for the Contract work and train all employees and other Contractors and their employees in this.

All employees of the Principal and other Contractors to be in possession of proof of Site Specific OH&S Induction training at all times.

## (iii) Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training as follows:

OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- \* General Induction (Section 8 of the Act)
- \* Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- \* Site/Project Manager
- \* Construction Supervisor
- \* OH&S Representatives (Section 18 (3) of the Act)
- \* Training of the Appointees indicated above
- \* Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
- \* Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction regulation 27)
- \* Basic First Aid (General Safety Regulations 3)
- \* Storekeeping Methods & Safe Stacking (Construction Regulation 26)



\* Emergency, Security and Fire Co-ordinator

(iv) Awareness & Promotion

The Principal Contractor is required to have a promotion and awareness scheme in place to create an OH&S culture in employees. The following are some of the methods that may be used:

- Toolbox Talks
- OH&S Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as OH&S Safety circles.

(v) Competence

The Principal Contractor shall ensure that his and other Contractors personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences

The Principal Contractor shall ensure that follow-up and refresher training is conducted as the contract work progresses and the work situation changes.

Records of all training must be kept on the OH&S File for auditing purposes.

(h) Consultation, Communication and Liaison

- OH&S Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S committee as contemplated in above.

In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.

The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/ situations etc.

The Principal Contractor will be required to do Site Safety Walks with Department of Public works at least on a basis to be determined between the two parties.

The Principal and other Contractors will be required to conduct Toolbox Talks with their employees on a weekly basis and records of these must be kept on the OH&S File. Employees must acknowledge the receipt of Toolbox Talks which record must, likewise be kept on the OH&S File.

The Principal Contractors most senior manager on site will be required to attend all Department of Public works OH&S meetings and

a list of dates, times and venues will be provided to the Principal Contractor by Department of Public Works.

(i) Checking, Reporting and Corrective Actions

(i) Monthly Audit by Client (Construction Regulation 1(d))

Department of Public Works will be conducting a Monthly Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

(ii) Other Audits and Inspections by Department of Public Works:

Department of Public Works reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include Site Safety Walks.

(iii) Conducting an Audit

A representative of the Principal Contractor must accompany Department of Public Works on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

(iv) Contractor's Audits and Inspections

The Principal Contractor is to conduct his own monthly internal audits to verify compliance with, his own OH&S Management system as well as of with this specification.

(v) Inspections by OH&S Representative's and other Appointees

OH&S Representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

(vi) Recording and Review of Inspection Results

All the results of the abovementioned inspections to be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

(vii) Reporting of Inspection Results

The Principal Contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 2: "SHE Risk Management Report"

(j) Incident Reporting and Investigation

Reporting of Accidents and Incidents (Section 24 and General Administrative Regulation 8 of the OHS Act)

The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- \* dies
- \* becomes unconscious
- \* loses a limb or part of a limb
- \* is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- \* a major incident occurred
- \* the health or safety of any person was endangered
- \* where a dangerous substance was spilled
- \* the uncontrolled release of any substance under pressure took place
- \* machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- \* machinery ran out of control

to Department of Public Works within two days and to the Provincial Director of the Department of Labour within seven days (Section 24 of the Act & General Administrative Regulation 8.) EXCEPT that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both Department of Public Works and the Provincial Director of the Department of Labour forthwith by telephone, telefax or E-mail.

The Principal Contractor is required to provide Department of Public Works with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Principal Contractor is required to provide Department of Public Works with copies of all internal and external accident/incident investigation reports including the reports contemplated below within 7 days of the incident occurring.

Accident and Incident Investigation (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic

The results of the investigation to be entered into the Accident/Incident Register listed in above.

The Principal Contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Department of Public Works reserves the right to hold its own investigation into an incident or call for an independent external investigation.

#### Operational Control

##### (a) Emergency Preparedness, Contingency Planning and Response

The Principal Contractor must appoint a competent person to act as Emergency Controller/Coordinator.

The Principal Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that Department of Public Works may have in place.

The Principal Contractor and the other Contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

##### (b) First Aid (General Safety Regulation 3)

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by General Safety Regulation 3 of the OHS Act.

The Contingency Plan of the Principal Contractor must include the arrangements for speedily and timeously transporting injured/ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor must have firm arrangements with his other Contractors in place regarding the responsibility of the other Contractors injured/ill employees

##### (c) Security

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period

##### (d) Fall Protection (Working in Elevated Positions (Construction regulation 8.))

A pre-emptive Risk Assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as "Work in Elevated Positions".

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing a single belt with lanyard that will be worn to prevent the person falling from the platform, ladder or other device utilised. This safety belt will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length that the person will not be able to move over the edge.

Alternatively, any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribed in SABS 085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the requirement in is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device OR the person must be attached to an approved, by Department of Public Works, fall arrest system.

Where the requirements are not practicable, a suitable catch net must be erected.

Workers working in elevated positions must be trained to do this safely and without risk to health

Where work on roofs is carried out, the Risk Assessment must take into account the possibility of persons falling through fragile material. Skylights and openings in the roof.

### Measurement and Payment

Payment for the Contractor's obligations in respect of the Occupational Health and Safety act and Construction Regulations shall be made through three payment items described below. The three payment items together shall include full compensation for all personnel (including a dedicated full time Construction Safety Officer), cost and incidentals in respect of compliance with the enforcement of the Health and Safety Specifications, which shall include for the compilation, presentation, implementation and maintenance of the Health and Safety Plan as contemplated. In tendering rates for the three items the Contractor shall ensure that the sum of the amounts for the three items shall not be less than one percent (1%) of the Tender Amount.

Item	Unit
C1.1 Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Lump Sum

The full amount will be paid in one instalment only once:-

- (a) The Contractor has notified the Provincial Director of the Department of Labour in writing of the project.
- (b) The Contractor has made the required initial appointments of employees and sub-Contractors.

- (c) The client has approved the Contractor's Health and Safety Plan.
- (d) The Contractor has set up his Health and Safety File.

Item	Unit
C1.2 Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Month

The tendered monthly amount shall represent full compensation for that part of the Contractor's general obligations in terms of the Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. This includes inter alia payment of all costs for the appointment of all staff contemplated in the construction regulations and the transport of employees on site. Payment will be monthly only after payment for Item C1.1 has been made.

Item	Unit
C1.3 Submission of the Health and Safety File	Lump Sum

The tendered lump sum shall represent full compensation for the Contractor meeting all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and for the preparation and submission of his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

This amount will be paid only once the Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

### C3.4.3.2 ENVIRONMENTAL MANAGEMENT PLAN

#### CONTENTS

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- C3.4.3.2.2 DEFINITIONS
- C3.4.3.2.3 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS
- C3.4.3.2.4 LEGAL REQUIREMENTS
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- C3.4.3.2.9 RECORD KEEPING
- C3.4.3.2.10 COMPLIANCE AND PENALTIES
- C3.4.3.2.11 MEASUREMENT AND PAYMENT

#### SCOPE

This environmental management programme (EMP) sets out the methods by which proper environmental controls are to be implemented by the Contractor. The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract, and the project specifications, as the defects notification period (maintenance period).

The provisions of this EMP are binding on the Contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract. In the event that any conflict occurs between the terms of the EMP and the project specifications or Record of Decision, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the Department of Public Works in writing for approval.

The EMP identifies the following:

- Construction activities that will impact on the environment.
- Specifications with which the Contractor shall comply in order to protect the environment from the identified impacts.
- Actions that shall be taken in the event of non-compliance.

### C3.4.3.2.1. DEFINITIONS

**Alien Vegetation:** alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

**Construction Activity:** a construction activity is any action taken by the Contractor, his Subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7, 1998)

**Environment:** environment means the surroundings within which humans exist and that could be made up of -

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

**Environmental Aspect:** an environmental aspect is any component of a Contractor's construction activity that is likely to interact with the environment.

**Environmental Impact:** an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

**Record of Decision:** a record of decision is a written statement from the Limpopo Department of Economic Development, Environment and Tourism, that records its approval of a planned undertaking to improve, upgrade or rehabilitate a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

**Road Reserve:** the road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

**Road Width:** for the purposes of the EMP, the road width is defined as the area within the road reserve i.e. fence line to fence line, but also includes all areas beyond the road reserve that are affected by the continuous presence of the road, e.g. a reach of a water course.



#### **C3.4.3.2.2. IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS**

The Contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- waste generation
- stormwater discharge
- emission of pollutants into the atmosphere
- chemical use operations
- energy use operations
- water use operations
- use of natural resources
- noise generation

Thereafter the Contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified and the activity planned so as to prevent any impact from happening. If prevention is not practicable, or in the event of mishap or misapplication, the Contractor shall provide plans and measures for the Engineer's approval, which will limit and contain the magnitude, duration and intensity of the impact. The Contractor shall demonstrate that he/she is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce an approved construction programme according to subclause 8.3 as amended by Particular Condition of the general conditions of contract and clause B1204 of these project specifications.

Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:

- Pollution of atmosphere, soil or water
- Destruction or removal of fauna and flora and effect on biological diversity
- Deformation of the landscape
- Soil erosion
- Destruction of historical/heritage sites
- Effect on the built environment
- Effect on agricultural land and wetlands

General good construction practice will play an important role in avoiding the occurrence of an Impact. The Contractor's attention is drawn, in this regard, to C1008. Environmental Management of Construction Activities

#### **C3.4.3.2.3. LEGAL REQUIREMENTS**

##### **a) General**

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the Contractor as to his

duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The Contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

b) Statutory and other applicable legislation

The Contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

**C3.4.3.2.4. ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS**

a) Appointment of a Designated Environmental Officer (DEO)

For the purposes of implementing the conditions contained herein, the Contractor shall submit to the Engineer for approval the appointment of a nominated representative of the Contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the Engineer to make a decision. The Engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the Contractor has been approved he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The Engineer will be responsible for issuing instructions to the Contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the Engineer, but not less frequently than once a month.

The Engineer shall have the authority to instruct the Contractor to replace the DEO if, in the Engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required.

There shall be an approved DEO on the site at all times.

b) Administration

Before the Contractor begins each construction activity the DEO shall give to the Engineer a written statement setting out the following:

- The type of construction activity.
- Locality where the activity will take place.
- Identification of the environmental aspects and impacts that might result from the activity.
- Methodology for impact prevention for each activity or aspect.
- Methodology for impact containment for each activity or aspect.
- Emergency/disaster incident and reaction procedures.
- Treatment and continued maintenance of impacted environment.

The Contractor may provide such information in advance of any or all construction activities provided that new submissions shall be given to the Engineer whenever there is a change or variation to the original.

The Engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the Contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the Contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

c) Good Housekeeping

The Contractor shall undertake "good housekeeping" practices during construction as stated in clause 1217 of the COLTO Standard Specifications for Roads and Bridges and subclauses 4.18 and 11.11, of the General Conditions of Contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

**C3.4.3.2.5. TRAINING**

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The Contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff the Contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Contractor shall inform the Engineer when and how he/she intends concluding his environmental training obligations.

#### **C3.4.3.2.6. ACTIVITIES/ASPECTS CAUSING IMPACTS**

A list of possible causes of environmental impacts that occur during construction activities is given in Table 7/1: Aspects or Activities that Cause Environmental Impacts during Construction Activities, which is to be found at the end of this part. This list is not exhaustive and shall be used for guideline purposes only.

#### **C3.4.3.2.7. ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES**

a) Site Establishment

i) Site Plan

The Contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the Contractor shall submit to the Engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the Contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the Engineer for consultation during rehabilitation of the site. Read with COLTO Specification 1302(a), 1402 (e).

ii) Vegetation

The Contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the Engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring, shall be re-established.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. (Read in conjunction with COLTO Specification 5801(b), 5802(b), (c), (d) and (e), 5804, 5805, 5806 and 5807). Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

iv) Water for human consumption

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

v) Heating and Cooking fuel

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage treatment

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of project management, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-ways, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a Subcontractor. The type of sewage treatment will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the Engineer. Read with COLTO Specifications 1402(g) and 1404(a).

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer.

c) Waste Management

The Contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid Waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the Engineer. Disposal of solid waste shall be at a Department of Water Affairs and Forestry (DWAF) licensed landfill site or at a site approved by DWAF in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, nor anywhere else on the site, including the approved solid waste disposal site. Read with COLTO Specification 1404(a).

ii) Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.

Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the Contractor shall provide litter collection facilities for later safe disposal at approved sites. (Read with COLTO Specification 1302(b)).

iii) Hazardous waste

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. Any spillage of tar or bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the Engineer.

d) Control at the workshop

The Contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless of whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop).

i) Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the Contractor to, and used or worn by, the staff whose duty it is to manage and maintain the Contractor's and his Subcontractor's and supplier's plant, machinery and equipment.

ii) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g. tar or bitumen binders shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of the Engineer.

The Contractor shall provide proof to the Engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the Contractor shall furnish the Engineer with details of the preventative measures, he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

iii) Fuel and Gas Storage

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.

iv) Oil and Lubricant Waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) Clearing the Site

In all areas where the Contractor intends to, or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the Engineer for his approval.

The plan shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the Engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.

The Contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, road construction has to be stored temporarily or otherwise within the road reserve, or at designated or instructed areas outside the road reserve. This responsibility shall extend until expiry of the defects notification period.

f) Soil Management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is considered to be the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include the storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved Department of Water Affairs and Forestry waste disposal site. (Read with COLTO Specifications 3104(a), 5802(a), (g), 5804(a), (b) and (c)). The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water. Stockpiles of topsoil shall not exceed a height of 2m, and if they are to be left for longer than 6 months, shall be analysed, and if necessary, upgraded before replacement. Stockpiles shall be protected against infestation by weeds.

The Contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be topsoiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The Contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The Contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the Engineer. The Contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Engineer, and stored separately from the topsoil if not used for road building. This soil shall be replaced in the excavation in the original order it was removed for rehabilitation purposes.



## g) Drainage

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users / receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products.

The Contractor shall submit to the Engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions.

## h) Earthworks and Layer works

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the Contractor shall have complied with the requirements of sections C1008 (e) and C1008 (g). In addition, the Contractor shall take cognisance of the requirements set out below.

## i) Quarries and borrow pits

The Contractor's attention is drawn to the requirement of the Department of Minerals and Energy, that before entry into any quarry or borrow pit, an EMP for the establishment, operation and closure of the quarry or borrow pit shall have been approved by the Department. It is the responsibility of the Contractor to ensure that he is in possession of the approved EMP or a copy thereof, prior to entry into the quarry or borrow pit. The conditions imposed by the relevant EMP are legally binding on the Contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in existing rates in the Bill of Quantities. (Read with COLTO Specification 3100 and 3200).

## ii) Excavation, hauling and placement

The Contractor shall provide the Engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil, sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment.

The Contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition from rainfall overnight or over periods when there is no construction activity. (Read with COLTO Standard Specification clauses 1217 and 3309)

iii) Spoil sites

The Contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the Engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the Engineer. No spoil site shall be located within 500m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The Engineer will assist the Contractor in obtaining the necessary approval if requested by the Contractor.

Spoil sites will be shaped to fit the natural topography. These sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate grassing measures to minimise soil erosion shall be undertaken by the Contractor. This will include both strip and full sodding. The Contractor may motivate to the Engineer for other acceptable stabilising methods. The Engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the Contractor of a landowner's clearance notice and an Engineer's certificate certifying slope stability (Read with COLTO standard Specifications clause 1214). The Contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the tendered rates for spoiling.

iv) Stockpiles

The Contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the Engineer for his approval, together with the Contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the Contractor shall at all times ensure that they are:

- Positioned and sloped to create the least visual impact;
- Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and
- Kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated / deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the Contractor's cost until clearance from the Engineer and the relevant Authority is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the Engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in-situ milling or any detritus of material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract drawing or under instruction from the Engineer.

In all cases, the Engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their clause only when they have been satisfactorily rehabilitated. (Read with COLTO Specification 3203 and 4306).

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the Contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives. In addition, the Contractor shall, prior to any drilling of holes in preparation for blasting, supply the Engineer with a locality plan of the blast site on which shall be shown the zones of influence of the ground and air shockwaves and expected limits of fly-rock. The plan shall show each dwelling, structure and service within the zones of influence and record all details of the dwellings/structures/services including existing positions, lengths and widths of cracks, as well as the condition of doors, windows, roofing, wells, boreholes etc. The Contractor, alone, shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields. The submission of such a plan shall not in any way absolve the Contractor from his responsibilities in this regard. The Contractor shall also indicate to the Engineer the manner in which he intends to advertise to the adjacent communities and/or road users the times and delays to be expected for each individual blast.

i) Batching sites

Asphalt plants are considered scheduled processes listed in the second schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965). Should the use of an asphalt plant be considered on site, the Contractor shall be responsible to obtain the necessary permit from the Department of Environmental Affairs and Tourism, regardless of where they are sited.

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the Department of Minerals and Energy legislation as well as the applicable industrial legislation that governs gas and dust emissions into the atmosphere.

Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1008(h)(iii), with the exception that the Contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the Contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant national authority, as shall approval of closure. The Engineer will assist the Contractor in his submissions to the relevant authority.

Effluent from concrete batch plants and crusher plants shall be treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the Engineer for approval.

The Contractor shall invite the relevant department to inspect the site within 2 months after any plant is commissioned and at regular intervals, thereafter, not exceeding 12 months apart

j) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and tar or bituminous products. In the event of a spillage, the Contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the Contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the Engineer. The Designated Environmental Officer will assess the situation in consultation with the Engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the Contractor in consultation with the DEO and the Engineer. Areas cleared of hazardous waste shall be re-vegetated according to the Engineer's instructions

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Engineer. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input.

k) Areas of Specific Importance

Any area, as determined and identified within the project document as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the approved EMP. The Contractor may offer alternative solutions to the Engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection shall not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall require ad hoc treatment.

i) Archaeological Sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The South African Heritage Research Agency (SAHRA) is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. (Read with COLTO General Condition of Contract Subclause 4.24 as amended by Particular Condition).

ii) Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the Engineer informed of the discovery. SAHRA should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The Employer will be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred. (Read with COLTO General Conditions of Contract Subclause 4.24 as amended by Particular Condition).

l) Noise Control

The Contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during daylight hours. Compliance with the appropriate legislation with respect to noise, shall be mandatory.

Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

m) Dust Control

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

n) Alien Vegetation

The Contractor shall be held responsible for the removal of alien vegetation within the road reserve disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily or otherwise within the road reserve. This responsibility shall extend for the duration of the defects notification period.

#### C3.4.3.2.8. RECORD KEEPING

The Engineer and the DEO will continuously monitor the Contractor's adherence to the approved impact prevention procedures and the Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the Engineer in the monthly report.

Copies of any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

#### C3.4.3.2.9. COMPLIANCE AND PENALTIES

The Contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings.

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

The following penalties shall apply for environmental violations:

##### a) Unnecessary removal or damage to trees

- |                                                   |   |                  |
|---------------------------------------------------|---|------------------|
| • 2600mm girth or less                            | : | R 5 000 per tree |
| • Greater than 2600mm, but less than 6180mm girth | : | R10 000 per tree |
| • Greater than 6180mm girth                       | : | R30 000 per tree |

##### b) Serious violations:

- |                                                                              |   |                               |
|------------------------------------------------------------------------------|---|-------------------------------|
| • Hazardous chemical/oil spill and/or dumping in non-approved sites.         | : | R10 000 per incident          |
| • General damage to sensitive environments.                                  | : | R 5 000 per incident          |
| • Damage to cultural and historical sites.                                   | : | R 5 000 per incident          |
| • Uncontrolled/unmanaged erosion (plus rehabilitation at Contractor's cost). | : | R1 000 to R5 000 per incident |
| • Unauthorised blasting activities.                                          | : | R 5 000 per incident          |
| • Pollution of water sources.                                                | : | R 10 000 per incident         |

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

## c) Less serious violations:

• Littering on site.	R1 000 per incident
• Lighting of illegal fires on site.	R1 000 per incident
• Persistent or un-repaired fuel and oil leaks.	R1 000 per incident
• Excess dust or excess noise emanating from site.	R1 000 per incident
• Dumping of milled material inside drains or on grassed areas:	R1 000 per incident
• Possession or use of intoxicating substances on site.	R 500 per incident
• Any vehicles being driven in excess of designated speed limits.	R 500 per incident
• Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife.	R2 000 per incident
• Illegal hunting.	R2.000 per incident
• Urination and defecation anywhere except in designated areas.	R 500 per incident

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

**C3.4.3.2.10. MEASUREMENT AND PAYMENT**

The cost of complying to this specification shall be deemed to be included in the rates tendered for this project.

Item	Unit
C100.01	Penalty for unnecessary removal or damage to trees for the following diameter sizes
(a)	2600mm girth or less
(b)	Greater than 2600mm, but less than 6180mm girth
(c)	Greater than 6180mm girth
	number (No)
	number (No)
	number (No)

The unit of measurement shall be the number of trees by diameter size removed unnecessary or damaged. The penalty rates applied shall be those stated in clause C3.5.2.10.

Item	108 Unit
<b>C100.02</b> <b>Penalty for serious violations</b>	
(a) Hazardous chemical/oil spill and/or dumping in non-approved sites	number (No)
(b) General damage to sensitive environments	
(c) Damage to cultural and historical sites	number (No)
(d) Pollution of water sources	number (No)
(e) Unauthorised blasting activities	number (No)
(f) Uncontrolled/unmanaged erosion per incident, depending on environment impacts, plus rehabilitation at Contractor's cost)	number (No)

The unit of measurement for C100.02 (a) to (f) shall be the number of serious violation incidents. The penalty rates to be applied shall be those stated in clause C3.5.2.10.

Item	Unit
<b>C100.03</b> <b>Penalty for less serious violations</b>	
• Littering on site	number (No)
• Lighting of illegal fires on site	number (No)
• Persistent or un-repaired fuel and oil leaks	number (No)
• Excess dust or excess noise emanating from site	number (No)
• Dumping of milled material inside drains or on grassed areas	number (No)
• Possession or use of intoxicating substances on site	number (No)
• Any vehicles being driven in excess of designated speed limits	number (No)
• Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife	number (No)
• Illegal hunting	number (No)
• Urination and defecation anywhere except in designated areas	number (No)

The unit of measurement shall be the number of less serious violation incidents. The penalty rates applied shall be those stated in clause C3.5.2.10.

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the



calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

Table 1: Mechanisms that Cause Environmental Impacts during Construction Activities

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS					SENSITIVE AREAS (to be completed by compiler)
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION		
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
1600	Overhaul	Spillage Storage Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil		

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS					SENSITIVE AREAS (to be completed by compiler)
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION		
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil		
2100 - 2400	Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
3100	Borrow pits	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
3200	Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		
3300	Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds		

ENVIRONMENTAL IMPACTS						
SECTION	CONTENTS	POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
3400 - 3900	Pavement layers	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
6000	Structures	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

ENVIRONMENTAL IMPACTS						
SECTION	CONTENTS	POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
7000	Concrete pavements etc	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

PART C4: SITE INFORMATION

C4.1      SITE INFORMATION ..... 115

## SITE INFORMATION

## C4.1.1 Material site investigation

Materials for pavement works will be outsourced commercial sources as selected by the Contractor. All sourced material must be in compliance with the specifications in the contract documents and shall be approved by the Engineer. The Contractor must provide the necessary test results as undertaken by an approved laboratory to establish the quality of the material and specification requirements.

A substantial quantity for the fill earthworks will equally be obtained from the nearby cut areas as the design approach has been undertaken with the principle of endeavouring to balance the cut and fill volumes.

Hard excavations are characteristic of a significant proportion of the cut areas. Weathered rock is envisaged to be in some of those cut sections.

## C4.1.2 Pavement and layer works design

The typical cross-section shows the road works consisting of the following layer works; essentially two layers will be constructed each of the two layers being 150mm in thickness. Above a 150mm thick in-situ prepared roadbed will be the sub base and base layers with the base layer acting as a wearing course.

## C4.1.3 Structures

Detailed in the scope of works.

## C4.1.4 Services

The road is located within a built up area. The major challenge has been to ensure that the horizontal alignment fits within the available restricted servitude. The boundary fences are thus one of the major services which while will form a significant challenge with regards to working space in some sections of the road there will be a need to remove and reinstate them for the delivery of the final product. Any disturbances to the fences should be reinstated to the satisfaction of the employer's agent. It is envisaged that some Eskom and Telkom poles will need to be relocated since they are within the proposed horizontal alignment of the road in some sections.

PART C5: ANNEXURES

C5.2      CONTRACT DRAWINGS..... 117

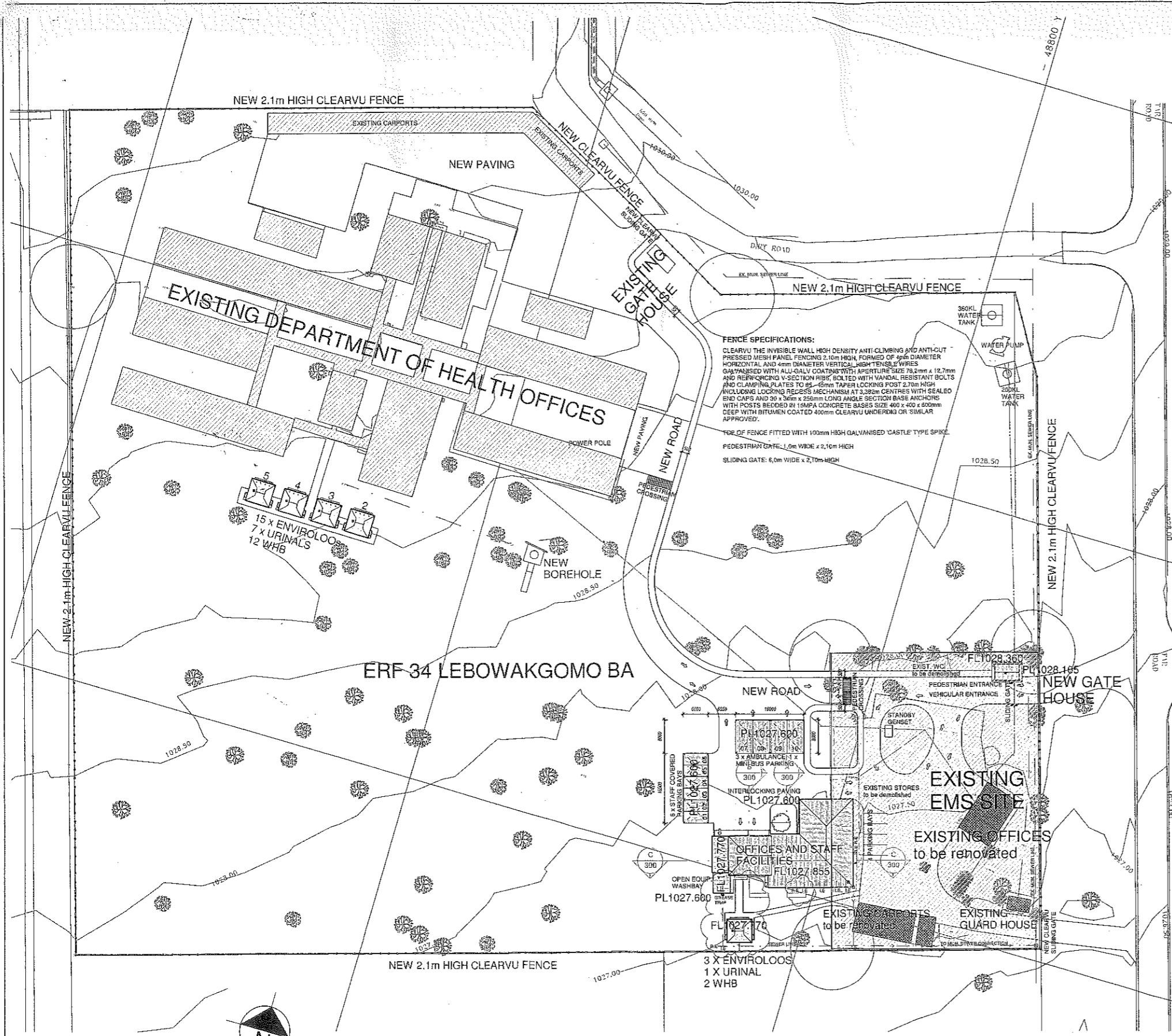


## CONTRACT DRAWINGS

The following is a list of contract drawings included in a separate volume entitled "Part C5.2: Contract Drawings."

### SEE BOOK 3 OF 3 (CONTRACT DRAWINGS)

DRAWING NUMBER	DRAWING TITLE
	<b>CIVIL DRAWINGS</b>
SHCE-008-A001	SITE LAYOUT PLAN
SHCE-008-A002	STORMWATER LAYOUT PLAN
SHCE-008-PL01	PLATFORM LAYOUT
SHCE-008-SSL02	SEWER SERVICE LAYOUT
SHCE-008-SSL03	SEWER LONG SECTION MANHOLE RFI TO OUTFALL
SHCE-008-SSL05	STORMWATER SERVICE LAYOUT
SHCE-008-WSL04	WATER SERVICE LAYOUT
SHCE-008-WL 01	WATER LONG SECTION NODE 1 TO 21
SHCE-008-WL 02	WATER LONG SECTION NODE 21 TO 5
SHCE-008-RLS001	ROAD LAYOUT PLAN AND LONG SECTION CHAINAGE 0 - 203
SHCE-008-RCS	ROAD CROSS SECTION CHAINAGE 0 - 203
SHCE-008-RLS01.1	ROAD SIGNAGE LAYOUT PLAN
SHCE-008-RD001	RAISED PEDESTRIAN CROSSING - CHAINAGE: 142.6m
SHCE-008-FS01	PUMPSTATION DETAILS: PLAN, SECTIONS AND ELEVATIONS
SHCE-008-SD01	TYPICAL SEWER DETAILS
SHCE-008-WD01	TYPICAL WATER DETAILS
SHCE-008-WD02	TYPICAL WATER DETAILS
SHCE-008-SWD01	STORMWATER CATCHPIT DETAILS (AT GRADE)
SHCE-008-SWD02	STORMWATER CATCHPIT DETAILS (LOW POINT)
SHCE-008-SWD03	STORMWATER DETAILS: PIPE BEDDING, MANHOLE, HEADWALL AND CHANNEL
	<b>STRUCTURAL DRAWINGS</b>
SHCE-008-SL00	STANDARD DRAWING
SHCE-008-SL01	GROUND FLOOR PLAN AND CONCRETE BEAMS LAYOUT
SHCE-008-SL02	FOUNDATIONS AND SLAB AND JOINT LAYOUT PLANS
SHCE-008-SL03	GROUND FLOOR FOUNDATION, JOINT AND SLAB LAYOUT PLANS - MAIN BUILDING
SHCE-008-SL04	FOUNDATION & GROUND FLOOR LAYOUT AMBULANCES AND STAFF PARKING
SHCE-008-SL05	STEEL LAYOUT - AMBULANCES (3 BAYS) AND MINIBUS (1 BAY) PARKING SHEDS
SHCE-008-SL06	STEEL LAYOUT - STAFF PARKING SHEDS (6 BAY)
SHCE-008-SL07	REINFORCEMENT ED FOUNDATION & STUB COLUMNS - AMBULANCES, STAFF PARKING, BUS SHEDS & ELEVATED WATER TANK
SHCE-008-SL08	WASHBAY ROOF DETAILS STEEL STRUCTURE
SHCE-008-SL09	ELEVATIONS AND REINFORCED CONCRETE BEAMS
SHCE-008-SL010	EMS EQUIPMENT WASHBAY ROOF STRUCTURE
SHCE-008-SL00-A	FOUNDATION DETAILS - STEEL TANKS
SHCE-008-SL00-A	TANKSTAND FOUNDATION DETAILS AND BASE REINFORCEMENT LAYOUT



**FENCE SPECIFICATIONS:**  
 CLEARVU THE INVISIBLE WALL HIGH DENSITY ANTI CLIMBING AND ANTI-CUT PRESSED MESH PANEL FENCING 2.10m HIGH, FORMED OF 4mm DIAMETER HORIZONTAL AND 4mm DIAMETER VERTICAL HIGH TENSILE WIRES GALVANISED WITH ALU-GALV COATINGS WITH APERTURE SIZE 78,2mm x 12,7mm AND REINFORCING V-SECTION RIBS, BOLTED WITH VANDAL RESISTANT BOLTS AND CLAMPING PLATES TO 48-60mm TAPER LOCKING POST 2,70m HIGH INCLUDING LOCKING RECESS MECHANISM AT 3,382m CENTRES WITH SEALED END CAPS AND 30 x 36mm x 250mm LONG ANGLE SECTION BASE ANCHORS WITH POSTS BEDDED IN 15MPa CONCRETE BASES SIZE 400 x 400 x 600mm DEEP WITH BITUMEN COATED 400mm CLEARVU UNDERDUG OR SIMILAR APPROVED.  
 TOP OF FENCE FITTED WITH 100mm HIGH GALVANISED 'CASTLE' TYPE SPIKE.  
 PEDESTRIAN GATE: 1,0m WIDE x 2,10m HIGH  
 SLIDING GATE: 6,0m WIDE x 2,10m HIGH

SCHEDULE OF RIGHTS		
PROPERTY DESCRIPTION		
STAND No. ERF 34	SITE AREA 41 894 m <sup>2</sup>	
TOWNSHIP LEBOWAKGOMO BA	TITLE DEED No. ****	
ZONING INFORMATION		
TOWNSHIP SCHEME LEPHELLE-NKUMPI	AMENDMENTS (TBC)	
USE ZONE INSTITUTION	ANNEXURE / SCHEME No. (TBC)	
DEVELOPMENT CONTROL MEASURES		
PERMISSIBLE ***	CONTROL BUILDING HEIGHT	ACTUAL 1 STOREYS
****%	COVERAGE	9,3% (3 898m <sup>2</sup> )
***	F.A.R.	0,68 (3 545m <sup>2</sup> )
PARKING		
PARKING RATIO / BUILDING OCCUPANCY	AREA USED	REQUIRED PARKING BAYS
G1 OFFICES 3 bays per 100m <sup>2</sup> (TBC)	New EMS - 356m <sup>2</sup>	10 bays
PROVIDED BAYS		10 bays

**AREA CALCULATIONS**  
 EXISTING DEPT. OF HEALTH : 2 941m<sup>2</sup>  
 EXISTING EMS : 252m<sup>2</sup>  
 NEW EMS : 726m<sup>2</sup>  
 TOTAL : 3 921m<sup>2</sup>

Area Schedule	
Name	Area
Ex. EMS	107 m <sup>2</sup>
Ex. Ambulance Carports	101 m <sup>2</sup>
Ex. Washbay	28 m <sup>2</sup>
Ex. Guard House	16 m <sup>2</sup>
Exist.	252 m <sup>2</sup>

EMS Building	356 m <sup>2</sup>
Staff Carports	99 m <sup>2</sup>
Ambulance Carports	129 m <sup>2</sup>
New Gate House	14 m <sup>2</sup>
Washbay	33 m <sup>2</sup>
Enviro 1	19 m <sup>2</sup>
Enviro 5	19 m <sup>2</sup>
Enviro 4	19 m <sup>2</sup>
Enviro 3	19 m <sup>2</sup>
Enviro 2	19 m <sup>2</sup>
New	726 m <sup>2</sup>
Grand total	978 m <sup>2</sup>

**COLOUR LEGEND**  
 SCALE 1 : 50

- EXISTING BUILDINGS
- BUILDINGS/STRUCTURES TO BE DEMOLISHED
- BUILDINGS TO BE RENOVATED
- NEW BUILDINGS
- NEW PAVING
- NEW PALISADE FENCE
- POWER LINE

**NOTES:**  
 COPYRIGHT AND RIGHT OF REPRODUCTION OF THIS DRAWING IS RESERVED BY THE ARCHITECT.  
 GENERAL NOTES:  
 THIS DRAWING IS NOT TO BE SCALED.  
 ALL DIMENSIONS TO BE USED AT ALL TIMES.  
 CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BUILDING LINES, BOUNDARIES, ETC.  
 CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORK IN HAND.  
 ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS SPECIFIED BY LOCAL AND OR ON-SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.  
 ANY ERROR DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
 FINAL REVISIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.  
 CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.  
 CONTRACTORS ARE TO BUILD IN D.P.C.'S WHERE APPROPRIATE AND NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS. CAVITY WALLS TO HAVE STEEPED J.O.C.'S.  
 CONTRACTOR TO MAKE SURE BRICKS COVER EVERY 3RD COURSE IN BRICK WALLS AND EVERY 2ND COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.  
 ALL GLAZING IN COMPLIANCE WITH SANS 10405 PART 1 LATEST EDITION.  
 ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.  
 QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND S. SPECIFICATIONS.  
**DRAINAGE NOTES:**  
 ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SATISFACTORY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY-LAWS, REGULATIONS AND REQUIREMENTS.  
 ALL DRAIN PIPES, MINIMUM FALL 1:60, MAXIMUM FALL 1:10.  
 ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
 L.I.E. TO BE PROVIDED AT EVERY BEND, JUNCTION AND CHANGE IN DIRECTION AND EVERY 31 METERS WITH MARKED COVERS AT GROUND LEVEL.  
 ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESIL TRAPS.  
 VENT PIPE OUTLETS TO BE MIN. 2m ABOVE ANY OPENINGS.  
 ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
 CHIMNEYS TO BE BRICKED AND WITH SUITABLE GULLY GRATING AND TO BE 120mm ABOVE SURROUNDING LEVELS.  
 ALL OPENINGS UNDER BUILDINGS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE ALL ROUND THE PIPE.  
 WASTE PIPES IN FLOORS TO BE SLOPED AND BE FITTED WITH EASY ACCESSIBLE G.C. ABOVE FLOOR LEVELS AND EACH END OF SLOPE.  
 NO OPEN BENDS OR JUNCTIONS IN OR UNDER FLOOR SLAB.  
 KEEP ALL DRAINING 150mm FROM CONCRETE FLOORING SURFACES.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	21/08/18
B	1 X REVISED COLOUR LEGEND	11/09/18
C	2 X NEW FOOTINGS OF THE NEW 2.1m HIGH CLEARVU FENCE	11/09/18
D	2 X NEW PALISADE FENCE GATES	11/09/18
E	1 X NEW PALISADE FENCE GATES	11/09/18
F	1 X NEW PALISADE FENCE GATES	11/09/18
G	1 X NEW PALISADE FENCE GATES	11/09/18
H	1 X NEW PALISADE FENCE GATES	11/09/18
I	1 X NEW PALISADE FENCE GATES	11/09/18
J	1 X NEW PALISADE FENCE GATES	11/09/18
K	1 X NEW PALISADE FENCE GATES	11/09/18
L	1 X NEW PALISADE FENCE GATES	11/09/18
M	1 X NEW PALISADE FENCE GATES	11/09/18
N	1 X NEW PALISADE FENCE GATES	11/09/18
O	1 X NEW PALISADE FENCE GATES	11/09/18
P	1 X NEW PALISADE FENCE GATES	11/09/18
Q	1 X NEW PALISADE FENCE GATES	11/09/18
R	1 X NEW PALISADE FENCE GATES	11/09/18
S	1 X NEW PALISADE FENCE GATES	11/09/18
T	1 X NEW PALISADE FENCE GATES	11/09/18
U	1 X NEW PALISADE FENCE GATES	11/09/18
V	1 X NEW PALISADE FENCE GATES	11/09/18
W	1 X NEW PALISADE FENCE GATES	11/09/18
X	1 X NEW PALISADE FENCE GATES	11/09/18
Y	1 X NEW PALISADE FENCE GATES	11/09/18
Z	1 X NEW PALISADE FENCE GATES	11/09/18



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**PROJECT**  
**LEBOWAKGOMO EMS**  
 ERF 34  
 LEBOWAKGOMO BA  
 LEPHELLE NKUMPI MUNICIPALITY

**DRAWING**  
**SITE PLAN TYPE C EMS**

SCALE	DATE	DRAWN	CHECKED
As indicated	AUG 2018	MM	BM
PROJECT NUMBER	<b>M547</b>		
DRAWING NUMBER	100	REVISION	

**SITE PLAN**  
 SCALE 1 : 500

**GENERAL SPECIFICATIONS**

**GENERAL**

- In terms of the National Building Regulations and Standards Act (Act 103 of 1977) the construction of the works on these drawings can only commence once approval in writing from the Local Authority is obtained.
- All materials used in the construction of the works indicated on these drawings shall either be SABS approved or have an Agrément South Africa Certificate unless otherwise stated.
- No deviations from the approved building plans shall be allowed unless approved by the Local Authority prior to construction.
- The Contractor shall adhere to all National Acts, Regulations, Standards, Ordinances and Bye Laws during construction.

**CONSTRUCTION**

The building / buildings on these drawings where designed by following the Deemed-to-Satisfy requirements of SANS10400 (3rd edition) or by Rational Design demonstrating better or equal than the SANS10400 requirements.

No deviation from the specifications will be allowed, - it is an offence in terms of the National Building Regulations and Standards Act (Act 103 of 1977) to deviate from any approved building plan.

All demolition work shall be carried out as per Regulation E of the National Building Regulations and the Construction Regulations as issued in terms of The Occupational Health and Safety Act.

All construction work shall be executed by the contractor in terms of the following requirements as per SANS10400 - Application of the National Building Regulations, unless otherwise stated:

- General Requirements:
- Structural: Part A
  - Dimensions: Part B
  - Public Safety: Part D
  - Site Operations: Part F
  - Excavations: Part G
  - Foundations: Part H
  - Floors: Part J
  - Walls: Part K
  - Roofs: Part L
  - Stairways: Part M
  - Lighting and Ventilation: Part N
  - Drainage: Part P
  - Non-water-borne sanitary disposal: Part Q
  - Stormwater Disposal: Part R
  - Accessible Buildings: Part S
  - Fire Protection: Part T
  - Space Heating: Part V
  - Fire Installation: Part W
  - Energy Usage: Part XA

Additional requirements as describe in the parts of SANS2001 - Construction Works shall be adhered to:

- Earthworks (General): Part BE1
- Site Clearance: Part BE1
- Concrete Works (Structural): Part CC1
- Concrete Works (Minor Works): Part CC2
- Installation of Glazing in frames: Part CG1
- Masonry Walling: Part CM1
- Slip loadings for masonry walling: Part CM2
- Structural Steelwork: Part CS1
- Structural Timberwork (Flooring): Part CT1
- Structural Timberwork (Roofing): Part CT2
- Earthworks for buried pipelines: Part DP1
- Medium Pressure Pipelines: Part DP2
- Cable ducts: Part DP3
- Sewers: Part DP4
- Stormwater Drainage: Part DP5
- Below-ground Water Installations: Part DP6
- Cement Plaster: Part EM1

All geyser installations shall comply with Regulation XA2 of the National Building Regulations. Solar shall comply with SANS1307, SANS10106, SANS10254. Heat Pumps shall comply with SANS149 and SANS1352.

All water reticulation system installations shall comply with SANS10252-1.

All electrical low-voltage installations and wiring shall comply with SANS10142-1.

**GENERAL NOTES**

**CONSTRUCTION AND COMPONENTS**

- A; GROUND FILLING:**  
 a1 FILLING: Filling (excavating or imported)  
 a2 SOIL POISONING: Approved ant poison to be applied.

- B; FOUNDATIONS:**  
 b1 STRIP FOUNDATION FOOTINGS; 220mm WALLS  
 b2 STRIP FOUNDATION FOOTINGS; 110mm WALLS

- C; FLOOR CONSTRUCTION:**  
 c1 SURFACE BED; 50mm 15MPa concrete surface bed  
 c2 WATERPROOFING MEMBRANE; Concol plastics  
 c3 DAMP PROOF COURSE; Concol plastics SABS 375um DPC

- D; WALL CONSTRUCTION AND LIMITS:**  
 d1 BRICK FOUNDATION WALLS; 220mm - 440mm walls  
 d2 110mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks  
 d3 220mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks

- E; ROOF CONSTRUCTION:**  
 e1 ROOF CONSTRUCTION; All exposed timber and timber in structure is to be treated with Carbolineum. (2 x coats)  
 e2 ROOF SHEETING; 0.50mm roof sheathing with Chromalok finish, on 135mm thick fire-ble non-combustible glasswool thermal insulation, on 75 x 50mm purins fixed strictly to manufacturer specification complete with cut breaking on edge with chromalok overlaps on each side and external corner iron at vertical corner joints

- F; CEILING CONSTRUCTION:**  
 f1 SUSPENDED CEILING PANELS; Lay Fine Fissured 900mm x 600mm Laid into ceiling grid and secured into place using H&M Down Clips.  
 f2 CORNICE; 75mm Covered Gypsum plaster board cornice.

- G; WINDOW GLAZING:**  
 g1 INTERNAL; Fibre cement window glazing  
 g2 EXTERNAL; Brick on edge

- H; FINISHES:**  
 h1 DIVING STRIPS; 25 x 3mm brass division strips  
 h2 PORCELAIN TILES; 600 x 600mm unglazed porcelain floor tiles fixed to floor screed.  
 h3 GRANULITHIC SCREED; 25mm thick slat floated (fixed granolithic screed).

- I; SKIRTINGS:**  
 i1 GRANULITHIC; Coved granolithic screed, 75mm high  
 i2 TILE-CUT SKIRTING; 100mm tile-cut skirting

- K; WALLS:**  
 k1 CORNER PROTECTORS; 50 X 50 X 2mm Angle section  
 k2 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
 k3 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
 k4 PLASTER AND TILE; 200 x 200 x 5mm glazed white ceramic tiles  
 k5 FACE BRICK; Approved Face brick walls in stretcher bond and all joints to be 8mm deep square recessed.  
 k7 WALL TILES; 200 x 200 x 5mm white ceramic tiles upto ceiling level.

- L; CEILINGS:**  
 l1 PAINT ON CEILINGS; Apply super acrylic PVA in strict accordance with the manufacturer's specification.  
 l2 CEILING CORNICE; Apply super acrylic PVA in strict accordance with the manufacturer's specification.

- M; SHELF OR OTHER APPROVED:**  
 Wall bands (no. WB 8 - 1830mm long and uprights with heavy duty 38mm brackets 22mm Laminated wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish.

**NOTES:**

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORKMANHAND.

CONTRACTOR TO CHECK DETAILS SHOWN ON THESE DRAWINGS FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS SPECIFIED BY LOCAL AND OR SITE SPECIFIC P.A.C.I.E. AND REPORT ANY DISCREPANCY TO THE ARCHITECT IMMEDIATELY.

FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FITTING PROPRIETARY OR INSTALLED FITTINGS.

CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.

CONTRACTORS ARE TO BUILD IN D.P.C.'S WHETHER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS, GUTTER WALLS OR ON SITE SPECIFIC P.A.C.I.E.

CONTRACTOR TO BUILD IN BRICK FACE EVERY 5TH COURSE IN BRICK WALLS AND EVERY 2ND COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.

ALL GLAZING IN COMPLIANCE WITH SANS 10400-PART 1 LATEST EDITION ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.

QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND S.S. SPECIFICATIONS.

**DRAINAGE NOTES:**  
 ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SHOWN FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY-LAWS, REGULATIONS AND REQUIREMENTS.

ALL DRAIN PIPES: HANG/4 FALL 1:80, MAXIMUM FALL 1:10.  
 ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
 IS TO BE PROVIDED AT EVERY 90° BEND, JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH MARKED COVERS AT GROUND LEVEL.

ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESSEAL TRAPS.  
 VENT PIPE OUTLET TO BE MIN 2m ABOVE ANY OPENING.  
 ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
 GULLIES TO BE TRAPPED AND WITH SUITABLE GULLY DRAINING AND TO BE 150 mm ABOVE SURROUNDING LEVELS.

ALL DRAIN LINES BUILDINGS OR FOOTINGS TO BE ENCASED BY 150mm CONCRETE ALL ROUND THE PIPE.  
 WASTE PIPES IN FLOORS TO BE SLEEVED AND BE FITTED WITH SUITABLE ACCESSIBLE 2.0 ABOVE FLOOR LEVEL AND EACH END OF SLEEVE.  
 NO DRAIN BEARS OR JUNCTIONS IN OR UNDER FLOOR SLAB.  
 KEEP ALL DRAINS 90mm FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	REVISIONS TO BE MADE	11/02/2014
B	REVISIONS TO BE MADE	15/02/2014
C	ADDED OXIDIZED METAL, REPAIR AND SUBSTITUTED STORE	22/02/2014
D	REVISIONS TO BE MADE	22/02/2014
E	INDICATED FLOOR LEVELS AS PER SURVEY	20/02/2014
F	NUMBERED STEEL JOISTS, REVISED JAMB PROFILES TO BE	20/02/2014
G	INDICATED GROUND TRAP AND COMPLETE KERBS	20/02/2014
H	ADDED STEEL AWNING TO FRONT PORCH	20/02/2014
I	REVISED MAINS - BLOCK & SUE	20/02/2014
J	FACE BRICK & STOCK BRICK JOINTS RECTIFIED	20/02/2014

**WORKING DRAWINGS**

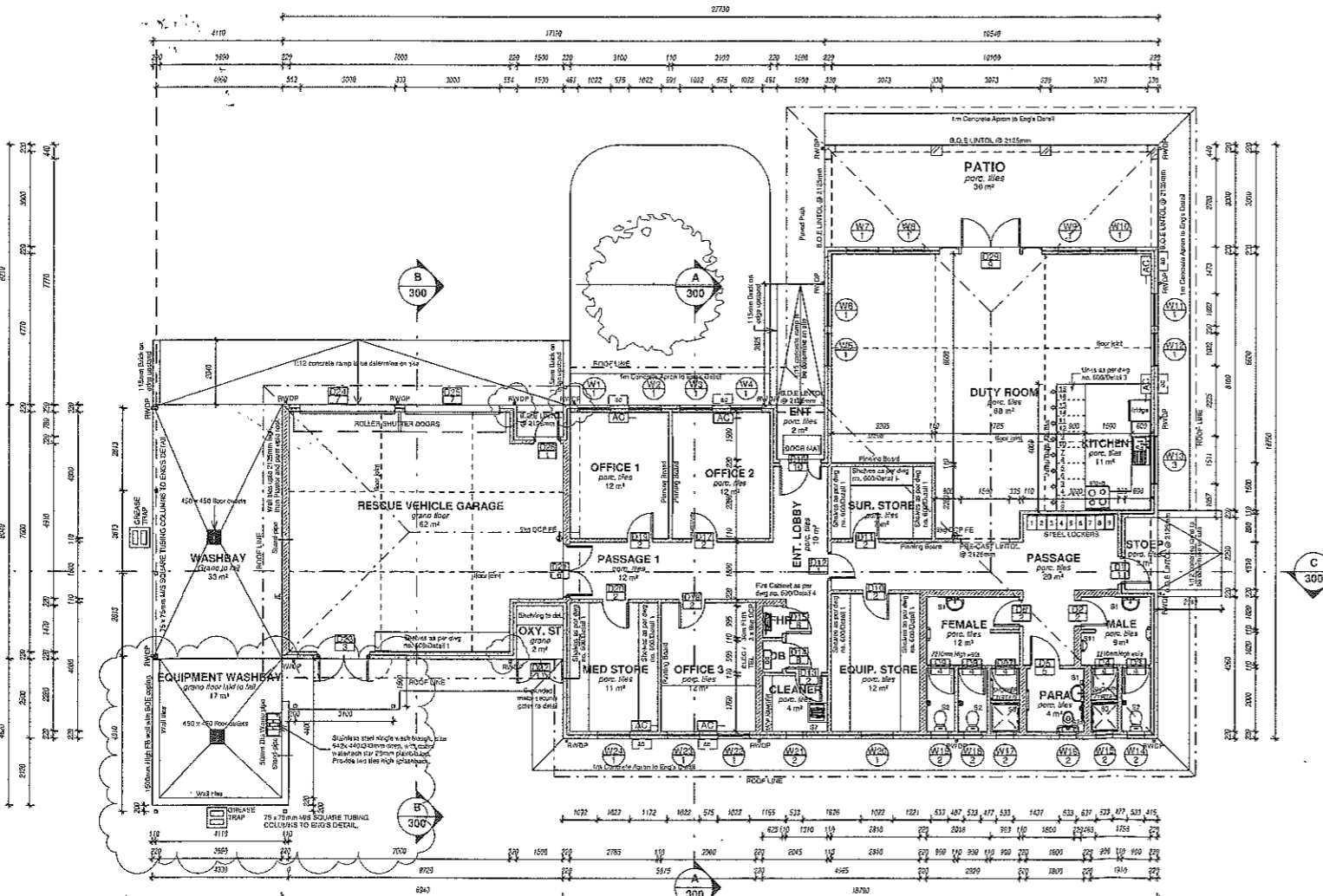
CLIENT: **LIMPOPO**  
 FEDERAL GOVERNMENT  
 REPUBLIC OF SOUTH AFRICA  
 Department of Public Works, Roads and Infrastructure

ARCHITECTURE | DESIGN | INNOVATION  
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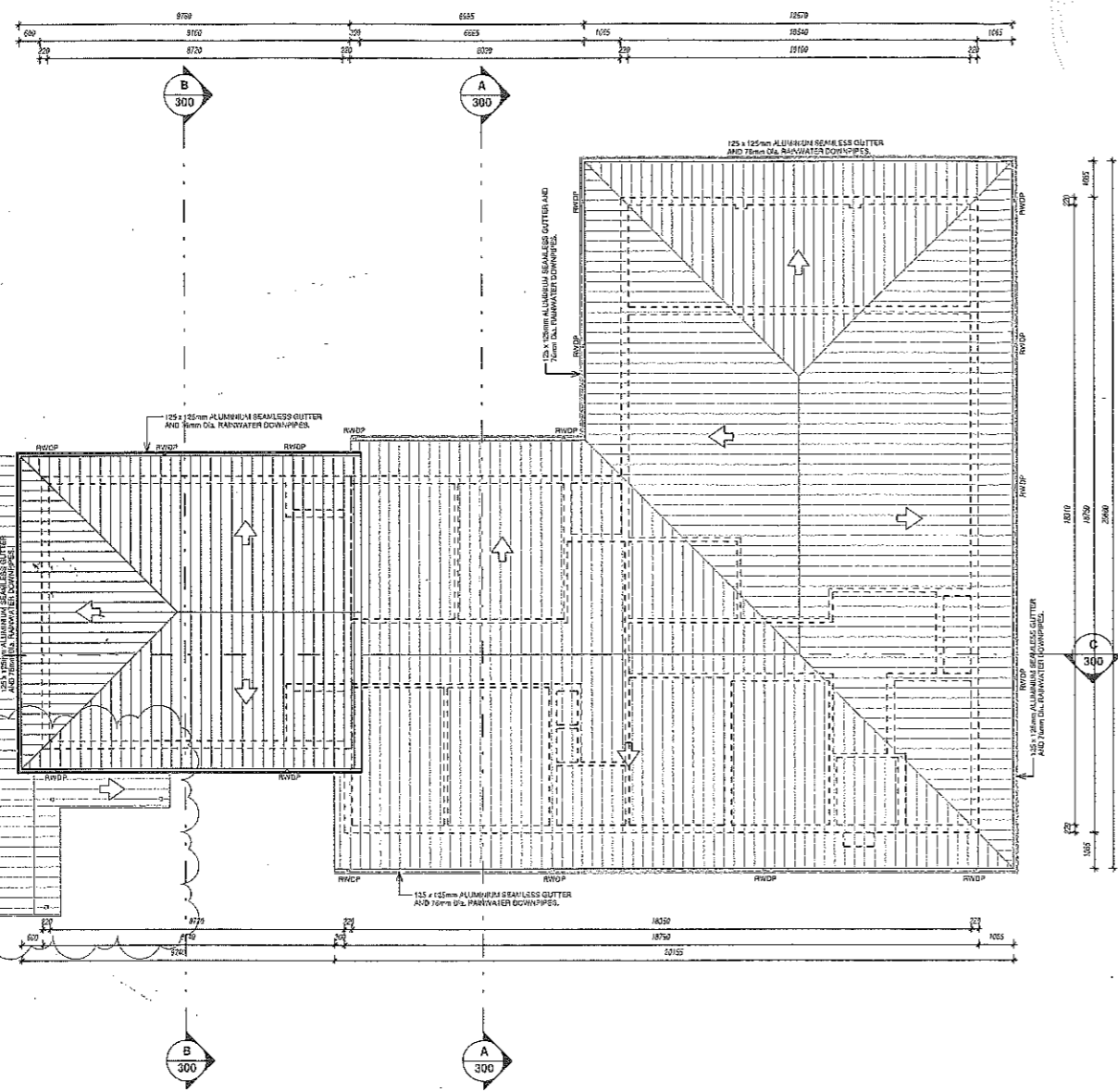
PROJECT:  
**LEBOWAKGOMO EMS**  
 ERF 34  
 LEBOWAKGOMO BA  
 LEPELE NKUMPI MUNICIPALITY

DRAWING:  
**GROUND FLOOR PLAN**  
 TYPE C EMS

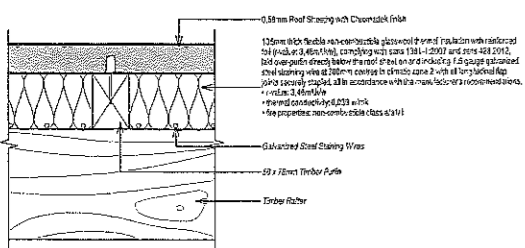
SCALE 1:100	DATE AUG 2014	DRAWN MK	CHECKED RJ
PROJECT NUMBER	M547		
DRAWING NUMBER 200	REVISION G		



**GROUND FLOOR PLAN**  
 SCALE 1:100



**ROOF PLAN**  
SCALE 1:100



**INSULATION DETAIL**  
SCALE 1:5

ROOF ASSEMBLY (R-VALUES)		
REQUIRED R-VALUE CLIMATIC ZONE 2	3,200 m²K/W	INSULATION THICKNESS
		75mm 100mm 135mm
Roof covering - Approximate R-value of roof covering material, external surface heat transfer co-efficient and thermal resistance of the air space above a ceiling.	0,300 m²K/W	
135mm Glasswool insulation	3,460 m²K/W	1,92 2,56 3,46
Ceiling - 0,031 Fibre cement	0,031 m²K/W	
Inside air surface	0,091 m²K/W	
<b>ACTUAL R - VALUE</b>	<b>3,892 m²K/W</b>	

ROOF ASSEMBLY (R-VALUES)		
REQUIRED R-VALUE CLIMATIC ZONE 2	3,200 m²K/W	INSULATION THICKNESS
		75mm 100mm 135mm
Roof covering - Approximate R-value of roof covering material, external surface heat transfer co-efficient and thermal resistance of the air space above a ceiling.	0,300 m²K/W	
135mm Glasswool insulation	3,460 m²K/W	1,92 2,56 3,46
Suspended Ceiling - 12mm	0,063 m²K/W	
Inside air surface	0,091 m²K/W	
<b>ACTUAL R - VALUE</b>	<b>3,914 m²K/W</b>	

Description Units: m²K/W	Climate zones (as per climatic zone appropriate here to)					
	1	2	3	4	5	6
Direction of heat flow	Up	Up	Down and up	Up	Down	Up
Minimum required total R-value (m²K/W)	3,70	3,20	2,70	3,70	2,70	3,50
Approximate R-value of roof covering material, external surface heat transfer co-efficient and thermal resistance of the air space above a ceiling.		0,30		0,26	0,30	
R-value of ceiling			0,05			
Added R-value of insulation	3,33	2,85	2,35	3,15	2,39	3,15

Description	K-Value	Thickness m²K/W
Fibre cement ceiling	0,19	0,006 0,031579
Gypsum	0,19	0,012 0,063158

**GENERAL SPECIFICATIONS**

**GENERAL**

- In terms of the National Building Regulations and Standards Act (Act 103 of 1977) the construction of the works on these drawings can only commence once approval in writing from the Local Authority is obtained.
- All materials used in the construction of the works indicated on these drawings shall either be SABS approved or have an Agreement South Africa Certificate unless otherwise stated.
- No deviations from the approved building plans shall be allowed unless approved by the Local Authority prior to construction.
- The Contractor shall adhere to all National Acts, Regulations, Standards, Ordinances and Bye Laws during construction.

**CONSTRUCTION**

The building / buildings on these drawings where designed by following the Deemed-to-Satisfy requirements of SANS10400 (3rd edition) or by National Design demonstrating better or equal than the SANS10400 requirements.

No deviation from the specifications will be allowed. - It is an offence in terms of the National Building Regulations and Standards Act (Act 103 of 1977) to deviate from any approved building plan.

All demolition work shall be carried out as per Regulation E of the National Building Regulations and the Construction Regulations as issued in terms of The Occupational Health and Safety Act.

All construction work shall be executed by the contractor in terms of the following requirements as per SANS10400 - Application of the National Building Regulations, unless otherwise stated:

General Requirements:	Part A
Structural:	Part B
Dimensions:	Part C
Public Safety:	Part D
Site Operations:	Part E
Excavations:	Part F
Foundations:	Part G
Floors:	Part H
Walls:	Part I
Roofs:	Part J
Slabways:	Part K
Cleaning:	Part L
Lighting and Ventilation:	Part M
Drainage:	Part N
Non-water-borne sanitary disposal:	Part O
Stormwater Disposal:	Part P
Accessible Buildings:	Part Q
Fire Protection:	Part R
Space Heating:	Part S
Fire Installation:	Part T
Energy Usage:	Part U

Additional requirements as describe in the parts of SANS2001 - Construction Works shall be adhered to:

Earthworks (General):	Part BE1
Site Clearance:	Part BS1
Concrete Works (Structural):	Part CC1
Concrete Works (Non-Structural):	Part CC2
Installation of Cladding in frames:	Part CG1
Masonry Walling:	Part CM1
Slip loadings for masonry walling:	Part CM2
Structural Steelwork:	Part CS1
Structural Timberwork (Flooring):	Part CT1
Structural Timberwork (Roofing):	Part CT2
Earthworks for buried pipelines:	Part DP1
Medium Pressure Pipelines:	Part DP2
Cable ducts:	Part DP3
Spacers:	Part DP4
Stormwater Drainage:	Part DP5
Below-ground Water Installations:	Part DP6
Cement Plaster:	Part EM1

All gasifier installations shall comply with Regulation XA2 of the National Building Regulations.

Solar shall comply with SANS1307, SANS10105, SANS10254

Heat Pumps shall comply with ISO5149 and SANS1332

All water recirculation system installation shall comply with SANS10252-1

All electrical low voltage installations and wiring shall comply with SANS10142-1

**GENERAL NOTES**

**CONSTRUCTION AND COMPONENTS**

**A: GROUND FILLING:**  
a1 FILLING: Filling (excavating or imported)  
a2 SOIL POISONING: Approved soil poison to be applied.

**B: FOUNDATIONS:**  
b1 STRIP FOUNDATION FOOTINGS: 230mm WALLS  
b2 STRIP FOUNDATION FOOTINGS: 110mm WALLS

**C: FLOOR CONSTRUCTION:**  
c1 SURFACE BED: 65mm 15MPa concrete surface bed  
c2 WATERPROOFING MEMBRANE: Concol plastics SABS 280mm  
c3 DAMP PROOF COURSE: Concol plastics SABS 375mm DPC  
c4 APRON: 15MPa concrete apron as per detail  
c5 PAVING: 60mm 25-24g standard grey interlocking paving blocks  
c6 KERBS: Mountable kerb (SABS 927)

**D: WALL CONSTRUCTION AND LINTELS:**  
d1 BRICK FOUNDATION WALLS: 230mm - 440mm walls dg 110mm WALLS, 110 x 75 x 220mm burnt clay plaster bricks  
d2 220mm WALLS, 110 x 75 x 220mm burnt clay plaster bricks  
d3 CONCRETE COPING: 300mm wide x 1000 long  
d4 BRICK COPING: Red brick  
d5 PRECAST CONCRETE LINTEL: 110 x 75mm standard lintel above all openings  
d6 CONCRETE BLOCKS: 228 x 228 x 100mm griffe concrete blocks  
d7 220mm WALLS: 2 rows of bricks built in stretcher course in darker colour bricks

**E: ROOF CONSTRUCTION:**  
e1 ROOF CONSTRUCTION: All exposed timber and timber in brickwork is to be treated with Carcolinum. (2 x coats)  
e2 ROOF SHEETING: 0,8mm roof sheathing with Chromadek finish, on 125mm thick flexible rockwool insulation, on 75 x 50mm purlins fixed strictly to manufacturer specification complete with cut cranking on edge with chromadek caps on each rib and external corner trim at external corner joints  
e3 TIMBER ROOF TRUSSES: Prefabricated Ganguahydro or equal approved SA Pine roof trusses with 17,5 degree slope  
e4 BARGE AND FACIA BOARD: 10 x 225mm Standard fibre cement barge and fascia board  
e5 COVER FLASHING: 0,8mm stainless steel flashing (600mm girth)  
e6 FLASHING AND COVER FLASHING: 0,6mm sheet metal flashing

**F: CEILING CONSTRUCTION:**  
f1 SUSPENDED CEILING PANELS: Lay Fine Flashed 600mm x 600mm laid into ceiling grid and secured into place using Hail Down Clips.  
f2 CORNICE: 75mm Covered Gypsum plaster board cornice.  
f3 INSULATION: to be laid under roof sheathing as per roof notes.  
f4 CORNICE: 75mm x 15mm SA Pine cornice fixed to wall  
f5 FIBRE CEMENT CEILING: 6mm thick plain ceiling boards, size 1200 x 2400mm, fixed to 38 x 38mm bracing at 450mm centres. Apply One universal undercoat two acrylic PVA.

**G: WINDOW CILLS:**  
g1 INTERNAL: Fibre cement window cills  
g2 EXTERNAL: Brick on edge

**H: FINISHES:**  
FLOOR:  
h1 DIVIDING STRIPS: 25 x 3mm brass division strips  
h2 PORCELAIN TILES: 600 x 600mm unglazed porcelain floor tiles fixed to floor screed.  
h3 GRANULITIC SCREED: 25mm thick steel fixed lined granolithic screed.

**J: SKIRTINGS:**  
j1 GRANULITIC: Corad granolithic screed, 75mm high  
j2 TILE-CUT SKIRTING: 105mm tile-cut skirting

**K: WALLS:**  
k1 CORNER PROTECTORS: 20 x 50 x 2mm Angle section  
k2 PLASTER AND PAINT: 12mm thick 1:5 cement plaster  
k4 PLASTER AND PAINT: 12mm thick 1:5 cement plaster  
k5 PLASTER AND TILE: 200 x 200 x 5mm glazed white ceramic tile  
k6 FACE BRICK: Approved Face brick walls in stretcher bond and all joints to be 6mm deep square recessed.  
k7 WALL TILES: 200 x 200 x 5mm white ceramic tiles upto ceiling level.

**L: CEILINGS:**  
l1 PAINT ON CEILINGS: Apply super acrylic PVA in strict accordance with the manufacturers specification.  
l2 CEILING CORNICE: Apply super acrylic PVA in strict accordance with the manufacturers specification.

**M: SHELOCO SHEILING OR OTHER APPROVED:**  
Wall bands no: WB 5 - 1830mm long and uprights with heavy duty 38mm brackets 22mm Laminated wood shelves fixed with wood screws and always painted with 2 x eggshell varnish.

**NOTES:**

CONTRACTOR AND RIGHT OF REPRODUCTION OF THIS DRAWING RESERVED BY THE ARCHITECT.

**GENERAL NOTES:**

THIS DRAWING IS NOT TO BE SCALED.  
DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING. ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BURDOLINES, MEASUREMENTS, ETC.  
CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORK IN HAND.  
ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS INDICATED BY LOCAL AND ON SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.  
ANY ERROR DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.  
CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.  
CONTRACTORS ARE TO BUILD IN D.P.C.'S WHETHER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS. CAVITY WALLS TO HAVE STRIPPED G.C.S.  
CONTRACTOR TO BUILD IN BRICK FORCE EVERY 5TH COURSE IN BRICK WALLS AND EVERY 3RD COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.  
ALL GLAZING IN COMPLIANCE WITH SANS 1600-PART 1 LATEST EDITION  
ALL OPENINGS ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT IN HAND.  
QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT SABS AND B.S.S. SPECIFICATIONS.

**DRAINAGE NOTES:**

ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SANITARY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY'S PLANS, REGULATIONS AND REQUIREMENTS.  
ALL DRAIN PIPES: MINIMUM FALL 1:80. MAXIMUM FALL 1:10.  
ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
IS TO BE PROVIDED AT EVERY SEED, JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH MARKED COVERS AT GROUND LEVEL.  
ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESAL TRAPS.  
VENT PIPE OUTLET TO BE MIN. 2m ABOVE ANY OPENING.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
DRAINAGES TO BE TRAPPED AND WITH SUFFICIENT GULLY GRATING AND TO BE 150mm ABOVE SUPPLEMENTED LEVELS.  
ALL DRAIN UNDER BUILDINGS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE ALL ROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE SLEEVED AND BE FITTED WITH EASILY ACCESSIBLE G.C.S. ABOVE FLOOR LEVEL AND EACH END OF SLEEVE.  
NO DRAIN BENDS OR JUNCTIONS IN OR UNDER FLOOR SLAB.  
KEEP ALL DRAIN 800mm FROM CONCRETE FOUNDATIONS.

NO	REVISION	DATE
A	DESIGNED FOR CONSTRUCTION ONLY	11/09/2018
B	REVISED GENERAL NOTES AS PER COMMENTS	22/09/2018
C	INITIAL SET OUT	08/10/2018
D	REVISED THE FINISHES - BRICKS ON CHIMNEYS & NEW DETAIL	23/10/2018
E	LOW ROOF MADE LIGHTER	02/07/2020

**WORKING DRAWINGS**

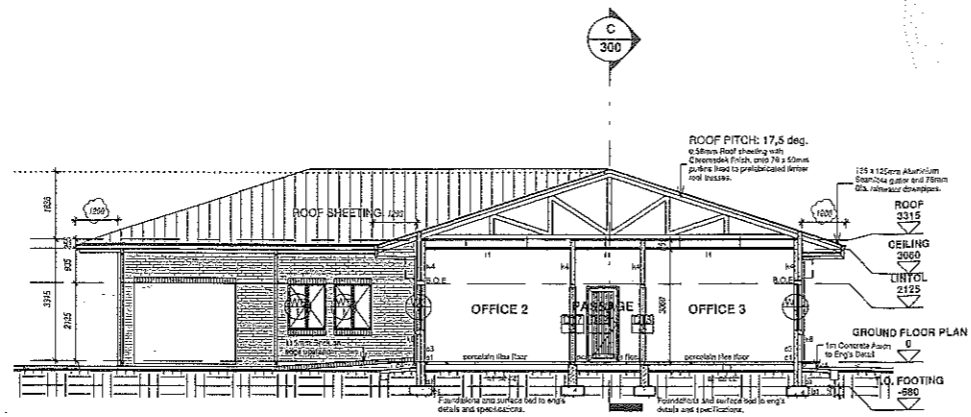
CLIENT: **LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA  
PROJECT: **PUNE HALL, BHEBE AND INTENDANCE**

ARCHITECTURE | DESIGN | INNOVATION  
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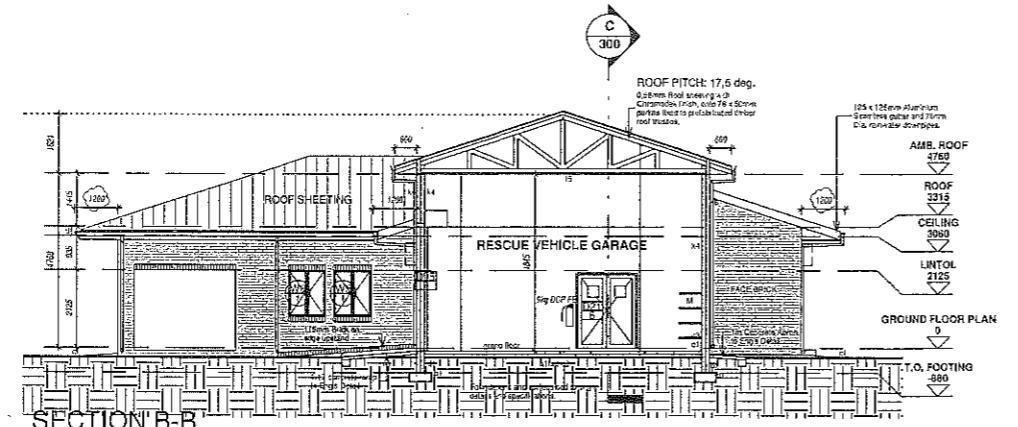
PROJECT: **LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELLE NKUMPI MUNICIPALITY

DRAWING: **ROOF PLAN**

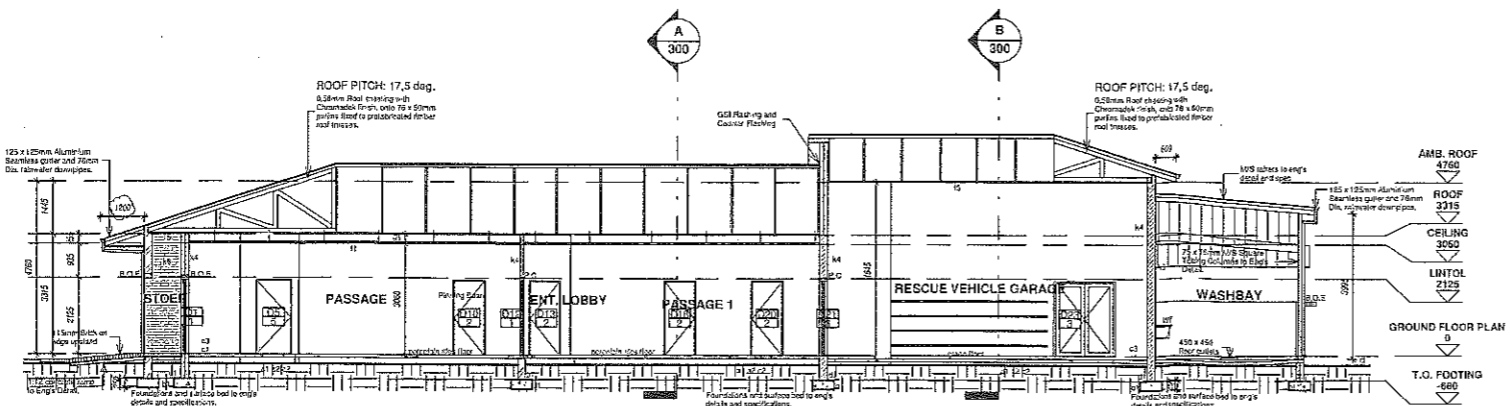
SCALE	DATE	DRAWN	CHECKED
As Indicated	AUG 2018	HK	RJ
PROJECT NUMBER	<b>M547</b>		
DRAWING NUMBER	<b>203</b>		
DRAWING NUMBER	REVISION		



SECTION A-A  
SCALE 1 : 100



SECTION B-B  
SCALE 1 : 100



SECTION C-C  
SCALE 1 : 100

GENERAL SPECIFICATIONS

GENERAL

- In terms of the National Building Regulations and Standards Act (Act 103 of 1977) the construction of the works on these drawings shall commence once approval in writing from the Local Authority is obtained.
- All materials used in the construction of the works indicated on these drawings shall either be SABS approved or have an Agreement South Africa Certificate unless otherwise stated.
- No deviations from the approved building plans shall be allowed unless approved by the Local Authority prior to construction.
- The Contractor shall adhere to all National Acts, Regulations, Standards, Ordinances and bye laws during construction.

CONSTRUCTION

The building / buildings on these drawings were designed by following the Deemed-to-Safely requirements of SANS10400 (3rd edition) or by Rational Design demonstrating better or equal than the SANS10400 requirements.

No deviation from the specifications will be allowed - it is an offence in terms of the National Building Regulations and Standards Act (Act 103 of 1977) to deviate from any approved building plan.

All demolition work shall be carried out as per Regulation E of the National Building Regulations and the Construction Regulations as issued in terms of The Occupational Health and Safety Act.

All construction work shall be executed by the contractor in terms of the following requirements as per SANS10400 - Application of the National Building Regulations, unless otherwise stated:

General Requirements:	Part A
Structural:	Part B
Dimensions:	Part C
Public Safety:	Part D
Site Operations:	Part E
Excavations:	Part G
Foundations:	Part H
Floors:	Part J
Walls:	Part K
Roofs:	Part L
Stairways:	Part M
Lighting and Ventilation:	Part N
Drainage:	Part P
Non-water-borne sanitary disposal:	Part R
Stormwater Disposal:	Part R
Accessible Buildings:	Part S
Fire Protection:	Part T
Space Heating:	Part V
Fire Installation:	Part W
Energy Usage:	Part XA

Additional requirements as describe in the parts of SANS2001 - Construction Works shall be adhered to:

Earthworks (General)	Part BE1
Site Clearance	Part BE1
Concrete Works (Structural)	Part CC1
Concrete Works (Minor Works)	Part CC2
Installation of Glazing in Frames	Part CC1
Masonry Walling	Part CM1
Strip footings for masonry walling	Part CM2
Structural Steelwork	Part CS1
Structural Timberwork (Flooring)	Part CT1
Structural Timberwork (Roofing)	Part CT2
Earthworks for buried pipelines	Part DP1
Medium Pressure Pipelines	Part DP2
Cable ducts	Part DP3
Sewers	Part DP4
Stormwater Drainage	Part DP5
Below-ground Water Installations	Part DP6
Cement Plaster	Part EM1

All geyser installations shall comply with Regulation XA2 of the National Building Regulations.  
Solar shall comply with SANS1307, SANS10109, SANS10254.  
Heat Pumps shall comply with ISO5149 and SANS1352.

All water reticulation system installations shall comply with SANS10252-1.

All electrical low voltage installations and wiring shall comply with SANS10142-1.

GENERAL NOTES

CONSTRUCTION AND COMPONENTS

A: GROUND FILLING;  
a1 FILLING: Filling (as existing or imported)  
a2 SOIL FORTIFICATION: Approved ant poison to be applied.

B: FOUNDATIONS;  
b1 STRIP FOUNDATION FOOTINGS; 220mm WALLS  
b2 STRIP FOUNDATION FOOTINGS; 110mm WALLS

C: FLOOR CONSTRUCTION;  
c1 SURFACE BED: 85mm 15MPa concrete surface bed  
c2 WATERPROOFING MEMBRANE: Concrete plastic SABS 250mm  
c3 SAND PROOF COURSE: Concrete plastic SABS 375mm DPC  
c4 APRON: 150mm concrete apron as per detail  
c5 PAVING: 60mm Zig-Zag standard grey interlocking paving blocks  
c6 KERBS: Mountable kerb (SABS 927)

D: WALL CONSTRUCTION AND LINTELS;  
d1 BRICK FOUNDATION WALLS; 220mm - 440mm walls  
d2 110mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks  
d3 220mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks  
d4 CONCRETE COPING; 300mm wide x 1000 long  
d5 BRICK COPING: Foller course  
d6 PRECAST CONCRETE LINTEL; 110 x 75mm standard lintel above all openings  
d7 CONCRETE BLOCKS: 228 x 228 x 105mm grille concrete blocks  
d8 220mm WALLS; 2 rows of bricks built in stretcher course in darker colour bricks

E: ROOF CONSTRUCTION;  
e1 ROOF CONSTRUCTION: All exposed timber and timber in brickwork is to be treated with Carbolineum. (2 x coats)  
e2 ROOF SHEETING; 0,5mm roof sheeting with Chromadek finish, on 135mm thick flexible non-combustible glasswool thermal insulation, on 75 x 50mm perforated steel studs to manufacture specification complete with cut cranking on edges with chromadek ribcaps on each rib and external corner trim at vertical corner joints  
e3 TIMBER ROOF TRUSSES: Prefabricated Gange/hydrant or equal approved SA Pine roof trusses with 17,5 degree slope  
e4 BARGE AND FACIA BOARD; 10 x 225mm Standard fibra cement barge and fascia board  
e5 COVER FLASHING; 0,6mm sheetmetal flashing (200mm girth)  
e6 FLASHING AND COVER FLASHING; 0,6mm sheet metal flashing

F: CEILING CONSTRUCTION;  
f1 SUSPENDED CEILING PANELS; Lay Fine Fibred 600mm x 600mm laid into ceiling grid and secured into place using Hail Down Clips.  
f2 CORNICE; 75mm Covered Gypsum plaster board cornice.  
f3 INSULATION; to be laid under roof sheeting as per roof note.  
f4 CORNICE; 75mm x 18mm SA Pine cornice fixed to wall  
f5 FIBRE CEMENT CEILING; 6mm thick plain ceiling boards, sizes 1200 x 2400mm, fixed to 38 x 38mm bracing at 450mm centres. Apply One universal undercoat two acrylic PVA.

G: WINDOW CILLS;  
g1 INTERNAL: Fibre cement window cills  
g2 EXTERNAL: Brick on edge

H: FINISHES;  
FLOOR:  
h1 DIVING STRIPS; 25 x 3mm brass division strips  
h2 PORCELAIN TILES; 600 x 600mm unglazed porcelain floor tiles fixed to floor screed.  
h3 GRANULITIC SCREED; 25mm thick steel floated tiled granolithic screed.

J: SKIRTINGS;  
j1 GRANULITIC; Coved granolithic screed, 75mm High  
j2 TILE-CUT SKIRTING; 100mm tile-cut skirting

K: WALLS;  
k1 CORNER PROTECTORS; 50 X 50 X 2mm Angle section  
k2 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
k3 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
k4 PLASTER AND TILE; 200 x 200 x 5mm glazed white ceramic tiles  
k5 FACE BRICK; Approved Face brick walls in stretcher bond and all joints to be 5mm deep square recessed.  
k6 WALL TILES; 200 x 200 x 5mm white ceramic tiles upto ceiling level.

L: CEILINGS;  
l1 PAINT ON CEILINGS; Apply super acrylic PVA in strict accordance with the manufacturers specification.  
l2 CEILING CORNICE; Apply super acrylic PVA in strict accordance with the manufacturers specification.

M: SHELOCO SHELVING OR OTHER APPROVED;  
Wall bands no: WB 8 - 1800mm long and uprights with heavy duty 380mm brackets 22mm Laminated wood shelving fixed with wood screws and shelves painted with 2 x eggshell varnish.

NOTES:

CONTRACTOR AND/OR CLIENT TO BE RESPONSIBLE FOR THE REPRODUCTION OF THIS DRAWING BY THE CONTRACTOR.

GENERAL NOTES:

THIS DRAWING IS NOT TO BE COPIED.  
FIXED DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING. ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BULKHEADS, BOUNDARIES, ETC.

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THIS DRAWING BEFORE PUTTING ANY TROUSERS ON.

ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS INCORPORATED BY LOCAL AND OR OTHER CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.

ANY ERROR OR OMISSIONS OR CHANGES TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.

CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.  
CONTRACTORS ARE TO BUILD IN D.P.C. & WHETHER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOW DOORS OR OTHER OPENINGS IN EXTERNAL WALLS. CAVITY WALLS TO HAVE STRIP OF D.P.C. CONTRACTOR TO BUILD IN BRICK FENCES EVERY 2ND COURSE IN BRICK WALLS AND EVERY 2ND COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.

ALL GLAZING IN COMPLIANCE WITH SABS 1040-PART N LATEST EDITION  
ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON PAPEL.  
QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT SABS & OTHER SPECIFICATIONS.

DRAINAGE NOTES:  
ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SANITARY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY LAWS, REGULATIONS AND REQUIREMENTS.  
ALL DRAIN PIPES PERFORM FALL 1:80. MINIMUM FALL 1:10.  
ALL WASTE PIPES AND SOA PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
I.E. TO BE PROVIDED AT EVERY BEND, JOINT AND CHANGES IN DIRECTION AND EVERY 24 METERS WITH WARED COVERS AT DRAIN LEVELS.

ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESAL TRAPS.  
VENT PIPE OUTLET TO BE MIN. 50 ABOVE ANY OPENED.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
DRAINS TO BE TRAPPED AND WITH SUITABLE GELLY GRATING AND TO BE 150mm ABOVE SURROUNDING LEVELS.

ALL DRAIN LID OR BUILDINGS OR FOOTINGS TO BE ENCASED IN HEAVY CONCRETE ALL ROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE SLOPED AND BE FITTED WITH EASILY ACCESSIBLE C.G.E. ABOVE FLOOR LEVEL AND EACH END OF LEVEL.  
NO DRAIN BENDS OR JOINTS TO BE ON UNDER FLOOR SLAB.  
KEEP ALL DRAINS 100mm FROM CONCRETE FOUNDATIONS.

ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION

NO	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	11/26/2018
B	REVISED TO TYPE C-EMS	13/02/2019
C	REVISED GENERAL NOTES AS PER COMMENTS	22/07/2019
D	ADDED STEEL ANCHORS TO CORNER TIE RODS AND ADD	21/09/2020
E	CONCRETE NOTES TO BE ADDED	28/04/2020
F	TACS OVER THE DOORS & WINDOWS	29/07/2020
G	TEXT UNDER REVISED TO WORKING DRAWINGS	21/10/2020

WORKING DRAWINGS

CLIENT: **LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA  
Department of Public Works, Roads and Infrastructure

ARCHITECTURE | DESIGN | INNOVATION  
**THE CREATIVE AXIS**  
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PO Box 201, Mafikeng 0600  
Tel: +27 15 227 0202 | Fax: +27 86 612 3935

PROJECT:  
**LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELLE NKUMPI MUNICIPALITY

DRAWING SECTIONS

SCALE	DATE	DRAWN	CHECKED
1 : 100	AUG 2018	MK	RM
PROJECT NUMBER		M547	
DRAWING NUMBER		REVISION	
300			



DOOR SCHEDULE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8		
QUANTITY	QUANTITY = 3 (D1, D12 & D28)	QUANTITY = 9 (D2, D5, D10, D11, D13, D17, D18, D19 & D29)	QUANTITY = 1 (D33)	QUANTITY = 5 (D3, D4, D7, D8 & D9)	QUANTITY = 1 (D7)	QUANTITY = 1 (D21)	QUANTITY = 2 (D24 & D25)	QUANTITY = 2 (D14 & D15)		
LOCATION	Passages & Rescue Vehicle Garage	Male Ablutions, Female Ablutions, Equip. Store, Sur. Store, Cleaners, Med Store & Offices 1-3	Rescue Vehicle Garage	Male Ablutions & Female Ablutions	Disable Toilet	Rescue Vehicle Garage	Rescue Vehicle Garage	Electrical DB Cupboard & FHR Cupboard		
DOOR DESCRIPTION	Standard 2032x2131mm solid meranti T&G hardwood door with flush back with concealed hardwood edge.	40mm solid core door with moisture finish and concealed hardwood edge.	Standard 2032x1613mm solid meranti T&G hardwood double door with flush back with concealed hardwood edge.	Undercut 1832x1346mm solid core door with 2,2mm beveled hardwood covering on both sides with concealed hardwood edge.	40mm solid core door with moisture finish and concealed hardwood edge.	2,1m high 1812mm wide solid core door, double swing with 30 stainless steel adjustable 100mm wide x 200mm high viewing panel (geogran wire glass) and with smoke seal.	Roll-Up Shutter System 1000 powder coated chain operated 75,20mm thick embossed slatted curtain roller shutter for opening 3000 x 3400mm high with overhead box 280mm high including canopy cover, standard bottom rail, 20mm wide guides, powder coated aluminium floor with weights, powder coated auxiliary components including 4,8mm thick end plates, guide rail, side bolt and guide lock, fixed to brick, masonry and concrete beam.	40mm solid core door with moisture finish and concealed hardwood edge.		
DOOR FINISH	Sand lightly, prepare and paint 3 coats 'Falcon Woodcote 44 Super' polyurethane varnish, sanding between coats.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.	Sand lightly, prepare and paint 3 coats 'Falcon Woodcote 44 Super' polyurethane varnish, sanding between coats.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.	FACTORY PRE-PAINTED CHROMADEK FINISH Colour to Architect.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.		
FRAME DESCRIPTION	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x2131mm door, 2,5 steel hinges.	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x2131mm door, 2,5 steel hinges.	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x1613mm door, 2,5 steel hinges. (TO HAVE BARREL BOLTS)	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x1346mm door, 2,5 steel hinges.	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x1346mm door, 2,5 steel hinges.	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x1812mm door, 2,5 steel hinges. (TO HAVE BARREL BOLTS)	PURPOSE MADE (1000x x 2400H)	1,6mm Double rebated standard pressed steel door frame for 203 / 110mm wall and 2032x2131mm door, 2,5 steel hinges.		
FRAME FINISH	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	As per manufacturer	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.		
IRONMONGERY	Furniture: Union RADUIS CZ 692-24 81 SC lockset (includes fixing screws complete with four lever mortise upper lock. (Masterkey required) Door type: AL 8750 AL or similar approved.	Furniture: Union RADUIS CZ 692-24 81 SC lockset (includes fixing screws complete with four lever mortise upper lock. (Masterkey required) Door type: AL 8750 AL or similar approved.	Furniture: Union RADUIS CZ 692-24 81 SC lockset (includes fixing screws complete with four lever mortise upper lock. (Masterkey required) Door type: AL 8750 AL or similar approved.	Furniture: RADUIS CZ 692-735C (male/female fixing screws) complete with both lock handle & coat hook AL8723 AS, or similar approved.	* UNION CODE ALSO D1 DOOR PULL HANDLE, 37051 SC UNION PARAPLEGIC INDICATOR BOLT, SATIN CHROME FINISH, or similar approved.	Furniture: Union RADUIS CZ 692-24 232 SC lockset (includes fixing screws complete with double cylinder lock. (Masterkey required) Door type: AL 8750 AL or similar approved.	Furniture: ASSA ABLOY Radius handle on 152 x 41mm backplate with satin chrome finish (Code: CE692-0630) including mortise lock (Code: 2857-7839).	Furniture: ASSA ABLOY Radius handle on 152 x 41mm backplate with satin chrome finish (Code: CE692-0630) including mortise lock (Code: 2857-7839).		
SANITARY SCHEDULE	S1	S2	S2a	S3	S4	S11	S7			
FITTING TYPE & QUANTITY	QUANTITY = 3	QUANTITY = 3	QUANTITY = 1	QUANTITY = 2	QUANTITY = 1	QUANTITY = 1	QUANTITY = 1			
SANITARY FITTING	Wall Sanitaryware FLAVIKO BASH urinal with a semi-adjustable rim with 110mm hole, size 585x450mm Product Code 7007 fixed with 2x 10mm bolts, Code 84823 to wall and sealed with 10mm bolts, Code 84823 to wall and sealed with silicon, or similar approved.	Wall Sanitaryware AF-SH ADJUSTABLE urinal with a semi-adjustable rim with 110mm hole, size 585x450mm Product Code 7007 fixed with 2x 10mm bolts, Code 84823 to wall and sealed with 10mm bolts, Code 84823 to wall and sealed with silicon, or similar approved.	Wall Sanitaryware urinal china PROTEA PARAPLEGIC 801 urinal pan (Code 79200) and matching 9 litre cistern (Code 71031) complete with 10/15mm and purpose made copper washers and purpose made copper washers and purpose made copper washers and purpose made copper washers, or similar approved.	Flushing rim urinal cast acrylic Protopan Code 84823 urinal pan (Code 79200) and matching 9 litre cistern (Code 71031) complete with 10/15mm and purpose made copper washers and purpose made copper washers and purpose made copper washers and purpose made copper washers, or similar approved.	Tiered Model 90x40x50 Code 594 1x10 perforated stainless steel urinal with bowl deep on pan, overall size 300 x 400mm with one 200 x 400 x 140mm deep bowl, fixed onto cabinet, or similar approved.	'Wall Toilet' Lavatory urinal with rim (Code 704091) Overall size 80x385mm. Supplied with 30 mm o.p. double gasket (Code 8787) g.p. spreader (Code 8543) and two hanger brackets (Code 8127) Colour: white or similar approved.	Ceramic model 800 Drip sink, manufactured from 1,2mm grade 304 (18/10) stainless steel with 100mm splashback, 40mm dia waste outlet with a large backlit gnd fixed over bowl. Two 352mm dia fixing brackets as per manufacturer, or similar approved.			
TAPS AND MISCELLANEOUS	Cobra Waterleak 15mm 'NOVA' basin mixer Type 292, CP, with Type 303 Anti-leak plug with silicone or similar approved. 600mm high x 450mm bevelled edge glass mirror fixed with dowel screws to wall.	Standard as per manufacturer	Standard as per manufacturer	Cobra Waterleak Type 431 15mm shower cubicle set, CP, with 10mm hose, comprising: 1 pair underfloor drainage No. 128 NOVA 1 overhead shower arm No. 027 1 Concealed shower tray No. 048BU or similar approved.	Cobra Waterleak 15mm wall type sink mixer with overflow and splashback, CP, Type 298044110 'NOVA' with adjustable concealed connections, or similar approved.	Cobra Waterleak Type FJ6.000 'Flashmaster Junior' urinal with chrome plated rim and splashback, CP, 25mm high, 152mm dia, with 100mm splashback, Code 8543 and two hanger brackets (Code 8127) or similar approved.	Cobra Waterleak 25mm wall type basin type 208-20 Nova, with 20mm type 656-20 underfloor plate, CP, 25mm high, 152mm dia, with 100mm splashback, Code 8543 and two hanger brackets (Code 8127) or similar approved.			
WINDOW SCHEDULE	TYPE 1	TYPE 2	TYPE 3	ALUMINIUM SCHEDULE				TYPE 9	TYPE 10	TYPE 11
WINDOW TYPE & QUANTITY	QUANTITY = 16 (W1, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11, W12, W20, W21, W22, & W24)	QUANTITY = 08 (W14, W15, W16, W17, W18 & W19)	QUANTITY = 01 (W13)	DOOR/WINDOW TYPE & QUANTITY				QUANTITY = 1 (D129)	QUANTITY = 1 (D16)	QUANTITY = 1 (D128)
LOCATION	Offices 1-3, Recreation Room & Store	Male Ablutions, Female Ablutions, Cleaners & Disable Toilet	Kitchen	RECREATION ROOM				RECREATION ROOM	ENTRANCE LOBBY	OFFICE STORE
DESCRIPTION	Standard domestic steel window frame cat. no. ND7, with type B burglar proofing to all opening cashes.	Standard domestic steel window frame cat. no. NE1, with type B burglar proofing to all opening cashes.	Standard domestic steel window frame cat. no. NC11, with type B burglar proofing to all opening cashes.	Double aluminium purpose made door as per specialist manufacturer with fixed sidelights as per drawing.				Double aluminium purpose made door as per specialist manufacturer with fixed sidelights as per drawing.	Double aluminium purpose made door as per specialist manufacturer with fixed sidelights as per drawing.	
GEAR	Standard as per manufacturer	Standard as per manufacturer	Standard as per manufacturer	Radius 692 lever handle set with double cylinder lock as per manufacturer. Release set as per manufacturer.				Radius 692 lever handle set with double cylinder lock as per manufacturer. Release set as per manufacturer.	Radius 692 lever handle set with double cylinder lock as per manufacturer. Release set as per manufacturer.	
GLASS	4mm Clear float glass	4mm Tinted glass Type: Pacific	4mm Clear float glass	Natural anodised aluminium.				Natural anodised aluminium.	Natural anodised aluminium.	4
FINISH	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.	6mm Clear PVB laminated safety glass.				6mm Clear PVB laminated safety glass.	6mm Clear PVB laminated safety glass.	Re-touch factory priming, zinc-chrome primer, one undercoat and two coats alkyl enamel paint. Colour to Architect.
MISCELLANEOUS	Standard SC window catch. Vertical blind with 127mm wide vanes, with 45mm x 5mm high powder-coated (white) top track, face-fixed with clip-on back fix. Colour: Chrome & Burgundy.	Standard SC window catch.	Standard SC window catch.	Aluminium door frame & sashlight frame as per manufacturer suitable for single swing doors. 1,5 mm dia (3 per door) hinges as per manufacturer for standard aluminium doors. ASSA ABLOY Avesse Silver straight pull handle (Code: AL 8750-2008AS) with 200mm fixing cover.				Aluminium door frame & sashlight frame as per manufacturer suitable for single swing doors. 1,5 mm dia (3 per door) hinges as per manufacturer for standard aluminium doors. ASSA ABLOY Avesse Silver straight pull handle (Code: AL 8750-2008AS) with 200mm fixing cover.	Aluminium door frame & sashlight frame as per manufacturer suitable for single swing doors. 1,5 mm dia (3 per door) hinges as per manufacturer for standard aluminium doors. ASSA ABLOY Avesse Silver straight pull handle (Code: AL 8750-2008AS) with 200mm fixing cover.	4 pairs 100mm built-in hinges welded to frame and gage.

**NOTES:**

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORKER HAND.

ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS SPECIFIED BY LOCAL AND/OR ON SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.

ANY ERRORS OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.

FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.

CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.

CONTRACTORS ARE TO BUILD IN D.P.C.'S WHETHER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER PENETRATIONS IN EXTERNAL WALLS, CAVITY WALLS TO HAVE DETERMINED D.P.C.'S.

CONTRACTOR TO BUILD IN EACH COURSE EVERY 5th COURSE IN BRICK WALLS AND EVERY 2nd COURSE ABOVE WIGGOWS DOORS AND ALL OTHER OPENINGS.

ALL BLAZING IN COMPLIANCE WITH THIS PART IN LATEST EDITION.

ANY CHANGES AND/OR OMISSIONS FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.

QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND R.S. SPECIFICATIONS.

**DRAINAGE NOTES:**

ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SHALL FIT TO BS 5534 TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY-LAWS, REGULATIONS AND REQUIREMENTS.

ALL DRAIN PIPES: MINIMUM FALL: 1:50. MAXIMUM FALL: 1:10.

ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.

ALL TO BE PROVIDED AT EVERY LEVEL, JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 HOURS WITH Hinged COVERS AT GROUND LEVEL.

ALL WASTE PIPE FITTINGS TO HAVE APPROVED ASSEAL TRAPS.

VENT PIPES OUTLET TO BE MIN. 2m ABOVE ANY OPENING.

ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.

ALL TRAYS TO BE TRAPPED AND WITH SUITABLE QUALITY GRATING AND TO BE 150mm ABOVE SURROUNDING LEVEL.

ALL DRAIN LINES UNDER FLOORS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE SLAB AROUND THE PIPE.

WASTE PIPES IN FLOORS TO BE SEALED AND BE FITTED WITH EARLY ACCESSIBLE C.F. ABOVE FLOOR LEVEL AND EACH END OF SLEEVE.

NO DRAIN BENDS OR JUNCTIONS IN OR UNDER FLOOR SLAB.

KEEP ALL DRAINS 300mm FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	11/03/2018
B	REVISED WINDOW & DOOR SCHEDULES, ADDED TYPE 11WAL	11/03/2018
C	TYPE 8, REVISED DOOR TYPE 11WAL	15/04/2018
D	REVISED SINK AND SPECIFICATION	20/04/2018
E	REVISED MISCELLANEOUS TO CORRECT DOOR	21/04/2018
F	ADDED TYPE 11 FLOOR	28/04/2018

**WORKING DRAWINGS**

CLIENT: **LIMPOPO** REPUBLIC OF SOUTH AFRICA  
Department of Public Works, Roads and Infrastructure

**THE CREATIVE AXIS ARCHITECTS**  
Suite 2, 76 Hans Van Rensburg Street, Polokwane, 0697.  
PO Box 201, Mookgopane 0600  
Tel: +27 15 227 0209 | Fax: +27 84 617 3225

PROJECT: **LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELLE NKUMPI MUNICIPALITY

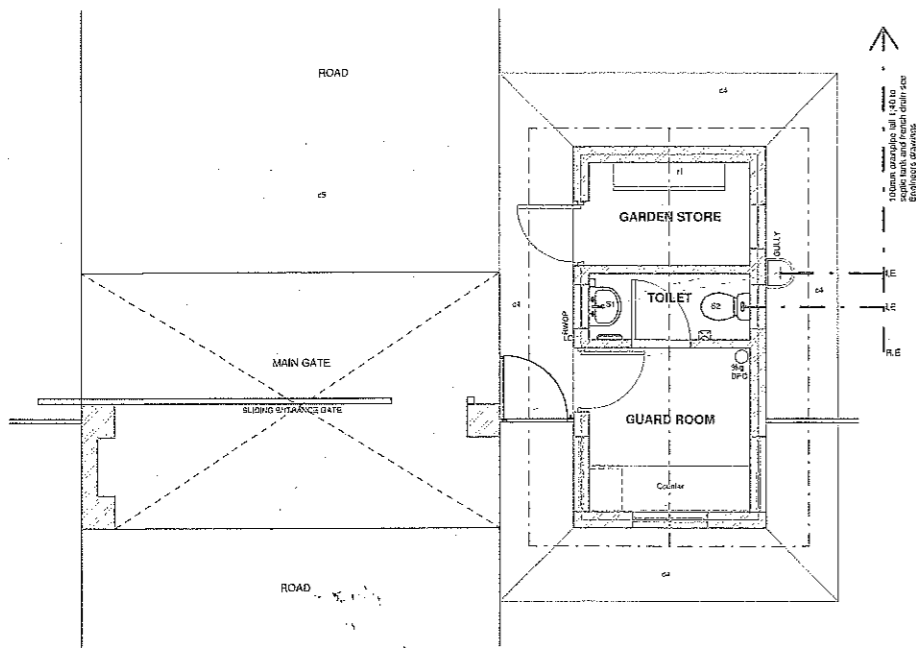
DRAWING SCHEDULES

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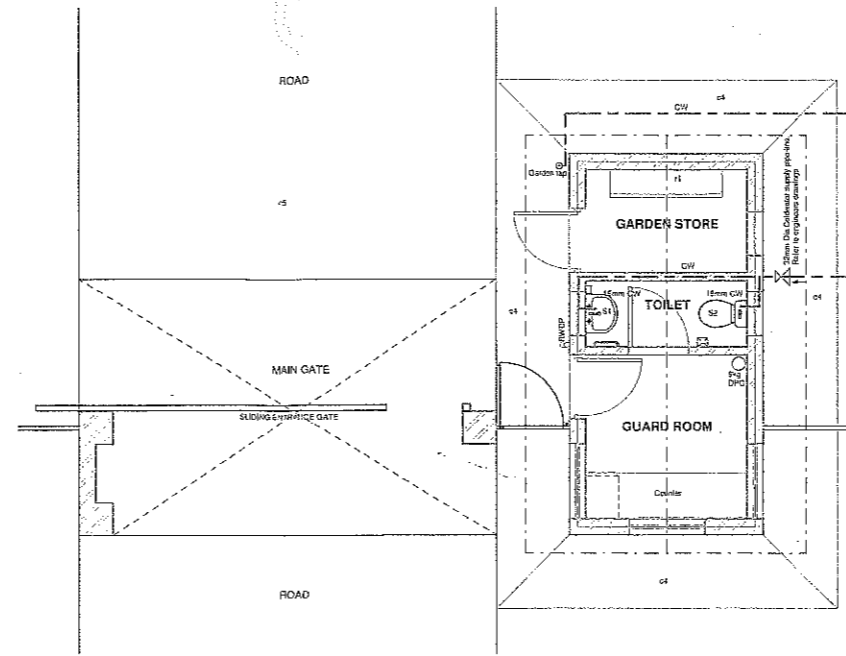
PROJECT NUMBER: **M547**

DRAWING NUMBER: **800** REVISION: **0415**

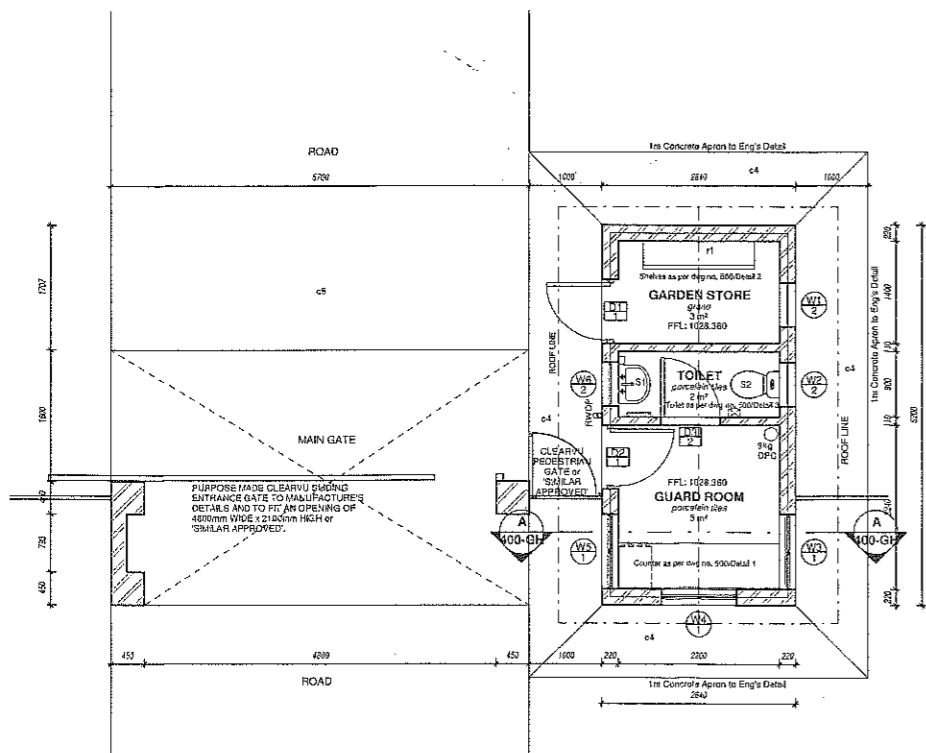
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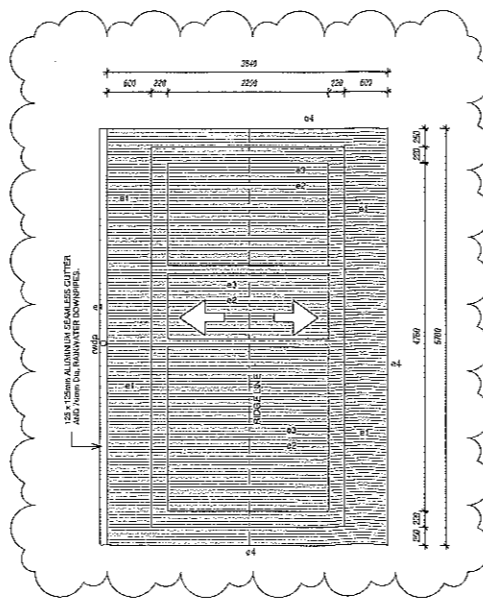
SEWER - DRAINAGE LAYOUT  
GROUND FLOOR PLAN  
SCALE 1:50



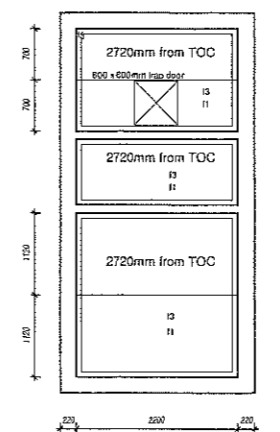
WATER LAYOUT  
GROUND FLOOR PLAN  
SCALE 1:50



GROUND FLOOR PLAN  
SCALE 1:50



ROOF PLAN  
SCALE 1:50



CEILING PLAN  
SCALE 1:50

**GENERAL NOTES**

**CONSTRUCTION AND COMPONENTS**

**A; GROUND FILLING;**  
a1 FILLING; Filling (excavating or imported)  
a2 SOIL POISONING; Approved ant poison to be applied.

**B; FOUNDATIONS;**  
b1 STRIP FOUNDATION FOOTINGS; 220mm WALLS  
b2 STRIP FOUNDATION FOOTINGS; 110mm WALLS

**C; FLOOR CONSTRUCTION;**  
c1 SURFACE BED; 85mm 18MPa concrete surface bed  
c2 WATERPROOFING MEMBRANE; Concol plastics SABS 250um  
c3 DAMP PROOF COURSE; Concol plastics SABS 275um DPD  
c4 APRON; 15MPa concrete apron as per detail  
c5 PAVING; 60mm Zp-Zag standard grey interlocking paving blocks  
c6 KERBS; Mountable kerb (SABS 927)

**D; WALL CONSTRUCTION AND LINTELS;**  
d1 BRICK FOUNDATION WALLS; 220mm - 440mm walls  
d2 110mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks  
d3 220mm WALLS; 110 x 75 x 220mm burnt clay plaster bricks  
d4 CONCRETE COPING; 300mm wide x 1000 long  
d5 BRICK COPING; Red brick  
d6 PRECAST CONCRETE LINTEL; 110 x 75mm standard lintel above all openings  
d7 CONCRETE BLOCKS 228 x 228 x 105mm grille concrete blocks  
d8 220mm WALLS; 2 rows of bricks built in alternate courses in darker colour bricks.

**E; ROOF CONSTRUCTION;**  
e1 ROOF CONSTRUCTION; All exposed timber and timber in brickwork is to be treated with Carbolineum. (2 coats)  
e2 ROOF SHEETING; 0,52mm roof sheeting with Chorastak finish, on 135mm thick (stable non-combustible) glasswool thermal insulation, on 75 x 50mm pine line fixed strictly to manufacturer specification comply with cut cranking on edge with chorastak ribcaps on each rib and external corner trim at vertical corner joints  
e3 TIMBER ROOF TRUSSES; Prefabricated Gangnail/hydroseal or equal approved SA Pine roof trusses with 17,5 degree slope  
e4 BARGE AND FACIA BOARD; 10 x 225mm standard fibre cement barge and fascia board  
e5 COVER FLASHING; 0,6mm sheathmetal flashing (600mm girth)  
e6 FLASHING AND COVER FLASHING; 0,6mm sheet metal flashing

**F; CEILING CONSTRUCTION;**  
f1 SUSPENDED CEILING PANELS; Lay Fine Fissured 600mm x 600mm laid into ceiling grid and secured into place using Hold Down Clips.  
f2 CORNICE; 75mm Cornice/Cypsum plaster board cornice.  
f3 INSULATION; to be laid under roof sheeting as per roof notes.  
f4 CORNICE; 75mm x 19mm SA Pine cornice fixed to wall  
f5 FIBRE CEMENT CEILING; 8mm thick plate ceiling boards, sheet 1200 x 2400mm, fixed to 38 x 38mm branding at 450mm centres. Apply One universal undercoat two acrylic PVA.

**G; WINDOW CILLS;**  
g1 INTERNAL; Fibre cement window cills  
g2 EXTERNAL; Brick on edge

**H; FINISHES;**  
FLOOR;  
h1 DIVIDING STRIPS; 25 x 3mm brass division strips  
h2 PORCELAIN TILES; 600 x 600mm glazed porcelain floor tiles fixed to floor screed.  
h3 GRANOLITHIC SCREED; 25mm thick steel fixed tiled granolithic screed.

**J; SKIRTINGS;**  
j1 GRANOLITHIC; Coved granolithic screed, 75mm High  
j2 TILE-OUT SKIRTING; 160mm tile-cut skirting

**K; WALLS;**  
k1 CORNER PROTECTORS; 50 X 50 X 2mm Angle section  
k2 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
k3 PLASTER AND PAINT; 12mm thick 1:5 cement plaster  
k4 PLASTER AND TILE; 200 x 200 x 5mm glazed white ceramic tiles  
k5 FACE BRICK; Approved Face brick walls in shearer bond and all joints to be 8mm deep square recessed.  
k7 WALL TILES; 200 x 200 x 5mm white ceramic tiles upto ceiling level.

**L; CEILINGS;**  
l1 PAINT ON CEILINGS; Apply super acrylic PVA in strict accordance with the manufacturers specification.  
l2 CEILING CORNICE; Apply super acrylic PVA in strict accordance with the manufacturers specification.

**M; SHELF OR OTHER APPROVED;**  
Wall bands on WB 8 - 1830mm long and uprights with heavy duty 380mm brackets 22mm Laminated wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish.

**LEGEND & LINE TYPES**

--- COLD WATER (CW)  
--- CLASS 6 UPVC PIPE  
--- WASTE PIPE  
--- SOIL PIPE

**NOTES:**

**GENERAL NOTES:**

THIS DRAWING IS NOT TO BE SCALED.  
FIGURED DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, FOUNDATIONS, ETC.  
CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORK ON HAND.  
ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS INDICATED BY LOCAL AND OR ON-SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.  
ANY ERROR OR DISCREPANCY OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAIL FITTINGS.  
CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.  
CONTRACTORS ARE TO BRUSH UP P.E. & WHETHER OR NOT THESE ARE GOVERNOR DRAWINGS TO ALL EXTERNAL WALLS, AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS, CAVITY WALLS TO HAVE STEEPED J.O.C.'S.  
CONTRACTOR TO BRUSH UP BRICK COURSE EVERY 5TH COURSE IN BRICK WALLS AND EVERY 5TH COURSE ABOVE WINDOW, DOORS AND ALL OTHER OPENINGS.  
ALL GLAZING IN COMPLIANCE WITH SABS 1040 PART 1 (LATEST EDITION)  
ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.  
QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND B.S. SPECIFICATIONS.

**DRAINAGE NOTES:**

ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORKS SATISFY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL, APPLICABLE BYLAW, REGULATIONS AND REQUIREMENTS.  
ALL DRAIN PIPES (MINIMUM FALL 1:100) MAY BE FALL 1:100.  
ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
HE. TO BE PROVIDED AT EVERY BEND, JUNCTION AND CHANGE IN DIRECTION AND OVER 24 METERS WITH MARKED COVERS AT GROUND LEVEL.  
ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESAL TRAPS.  
VENT PIPE OUTLET TO BE 200mm ABOVE ANY OPENING.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
GULLIES TO BE TRAPED AND WITH SUITABLE GULLY DRAINAGE AND TO BE 150mm ABOVE SURROUNDING LEVELS.  
ALL DRAINAGE UNDER BUILDINGS OR FOOTINGS TO BE FITTED WITH 150mm x 150mm x 150mm CONCRETE ALL ROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE RECEIVED AND BE FITTED WITH EASILY ACCESSIBLE C.E. ABOVE FLOOR LEVEL AND TO BE OF SUFFICIENT STRENGTH TO BE EASILY ACCESSIBLE C.E.  
NO DRAINAGE OR DRAINAGE FITTINGS TO BE UNDER FLOOR SLAB.  
KEEP ALL DRAINS FREE FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	14/06/2016
B	CHANGED GATE SPECIFICATION TO CLEARLY	20/06/2016
C	ADDED FLOOR LEVEL AND REVISED FLOOR FINISH TO PORCELAIN TILES	20/06/2016
D	ADDED ROOF PLAN & CEILING PLAN, MOVED DRAINAGE NOTE	11/07/2016
E	REMOVED TRUSSES ON ROOF PLAN	09/07/2016

**WORKING DRAWINGS**

CLIENT  
**LEBOWAKGOMO EMS**

ARCHITECTURE | DESIGN | INNOVATION  
**THE CREATIVE AXIS ARCHITECTS**  
Suite 2, 76 Horn Van Rensburg Street, Polokwane, 0959.  
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PROJECT  
**LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELLE NKUMPI MUNICIPALITY

DRAWING  
**GATE HOUSE**  
GROUND FLOOR PLAN, ROOF PLAN,  
CEILING, WATER LAYOUT & SEWER  
LAYOUT

SCALE	DATE	DRAWN	CHECKED
As indicated	JUNE 2016	MK	RJ

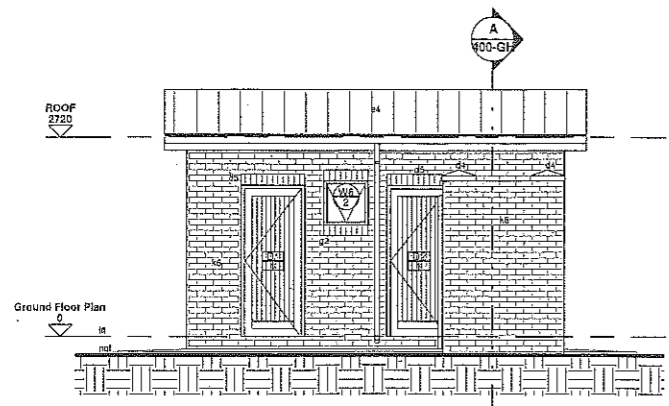
PROJECT NUMBER  
**M547**

DRAWING NUMBER  
**200-GH**

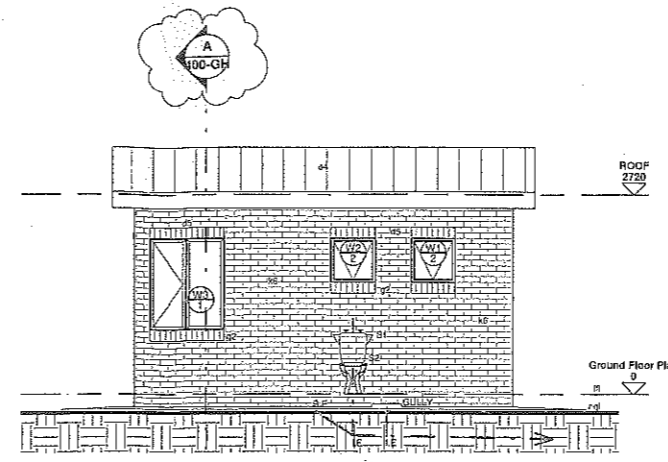
REVISION

SCALE 1:50

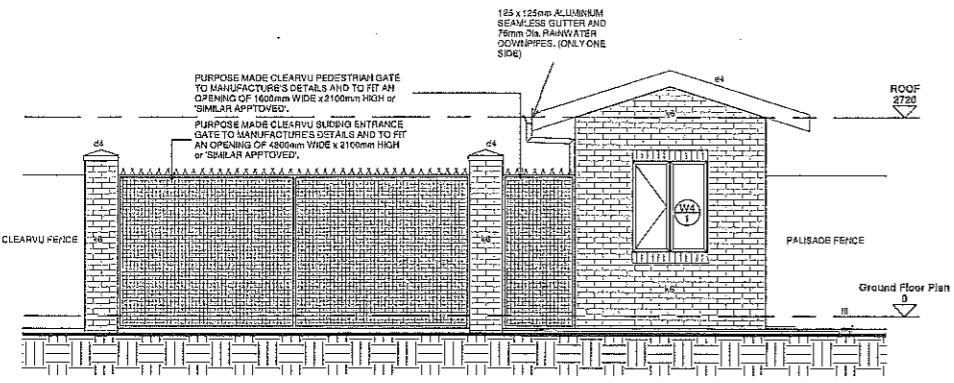




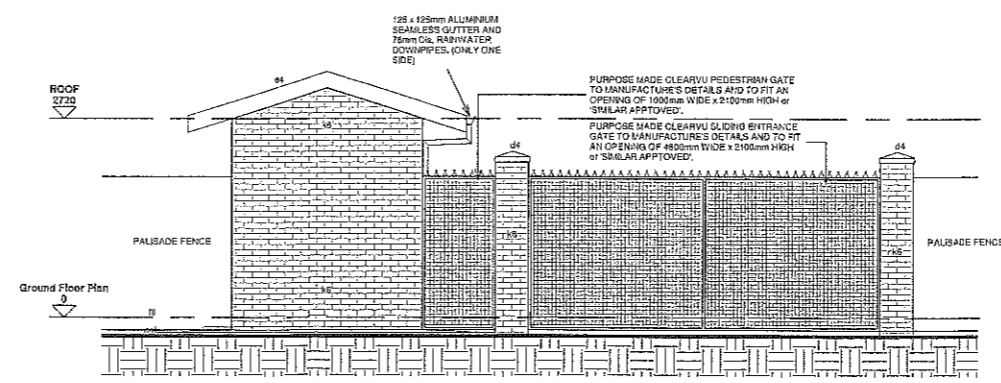
WEST ELEVATION  
SCALE 1:50



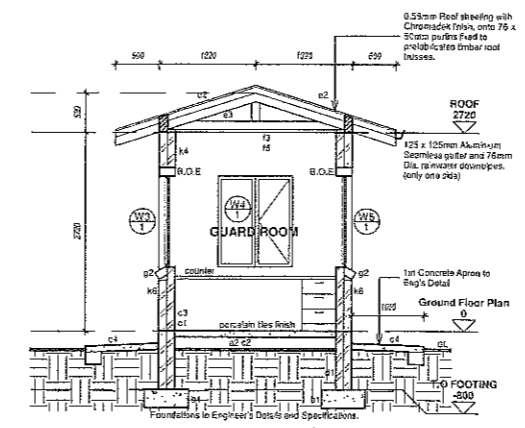
EAST ELEVATION  
SCALE 1:50



SOUTH ELEVATION  
SCALE 1:50



NORTH ELEVATION  
SCALE 1:50



SECTION A-A  
SCALE 1:50

**GENERAL NOTES**

**CONSTRUCTION AND COMPONENTS**

**A: GROUND FILLING:**  
a1 FILLING: Filling (local or imported)  
a2 SOIL POISONING: Approved ant poison to be applied.

**B: FOUNDATIONS:**  
b1 STRIP FOUNDATION FOOTINGS: 220mm WALLS  
b2 STRIP FOUNDATION FOOTINGS: 110mm WALLS

**C: FLOOR CONSTRUCTION:**  
c1 SURFACE BED: 85mm 15MPa concrete surface bed  
c2 WATERPROOFING MEMBRANE: Consol plastics SABS 250um  
c3 DAMP PROOF COURSE: Consol plastics SABS 375um DPC  
c4 APPROX: 15mm concrete apron as per detail  
c5 PAVING: 60mm Zg-Zag standard grey interlocking paving blocks  
c6 KERBS: Mountainal seb (SABS 927)

**D: WALL CONSTRUCTION AND LINTELS:**  
d1 BRICK FOUNDATION WALLS: 220mm - 440mm walls  
d2 110mm WALLS: 110 x 75 x 220mm burnt clay plaster bricks  
d3 220mm WALLS: 110 x 75 x 220mm burnt clay plaster bricks  
d4 CONCRETE CORNICE: 300mm wide x 100mm long  
d5 BRICK CORNICE: Refer course  
d6 PRECAST CONCRETE LINTEL: 110 x 75mm standard lintel above all openings  
d7 CONCRETE BLOCKS: 228 x 228 x 105mm grille concrete blocks  
d8 220mm WALLS: 2 rows of bricks built in stretcher course in darker colour bricks

**E: ROOF CONSTRUCTION:**  
e1 ROOF CONSTRUCTION: All exposed timber and timber in brickwork is to be treated with Creosolite (2 x coats)  
e2 ROOF SHEETING: 0,58mm roof sheeting with Chromadak finish, on 125mm thick flexible non-combustible glasswool thermal insulation, on 75 x 50mm rafters fixed stably to manufacture specification complete with cut cranking on edge with chromadak fibcap on each rib and external corner trim at vertical corner joints  
e3 TIMBER ROOF TRUSSES: Prefabricated Gungahlythruall or equal approved SA Pine roof trusses with 17,5 degree slope  
e4 BARGE AND FACIA BOARD: 10 x 225mm Standard fibre cement barge and fascia board  
e5 COVER FLASHING: 0,6mm sheetmetal flashing(500mm girth)  
e6 FLASHING AND COVER FLASHING: 0,6mm sheet metal flashing

**F: CEILING CONSTRUCTION:**  
f1 SUSPENDED CEILING PANELS: Lay Fine Fintex 600mm x 600mm laid into ceiling grid and secured into place using Hold Down Clips.  
f2 CORNICE: 75mm Covered Gypsum plaster board cornice.  
f3 INSULATION: to be laid under roof sheeting as per roof notes.  
f4 CORNICE: 75mm x 19mm SA Pine cornice fixed to wall  
f5 FIBRE CEMENT CEILING: 6mm thick plain ceiling boards, sizes 1200 x 2400mm laid to 38 x 38mm bracing at 450mm centres. Apply One universal undercoat no acrylic PVA.

**G: WINDOW CILLS:**  
g1 INTERNAL: Fibre cement window cills  
g2 EXTERNAL: Brick on edge

**H: FINISHES:**  
FLOOR:  
h1 DIVIDING STRIPS: 25 x 3mm brass division strips  
h2 PORCELAIN TILES: 600 x 600mm unglazed porcelain floor tiles fixed to floor screed.  
h3 GRANOLITHIC SCREED: 25mm thick steel fixed linted granolithic screed.

**J: SKIRTINGS:**  
j1 GRANOLITHIC: Coved granolithic screed, 75mm high  
j2 TILE-CUT SKIRTING: 100mm tile-cut skirting

**K: WALLS:**  
k1 CORNER PROTECTORS: 50 x 50 x 2mm Angle section  
k2 PLASTER AND PAINT: 12mm thick 1:5 cement plaster  
k3 PLASTER AND PAINT: 12mm thick 1:5 cement plaster  
k4 PLASTER AND TILE: 200 x 200 x 5mm glazed white ceramic tiles  
k5 FACE BRICK: Approved Face brick walls in stretcher bond and all joints to be 6mm deep square recessed.  
k7 WALL TILES: 200 x 200 x 5mm white ceramic tiles uple ceiling level.

**L: CEILINGS:**  
l1 PAINT ON CEILINGS: Apply super acrylic PVA in strict accordance with the manufacturers specification.  
l2 CEILING CORNICE: Apply super acrylic PVA in strict accordance with the manufacturers specification.

**M: SHELOCO SHELVING OR OTHER APPROVED:**  
Wall bands no. 142 0 - 1830mm long and uprights with heavy duty 386mm brackets 22mm Laminated wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish.

**NOTES:**

**CONTRACTOR AND RIGHT OF REPRODUCTION:** THIS DRAWING IS ASSIGNED BY THE ARCHITECT.

**GENERAL NOTES:**  
THIS DRAWING IS NOT TO BE SCALED.  
FIGURED DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BOUNDARIES, ETC.  
CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORK ON HAND.  
ALL CONTRACTORS TO CHECK DETAILS IN THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS INDICATED BY LOCAL AND ON SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.  
ANY ERROR OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.  
CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORK.  
CONTRACTORS ARE TO READ IN FULL AND UNDERSTAND THESE AND SHOW ON DRAWINGS TO ALL EXTERNAL WALLS AT EACH FLOOR AND TO ALL INTERIOR CORNERS OR OTHER OPENINGS IN EXTERNAL WALLS. CAVITY WALLS TO HAVE STEPPED D.P.C.'S.  
CONTRACTOR TO BUILD BRICK FORCE EVERY 8TH COURSE IN BRICK WALLS AND EVERY 10TH COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.  
ALL GLAZING IN COMPLIANCE WITH SABS 9045 PART 1 LATEST EDITION  
ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.  
QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND S.E.S. SPECIFICATIONS.

**DRAINAGE NOTES:**  
ALL FLOOR AND DRAINAGE WORK AND INSTALLATION WORK SHALL BE FITTED TO SPECIFY WITH THE RELEVANT APPROVED S.A.S. REGULATIONS AND REQUIREMENTS.  
ALL DRAIN PIPES MINIMUM FALL 1:80, MINIMUM FALL 1:10.  
ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
E.E. TO BE PROVIDED AT EVERY BRICK JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH MARKED COVERS AT GROUND LEVEL.  
ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESEAL TRAPS.  
VENT PIPE OUTLET TO BE IN LINE OR ABOVE ANY OPENING.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
GULLIES TO BE TRAPPED AND WITH SUITABLE GULLY GRATING AND TO BE 150mm ABOVE FLOORING LEVELS.  
ALL DRAINING UNDER BUILDINGS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE ALL ROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE GULLED AND BE FITTED WITH EASILY ACCESSIBLE C.E. ABOVE FLOOR LEVEL AND EACH END OF BULKHEAD.  
NO DRAIN BODIES OR JUNCTIONS IN OR UNDER FLOOR SLAB.  
KEEP ALL DRAINS FREE FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	ISSUED FOR REGISTRATION ONLY	12/02/2019
B	CHANGES MADE BY ARCHITECT TO CLEAR UP	26/02/2019
C	CORRECTING DETAILS OF BRICK AND PLASTER	28/02/2019
D	MOVED DRAINAGE NOTE, CLEAR SECTION ANNOTATIONS	19/03/2020

**WORKING DRAWINGS**

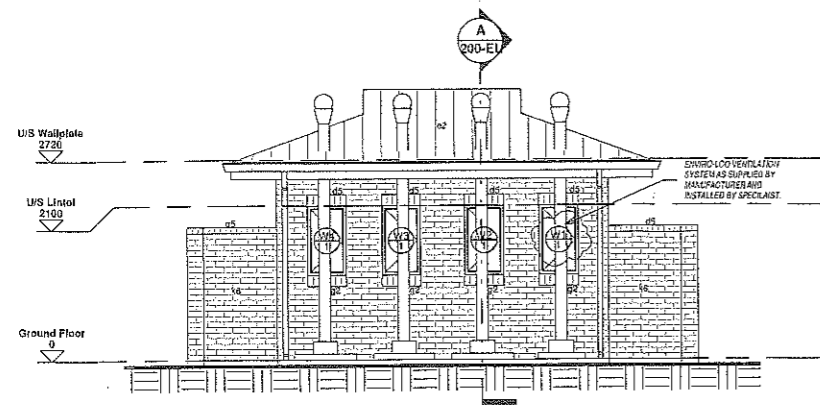
CLIENT  
**LEBOWAKGOMO EMS**

ARCHITECTURE | DESIGN | INNOVATION  
**THE CREATIVE AXIS**  
ARCHITECTS  
Suite 2, 74 Hart Van Rensburg Street, Polokwane, 0659.  
PO Box 201, Mokopane 0600  
Tel: +27 15 297 0909 | Fax: +27 85 412 3925

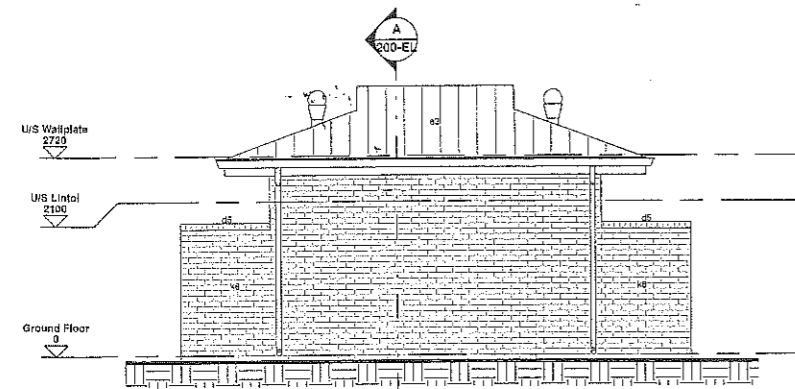
PROJECT  
**LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELE NKUMPI MUNICIPALITY

DRAWING  
**GATE HOUSE ELEVATIONS AND SECTION**

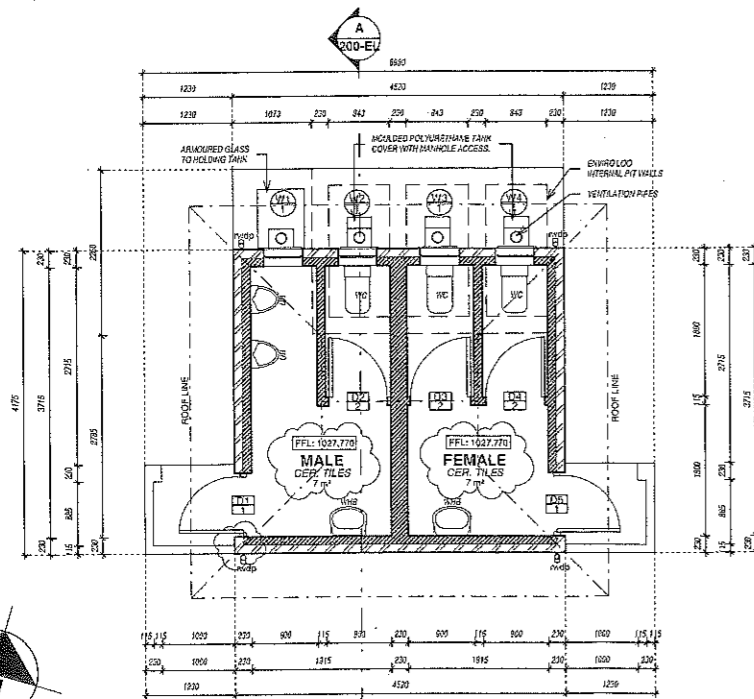
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		REVISION	



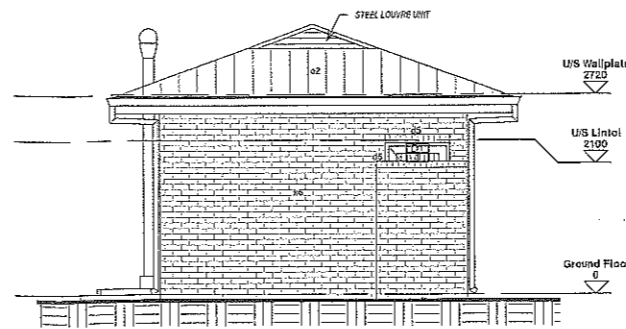
North Elevation  
SCALE 1:50



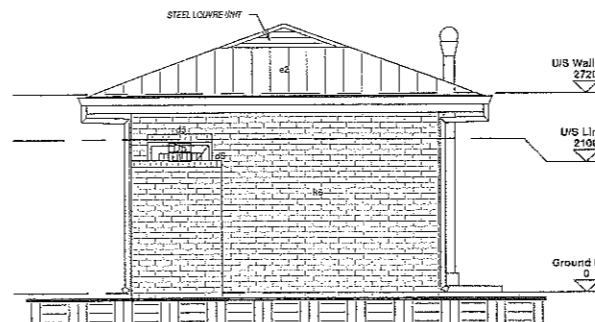
South Elevation  
SCALE 1:50



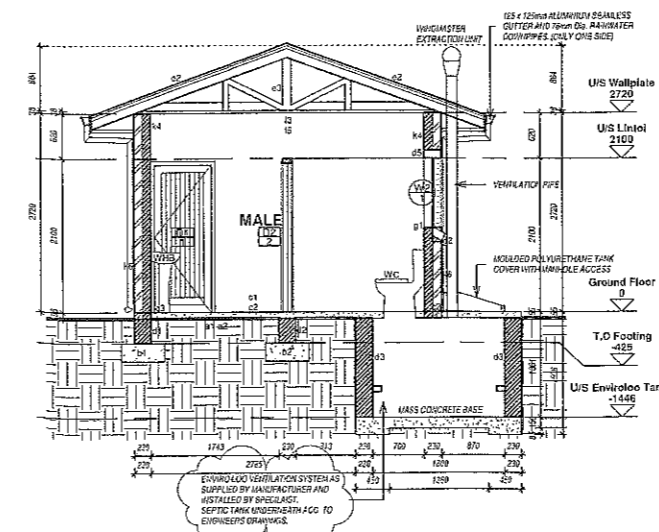
GROUND FLOOR PLAN  
SCALE 1:50



West Elevation  
SCALE 1:50



East Elevation  
SCALE 1:50



SECTION A-A  
SCALE 1:50

- GENERAL NOTES:**  
CONSTRUCTION AND COMPONENTS
- A: GROUND FILLING;
  - a1 FILLING: Filling (excavating or imported)
  - a2 SOIL: POISSONING, Approved ant poison to be applied.
  - B: FOUNDATIONS;
  - b1 STRIP FOUNDATION FOOTINGS: 220mm WALLS
  - b2 STRIP FOUNDATION FOOTINGS: 110mm WALLS
  - C: FLOOR CONSTRUCTION;
  - c1 SURFACE BED: 50mm 15Mpa concrete surface bed
  - c2 WATERPROOFING MEMBRANE: Consol plastics SABS 250mm
  - c3 DAMP PROOF COURSE: Consol plastics SABS 375mm DPS
  - c4 APRON: 15Mpa concrete apron as per detail
  - c5 PAVING: 60mm Zig-Zag standard grey interlocking paving blocks
  - c6 KERBS: Mountable kerb (SABS 927)
  - D: WALL CONSTRUCTION AND LINTELS;
  - d1 BRICK FOUNDATION WALLS: 220mm - 440mm walls
  - d2 110mm WALLS: 110 x 75 x 220mm burnt clay plaster bricks
  - d3 220mm WALLS: 110 x 75 x 220mm burnt clay plaster bricks
  - d4 CONCRETE COPING: 300mm wide x 1000 long
  - d5 BRICK COPING: Roller course
  - d6 PRECAST CONCRETE LINTEL: 110 x 75mm standard lintel above all openings
  - d7 CONCRETE BLOCKS: 228 x 228 x 105mm grille concrete blocks
  - d8 220mm WALLS: 2 rows of bricks built in stretcher course in darker colour bricks
  - E: ROOF CONSTRUCTION;
  - e1 ROOF CONSTRUCTION: All exposed timber and timber in brickwork is to be treated with Carbolineum, (2 x coats)
  - e2 ROOF SHEETING: 0.58mm roof sheeting with Chromadek flash onto 32mm isoboard insulation or similar approved, onto 75 x 50mm purlin fixed strictly to manufacture specification complete with cut cranking on edge with chromadek ricrops on each rib and external corner film at vertical corner joints
  - e3 TIMBER ROOF TRUSSES: Prefabricated Gangnail/hydro nail or equal approved SA Pine roof trusses with 17.5 degree slope
  - e4 GARGE AND FASCIA BOARD: 10 x 225mm Standard fibre cement batten and fascia board
  - e5 COVER FLASHING: 0.6mm sheet metal flashing (600mm girth)
  - e6 FLASHING AND COVER FLASHING: 0.6mm sheet metal flashing
  - F: CEILING CONSTRUCTION;
  - f1 SUSPENDED CEILING PANELS: Lay Fine Fused 600mm x 600mm laid into ceiling grid and secured into place using Hold Down Clips.
  - f2 CORNICE: 75mm Covered Gypsum plaster board cornice.
  - f3 INSULATION: Minimum 150mm thick Aerocel non-combustible light weight fibreglass Classical thermal ceiling insulation on top of bracing between roof timbers as per SANS calculations.
  - f4 CORNICE: 75mm x 18mm SA Pine cornice fixed to wall
  - f5 FIBRE CEMENT CEILING: 75mm thick plain ceiling boards, sizes 1200 x 2400mm, fixed to 38 x 38mm bracing at 450mm centres. Apply One universal undercut two acrylic PVA.
  - G: WINDOW CILLS;
  - g1 INTERNAL: Fibre cement window cills
  - g2 EXTERNAL: Brick on edge
  - H: FINISHES;
  - FLOOR
  - h1 DIVIDING STRIPS: 25 x 3mm brass division strips
  - h2 PORCELAIN TILES: 600 x 600mm unglazed porcelain floor tile fixed to floor screed.
  - h3 GRANOLITHIC SCREED: 25mm thick steel floated lined granolithic screed.
  - SKIRTINGS;
  - j1 GRANOLITHIC: Coved granolithic screed, 75mm high
  - j2 TILE CUT SKIRTING, 100mm tile-cut skirting
  - WALLS;
  - k1 CORNER PROTECTORS: 50 x 50 x 2mm Angle section
  - k2 PLASTER AND PAINT: 12mm thick 1:5 cement plaster
  - k4 PLASTER AND PAINT: 12mm thick 1:5 cement plaster
  - k5 PLASTER AND TILE: 200 x 200 x 5mm glazed white ceramic tiles
  - k6 FACE BRICK: Approved Face brick walls in stretcher bond and all joints to be 8mm deep square recessed.
  - k7 WALL TILES: 200 x 200 x 5mm white ceramic tiles upto ceiling level.
  - CEILING;
  - l1 PAINT ON CEILING: Apply super acrylic PVA in strict accordance with the manufacturers specification.
  - l2 CEILING CORNICE: Apply super acrylic PVA in strict accordance with the manufacturers specification.
  - SHELCO SHELVING OR OTHER APPROVED;
  - M: Wall bands rec: W8 - 1830mm long and uprights with heavy duty 38mm brackets 20mm laminated wood shelves fixed with wood screws and shelves painted with 2 x eggshell varnish.

**NOTES:**  
COPYRIGHT AND RIGHT OF REPRODUCTION OF THIS DRAWING IS RESERVED BY THE ARCHITECT.

**GENERAL NOTES:**  
THIS DRAWING IS NOT TO BE SCALED.  
FIGURED DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE SUBSIDY. ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO SUBSIDIES, BOUNDARIES, ETC.  
CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORK IN HAND.  
ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQS. WHERE NECESSARY BY LOCAL AND OR ON SITE CONDITIONS AND REPORT ANY CONTRADICTION TO THE ARCHITECT.  
ANY ERROR OR OMISSIONS OR CONTRADICTIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FITTING PROPRIETARY OR DETAIL FITTINGS.  
CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS.  
CONTRACTORS ARE TO BUILD IN DUPLEX WHETHER OR NOT THESE ARE SHOWN OR PROVIDED TO ALL EXTERNAL WALLS AT EACH FLOOR AND TO ALL INTERIOR DOORS OR OTHER OPENINGS IN EXTERNAL WALLS. EXTERIOR WALLS TO HAVE STEPPED G.P.C.S.  
CONTRACTOR TO BUILD IN BRICK FORCE EVERY 5TH COURSE IN BRICK WALLS AND EVERY 4TH COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.  
ALL GLAZING IN COMPLIANCE WITH SABS SANS 1043 PART 1 LATEST EDITION.  
ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.  
QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT S.A.S. AND B.B.E. SPECIFICATIONS.

**DRAINAGE NOTES:**  
ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION WORK SATISFACTORY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY LAWS, REGULATIONS AND REQUIREMENTS.  
ALL DRAIN PIPES, MINIMUM FALL 1:50. MAXIMUM FALL 1:10.  
ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
I.E. TO BE PROVIDED AT EVERY 4500, A JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH MARKED COVERS AT GROUND LEVEL.  
ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESINAL TRAP.  
VENT PIPE OUTLET TO BE MIN. 2m ABOVE ANY OPENING.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
GULLIES TO BE TRAPPED AND WITH SUITABLE GULLY DRAINING AND TO BE 150mm ABOVE FINISHED FLOOR LEVELS.  
ALL INTERNAL LINES, BUILDINGS OR FOOTINGS TO BE ENCASED BY 150mm CONCRETE. ALL AROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE SLEEZED AND BE FITTED WITH EASILY ACCESSIBLE C.A. ABOVE FLOOR LEVEL, AND EACH END OF SLEEVE.  
NO DRAIN BENDS OR JOINTS IN OR UNDER FLOOR SLAB.  
KEEP ALL SPACES 50mm FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

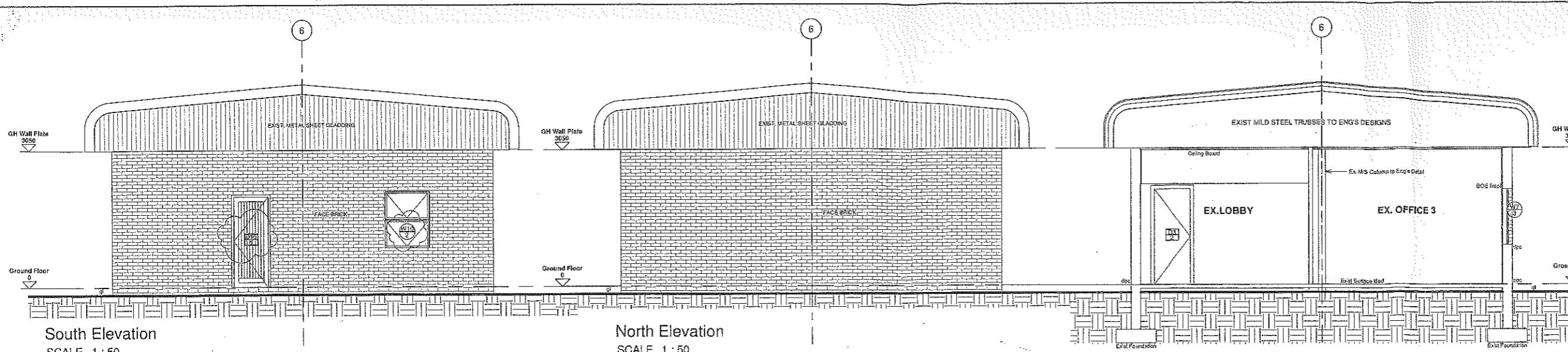
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B	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
C	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
D	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
E	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
F	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
G	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
H	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
I	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
J	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
K	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
L	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019
M	REVISED PER MUNICIPALITY COMMENTS AND APPROVED FOR PERMIT	16/08/2019



PROJECT: **LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPELLE NKUMPI MUNICIPALITY

DRAWING: **ENVIRO-LOO - GROUND FLOOR PLAN, ELEVATIONS AND SECTION**

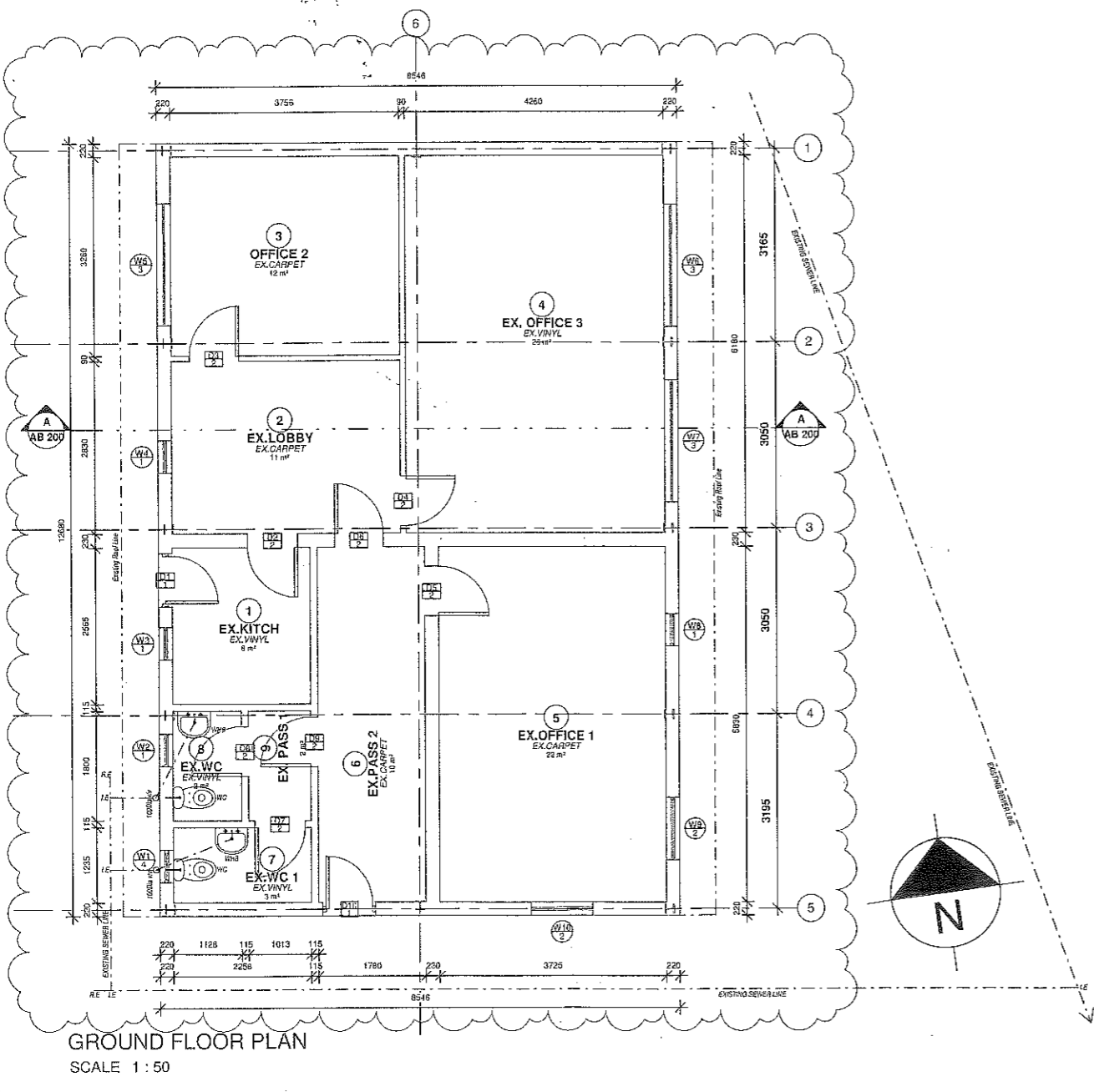
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PROJECT NUMBER <b>M547</b>		REVISION	
DRAWING NUMBER <b>200-EL</b>		REVISION	



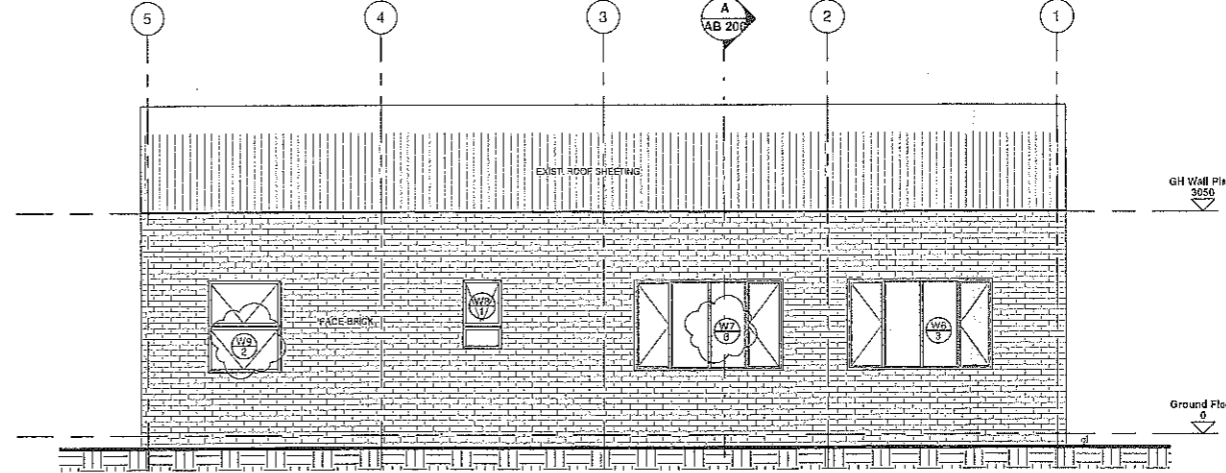
South Elevation  
SCALE 1 : 50

North Elevation  
SCALE 1 : 50

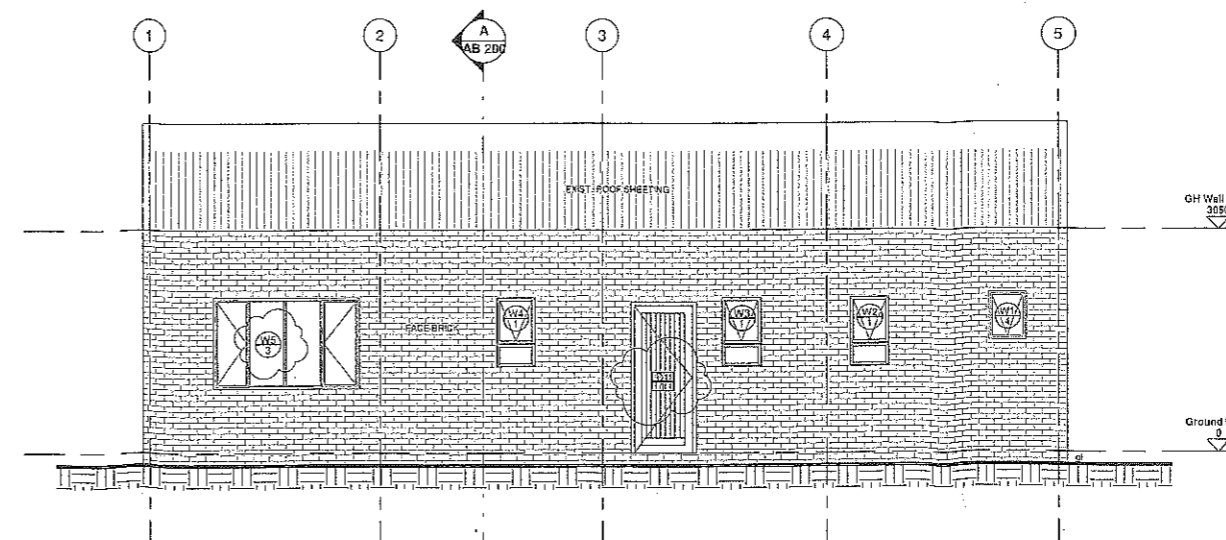
Section A-A  
SCALE 1 : 50



GROUND FLOOR PLAN  
SCALE 1 : 50



East Elevation  
SCALE 1 : 50



West Elevation  
SCALE 1 : 50

**NOTES:**

**GENERAL NOTES:**

THIS DRAWING IS NOT TO BE SCALED.  
FIGURED DIMENSIONS TO BE USED AT ALL TIMES.  
CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING. ALL EXISTING AND EXTERNAL WALLS WITH PARTICULAR REFERENCE TO BUILDINGS, BOUNDARIES, ETC.  
CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWING BEFORE PUTTING ANY WORKS ON.  
ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO SPECIAL REQUIREMENTS INDICATED BY LOCAL AND OR SITE CONDITIONS AND REPORT ANY COMMENTS TO THE ARCHITECT.  
ANY ERROR DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FINISHING PROPRIETARY OR BETAILED FITTINGS.  
CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORK.  
CONTRACTORS ARE TO BUILD IN D.P.S. WHETHER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS CARRYING WALLS TO HAVE STRENGTH D.P.S. CONTRACTOR TO BUILD IN BRICK FORCE EVERY 6TH COURSE IN BRICK WALLS AND EVERY 2ND COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.  
ALL GLAZING IN COMPLIANCE WITH S95 SANS 10400-PART 1 LATEST EDITION.  
ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.  
QUALITY CONTROL AND PERFORMANCE TO COMPLY WITH THE RELEVANT TABLE AND S.B.S. SPECIFICATIONS.

**DRAINAGE NOTES:**

ALL FINISHING AND ORANGE WORK AND INSTALL LATCH WORK SANITARY FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY-LAWS, REGULATIONS AND REQUIREMENTS.  
ALL DOWNPIPE AND GULLY PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.  
L.E. TO BE PROVIDED AT EVERY BEND, JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH MARKED COVERS AT GROUND LEVEL.  
ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESIL. TRAPS.  
VENT PIPE OUTLET TO BE MIN. 50 ABOVE ANY OPENING.  
ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.  
GULLIES TO BE TRAPPED AND WITH SUITABLE GULLY GRATING AND TO BE 150mm ABOVE SURROUNDING LEVELS.  
ALL DRAINS UNDER BUILDINGS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE ALL ROUND THE PIPE.  
WASTE PIPES IN FLOORS TO BE SLEEVED AND BE FITTED WITH SLEEVES ACCESSIBLE 600mm ABOVE FLOOR LEVEL AND EACH END OF SLEEVE.  
NO DRAIN BENDS OR JUNCTIONS OR UNDER FLOOR SLAB.  
KEEP ALL DRAINS 600mm FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	14/12/2019
B	REVISED FOR EXISTING WALLS, EXISTING ROOF SHEETING & WINDOWS, SUGGESTED BY LEWIS UNL	23/02/2020

**AS-BUILT DRAWINGS**

CLIENT: **LIMPOPO**  
REPUBLIC OF SOUTH AFRICA  
DEPARTMENT OF  
ROADS & TRANSPORT

ARCHITECTURE | DESIGN | INNOVATION  
**THE CREATIVE AXIS**  
ARCHITECTS  
40A Van Riebeeck Street, Mokopane, 0600.  
PO Box 201, Mokopane 0600  
Tel: +27 15 491 2090 | Fax: +27 84 412 3915

PROJECT  
**LEBOWAKGOMO EMS**  
ERF 34  
LEBOWAKGOMO BA  
LEPHELE NKUMBI MUNICIPALITY

DRAWING  
**AS-BUILT OFFICES**

SCALE 1 : 50	DATE FEBRUARY 2020	DRAWN Author	CHECKED Checker
PROJECT NUMBER <b>M545</b>			
DRAWING NUMBER <b>AB 200</b>	REVISION A		

DOOR SCHEDULE SCALE 1:50	TYPE 1	TYPE 2
QUANTITY	QUANTITY = 2 (D1 & D10)	QUANTITY = 8 (D2, D3, D4, D5, D6, D7, D8 & D9)
LOCATION	Kitchen & Passage 2	Office 1 - 3, Lobby, Kitchen, Passage 1, WC & WC 1
DOOR DESCRIPTION	Standard 2032x2139mm solid steel door with flush back with concealed hardware edge.	40mm solid core door with masonry finish and concealed hardware edge.
DOOR FINISH	Steel light, epoxy and paint 3 coats 'Flonon Woodcote X4 5000' polyurethane varnish, sanding between coats.	One coat wood primer, one undercoat and two coats eggshell enamel paint. Colour to Architect.
FRAME DESCRIPTION	1.6mm Double rebated standard pressed steel door frame for 2032 x 2139mm wall and 2032x2139mm door. 2.5 steel hinges.	1.6mm Double rebated standard pressed steel door frame for 2107 x 1109mm wall and 2032x2139mm door. 2.5 steel hinges.
FRAME FINISH	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to door and frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to both door and frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to door and frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to both door and frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.
IRONMONGERY	Furniture: Linba SA405 C2 2032x2139 SC handle (multi-handle long screws) complete with four lever mortise upright lock. (Installation required) (Manufacturer required) Doorstop: AL 8730 AL or similar approved	Furniture: Linba RA405 C2 2032x2139 SC handle (multi-handle long screws) complete with four lever mortise upright lock. (Installation required) (Manufacturer required) Doorstop: AL 8730 AL or similar approved

### EXISTING WINDOW SCHEDULE

WINDOW SCHEDULE SCALE 1:50	TYPE 1	TYPE 2	TYPE 3	TYPE 3
WINDOW TYPE & QUANTITY	QUANTITY = 04 (W2, W3, W4, & W5)	QUANTITY = 02 (W6 & W7)	QUANTITY = 03 (W8, W9 & W7)	QUANTITY = 01 (W1)
LOCATION	WC, Kitchen, Lobby & Office	Office 1	Office 2 & 3	WC 1
DESCRIPTION	Standard domestic steel window frame cat. no. NCT18, with type	Standard domestic steel window frame cat. no. TD7, with type B1 burglar proofing to all opening sashes.	Standard domestic steel window frame cat. no. NC22, with type B1 burglar proofing to all opening sashes.	Standard domestic steel window frame cat. no. NET, with type B1 burglar proofing to all opening sashes.
GEAR	Standard as per manufacturer	Standard as per manufacturer	Standard as per manufacturer	Standard as per manufacturer
GLASS	4mm Clear float glass Buttressed 4mm Frosted glass Type Pacific	4mm Clear float glass	4mm Clear float glass	4mm Frosted glass Type Pacific
FINISH	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to window frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to window frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to window frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to window frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to window frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to window frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.	Steel frame to be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. Rub down and clean before repainting, but if paint film has blistered or broken down, paint to be completely removed down to the base metal. After removing rust from metalwork, those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint. Primer for metal to be zinc phosphate in accordance with SABS Specification 1318. Undercoats to window frames to be in accordance with SABS Specification 681 - Type II. Finishing coats to window frame to be two coats polyurethane eggshell enamel in accordance with SABS Specification 515. Colour to approval.
MISCELLANEOUS	Standard 80 window catch.  Kitchen, Lobby & Office Install new Roller blinds with slat/roller edge, aluminium roller and side controlled chain system with automatic down mechanism manually operated blind to be fixed inside reveal to concrete lintel. Colour: Georgia Burgandy	Standard 80 window catch.  Install new Roller blinds with slat/roller edge, aluminium roller and side controlled chain system with automatic down mechanism manually operated blind to be fixed inside reveal to concrete lintel. Colour: Georgia Burgandy	Standard 80 window catch.  Install new Roller blinds with slat/roller edge, aluminium roller and side controlled chain system with automatic down mechanism manually operated blind to be fixed inside reveal to concrete lintel. Colour: Georgia Burgandy	Standard 80 window catch.  Install new Roller blinds with slat/roller edge, aluminium roller and side controlled chain system with automatic down mechanism manually operated blind to be fixed inside reveal to concrete lintel. Colour: Georgia Burgandy

**NOTES:**

COPYRIGHT AND RIGHT OF REPRODUCTION OF THIS DRAWING IS RESERVED BY THE ARCHITECT.

**GENERAL NOTES:**

THIS DRAWING IS NOT TO BE SCALED.  
FIGURED DIMENSIONS TO BE USED AT ALL TIMES.

CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF THE BUILDING, ALL EXTERNAL AND INTERNAL WALLS WITH PARTICULAR REFERENCE TO SUBSIDENCES, BOUNDARIES, ETC.

CONTRACTOR TO VERIFY ALL LEVELS, HEIGHTS AND DIMENSIONS ON SITE AND TO CHECK SAME AGAINST THE DRAWINGS BEFORE PUTTING ANY WORK IN HAND.

ALL CONTRACTORS TO CHECK DETAILS SHOWN ON THIS DRAWING FOR COMPLIANCE WITH STANDARDS OF GOOD BUILDING PRACTICE WITH PARTICULAR REFERENCE TO MATERIAL REQUIREMENTS SPECIFIED BY LOCAL AND OR ON SITE CONDITIONS AND REPORT ANY COMMENT TO THE ARCHITECT.

ANY ERROR DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.

FINAL DIMENSIONS TO BE TAKEN ON SITE BEFORE ORDERING, SUPPLYING AND FIXING PROPRIETARY OR DETAILED FITTINGS.

CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE WORK.

CONTRACTORS ARE TO BUILD UP D.P.C.'S WHEREVER OR NOT THESE ARE SHOWN ON DRAWINGS TO ALL EXTERNAL WALLS AT EACH FLOOR AND TO ALL WINDOWS, DOORS OR OTHER OPENINGS IN EXTERNAL WALLS, CAVITY WALLS TO HAVE STEPPED D.P.C.'S.

CONTRACTOR TO BUILD IN BRICK FORCE EVERY 6TH COURSE IN BRICK WALLS AND EVERY 12TH COURSE ABOVE WINDOWS, DOORS AND ALL OTHER OPENINGS.

ALL GLAZING IN COMPLIANCE WITH SABS 10449-PART 1 LATEST EDITION

ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECT FOR CLARIFICATION BEFORE ANY WORK IS PUT ON HAND.

QUALITY OF ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH THE RELEVANT SABS AND B.E.C. SPECIFICATIONS.

**DRAINAGE NOTES:**

ALL PLUMBING AND DRAINAGE WORK AND INSTALLATION INCLUDING FITTINGS TO COMPLY WITH THE RELEVANT LOCAL AUTHORITY BY-LAWS, REGULATIONS AND REQUIREMENTS.

ALL DRAIN PIPES APPROX. FALL 1:50, MINIMUM FALL 1:40.

ALL WASTE PIPES AND SOIL PIPES TO BE FULLY ACCESSIBLE ALONG ENTIRE LENGTH OF THE PIPE.

I.E. TO BE PROVIDED AT EVERY BEND, JUNCTION AND CHANGE IN DIRECTION AND EVERY 24 METERS WITH AIRDRIED COVERS AT GROUND LEVEL.

ALL WASTE PIPE FITTINGS TO HAVE APPROVED RESEAL TRAPS.

VENT PIPE OUTLET TO BE MIN. 2m ABOVE ANY OPENING.

ALL BATH ENCLOSURES TO HAVE ACCESS PANELS.

GULLIES TO BE TRAPPED AND WITH REMOVABLE GULLY GRATING AND TO BE 150mm ABOVE SURROUNDING LEVELS.

ALL DRAINS UNDER BUILDINGS OR FOOTINGS TO BE ENCASED IN 150mm CONCRETE ALL ROUND THE PIPE.

WASTE PIPES IN FLOORS TO BE SLEEVED AND BE FITTED WITH EASILY ACCESSIBLE O.E. ABOVE FLOOR LEVEL AND EACH END OF SLEEVE.

NO DRAIN BENDS OR JUNCTIONS IN OR UNDER FLOOR SLAB.

KEEP ALL DRAINS 50mm FROM CONCRETE FOUNDATIONS.

**ALL STRUCTURAL CONCRETE WORK TO ENGINEER'S DESIGN AND SPECIFICATION**

NO.	REVISION	DATE
A	ISSUED FOR INFORMATION ONLY	2023/02/06
B	REVISED DRAWING TO REFLECT FRAME FINISH WORK	28/04/2024

**AS-BUILT DRAWINGS**

CLIENT: **LIMPOPO**  
REPUBLIC OF SOUTH AFRICA  
PERMANENT DEPARTMENT OF  
ROADS & TRANSPORT

ARCHITECTURE | DESIGN | INNOVATION  
**THE CREATIVE AXIS**  
ARCHITECTS  
40A Von Ribbeck Street, Mookgopong, 0600,  
PO Box 201, Mookgopong 0600  
Tel: +27 15 621 2090 | Fax: +27 15 612 3225

PROJECT:  
**LEBOWAKGOMO EMS**

ERF 34  
**LEBOWAKGOMO BA**  
**LEPEHE NKUMBI MUNICIPALITY**

DRAWING:  
**AS-BUILT SCHEDULES**

SCALE	DATE	DRAWN	CHECKED
1:50	FEBRUARY 2020	MK	BM

PROJECT NUMBER: **M545**

DRAWING NUMBER: **AB 800** REVISION: **B**

# DEPARTMENT OF PUBLIC WORKS

## LEBOWAKGOMO EMS

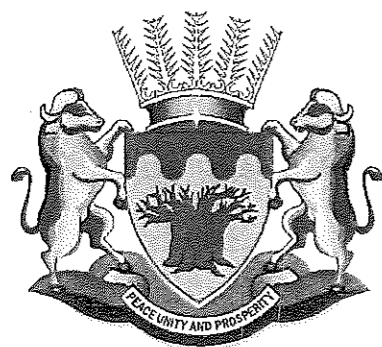
CONTRACT NO. : LDPW: PFOF/11026

BOOK OF DRAWINGS

FEB 2021

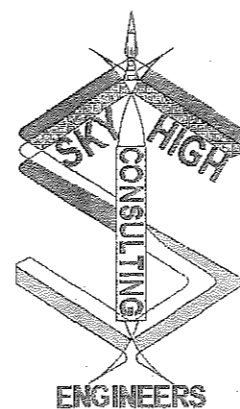
DETAILED DESIGN DRAWINGS

ISSUED BY :-



DEPARTMENT  
OF  
PUBLIC WORKS

PREPARED BY :-



SKY HIGH CONSULTING ENGINEERS C.C.

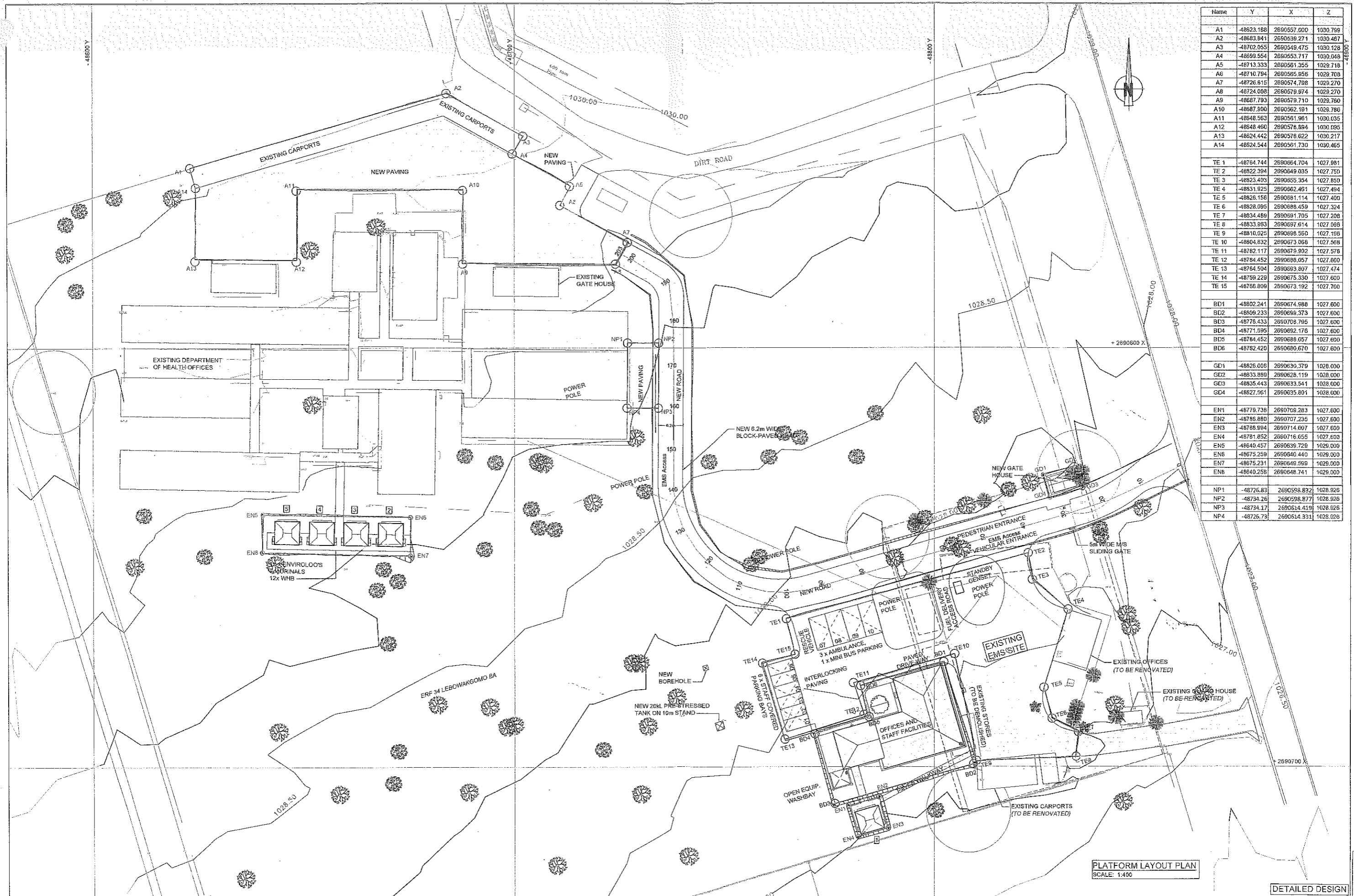
Head Office  
Khurula Park  
No 14 Peace Street  
P. O. Box 2816  
Tzaneen  
0850  
Tel: +27 (0)15 307 6961  
Fax: +27 (0)86 540 1430  
Email: [info@shconsulting.co.za](mailto:info@shconsulting.co.za)











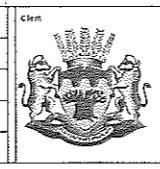
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TE 3	-48823.403	2690655.354	1027.850
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TE 6	-48828.095	2690688.459	1027.324
TE 7	-48834.489	2690681.705	1027.208
TE 8	-48833.963	2690697.614	1027.086
TE 9	-48810.025	2690698.560	1027.198
TE 10	-48804.832	2690673.068	1027.568
TE 11	-48782.117	2690679.902	1027.578
TE 12	-48784.452	2690688.057	1027.600
TE 13	-48764.504	2690693.807	1027.474
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PLATFORM LAYOUT PLAN  
SCALE: 1:400

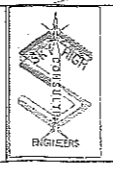
DETAILED DESIGN

REV. NO.	DATE	DESCRIPTION	CON'D BY	DR.	REV. NO.	DATE	REFERENCE DRAWING	CHECKED BY	DR.

DESIGNED BY	OH
CHECKED BY	CH
DRAWN BY	MM
CHECKED BY	TU
APPROVED & ACCEPTED BY	TU



DEPARTMENT OF PUBLIC WORKS



**SKY HIGH CONSULTING ENGINEERS**  
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 East London Office: 14 Szezekwa Road, Bheke, 6241. Tel: 043 721 1995  
 Nelspruit Office: 5 Eberke Street, Hlangeni, 1201. Tel: 013 752 3014  
 George Office: 17 Progress Street, Dornais Drift, 6529. Tel: 044 873 2892

CLIENT CONTRACT NUMBER:	
PROJECT:	LEBOAKGOMO EMS
DRAWING TITLE:	PLATFORM LAYOUT

CONTRACT NO.:	
CONSULTING ENGINEER:	

AS BUILT PLAN	
SCALE	1:400
DRAWING NUMBER	SHCE-008
SHEET	1 OF 1

0423

LEGEND	
	110mm PVC-U SEWER PIPE
	SEWER NODE



REV. NO.	DATE	DESCRIPTION	CONSULT	DATE	REFERENCE DRAWING	CONSULT	DATE	APPROVED & ACCEPTED BY	DATE
B	15/03/21	APPROVAL							
A	15/03/21	APPROVAL							

DEPARTMENT OF PUBLIC WORKS

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Nelspruit Office: 5 Elmke Street, Nelspruit, 1201. Tel: 013 782 3014  
George Office: 17 Progress Street, Donnell's Drift, 6520. Tel: 044 673 2962

CHEF ENGINEER LFO-SP/WM	DATE
CONSULTING ENGINEER	DATE

EVERY CONTRACT NUMBER	CONTRACT NO.:-
PROJECT:	LEBOAKGOMO EMS
DRAWING TITLE:	SEWER SERVICES LAYOUT

AS BUILT PLAN	SHEET 1 OF 1
SCALE	1:100
CONTRACT NUMBER	SHCE-008
PROJECT NUMBER	SHCE-008-SSL02_B

DRAWING NUMBER: SHCE-008-SSL02\_B

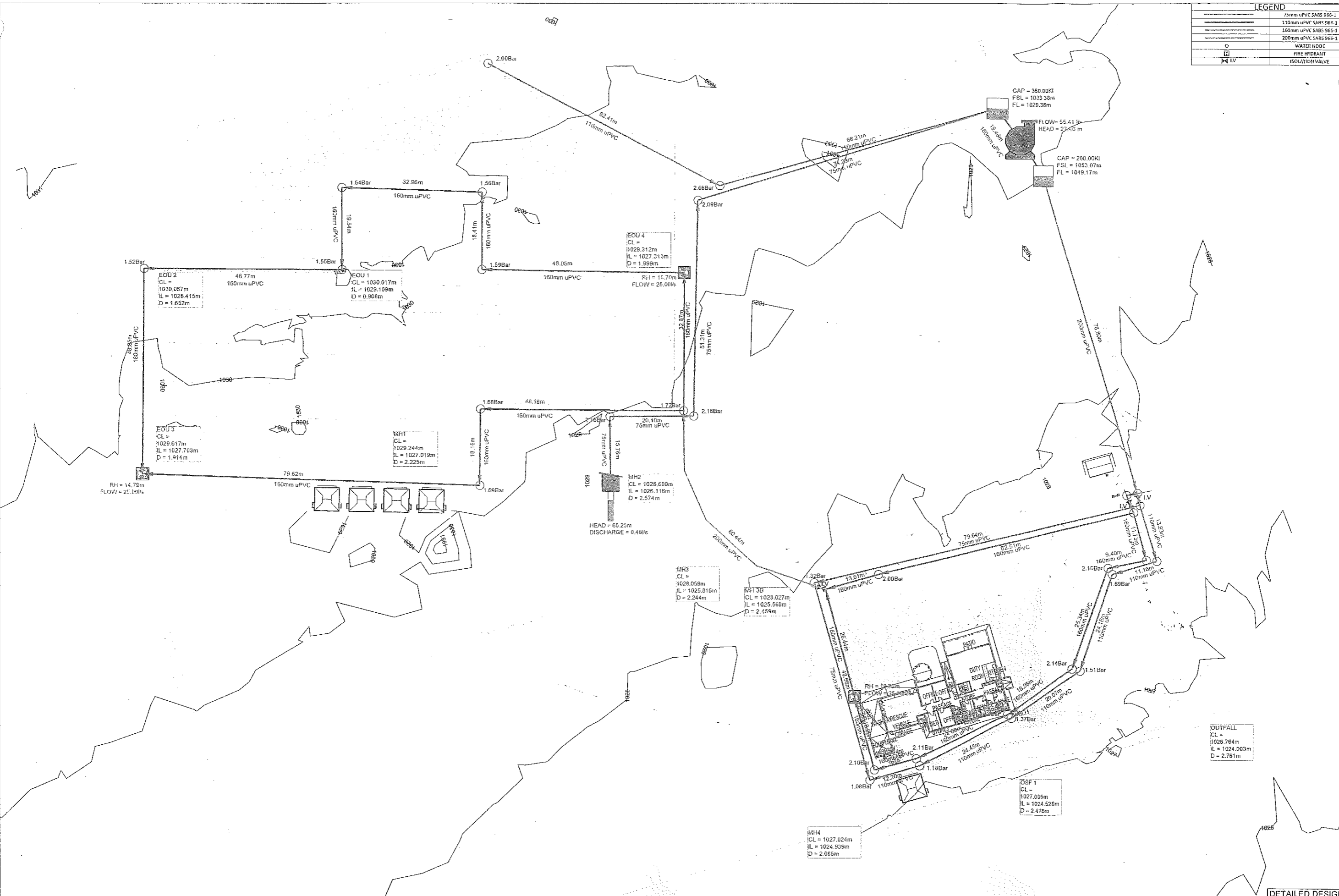
04/28





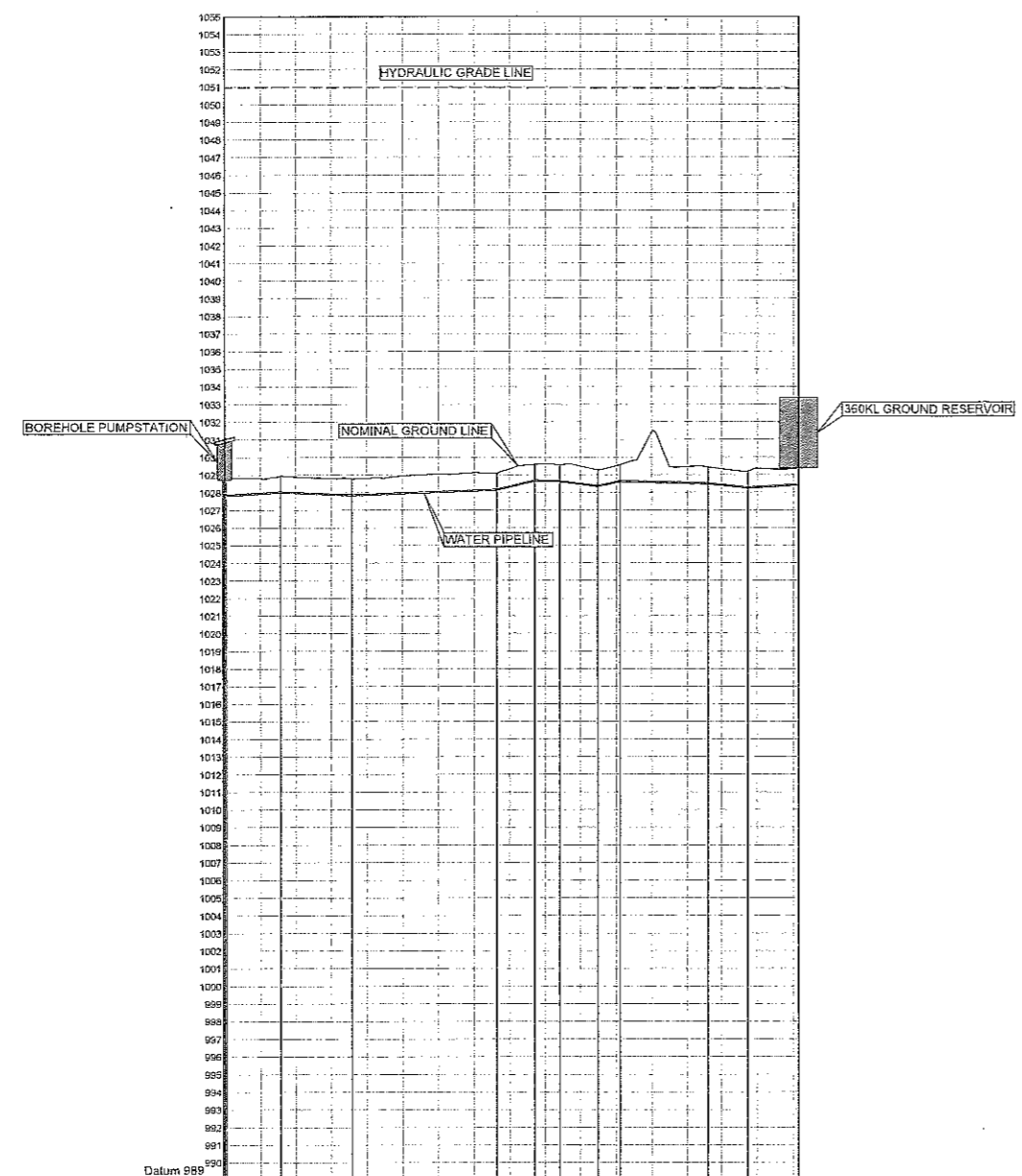
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	120mm uPVC SABS 966-1
	160mm uPVC SABS 966-1
	200mm uPVC SABS 966-1
	WATER NODE
	FIRE HYDRANT
	ISOLATION VALVE

0429



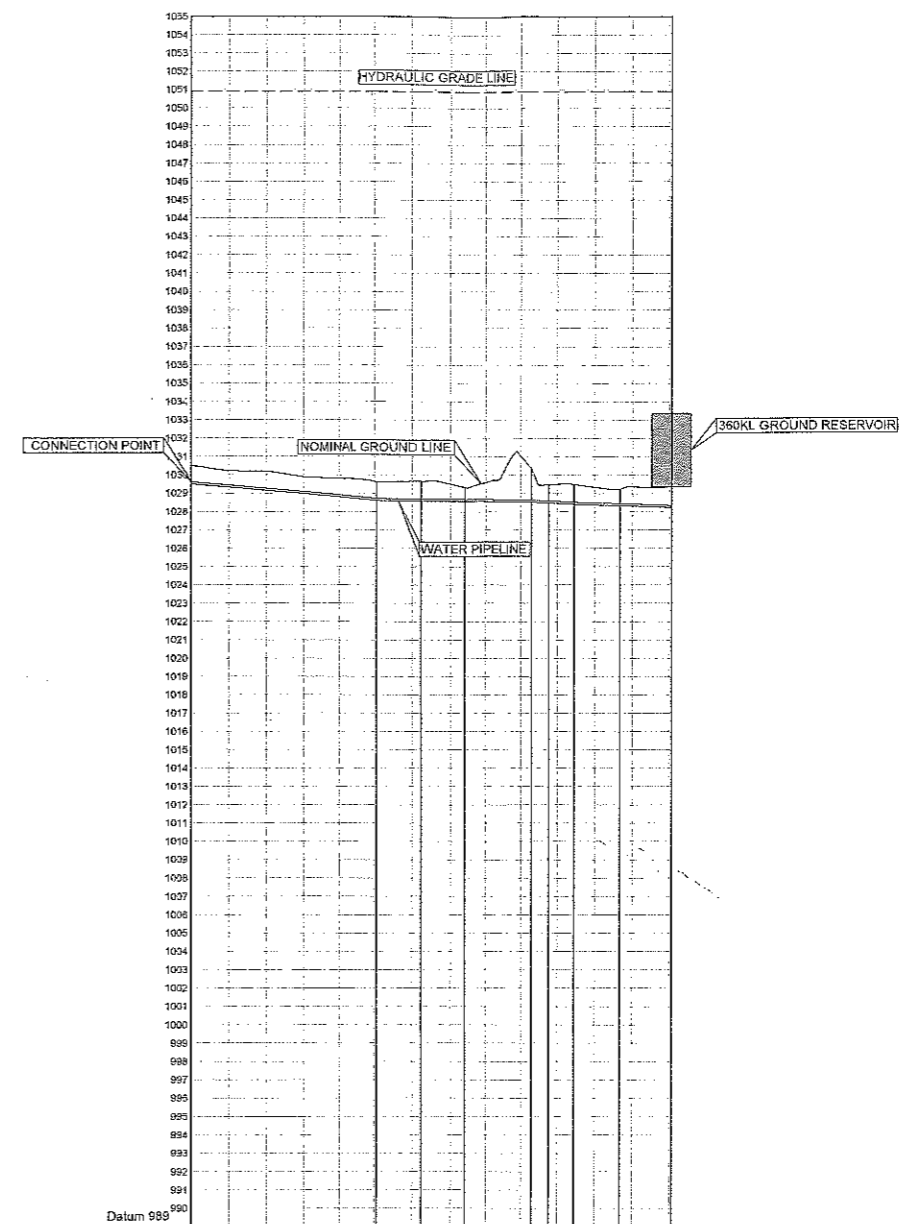
OUTFALL  
CL = 1026.764m  
IL = 1024.003m  
D = 2.761m

REVISIONS										DESIGNER			DEPARTMENT OF PUBLIC WORKS			SKY HIGH CONSULTING ENGINEERS			CLIENT CONTRACT NUMBER			CONTRACT NO. :-			AS BUILT PLAN									
Rev No	DATE	DESCRIPTION	CONSULT	DIR	Rev No	DATE	REFERENCE DRAWING	CONSULT	DIR	DESIGNED BY	SSCH	CHEKED BY	SSCH	DRAWN BY	EDVK	CHECKED BY	TM	APPROVED & ADOPTED BY	TM	Head Office	14 Stockton Road	Boksburg 1501	East London Office	5 Ethelbert Street	Nelson Mandela, 1201	George Office	17 Pines Street	Durbanville 7832	Client Contract Number	CONTRACT NO. :-	AS BUILT PLAN	PROJECT NUMBER	SHCE-008	SHEET 1 OF 1
																				Head Office	14 Stockton Road	Boksburg 1501	East London Office	5 Ethelbert Street	Nelson Mandela, 1201	George Office	17 Pines Street	Durbanville 7832	Project Number	LEBOAKGOMO EMS	Project Number	SHCE-008	Project Number	SHCE-008-WSL04 B



Ground Level	1028.714	1027.802	1027.695	1027.595	1027.799	1028.089	1028.627	1028.595	1028.296	1028.597	1028.434	1028.185	1028.375
Inlet Level / Outlet Level		1027.802	1027.695	1027.595	1027.799	1028.117	1028.627	1028.595	1028.296	1028.597	1028.434	1028.185	1028.375
Node Name		BSM	M40	M45	M45		M41						BS
Pipe Name		0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972
Link Type / Link Size			mPVC 75	mPVC 75		mPVC 75					mPVC 75		
Length / Slope		15.765 m 1.160 %	20.160 m 0.926 %		43.661 m 0.785 %	11.762 m 4.761 %	4.936 m 4.004 %	10.633 m 2.971 %	14.311 m 1.991 %	24.898 m 0.637 %	11.328 m 2.108 %	13.065 m 1.267 %	
Flow		0.475 l/s	0.475 l/s		0.475 l/s					0.475 l/s			
Velocity		0.129 m/s	0.129 m/s		0.129 m/s					0.129 m/s			
Pressure (bar)		2.273	2.254	2.251	2.271	2.238	2.233	2.188	2.181	2.216	2.202	2.225	2.207
Hydraulic Grade Head Loss		0.000	0.007 m	0.009 m	0.000 m	0.023 m	0.050 m			0.023 m			0.000 m
Chainage		0+000	15+765	35+925	79+586	91+348	96+284	107+117	121+428	136+326	147+760	160+825	173+890

**PUMPING MAIN**  
Horizontal Scale: 1:500  
Vertical Scale: 1:50

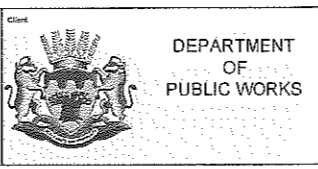


Ground Level	1028.714	1027.802	1027.695	1027.595	1027.799	1028.089	1028.627	1028.595	1028.296	1028.597	1028.434	1028.185	1028.375
Inlet Level / Outlet Level		1027.802	1027.695	1027.595	1027.799	1028.117	1028.627	1028.595	1028.296	1028.597	1028.434	1028.185	1028.375
Node Name		CP											BS
Pipe Name		1.005	1.009	1.008	1.074	1.008	1.008	1.005	1.005	1.005	1.005	1.142	
Link Type / Link Size			mPVC 110			mPVC 110					mPVC 110		
Length / Slope		50.624 m 1.729 %	11.789 m 0.368 %	11.659 m 0.003 %	16.921 m 0.238 %	47.762 m 0.907 %	12.164 m -0.535 %	14.000 m 0.756 %					
Flow		0.475 l/s			0.475 l/s								
Velocity		0.050 m/s			0.050 m/s								
Pressure (bar)		2.069	2.184	2.181	2.188	2.181	2.180	2.189	2.193	2.189	2.212	2.212	2.222
Hydraulic Grade Head Loss		0.004 m	0.004 m	0.005 m	0.005 m	0.005 m			0.005 m				0.000 m
Chainage		0+000	50+624	62+413	74-034	90-996	103-160	115-160	127-160	141-160	155-160	166-160	173-890

**CONNECTION POINT TO 360KL GROUND RESERVOIR**  
Horizontal Scale: 1:500  
Vertical Scale: 1:50

REV. NO.	DATE	DESCRIPTION	CONVULT	DIR	REV. NO.	DATE	REFERENCE DRAWING	CONVULT	DIR
1	15/05/2020	APPROVAL							
2	15/05/2020	APPROVAL							

DESIGNED BY	SSCH
CHECKED BY	SSCH
DRAWN BY	SSAYK
CHECKED BY	SS
APPROVED & ACCEPTED BY	SS



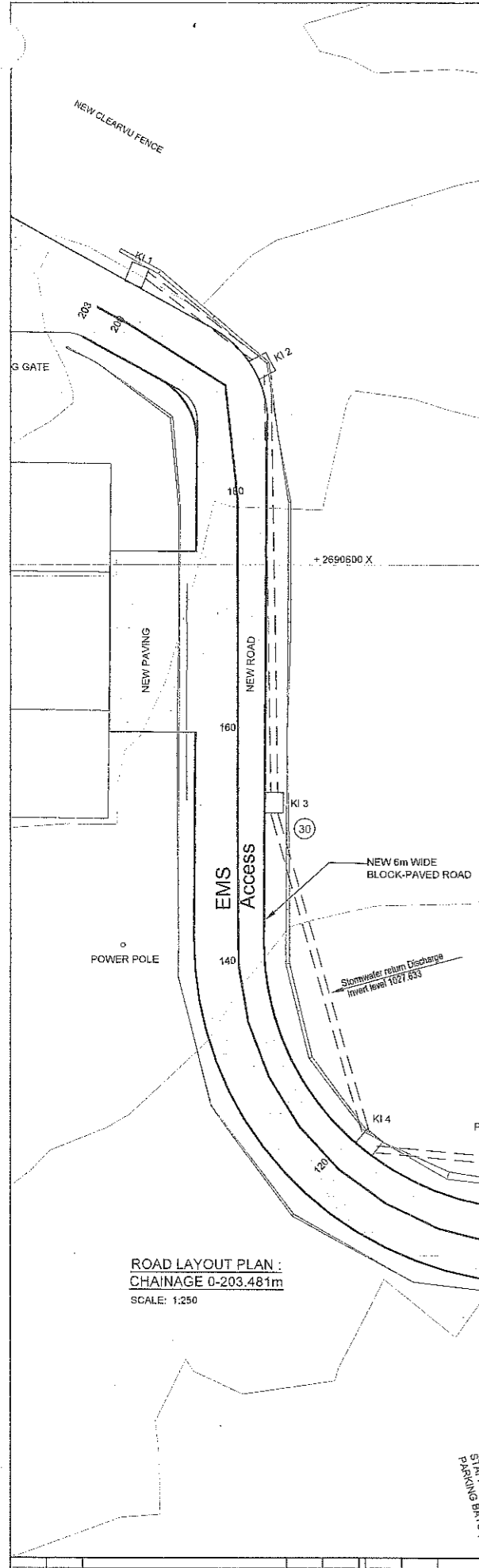
**SKY HIGH CONSULTING ENGINEERS**  
Head Office: No 14 Peace Street, P.O. Box 2810, Tzaneen, 0850.  
Tel: +27 (0)15 307 8061, Fax: +27 (0)15 640 1430, Email: info@shcon.co.za  
East London Office: 1A Sisonke Road, Beres, 5241. Tel: 043 721 1996  
Nelspruit Office: 4 Eureka Street, Nelspruit, 1201. Tel: 013 782 3014  
George Office: 17 Progress Street, Dornes Drift, 6520. Tel: 041 673 2902

CLIENT CONTRACT NUMBER	
PROJECT	LEBOAKGOMO EMS
CONTRACT NO.:-	
CONSULTING ENGINEER	

**WATER LONGSECTIONS**

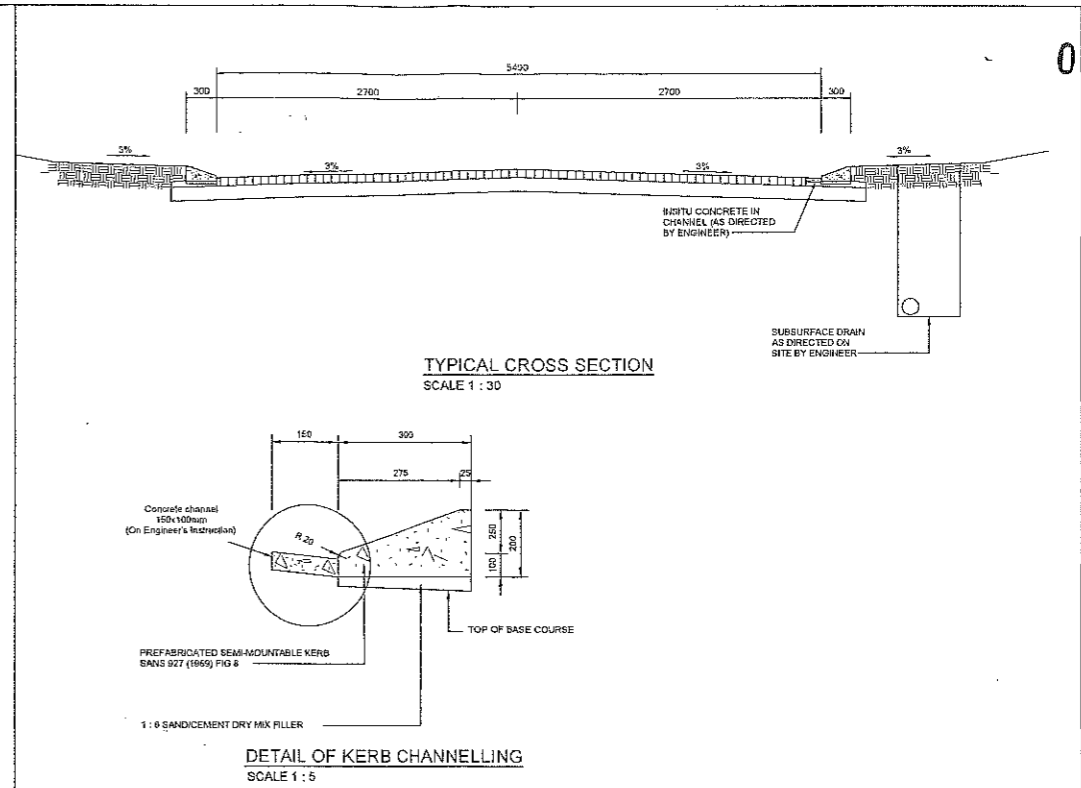
AS BUILT PLAN	
PROJECT	LEBOAKGOMO EMS
CONTRACT NO.	
CONSULTANT	SKY HIGH CONSULTING ENGINEERS
PROJECT NUMBER	SHCE-008
SHEET	1 OF 1
SCALE	AS SHOWN
DATE	15/05/2020
DRAWING NUMBER / REV.	SHCE-008-WL01_B

DRAWING NUMBER: SHCE-008-WL01\_B



LONGITUDINAL SECTION: CH.: 0 - 203.481m  
HORIZONTAL SCALE: 1:1000; VERTICAL SCALE: 1:100

Vertical Alignment	Design Road Levels	Grades	Vertical Curves
C/L Peg Levels	Left Edge Centre Line Right Edge	1.579 % -0.715 % 2.227 % 0.885 %	19.763 B.V.C. 46.481 80.000m VC K = 27.188 126.481 B.V.C. 128.571 40.000m VC K = 32.202 188.571 E.V.C.
Superelevation			3.00000000
Horizontal Curves			Curve 1 Right Radius=10.000 Direction 64°11'22" Curve 2 Right Radius=25.000 I=106°20'55" Curve 3 Left Radius=10.000 Direction 118°54'05"
Chainages			0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 203.481



Curve List

No	Radius	TR In	TR Out	TAN In	TAN Out	Deflection
1	10.00	0.00	0.00	0.00	0.00	0°00'00"
2	25.00	0.00	0.00	0.00	0.00	0°00'00"
3	10.00	0.00	0.00	0.00	0.00	0°00'00"
4	10.00	0.00	0.00	0.00	0.00	0°00'00"

Stormwater

No	Radius	TR In	TR Out	TAN In	TAN Out	Deflection
1	0.00	0.00	0.00	0.00	0.00	0°00'00"
2	0.00	0.00	0.00	0.00	0.00	0°00'00"
3	0.00	0.00	0.00	0.00	0.00	0°00'00"
4	0.00	0.00	0.00	0.00	0.00	0°00'00"
5	0.00	0.00	0.00	0.00	0.00	0°00'00"
6	0.00	0.00	0.00	0.00	0.00	0°00'00"
7	0.00	0.00	0.00	0.00	0.00	0°00'00"
8	0.00	0.00	0.00	0.00	0.00	0°00'00"

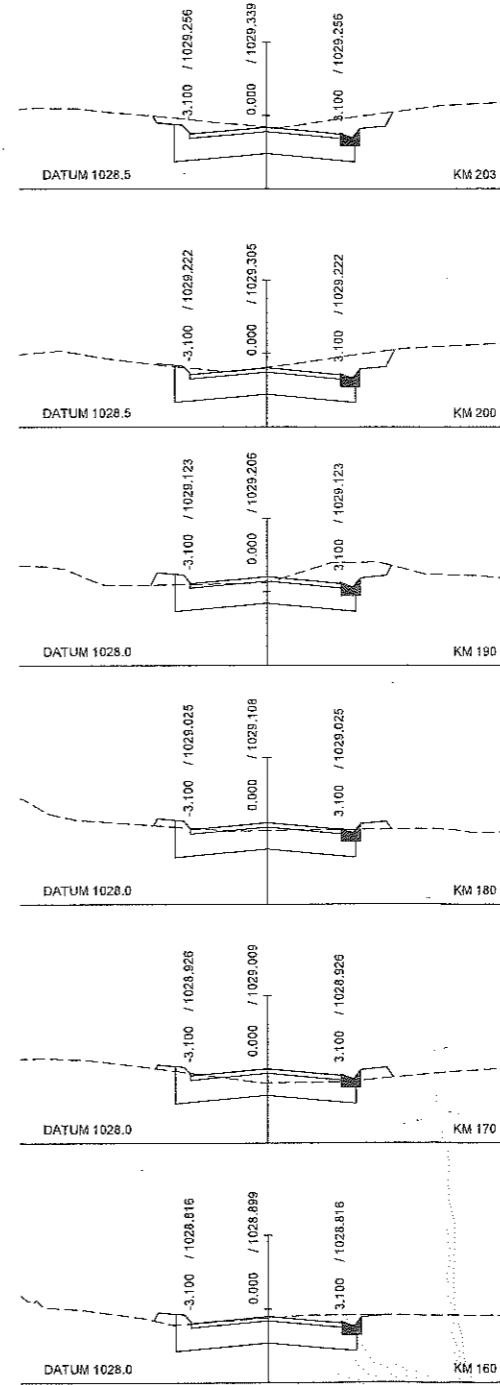
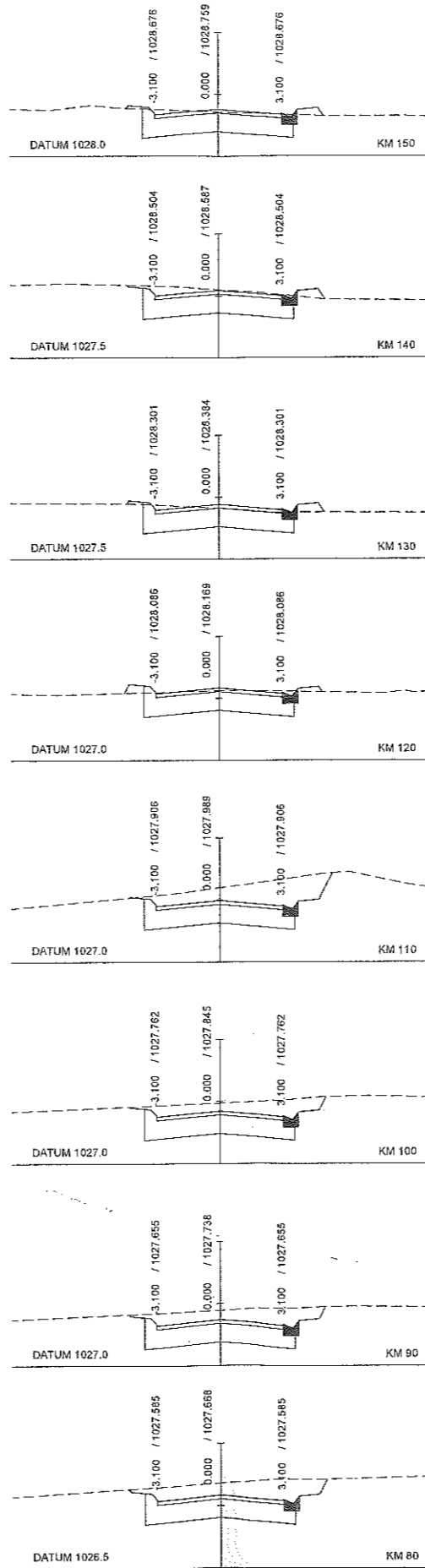
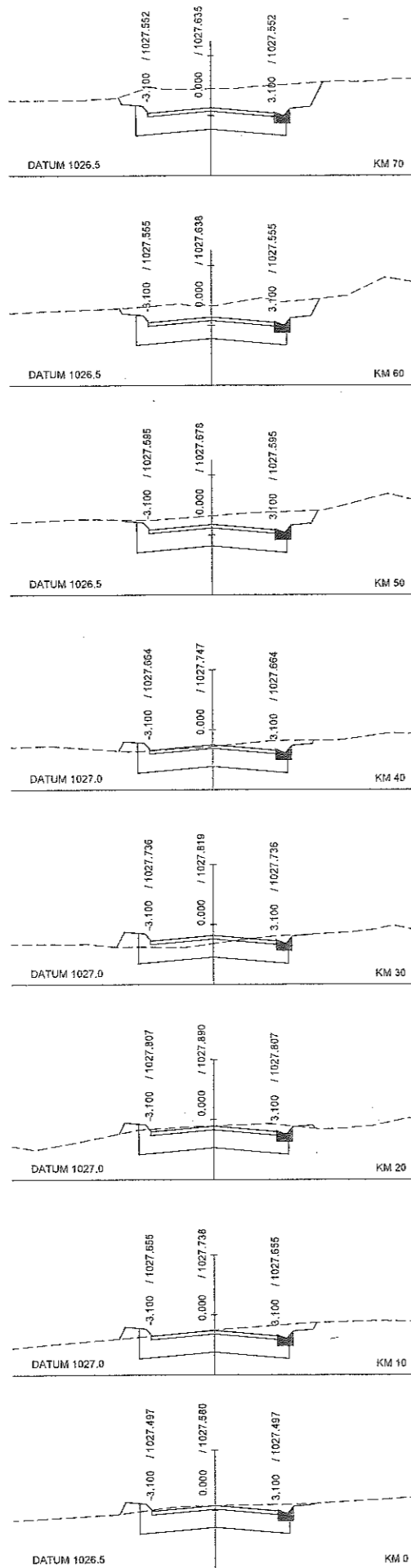
Road List

Position	SV	Y-Coord	X-Coord
RC	0	-45553.24	289827.48
R.C.1	24.81	-45298.47	289826.07
R	25.27	-45258.80	289826.45
R.C.1	25.70	-45222.49	289826.42
R.C.2	26.09	-45188.20	289826.41
R	112.22	-45138.87	289826.44
R.C.2	141.41	-45122.49	289826.41
R	184.87	-45122.24	289826.42
R	180.23	-45122.20	289826.42
R.C.2	180.23	-45122.17	289826.42
R	203.48	-45122.20	289827.27

Stormwater

Position	SV	Y-Coord	X-Coord
RC	0	-45128.34	289827.03
R.C.1	12.33	-45148.10	289827.00
R	12.33	-45148.43	289827.00
R.C.1	12.33	-45148.80	289827.00
R.C.2	24.81	-45143.49	289827.22
R	24.81	-45143.02	289827.22
R.C.2	24.81	-45143.00	289827.22
R	51.28	-45143.00	289827.22
R.C.2	51.28	-45143.00	289827.22
R	81.84	-45138.24	289827.18
R	81.84	-45138.44	289827.18
R.C.4	81.84	-45138.41	289827.18
R.C.4	103.56	-45124.07	289827.18
R	103.56	-45124.07	289827.18
R.C.4	103.56	-45124.07	289827.18
R	129.22	-45122.18	289827.40
R.C.6	129.22	-45122.18	289827.40
R	178.26	-45122.80	289827.43
R	178.26	-45122.80	289827.43
R.C.7	178.26	-45122.80	289827.43
R	203.48	-45122.20	289827.27

DESIGNED BY: CH	CHEKED BY: CH	DRAWN BY: HAM	CHEKED BY: TM	APPROVED & ADOPTED BY: TM
<b>SKY HIGH CONSULTING ENGINEERS</b> Head Office: No 14 Peace Street, P.O. Box 2816, Tloane, 0801. East London Office: 16 Gordon Road, Berea, 5241. Tel: 043 721 1995. Nelson Mandela Office: 5 Ethos Street, Malmesbury, 7201. Tel: 013 752 3014. George Office: 17 Progress Street, Dromedary, 6229. Tel: 044 873 2932.				
CONTRACT NO.: - <b>LEBOAKGOMO EMS</b>			AS BUILT PLAN SHEET 1 OF 1 SCALE: 1:500 DRAWING NUMBER: SHCE-008-AL001-B	



REV. NO.	DATE	DESCRIPTION	CONSULT	CHK.	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	CHK.



DEPARTMENT OF PUBLIC WORKS

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CHIEF ENGINEER (LPG-EPW) DATE

CONTRACT NO.: -  
 PROJECT: LEBOAKGOMO EMS  
 DRAWING TITLE: ROAD CROSS SECTIONS: CHAINAGE 0 - 203m

AS BUILT PLAN  
 SHEET 1 OF 1  
 SCALE: 1:100  
 DRAWING NUMBER: SHCE-008  
 PROJECT NUMBER: SHCE-008-CS01\_A

DETAILED DESIGN



GENERAL NOTES APPLICABLE TO ALL REINFORCED CONCRETE DRAWINGS

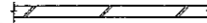
**1. CONSTRUCTION DRAWINGS**

(a) Structural drawings shall be read in conjunction with all relevant Architectural drawings and any discrepancies shall be immediately referred to the engineer

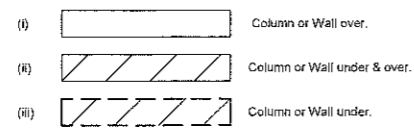
(b) All levels and setting out dimensions are to be confirmed by the Architect

(c) Do not scale off drawings, only figured dimensions should be used

(d) Beam sizes are expressed as depth x width. Depth shall include the slab where applicable.

(e) Loadbearing brickwork to be shown thus: 

(f) REINFORCED CONCRETE WALL/COLUMN NOTATION



**2. GRADES OF MATERIALS**

DESIGNED BRICKWORK	CLASS OF MORTAR
Common - 7MPa (Internal partitioning walls)	Class C
Facing - 15MPa (Peripheral walls)	Class B

**REINFORCED CONCRETE**

PART OF STRUCTURE	GRADE OF CONCRETE
Blinding/Mass concrete	C10
Strip footings	C25
Suspended Slabs	C25
Columns	C30
Beams	C25
OTHER	

**3. REINFORCING STEEL**

(a) Scheduling and bending dimensions shall conform to BS4466 (as revised)

(b) Sufficient concrete spacers and chairs shall be placed under the reinforcement to fix and maintain the steel in position during concreting

(c) All reinforcement to be checked and approved by the Engineer before concreting

(d) On the bending schedule: R denotes round mild steel bars in metric range of areas  
Y denotes high yield deformed type 2 bars in metric range of areas  
X denotes square twisted high yield bars in metric range of areas

(e) Unless stated otherwise fabric mesh to be used as follows:  
S193 Mesh - Minimum lap to be 300mm  
S078 Mesh - Minimum lap to be 300mm  
S245 Mesh - Minimum lap to be 450mm

(f) Concrete cover shall be to outermost steel including links

**4. FOUNDATIONS**

(a) Bottoms of excavations shall be moistened if necessary and rammed to the Engineer's approval

(b) A 50mm thick layer of grade 10 concrete shall be laid under all reinforced concrete pile caps, ground beams and suspended ground floor slabs. Excess excavation shall be backfilled with grade 10 concrete unless the excess excavation is greater than 300mm in which case instructions shall be obtained from the engineer as a change in design may be necessary. Minimum safe bearing capacity to be 100Kpa.

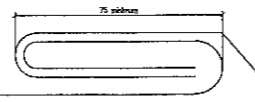
(c) Foundation brickwork shall be built to floor level and trenches backfilled to cut levels with selected and approved material. The loose material shall be placed in 150mm thick layers and thoroughly compacted to the Engineers specification.

**5. FLOATING SLABS**

(a) Top soil shall be removed to a depth of 150mm or such greater depth as directed by the Engineer. The remaining subgrade (in-situ soil) shall be compacted to 90% mod ashto. Approved material shall be laid and compacted in 150mm layers with the top most layer compacted to 93% mod ashto and the bottom layers to 91% mod ashto at optimum moisture content.

(b) Hardcore shall be used only where specified or instructed by the engineer and shall be struck flush after compaction with fine materials to provide a smooth surface.

(c) Lay 250 Micron black polythene sheets over prepared sub-base to form moisture barrier under slab. Joints shall be double welled as shown:



(d) Surface-bed slabs shall be cast in pre-planned panels not exceeding 5.0m long in chequer sequence against vertical boards.

(e) Surface-bed slabs shall be separated from brick wall with 10mm flexible material.

**6. MINIMUM PERIODS FOR REMOVAL OF FORMWORK**

PART OF WORK	PERIOD IN DAYS	
SUSPENDED SLABS	soffit boards	4
	props	10
BEAMS	side boards	2
	bottom boards	7
	props	14
COLUMN AND WALLS (UNLOADED)	2	

NB. These periods may be varied at the discretion of the engineer.

Irrespective of the times noted above, props cannot be removed where loads are imposed or likely to be imposed on any part of the structure without the specific and prior approval of the Engineer.

**7. SERVICE PIPES**

NO SERVICE PIPES ARE TO PASS THROUGH ANY PART OF THE LOAD BEARING STRUCTURE WITHOUT PRIOR APPROVAL OF THE ENGINEER.

**8. LEVELS**

STRUCTURAL GROUND FLOOR SLAB LEVEL = +100.000

**9. INSPECTIONS**

THE CONTRACTOR SHALL APPLY FOR AN ENGINEER'S INSPECTION AND OBTAIN HIS APPROVAL FOR WORK BEFORE PROCEEDING:

(i) when foundation excavations are complete

(ii) when top soil has been removed to expose the sub-base under surface bed slabs

(iii) when the sub-grade has been built up to final level

(iv) when reinforcement has been fixed, checked and ready for concreting

(v) before taking remedial action to correct imperfections in concrete

(vi) before finish-painting steel frameworks

(vii) before grouting-in frameworks

(viii) before sheeting or bracing steel frameworks

NB. The Engineer shall not be called until the contractor has checked his work and satisfied himself that the work is in accordance with relevant drawings & specifications

**10. GENERAL**

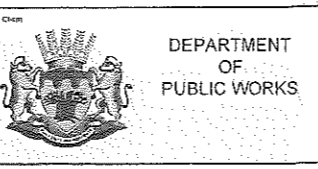
(a) 1MPa = 1N/square mm

(b) WHERE DIFFERENCES OCCUR BETWEEN THE NOTES AND INSTRUCTIONS GIVEN ABOVE, AND OTHER NOTES, INSTRUCTIONS OR ANY OTHER SPECIFICATIONS CONTAINED ELSEWHERE ON THE WORKING DRAWINGS, BILLS OF QUANTITIES, OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL APPLY TO THE ENGINEER FOR A RULING.

**SCHEDULE OF STRUCTURAL DRAWINGS**

DRAWING NUMBER	DESCRIPTION
SHCE-008-SL00	STANDARD DRAWING
SHCE-008-SL01	GROUND FLOOR PLAN AND CONCRETE BEAMS LAYOUT
SHCE-008-SL02	GROUND FLOOR FOUNDATION, JOINT AND SLAB LAYOUT PLANS - MAIN BUILDING
SHCE-008-SL03	GROUND FLOOR BEAMS DETAILS - MAIN BUILDING
SHCE-008-SL04	FOUNDATION & GROUND FLOOR LAYOUT - AMBULANCES, STAFF PARKING, BUS SHEDS & ELEVATED WATER TANK
SHCE-008-SL05	STEEL LAYOUT - AMBULANCES PARKING SHEDS
SHCE-008-SL06	STEEL LAYOUT - STAFF PARKING SHEDS (8 BAY)
SHCE-008-SL07	REINFORCEMENT TO FOUNDATION & STUB COLUMNS AMBULANCES, STAFF PARKING, BUSES SHEDS & ELEVATED WATER TANK
SHCE-008-SL08	WAREHOUSE ROOF DETAILS STEEL STRUCTURE

REV. NO.	DATE	DESCRIPTION	CONSULT	DR	REV. NO.	DATE	REFERENCES DRAWING	CONSULT	DR



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Ereca: 5241  
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Nelspruit, 1201  
Tel: 013 752 3014

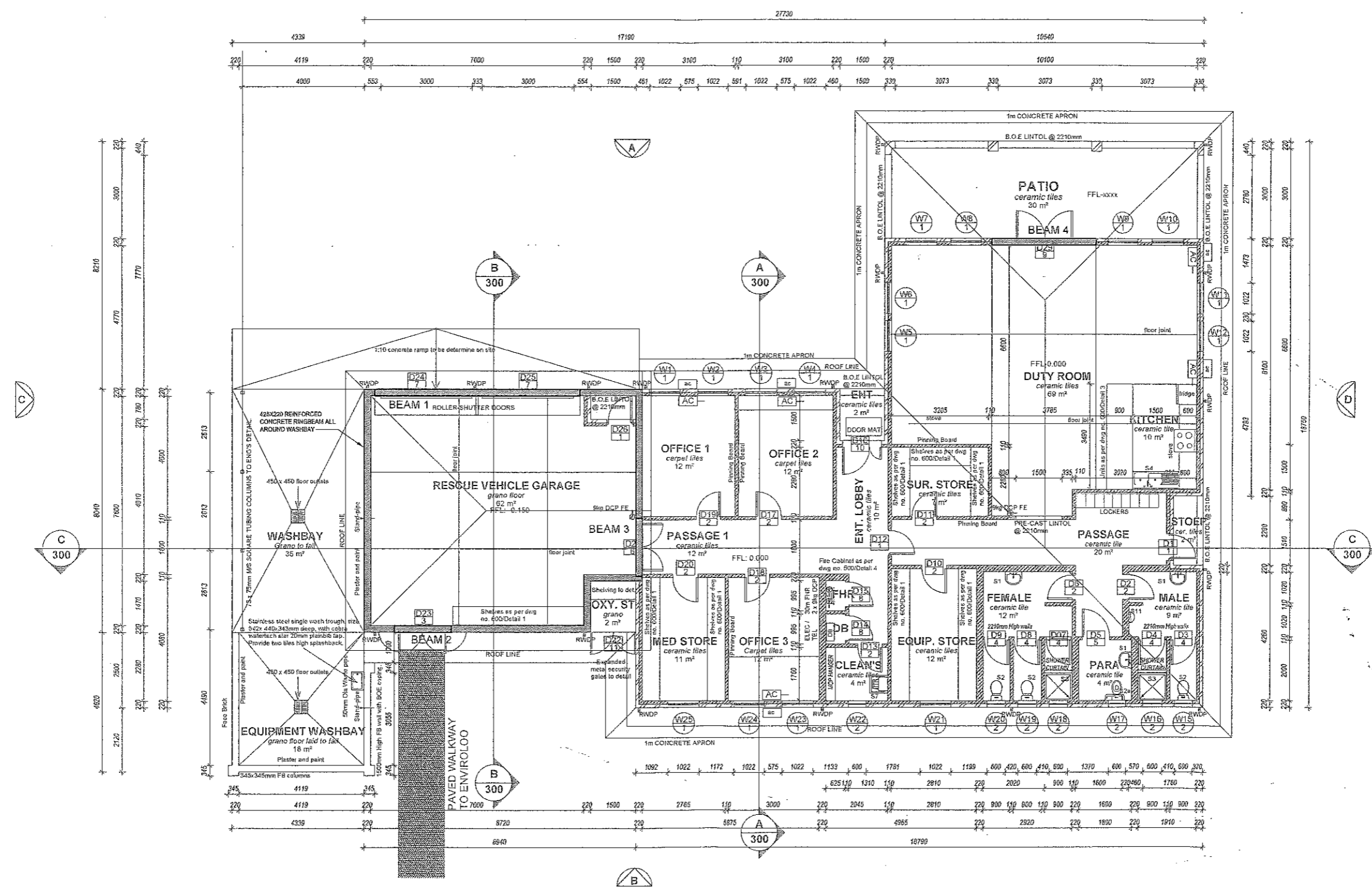
George Office  
17 Progress Street,  
Dormelsbos Dam, 6529  
Tel: 044 873 2992

CLIENT CONTRACT NUMBER	CONTRACT NO. :-
PROJECT	LEBOAKGOMO EMS
DRAWING TITLE	STANDARD DRAWING
CONSULTING ENGINEER	DATE

**DETAILED DESIGN**

AS BUILT PLAN	SHEET 1 OF 1
TO DEPARTMENT OF PUBLIC WORKS	SCALE
PROJECT NUMBER	DATE
CONSULTANT'S PROJECT NUMBER	DRAWING NUMBER
SHCE-008	SHCE-008-SL00_A

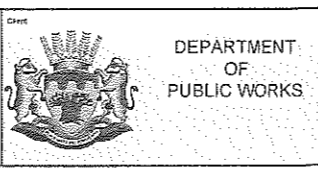
DRAWING NUMBER: SHCE-008-SL00\_A



GROUND FLOOR PLAN LAYOUT  
SCALE: 1:75

Rev. No.	DATE	DESCRIPTION	CONDUCT	DIR	Rev. No.	DATE	REFERENCES DRAWING	CONDUCT	DIR
A	08/05/2011	ISSUED							

DESIGNED BY	CH
CHECKED BY	CN
DRAWN BY	JAM
CHECKED BY	TR
APPROVED & ADOPTED BY	TR



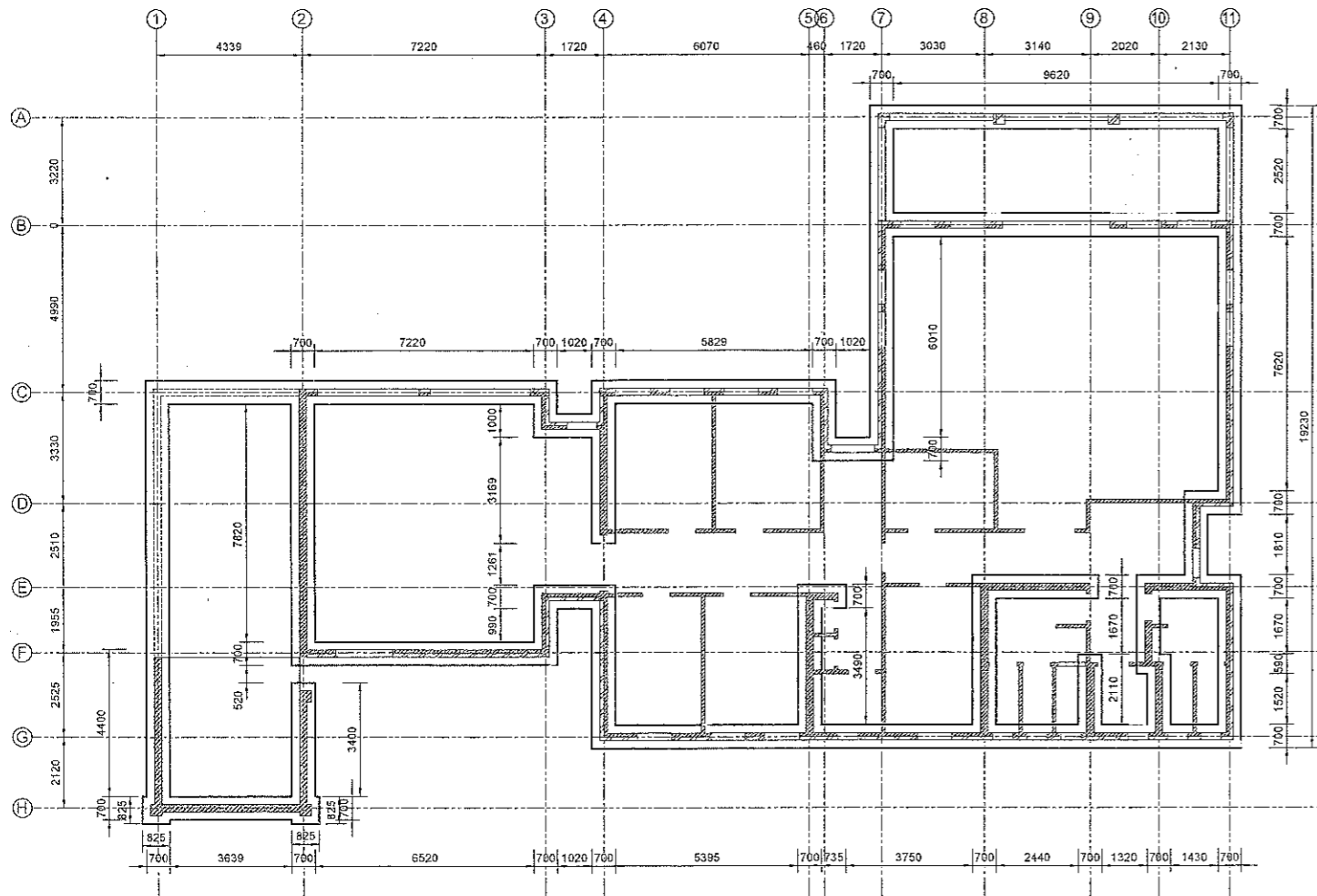
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 Nelson Mandela Bay Office: 5 Ethniko Street, Nelson Mandela Bay, 6001. Tel: 013 762 3014  
 George Office: 17 Progress Street, Dorekirk, 6529. Tel: 044 875 2922

CLIENT CONTRACT NUMBER	CONTRACT NO.:-
PROJECT	LEBOAKGOMO EMS
DRAWING TITLE	GROUND FLOOR PLAN AND CONCRETE BEAMS LAYOUT

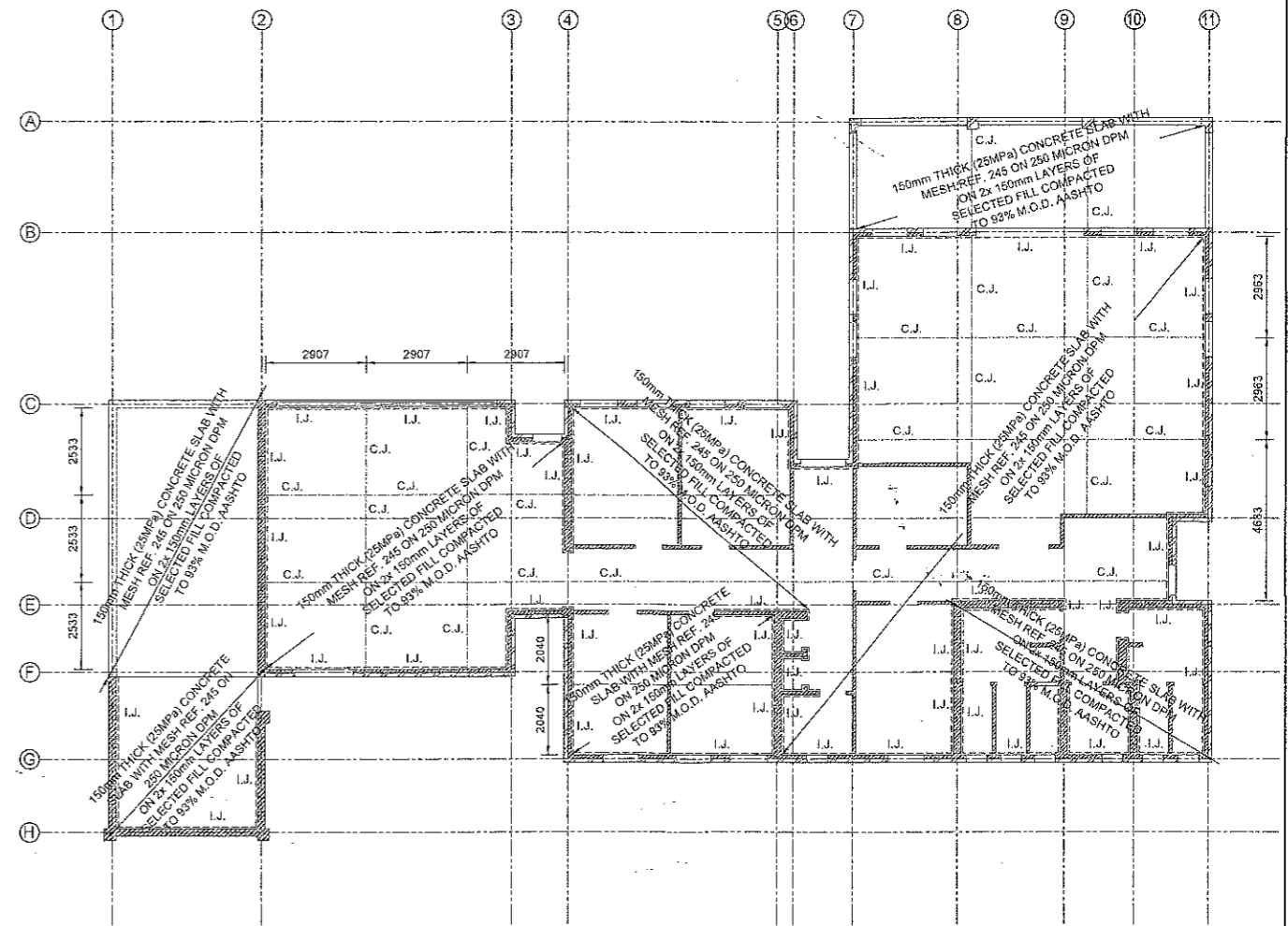
AS BUILT PLAN	SHEET 1 OF 1
SCALE	1:75
DRAWING NUMBER	SHCE-008-SL01_A

CONSULTING ENGINEER	DATE
DATE	

DRAWING NUMBER: SHCE-008-SL01\_A



FOUNDATION PLAN LAYOUT  
SCALE: 1:100



JOINT AND SLAB PLAN LAYOUT  
SCALE: 1:100

Rev. No	DATE	DESCRIPTION	CONSULT	DESIGNED BY	CHKD	APPVED	DATE	REFERENCE DRAWING	CONSULT	DESIGNED BY	CHKD	APPVED	DATE

DESIGNED BY	DIJ
CHECKED BY	DIJ
DRAWN BY	EMM
CHECKED BY	TM
APPROVED & ADOPTED BY	TM

DEPARTMENT OF PUBLIC WORKS

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George Office: 17 Progress Street, Dorchester Drift, 6529. Tel: 044 873 2992

CLIENT CONTRACT NUMBER: CONTRACT NO. :-

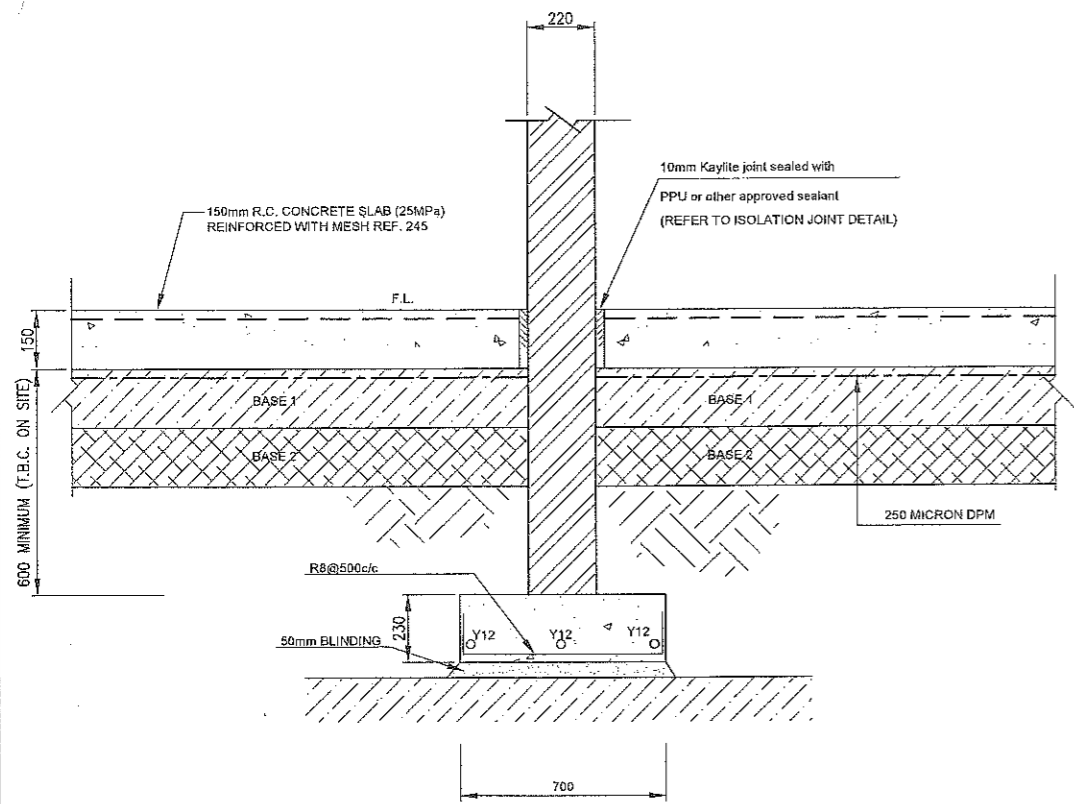
PROJECT: LEBOAKGOMO EMS

CONSULTANT PROJECT NUMBER: SHCE-008

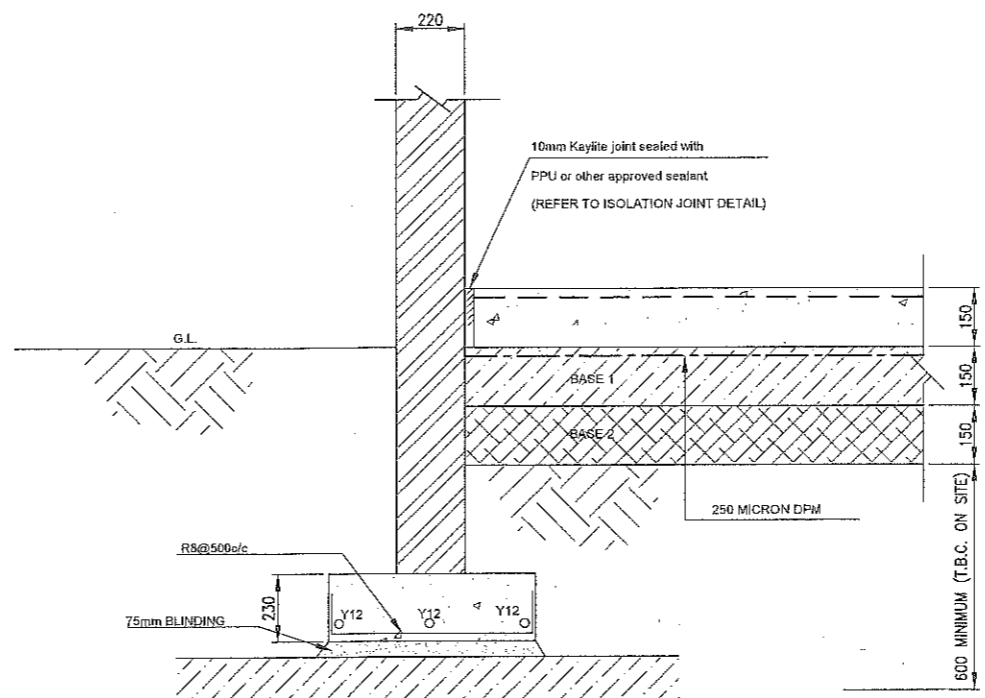
DRAWING TITLE: FOUNDATIONS AND SLAB AND JOINT LAYOUT PLANS

AS BUILT PLAN	PROJECT NO.	SHEET 1 OF 1
SCALE	DATE	DRAWING NUMBER / REV.
1:100		SHCE-008-SL02_A

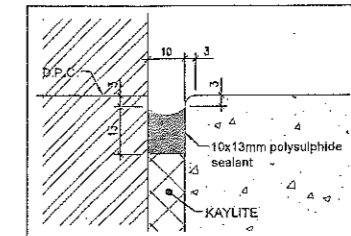
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TYPICAL SECTION THROUGH AN INTERNAL WALL  
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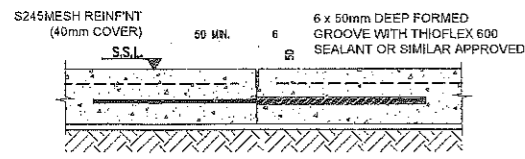


TYPICAL SECTION THROUGH AN EXTERNAL WALL  
SCALE: NTS

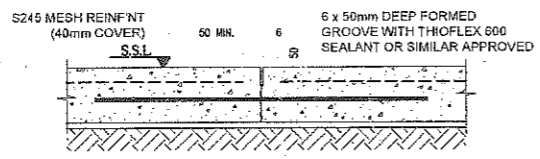


ISOLATION JOINT DETAIL  
SCALE: NTS

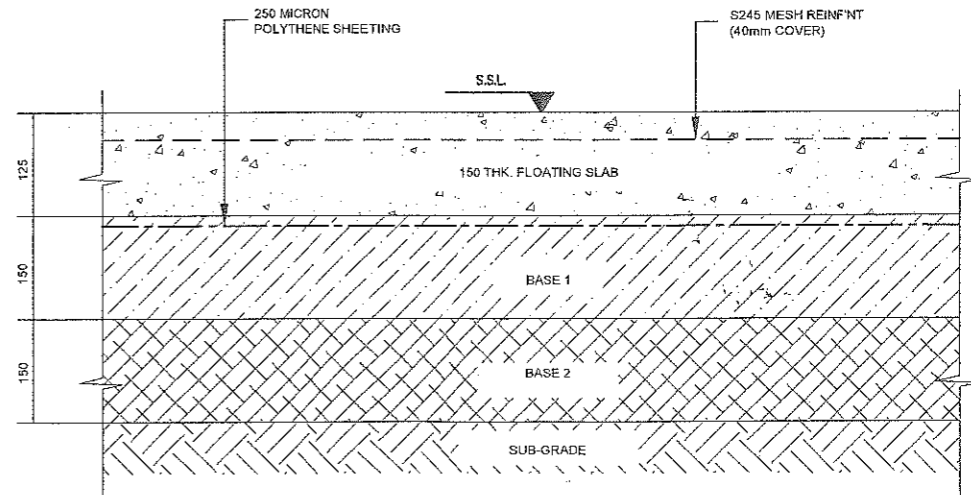
- FOUNDATION TREATMENT**
1. SCARIFY TOP OF FOUNDATION MATERIAL & COMPACT TO 90% MOD AASHTO (SUB-GRADE)
  2. IMPORT GRAVEL OF G7 TYPE & STABILISE WITH 2-3% CEMENT TO ACHIEVE 150mm OF WELL COMPACTED FILL TO 93% MOD AASHTO (BASE 2)
  3. IMPORT GRAVEL OF G7 TYPE & STABILISE WITH 2-3% CEMENT TO ACHIEVE 150mm OF WELL COMPACTED FILL TO 95% MOD AASHTO (BASE 1)
  3. BOTTOM OF EXCAVATIONS TO BE LIGHTLY COMPACTED BY HAND



FORMED DEBONDED  
CONSTRUCTION JOINT DETAIL  
SCALE 1:10



FORMED TIED  
CONSTRUCTION JOINT DETAIL  
SCALE 1:10

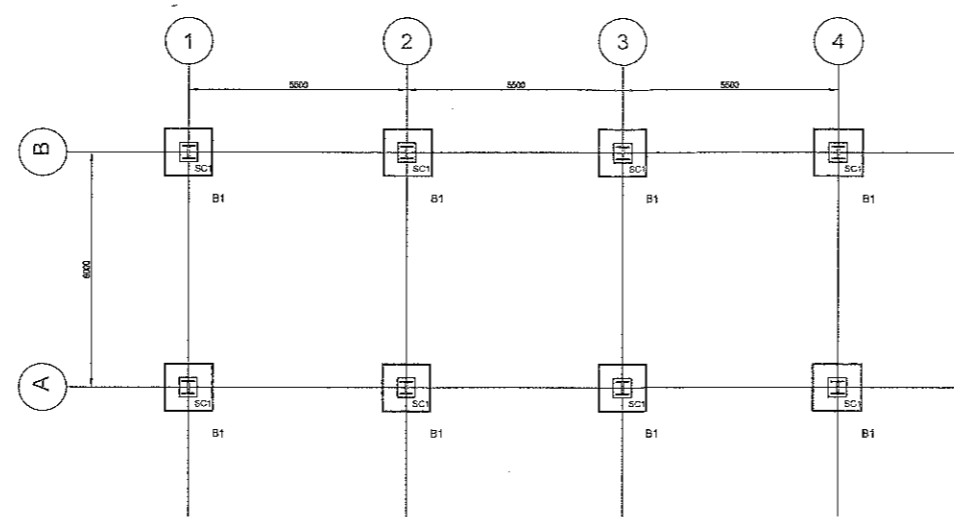


TYPICAL DETAIL OF FILL UNDER  
FLOATING GROUND FLOOR SLABS  
SCALE: NTS

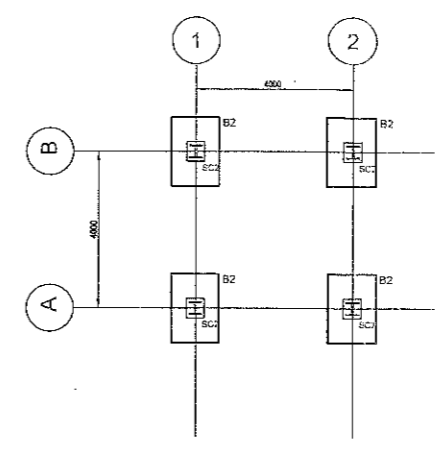
- UNDER FLOOR TREATMENT**
1. REMOVE TOP 150mm SOIL TO WASTE.
  2. SCARIFY TOP OF IN-SITU MATERIAL & COMPACT TO 90% MOD AASHTO (SUB-GRADE)
  3. IMPORT GRAVEL OF G7 TYPE & STABILISE WITH 2-3% CEMENT TO ACHIEVE 150mm OF WELL COMPACTED FILL TO 93% MOD AASHTO (BASE 2)
  4. IMPORT GRAVEL OF G7 TYPE & STABILISE WITH 2-3% CEMENT TO ACHIEVE 150mm OF WELL COMPACTED FILL TO 95% MOD AASHTO (BASE 1)

DESIGNED BY: DR		<p>DEPARTMENT OF PUBLIC WORKS</p>	SKY HIGH CONSULTING ENGINEERS		CLIENT CONTRACT NUMBER: CONTRACT NO. - PROJECT: LEBOAKGOMO EMS DRAWING TITLE: GROUND FLOOR FOUNDATION, JOINT AND SLAB LAYOUT PLANS - MAIN BUILDING CONSULTANT PROJECT NUMBER: SHCE-008	AS BUILT PLAN: SHEET 1 OF 1 SCALE: AS SHOWN DRAWING NUMBER: SHCE-008-SL03_A			
CHECKED BY: DR			Head Office: No 14 Pease Street, Tzaneen 0950						
DRAWN BY: MAA			East London Office: 14 Stockton Road, Berea: 5241 Tel: 043 721 1996						
CHECKED BY: TM			Nelson Mandela Office: 5 Elmke Street, Nelson Mandela, 1201 Tel: 013 752 3014						
APPROVED & ADOPTED BY: TM			George Office: 17 Progress Street, Doremsburg, 6528 Tel: 044 873 2902						
Rev. No.	DATE	DESCRIPTION	CONSULT	DR	Rev. No.	DATE	REPLACE/DRAWING	CONSULT	DR

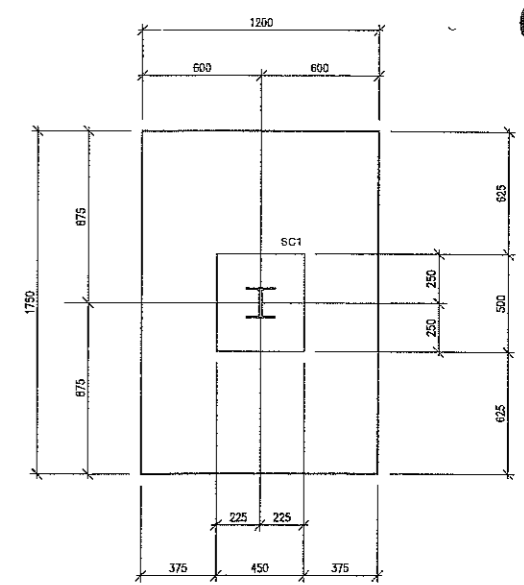
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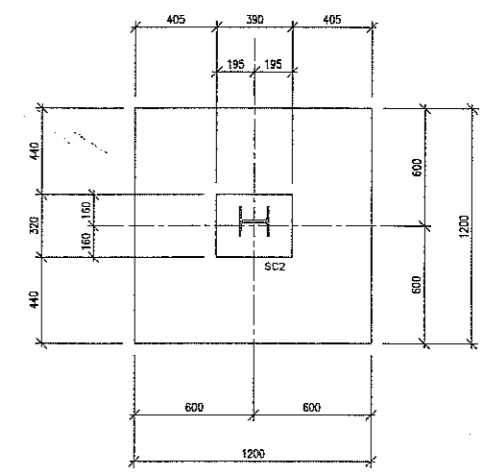
PLAN  
(STAFF CAR PORTS-6 BAY)



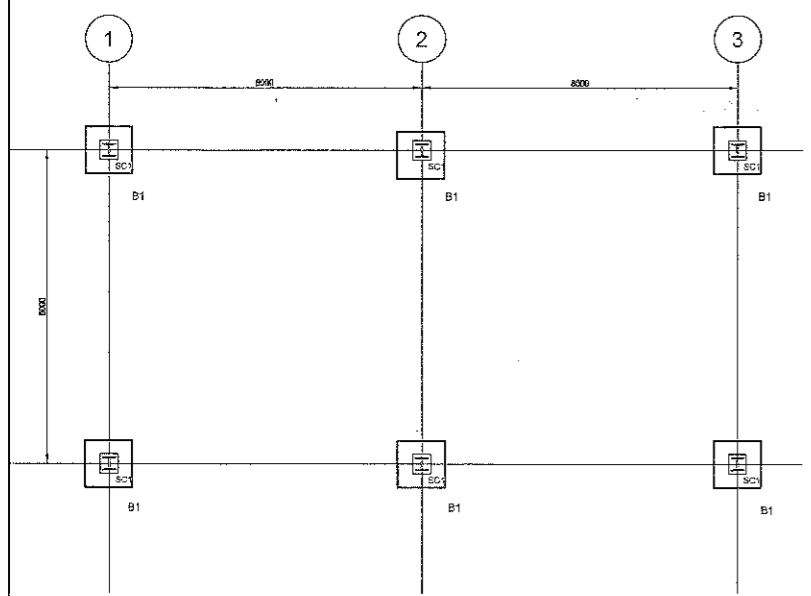
PLAN  
(ELEVATED WATER TANK)



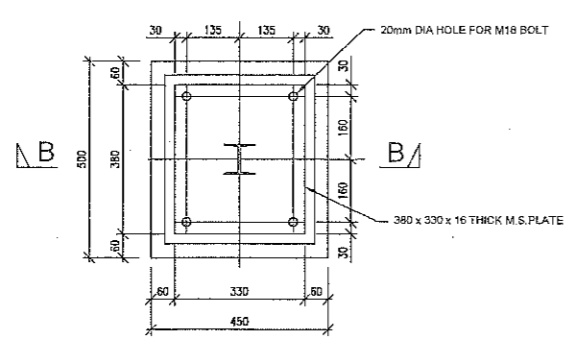
BASE TYPE B2  
SCALE 1:20



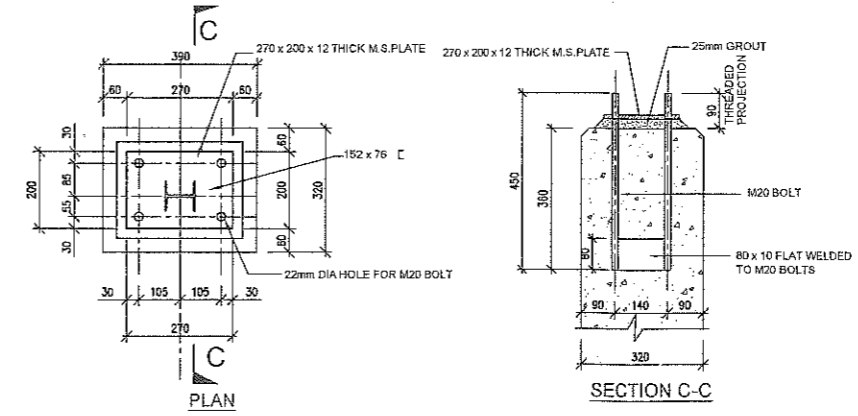
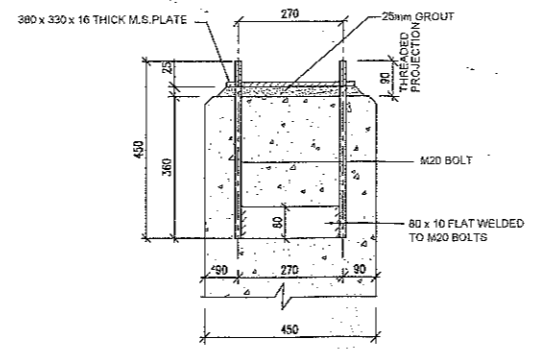
BASE TYPE B1  
SCALE 1:20



PLAN  
(AMBULANCES & CAR PORTS)



H.D. BOLT DETAILS ON STUB COLUMNS TYPE SC1  
SCALE 1:10



H.D. BOLT DETAILS ON STUB COLUMNS TYPE SC2  
SCALE 1:10

STUB COLUMN SCHEDULE

COLUMN TYPE	SIZE	QUANTITY
SC1	600 x 450 x 400 HIGH	32
SC2	380 x 320 x 400 HIGH	4

NOTE:- TOP OF STUB COLUMNS TYPE SC1 AND SC2 TO BE 100mm ABOVE FINISHED FLOOR LEVEL.

BASE SCHEDULE

BASE TYPE	SIZE (LxWxD)	QUANTITY
B1	1200x1200x400	32
B2	1200x1200x400	4

**PREPARATION FOOR SLAB:-**  
 1.-Excavate to at least 450mm below ground.  
 2.-Precollapse the excavations by compacting with a roller to at least 89% ModAASHTO.  
 3.-Backfill the excavation with three 150mm layers each of imported gravel to be compacted as detailed on drawing number SHE00\_SL02.

**PREPARATION UNDER BASES:**  
 1.-Excavate to at least 1500mm below ground.  
 2.-Precollapse the excavations by compacting with a roller to at least 89% ModAASHTO.  
 3.-Backfill the excavation to a depth of 900mm with approved material to be compacted to 91% ModAASHTO in 150mm layers.  
 4.-Compact the 4th, 3rd, 2nd and top layers with 150mm each of imported gravel to 91%, 93%, 95% and 98% ModAASHTO respectively. (The gravel must be stabilised with 1.5-3% cement)

Rev. No	DATE	DESCRIPTION	CONSULT	D/R	Rev. No	DATE	REFERENCE DRAWING	CONSULT	D/R

Client: **DEPARTMENT OF PUBLIC WORKS**

Head Office: 14 Gordon Road, P.O. Box 2816, Tzaneen, 0859.  
 Tel: +27 (0) 15 307 6961, Fax: +27 (0) 15 640 1430, Email: info@shiconsulting.co.za

East London Office: 5 Ethekwini Street, Mtshini, 1251.  
 Tel: 013 752 3014, Fax: 013 752 3014.

George Office: 17 Progress Street, Dornbos Drift, 6528.  
 Tel: 044 873 2992

PROJECT: **LEBOAKGOMO EMS**

FOUNDATION & GROUND FLOOR LAYOUT- AMBULANCES AND STAFF PARKING

CONTRACT NO.: -

AS BUILT PLAN

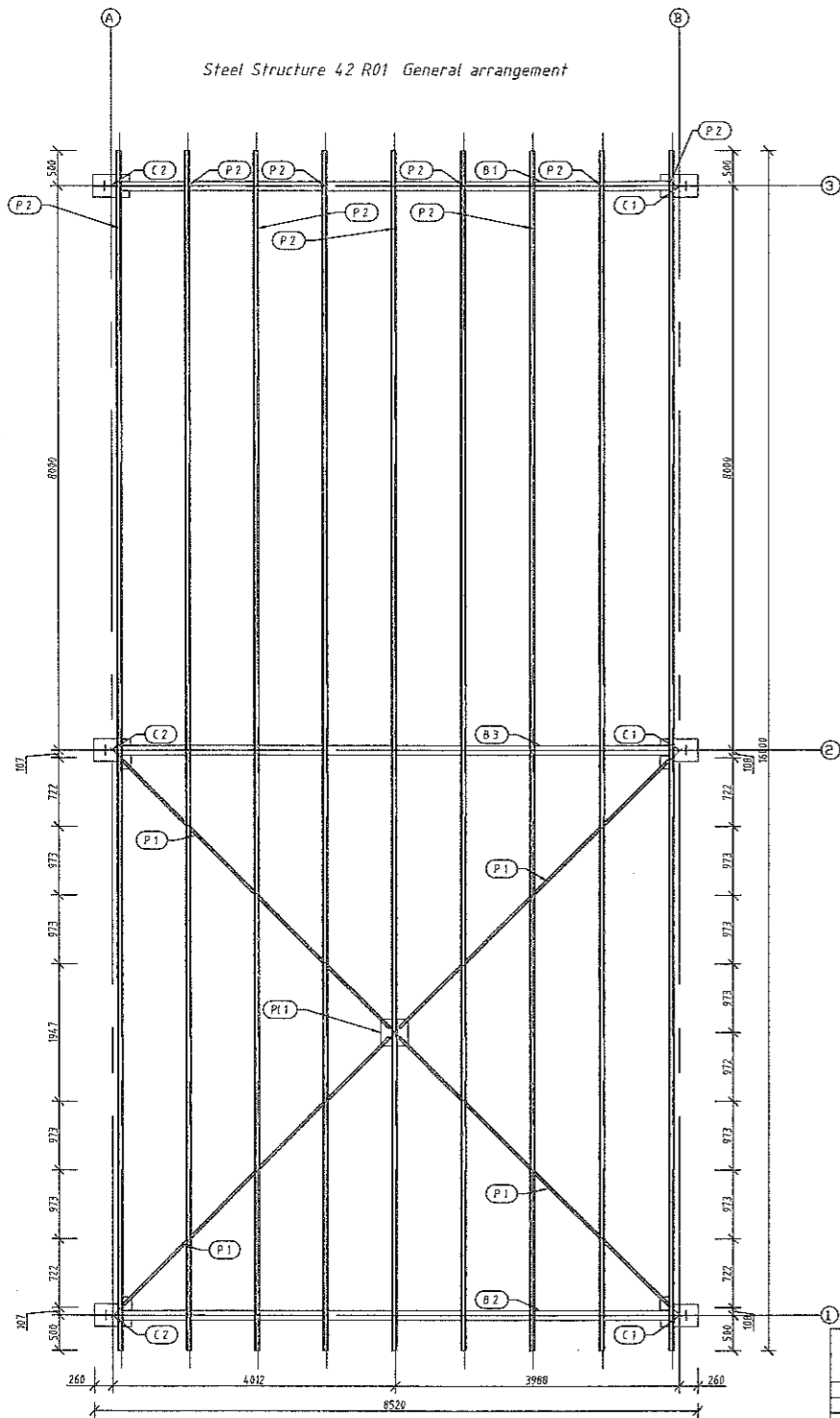
PROJECT NUMBER: **SHCE-008**

DRAWING NUMBER: **SHCE-008-SL04\_A**

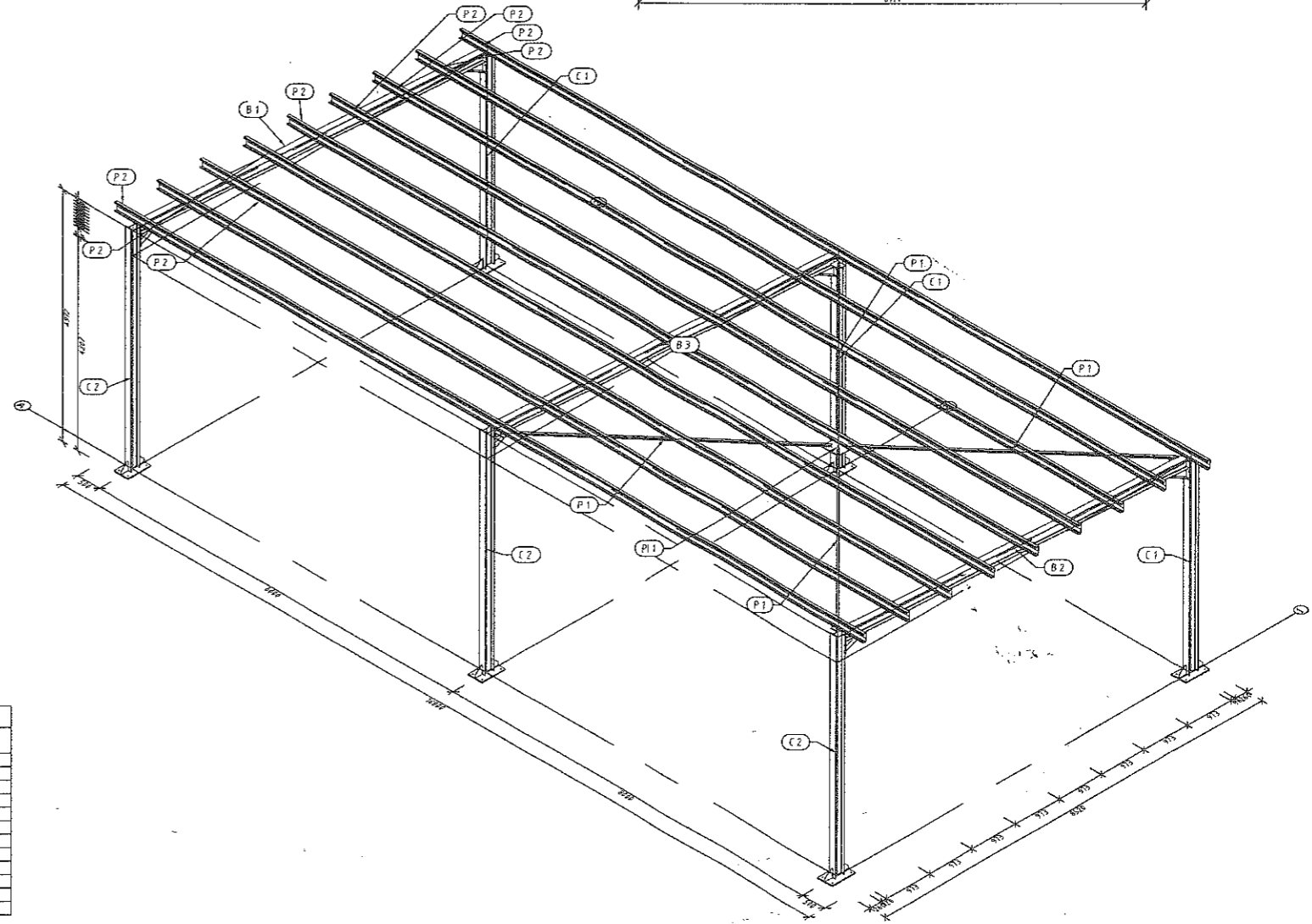
SHEET 1 OF 1

DRAWING NUMBER: SHCE-008-SL04\_A

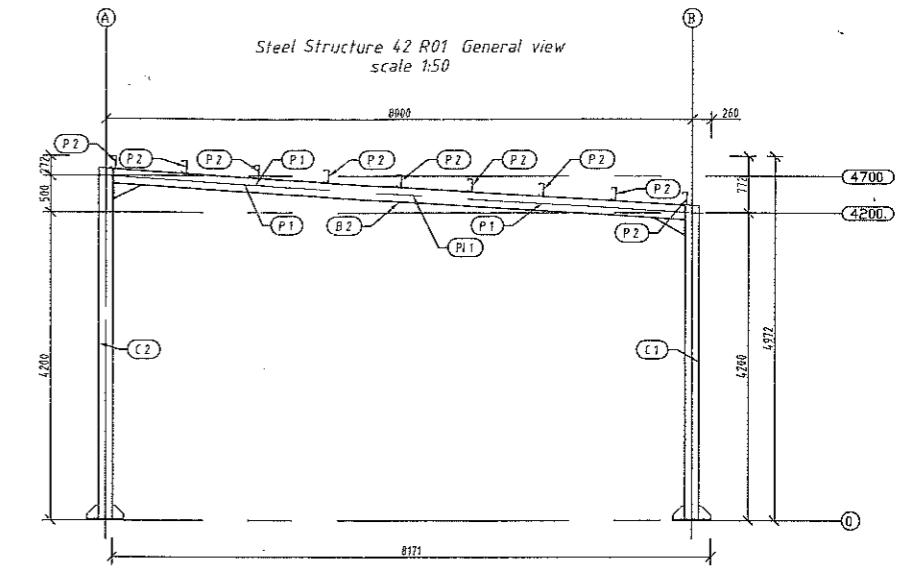
Steel Structure 42 R01 General arrangement



Steel Structure 42 R01 Isometry 1#50 1:50



Steel Structure 42 R01 General view scale 1:50



Position	Element name	Number	Length (m)	Mass	
				of element (kg)	Total (kg)
D 1	Beam UB 203x133x25	2	5872.35	143.44	286.87
B 2	Beam UB 203x133x25	1	5872.35	143.44	143.44
B 3	Beam UB 203x133x25	1	5872.35	143.44	143.44
C 3	Column UB 203x133x25	4	3012.42	93.61	374.45
C 2	Column UB 203x133x25	4	3104.2	106.16	424.65
P 1	Profile AE B340x40	4	3823.70	37.79	151.16
P 2	Profile EC 115x75x4.3	7	10006.08	222.36	856.10
Pl 1	Plate Plate 18x11	1	455.61	13.05	13.05
Total mass (kg)					3204.66
Element mass (kg)					3074.9
Weld mass addition : 7.0 X Dgl					129.76
Total mass (kg)					3204.66

Position	Section	Number	Length (m)	Material	Mass		
					Unit (kg/m)	of element (kg)	Total (kg)
b 1	UB 203x133x25	4	5872.35	STEEL 43-205 S15	25.100	147.44	583.76
c 1	UB 203x133x25	4	2596.42	STEEL 43-205 S15	25.100	65.16	263.69
c 2	UB 203x133x25	4	3964.22	STEEL 43-205 S15	25.100	99.51	398.26
p 1	AE 88x40x6	4	3923.70	STEEL	9.630	37.79	151.16
p 2	EC 115x75x4.3	7	10006.08	STEEL 43-205 S15	11.743	222.36	856.10
pl 1	PLATE 18x11	1	455.61	STEEL	1.31	13.05	13.05
pl 2	PLATE 6x306	4	195.54	STEEL 43-205 S15	1.85	7.40	29.63
pl 3	PLATE 18x123	4	219.95	STEEL 43-205 S15	3.09	12.18	48.72
pl 4	PLATE 6x306	4	221.86	STEEL 43-205 S15	1.85	7.40	29.63
pl 5	PLATE 20x520	8	3206.00	STEEL 43-205 S15	25.98	207.83	831.84
pl 6	PLATE 18x11	1	455.61	STEEL	13.05	13.05	13.05
pl 7	PLATE 18x50	6	1221.90	STEEL	5.31	31.87	125.02
pl 8	PLATE 18x133	4	1304.44	STEEL 43-205 S15	3.60	14.37	57.23
pl 9	PLATE 18x133	4	1304.44	STEEL 43-205 S15	3.64	14.55	58.07

REV. NO.	DATE	DESCRIPTION	CONSULT	DIR.	Rev. No.	DATE	REFERENCE/REVISION	CONSULT	DIR.

DESIGNED BY	GN
CHECKED BY	GN
DRAWN BY	MM
APPROVED & ADOPTED BY	TM

DEPARTMENT OF PUBLIC WORKS

SKY HIGH CONSULTING ENGINEERS

Head Office: 14, Stoughton Road, Brixton, 6241. Tel: 043 721 1999

Netpoll Office: 5 Ethelbert Street, Netpoll, 1201. Tel: 013 752 3014

George Office: 17 Progress Street, Donmills, 6529. Tel: 044 673 2592

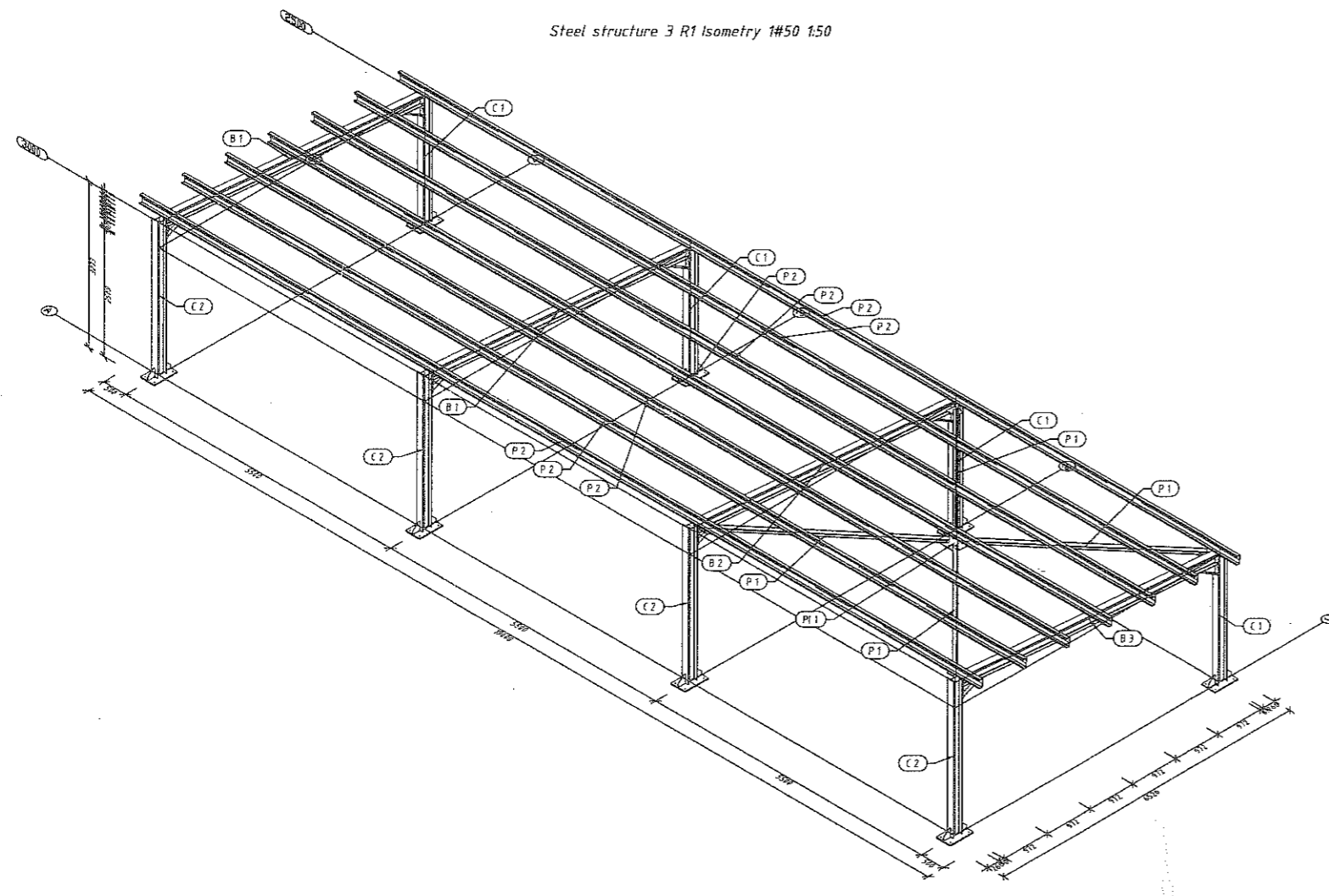
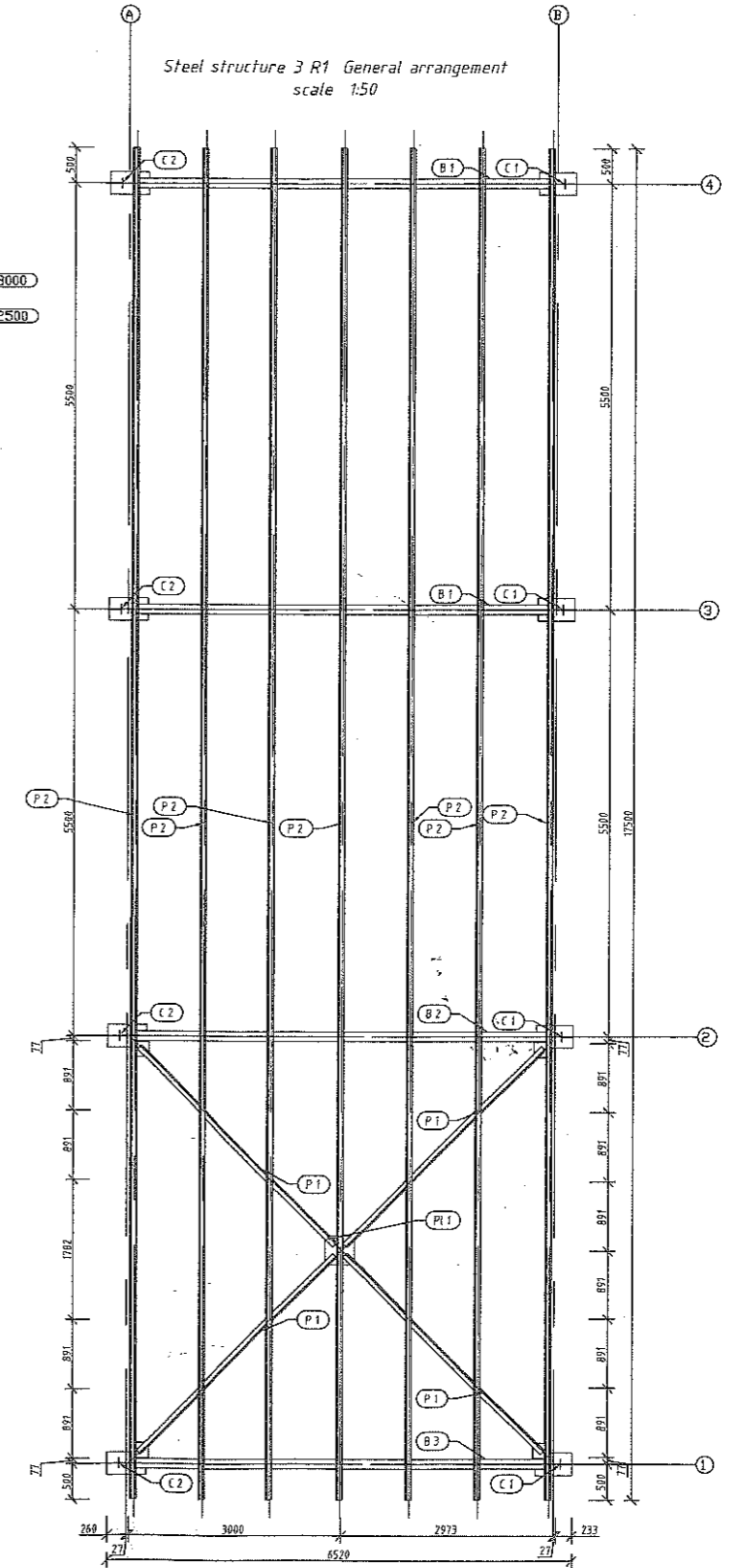
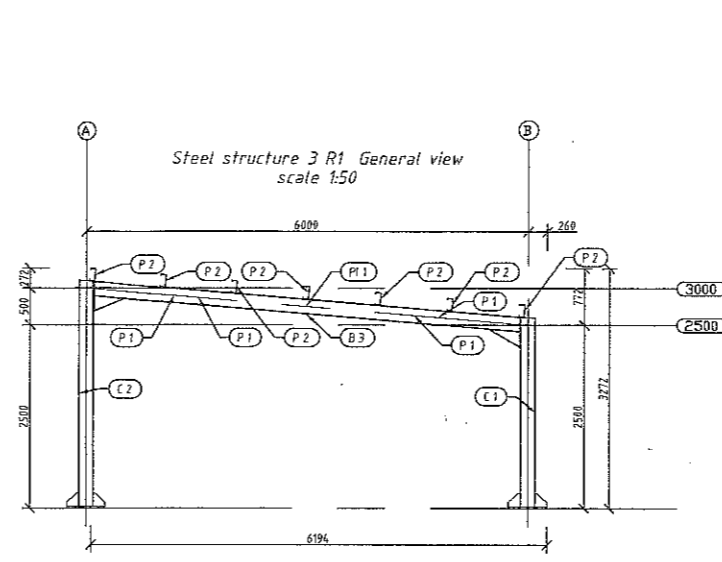
CLIENT CONTRACT NUMBER	CONTRACT NO. :-
PROJECT	LEBOAKGOMO EMS
CONSULTANT PROJECT NUMBER	SHCE-008
CONSULTANT PROJECT NUMBER	SHCE-008

AS BUILT PLAN	SHEET 1 OF 1
SCALE	HOR SCALE: 1:50 VER SCALE: 1:50
GRANT NUMBER	SHCE-008-SL05_A

DRAWING NUMBER: SHCE-008-SL05\_A


Position	Element name	Number	Length (mm)	Mass	
				of element (kg)	Total (kg)
B 1	Beam UB 203x133x25	2	5852.35	169.48	338.97
B 2	Beam UB 203x133x25	1	5852.35	173.55	173.55
B 3	Beam UB 203x133x25	1	5852.35	173.55	173.55
C 1	Column UB 203x133x25	4	2416.42	93.61	374.45
C 2	Column UB 203x133x25	4	3108.42	106.16	424.65
P 1	Profile AE 80x40x8	4	1923.76	37.39	151.56
P 2	Profile CC 115x75x5	7	19020.00	222.30	1556.10
Pl 1	Plate Plate 10x40	1	409.61	9.85	39.05
Total mass (kg)					3301.64
Element mass (kg)					307.49
Weld mass addition: 2.0 % (kg)					6.14
Total mass (kg)					3135.27

Position	Section	Number	Length (mm)	Material	Mass	
					Unit (kg/m)	Total (kg)
b 1	UB 203x133x25	4	5852.35	STEEL S275	29.54	118.17
c 1	UB 203x133x25	4	2590.42	STEEL S275	29.54	75.50
c 2	UB 203x133x25	4	3098.42	STEEL S275	29.54	75.50
d 1	AE 80x40x8	4	1923.76	STEEL	9.630	37.39
p 1	CC 115x75x5	7	19020.00	STEEL S275	11.700	222.30
p 2	PLATE 10x40	1	409.61	STEEL	1.31	24.92
pl 1	PLATE 10x40	4	1638.44	STEEL S275	1.86	7.47
pl 2	PLATE 10x40	4	2153.55	STEEL S275	3.03	12.12
pl 3	PLATE 10x40	4	227.08	STEEL S275	1.85	7.40
pl 4	PLATE 10x100	8	342.80	STEEL S275	2.56	20.48
pl 5	PLATE 10x40	1	409.61	STEEL	13.95	13.95
pl 6	PLATE 10x100	8	477.00	STEEL	5.31	41.67
pl 7	PLATE 10x30	4	430.14	STEEL S275	3.88	15.52
pl 8	PLATE 10x30	4	451.31	STEEL S275	3.84	15.36

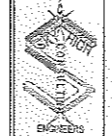


Rev. No.	DATE	DESCRIPTION	CONSULT	DR	Rev. No.	DATE	REFERENCE DRAWING	CONSULT	DR

DESIGNED BY: CK	Checked by: CK	Drawn by: HAH	Checked by: TM	APPROVED & ADOPTED BY: TM
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**DEPARTMENT OF PUBLIC WORKS**



**SKY HIGH CONSULTING ENGINEERS**

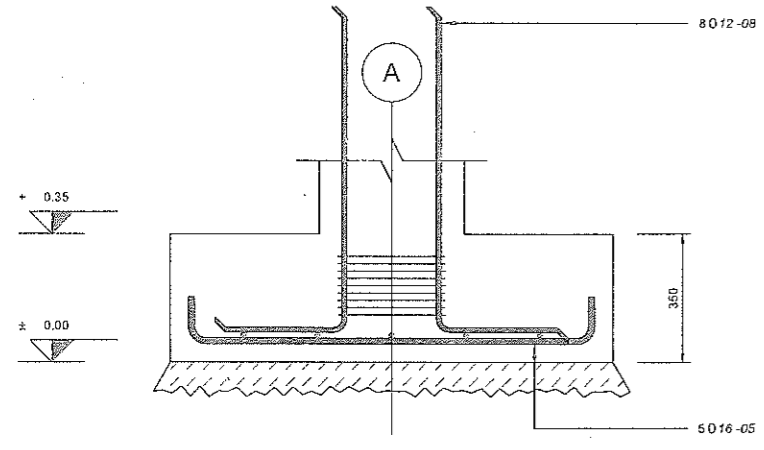
Head Office: No 14 Peace Street, P. O. Box 2816, Tzaneen, 0650.  
Tel: +27 (0)15 007 6861, Fax: +27 (0)15 540 1435, Email: info@shce.co.za

East London Office: 1A Gladion Road, Bayside, 5241. Tel: 043 721 1990  
Nelspruit Office: 5 Erimbe Street, Nelspruit, 1201. Tel: 013 782 2014  
George Office: 17 Progress Street, Dorenbos Driv, 6520. Tel: 044 673 2892

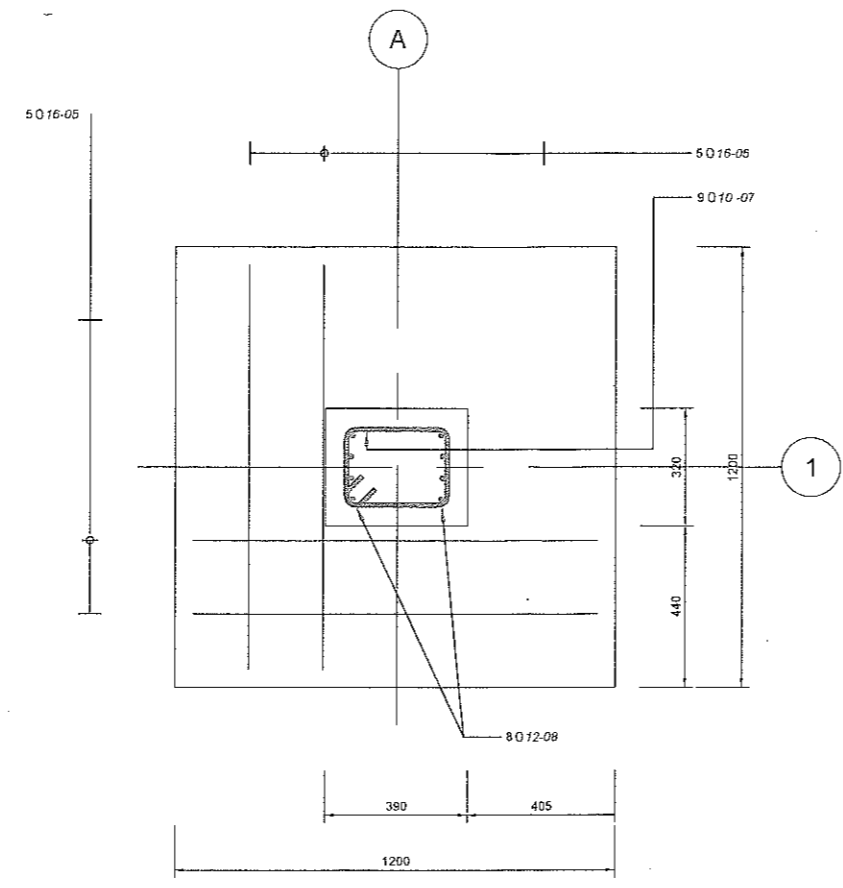
CONTRACT NO.:-	AS BUILT PLAN	SHEET 1 OF 1
PROJECT: LEBOAKGOMO EMS	SCALE: AS SHOWN	SCALE: AS SHOWN
DRAWING TITLE: STEEL LAYOUT - STAFF PARKING SHEDS (6 BAY)	CONSULTANT PROJECT NUMBER: SHCE-008	DRAWING NUMBER: SHCE-008-SL06_A

DRAWING NUMBER: SHCE-008-SL06\_A

Elevated water tank  
Position: 1.1.1  
Number of elements: 4

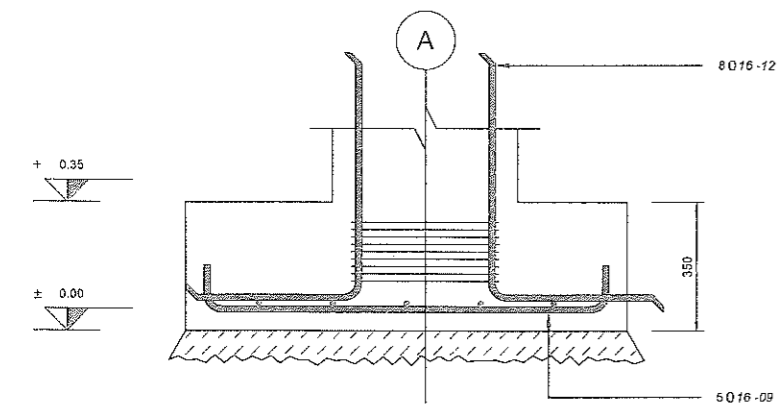


**ELEVATED WATER TANK - FOUNDATION SECTION**  
SCALE: 1:10

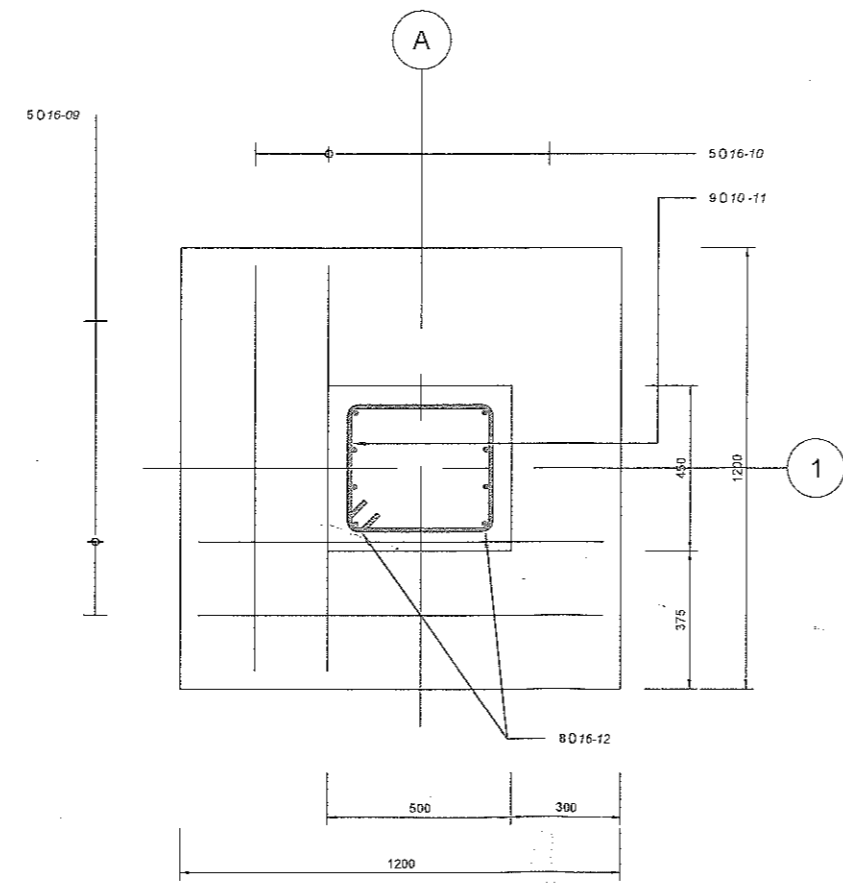


Bar mark	Type and size	No. of mtrs	No. of bars in each	Total no.	Length of each bar (mm)	Shape code	A (mm)	B (mm)	C (mm)	D (mm)	Symbol (mm)	Subtotal (m)
05	16	4	5	20	1300	00	1100					26.0
06	16	4	5	20	1300	00	1100					26.0
07	10	4	9	36	1100	31	285	215	285	215		39.6
08	12	4	8	32	1225	11	885	355				39.2
09	16	32	5	160	1300	00	1100					208.0
10	16	32	5	160	1300	00	1100					208.0
11	10	32	9	288	1575	31	395	345	395	345		453.6
12	16	32	8	256	1125	11	675	475				288.0

Parking sheds  
Position: 1.1.1  
Number of elements: 32



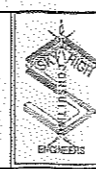
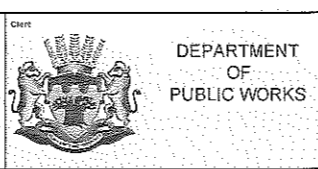
**PARKING SHEDS - FOUNDATION SECTION**  
SCALE: 1:10



T	O 10	O 12	O 16
Unit weight (kg/m)	0.62	0.89	1.58
Total length (mm)	493200	39200	756000
Total weight (kg)	304.30	34.81	1194.48

REV No.	DATE	DESCRIPTION	CONSULT	DIR	Rev. No.	DATE	REFERENCE DRAWING	CONSULT	DIR
A	05/02/20	APPROVAL							

DESIGNED BY	CHK
CHEKED BY	CHK
DRAWN BY	MAW
CHECKED BY	TM
APPROVED & ADOPTED BY	TM



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Head Office: No 14 Peka Street, P. O. Box 3116, Transvaal, 0050.  
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East London Office: 5 Elmbe Street, Helipark, 1201. Tel: 015 752 3014  
George Office: 17 Progress Street, Dorek's Deli, 6529. Tel: 044 873 2992

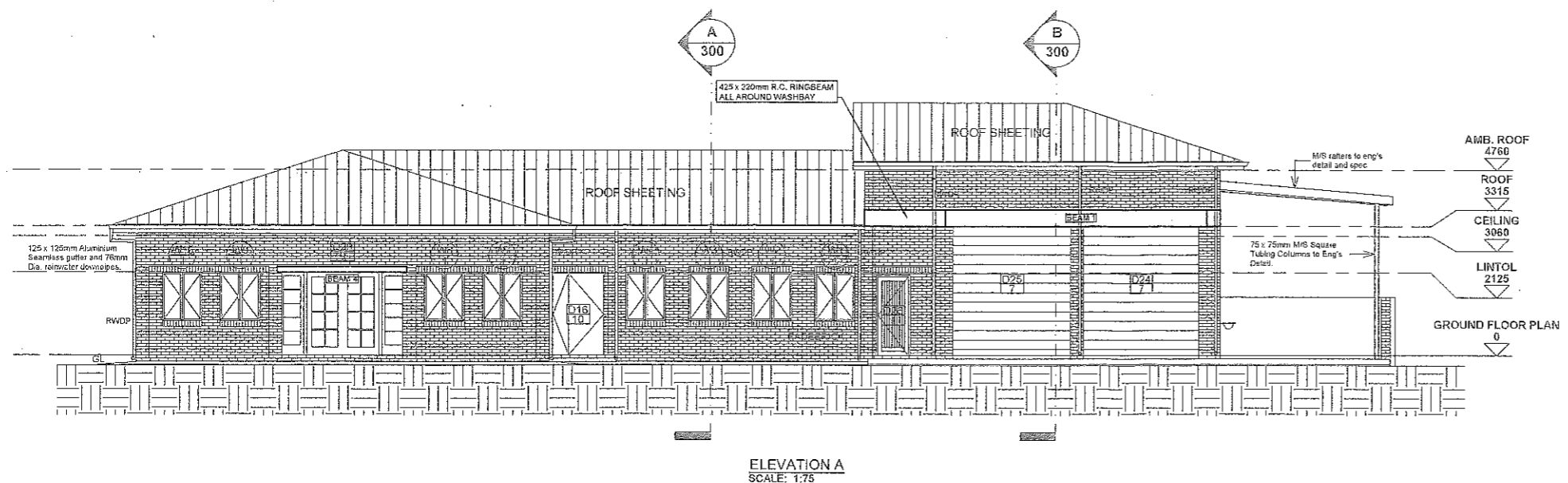
CLIENT CONTRACT NUMBER	CONTRACT NO.:

**REINFORCEMENT TO FOUNDATION & STUB COLUMNS - AMBULANCES, STAFF PARKING, BUS SHEDS & ELEVATED WATER TANK**

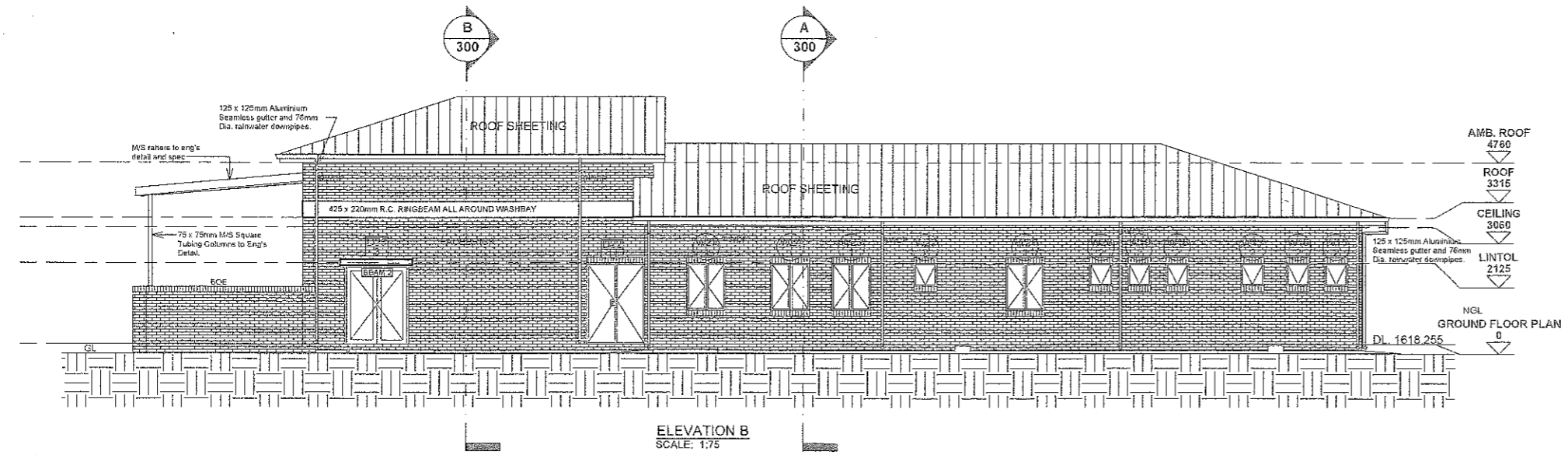
AS BUILT PLAN	SHEET 1 OF 1
SCALE	SCALE
SCALE: 1:100	SCALE: 1:100
VER. SCALE: 1:50	VER. SCALE: 1:50
CONSULTANT PROJECT NUMBER	DRAWING NUMBER
SHCE-008	SHCE-008-SL07_A

DRAWING NUMBER: SHCE-008-SL07\_A

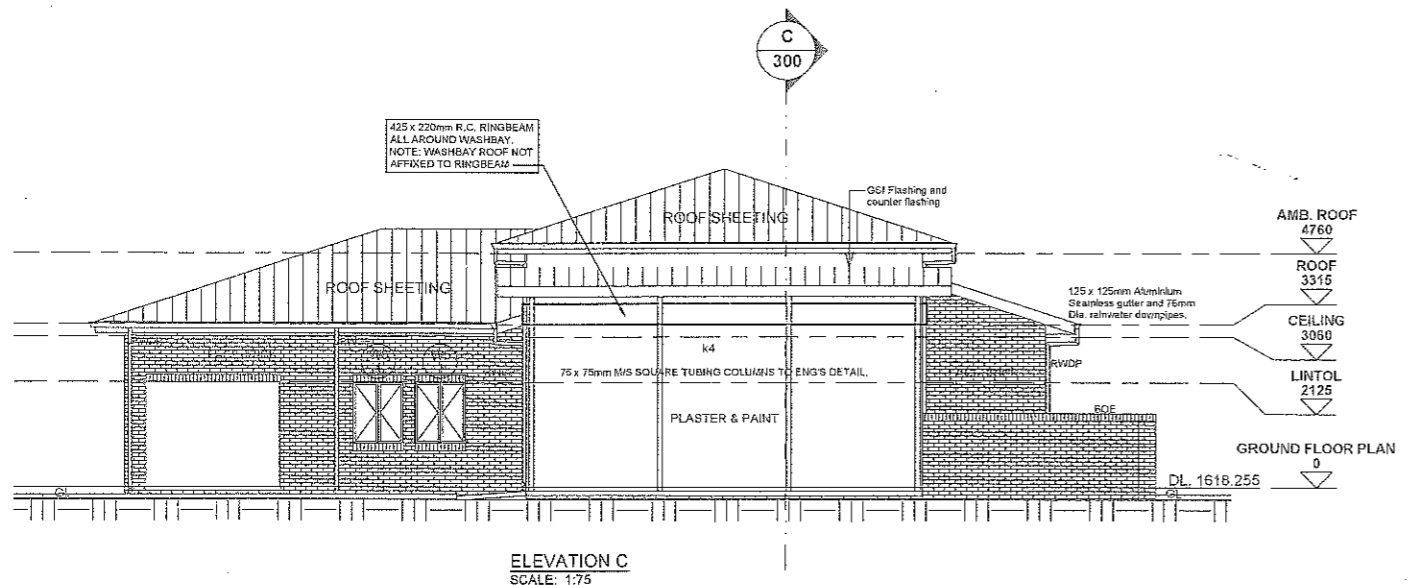




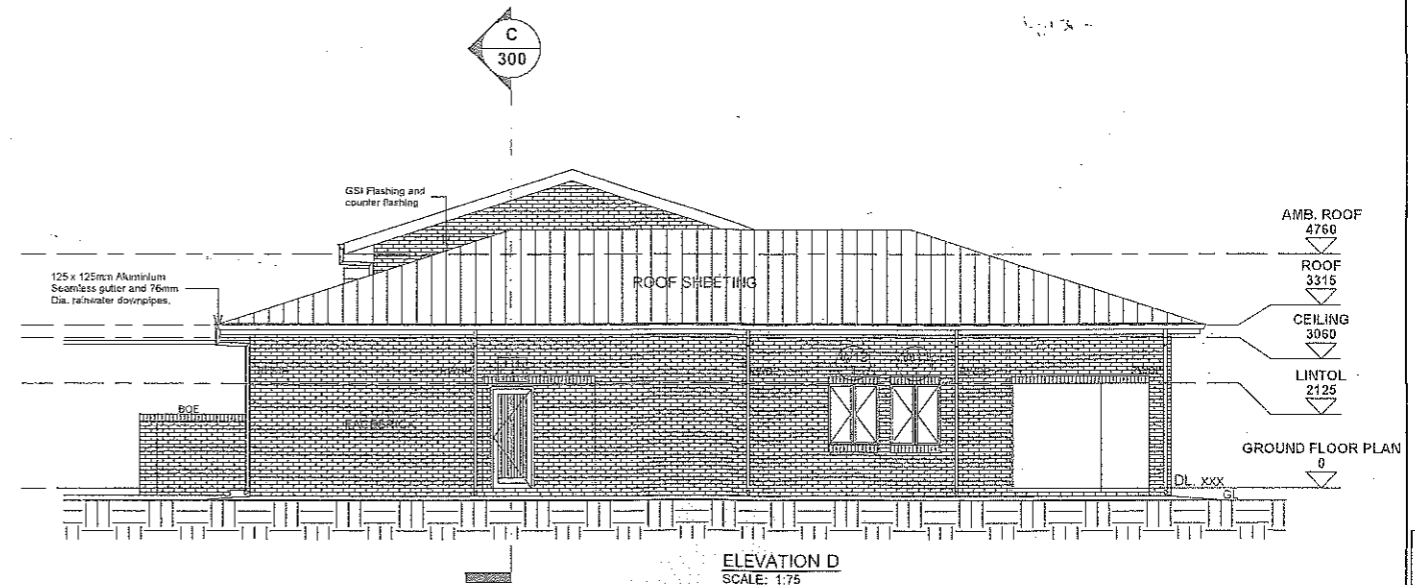
ELEVATION A  
SCALE: 1:75



ELEVATION B  
SCALE: 1:75



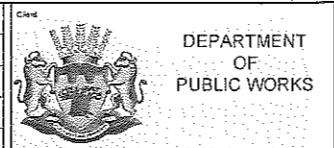
ELEVATION C  
SCALE: 1:75



ELEVATION D  
SCALE: 1:75

REV. NO.	DATE	DESCRIPTION	CONVAT	DR	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	DR
1	25/02/2011	APPROVAL							

DESIGNED BY	CH	CHKD	
CHECKED BY	CH	APPD	
DRAWN BY	MAM	DATE	
CHECKED BY	TM	DATE	
APPROVED & ADOPTED BY	TH	DATE	



**SKY HIGH CONSULTING ENGINEERS**

Head Office  
No 14 Peace Street  
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0850.  
Tel: +27 (0) 15 507 6961  
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Email: info@shce.co.za

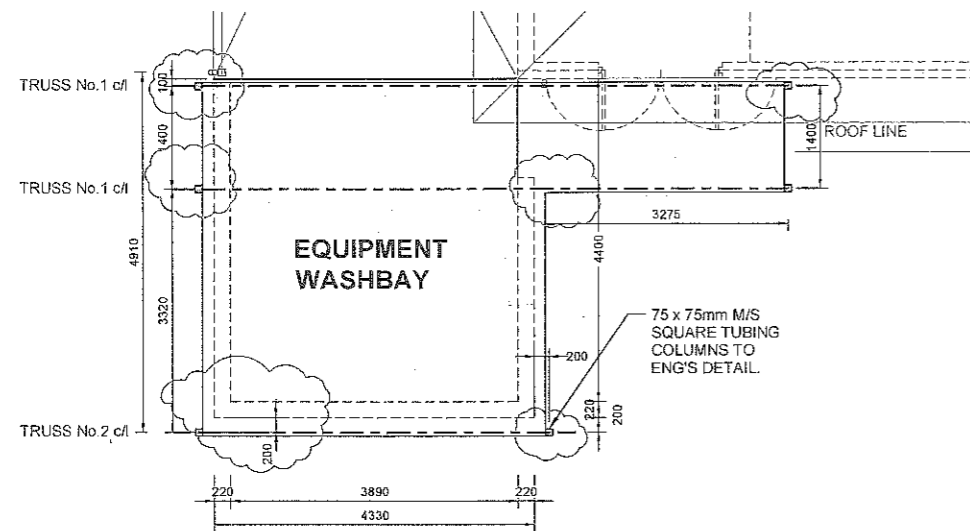
East London Office  
1A Shepperton Road  
Ereka; 6241  
Tel: 044 721 1999

Helpdesk Office:  
5 Eshke Street  
Nelspruit, 1201  
Tel: 013 762 3014

George Office:  
17 Progress Street,  
Dunelm Drift; 6520  
Tel: 044 873 2892

CLIENT CONTRACT NUMBER:	CONTRACT NO.:-	AS BUILT PLAN	SHEET 1 OF 1
PROJECT:	LEBOAKGOMO EMS	SCALE	1:75
DRAWING TITLE:	ELEVATIONS AND REINFORCED CONCRETE BEAMS	CONSULTANT PROJECT NUMBER	SHCE-008
CONSULTING ENGINEER:	DATE	DRAWING NUMBER	SHCE-008-SL08_A

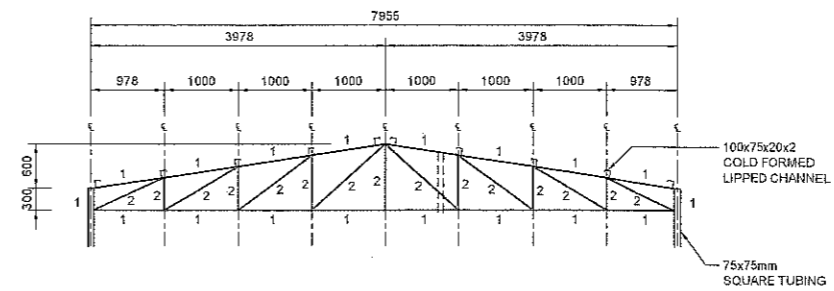
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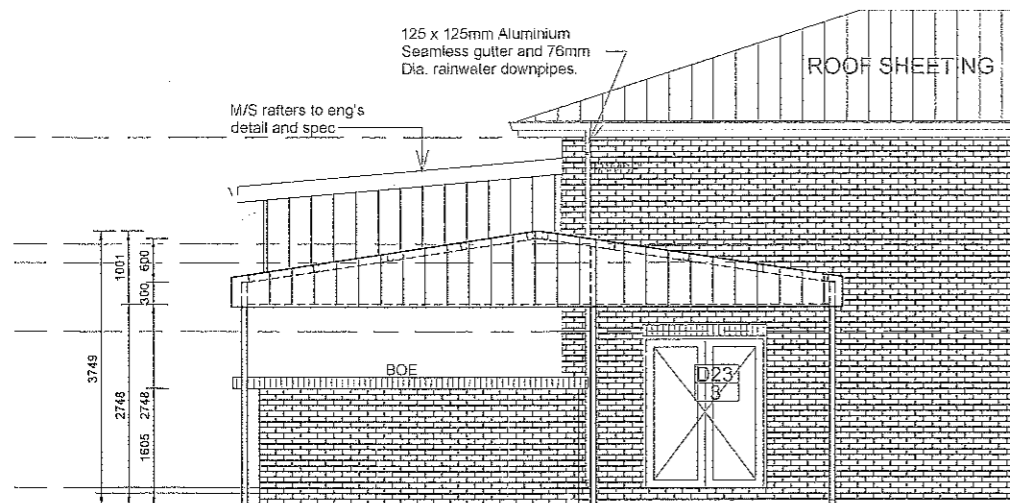
PLAN VIEW OF EQUIPMENT WASHBAY ROOF STRUCTURE  
SCALE: 1:50

STEEL ROOF TRUSS:  
1 : 65x50x6 UNEQUAL LEG ANGLE  
2 : 25x25x3 EQUAL LEG ANGLE

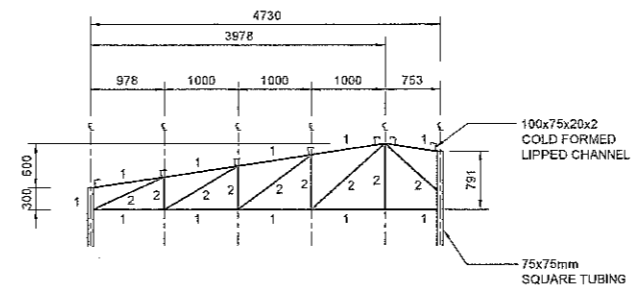
NOTE:  
CONNECTIONS TO HAVE 6mm FILLET WELD BOTH SIDES.



SECTIONAL ELEVATION OF EQUIPMENT WASHBAY ROOF STRUCTURE: TRUSS No.: 1  
SCALE: 1:50



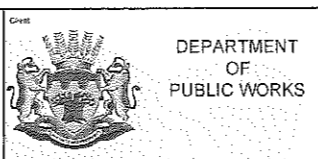
ELEVATION OF EQUIPMENT WASHBAY  
SCALE: 1:50



SECTIONAL ELEVATION OF EQUIPMENT WASHBAY ROOF STRUCTURE: TRUSS No.: 2  
SCALE: 1:50

Rev No.	DATE	DESCRIPTION	CONSULT	DR	Rev. No.	DATE	REFERENCE DRAWING	CONSULT	DR
1	01/02/11	APPROVAL							

DESIGNED BY	DNCH
CHECKED BY	DNCH
DRAWN BY	GNWC
CHECKED BY	TM
APPROVED & ADOPTED BY	TM



**SKY HIGH CONSULTING ENGINEERS**

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Nelspruit Office: 5 Elmira Street, Nelspruit, 1201. Tel: 013 752 3014

George Office: 17 Progress Street, Dorens Omt, 6529. Tel: 044 673 2902

CHIEF ENGINEER (PRO-SUPV)	DATE
CONSULTANT ENGINEER	DATE

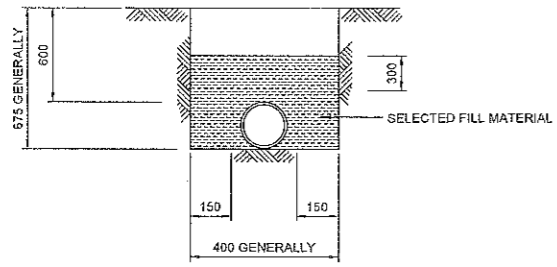
CONTRACT NO.: -

PROJECT: LÉBOAKGOMO EMS

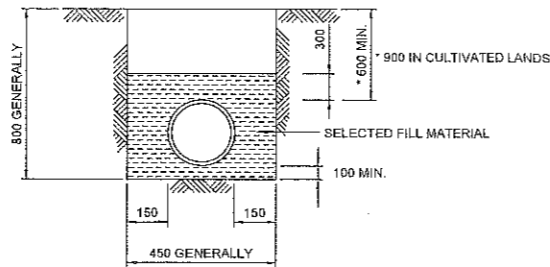
DRAWING TITLE: EMS EQUIPMENT WASHBAY ROOF STRUCTURE

AS BUILT PLAN	SHEET 1 OF 1
SCALE	1:50
CONSULTANT PROJECT NUMBER	DRAWING NUMBER
SHCE-008	SHCE-008-SL10_A

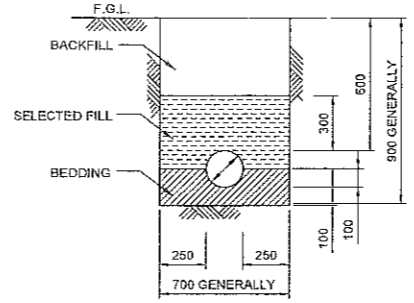
DRAWING NUMBER: SHCE-008-SL10\_A



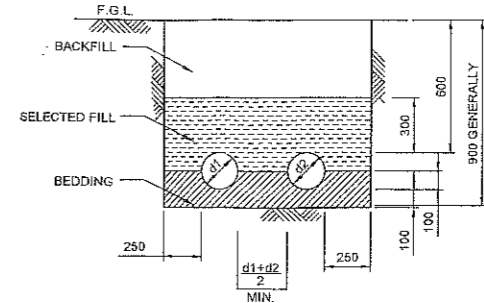
**BEDDING DETAILS FOR HDPE PIPES**  
N.T.S.



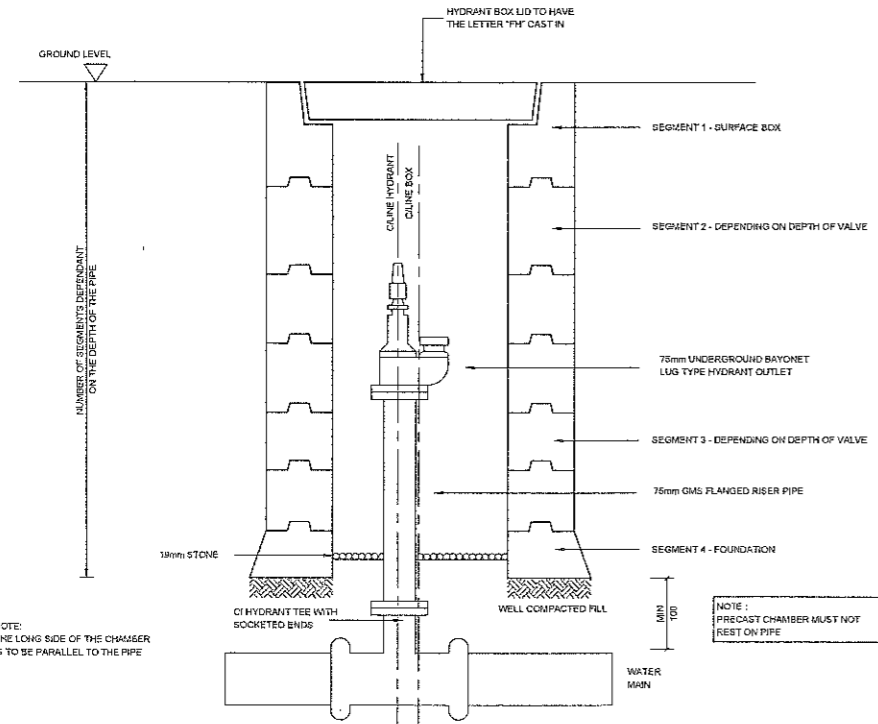
**BEDDING DETAILS FOR PVC PIPES**  
N.T.S.



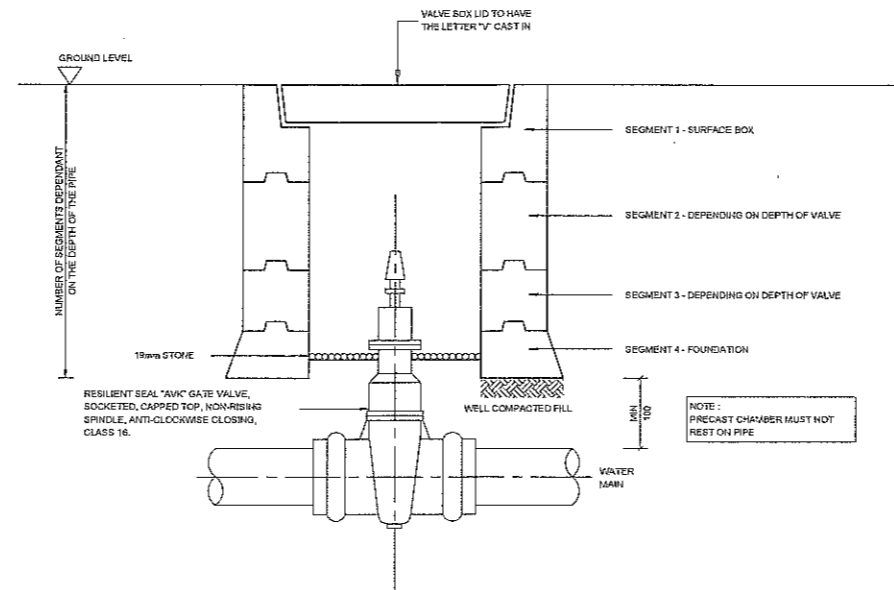
**RISING MAIN BEDDING DETAIL (mPVC PIPES)**  
N.T.S.



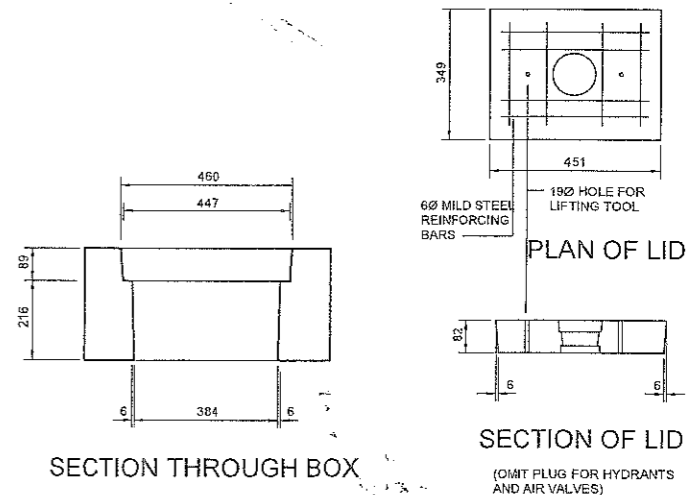
**BEDDING DETAILS FOR TWO OR MORE PIPES IN ONE TRENCH**  
N.T.S.



**SECTION TYPICAL PRECAST FIRE HYDRANT CHAMBER**  
N.T.S.

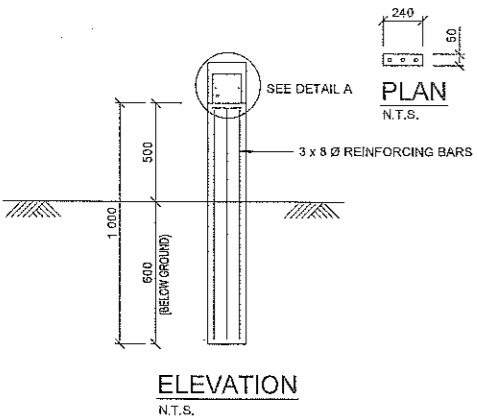


**SECTION TYPICAL PRECAST VALVE CHAMBER**  
N.T.S.

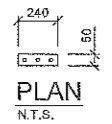


**SECTION THROUGH BOX**

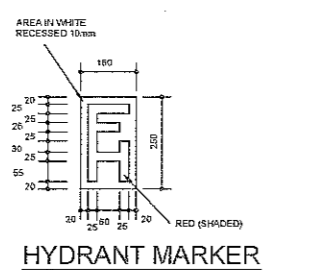
**SECTION OF LID**  
(OMIT PLUG FOR HYDRANTS AND AIR VALVES)



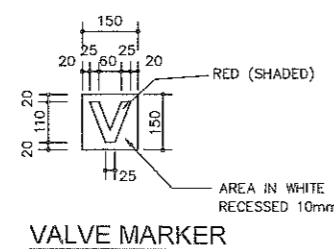
**ELEVATION**  
N.T.S.



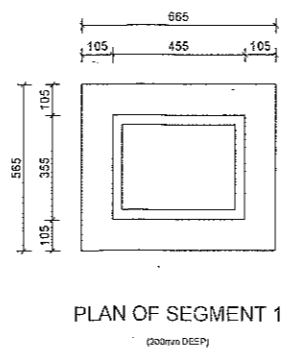
**PLAN**  
N.T.S.



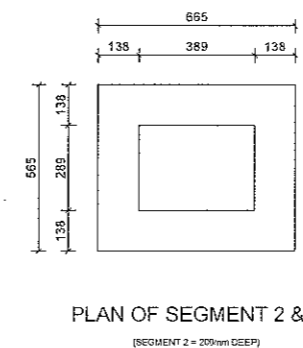
**DETAIL A: PIPELINE MARKER**  
N.T.S.



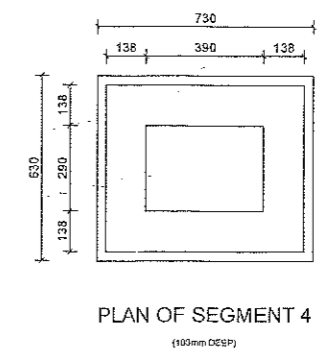
**DETAIL A: CONCRETE PIPE MARKER**  
SCALE: NTS



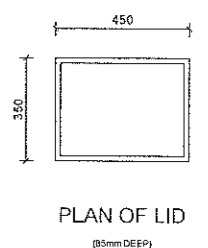
**PLAN OF SEGMENT 1**  
(200mm DEEP)



**PLAN OF SEGMENT 2 & 3**  
(SEGMENT 2 = 200mm DEEP)  
(SEGMENT 3 = 100mm DEEP)



**PLAN OF SEGMENT 4**  
(100mm DEEP)



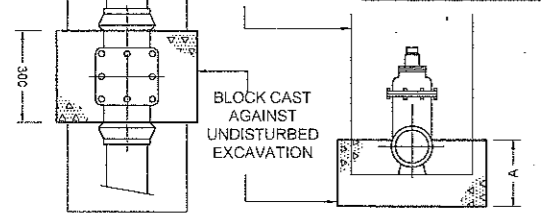
**PLAN OF LID**  
(80mm DEEP)

- NOTES:**
1. THE DIAMETER, TYPE AND CLASS OF THE PIPE SHALL BE PAINTED ON ALL PIPE ROUTE MARKERS.
  2. ALL ELEMENTS TO BE PAINTED WITH TWO COATS OF ROAD PAINT IN SPECIFIED COLOURS.

<p>DESIGNED BY: CN CHECKED BY: CN DRAWN BY: MAH CHECKED BY: TM APPROVED &amp; ADOPTED BY: TM</p>										<p>Client: <b>DEPARTMENT OF PUBLIC WORKS</b></p>										<p><b>SKY HIGH CONSULTING ENGINEERS</b> Head Office: No 14 Pines Road, Berekas, 5241. Tel: 043 721 1999 Nelspruit Office: 8 Elmko Street, Nelspruit, 1201. Tel: 013 307 8581 Fax: +27 (0)18 549 1430. Email: info@skyhigheng.co.za George Office: 17 Progress Street, Dorchester Drive, 6529. Tel: 041 673 2962</p>										<p>CLIENT CONTRACT NUMBER: <b>CONTRACT NO.: -</b> PROJECT: <b>LEBOAKGOMO EMS</b> DRAWING TITLE: <b>TYPICAL WATER DETAILS</b></p>										<p>AS BUILT PLAN: <b>SHCE-008</b> SHEET 1 OF 1 SCALE: 1:75 DRAWING NUMBER: <b>SHCE-008-WD01_A</b></p>									
REV. NO.	DATE	DESCRIPTION	CONSULT	DR	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	DR	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	DR	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	DR																														

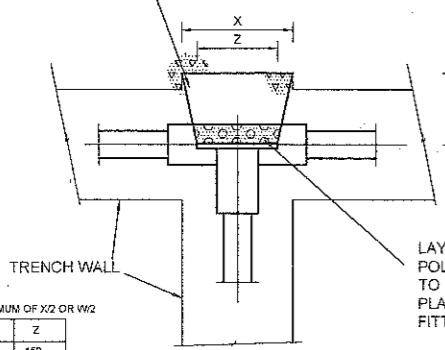
DRAWING NUMBER: SHCE-008-WD01\_A

VALVE SIZE	DIMENSIONS	
	A	B
50	150	80
75	200	100
90	250	150
110	300	150
160	300	150



**THRUST BLOCK FOR HYDRANT TEES AND VALVES IN PRESSURE PIPELINES**

BLOCK CAST SYMMETRICALLY ABOUT PLANE CONTAINING AXES OF FITTING AND AGAINST UNDISTURBED EXCAVATION

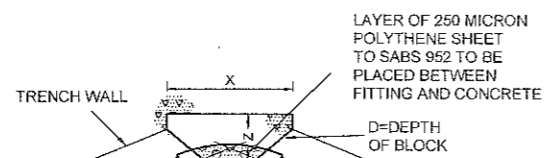


**THRUST BLOCK FOR TEE AND END CAP IN PRESSURE PIPELINE**

NOTE: Z SHALL BE THE MINIMUM OF X/2 OR W/2

DIAMETER	X	D	Z
50	500	150	150
75	600	175	150
90	700	200	200
110	800	250	200
160	800	300	275
250	800	400	400

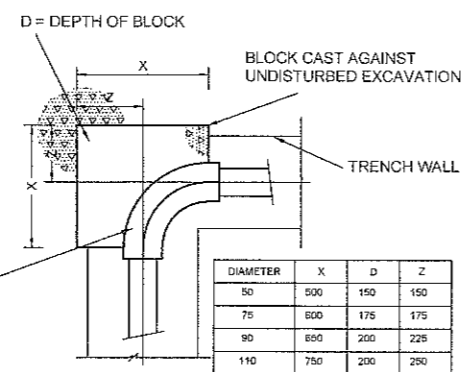
**THRUST BLOCK DETAILS**



NOTE: Z SHALL BE THE MINIMUM OF X/2 OR W/2

DIAMETER	11.25°			22.5°			45°		
	X	D	Z	X	D	Z	X	D	Z
75	600	175	125	500	175	125	500	175	125
AREA									

**THRUST BLOCK FOR 45°, 22.5° AND 11.25° BENDS IN PRESSURE PIPELINES**

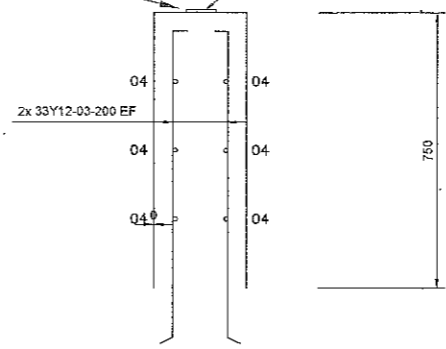


**THRUST BLOCK FOR 90° BEND IN PRESSURE PIPELINES**

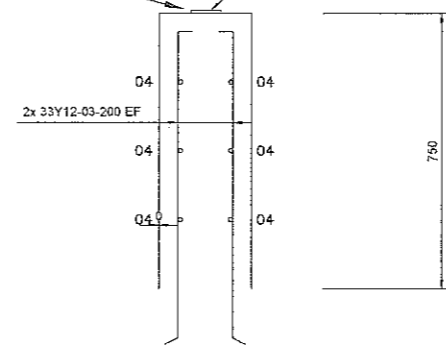
NOTE: Z SHALL BE THE MINIMUM OF X/2 OR W/2

DIAMETER	X	D	Z
50	500	150	150
75	600	175	175
90	650	200	225
110	750	200	250
160	850	400	400
250	900	500	500

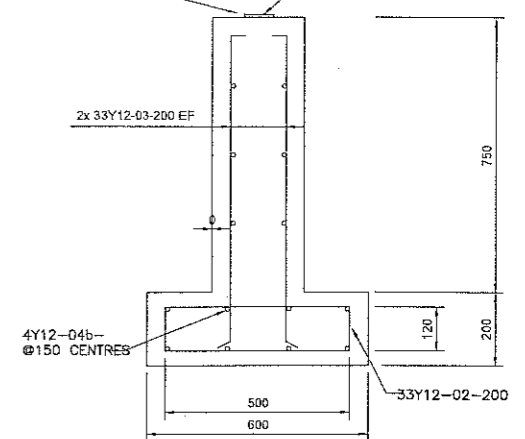
FIT 80x80 FLAT BAR AFTER CASTING CONCRETE WALL LEVEL TO ±2mm WITH STEEL PACKERS, THEN GROUT BETWEEN FLAT BAR AND CONCRETE WALL



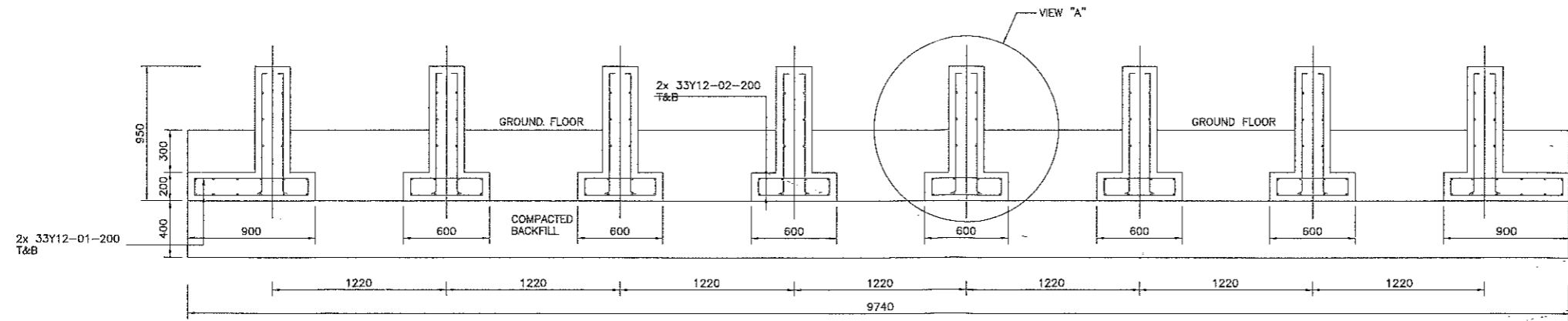
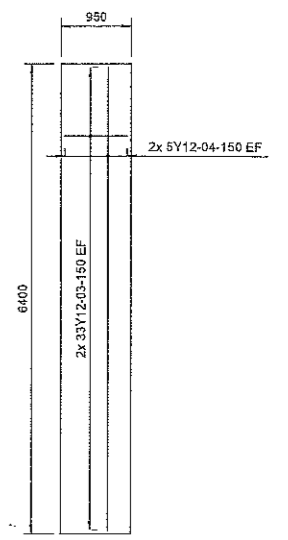
FIT 80x80 FLAT BAR AFTER CASTING CONCRETE WALL LEVEL TO ±2mm WITH STEEL PACKERS, THEN GROUT BETWEEN FLAT BAR AND CONCRETE WALL



FIT 80x80 FLAT BAR AFTER CASTING CONCRETE WALL LEVEL TO ±2mm WITH STEEL PACKERS, THEN GROUT BETWEEN FLAT BAR AND CONCRETE WALL



**NOTE:**  
 1.) ALL REINFORCEMENT BARS ARE HIGH TENSILE 12mm BARS.  
 2.) COVER TO ALL REINFORCEMENT TO BE 50mm.  
 3.) GRADE OF CONCRETE TO BE 25MPa.

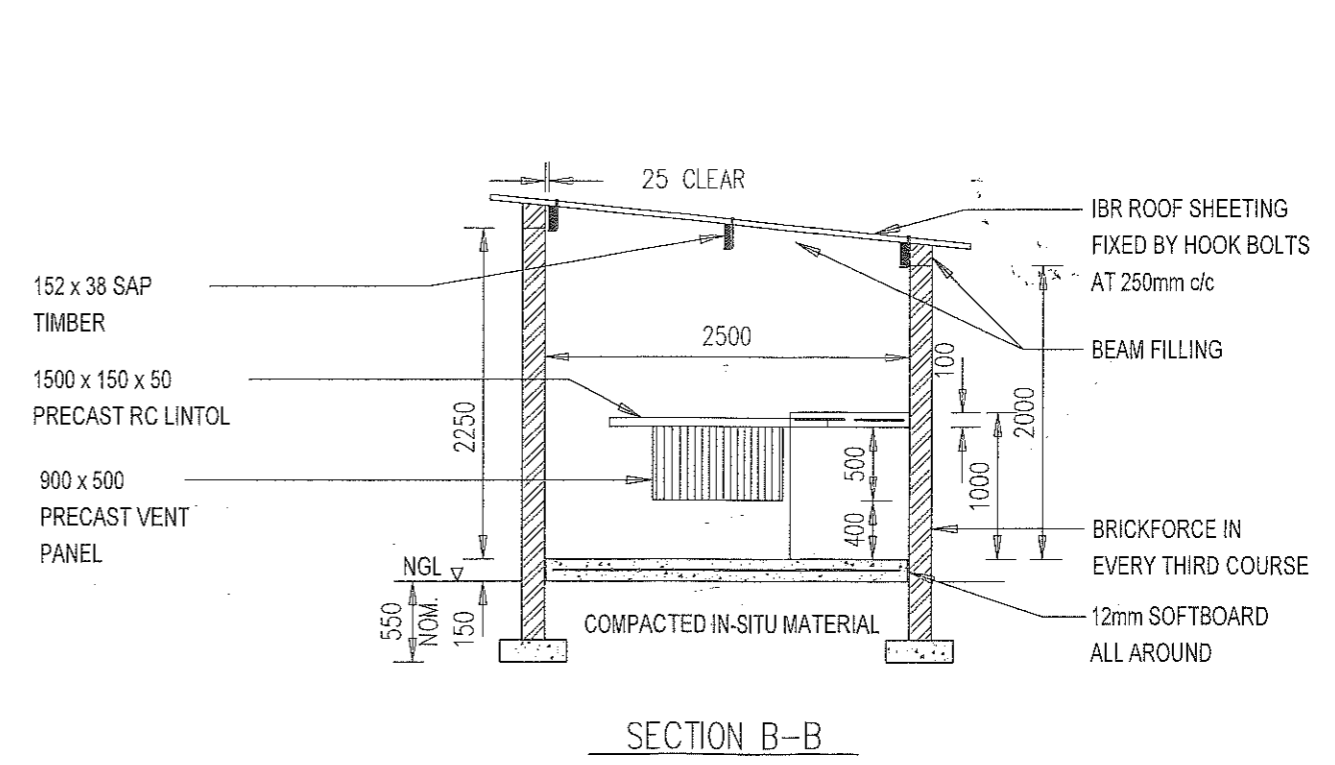
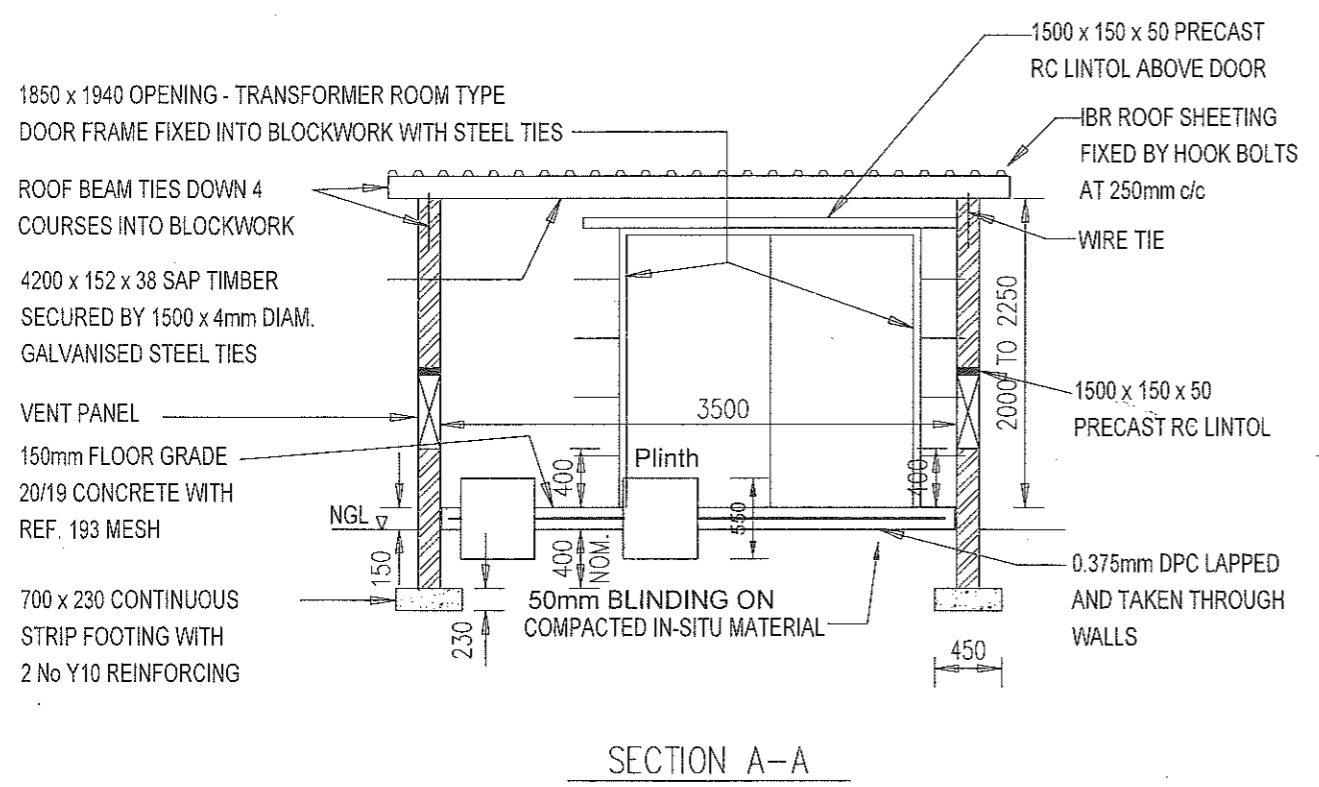
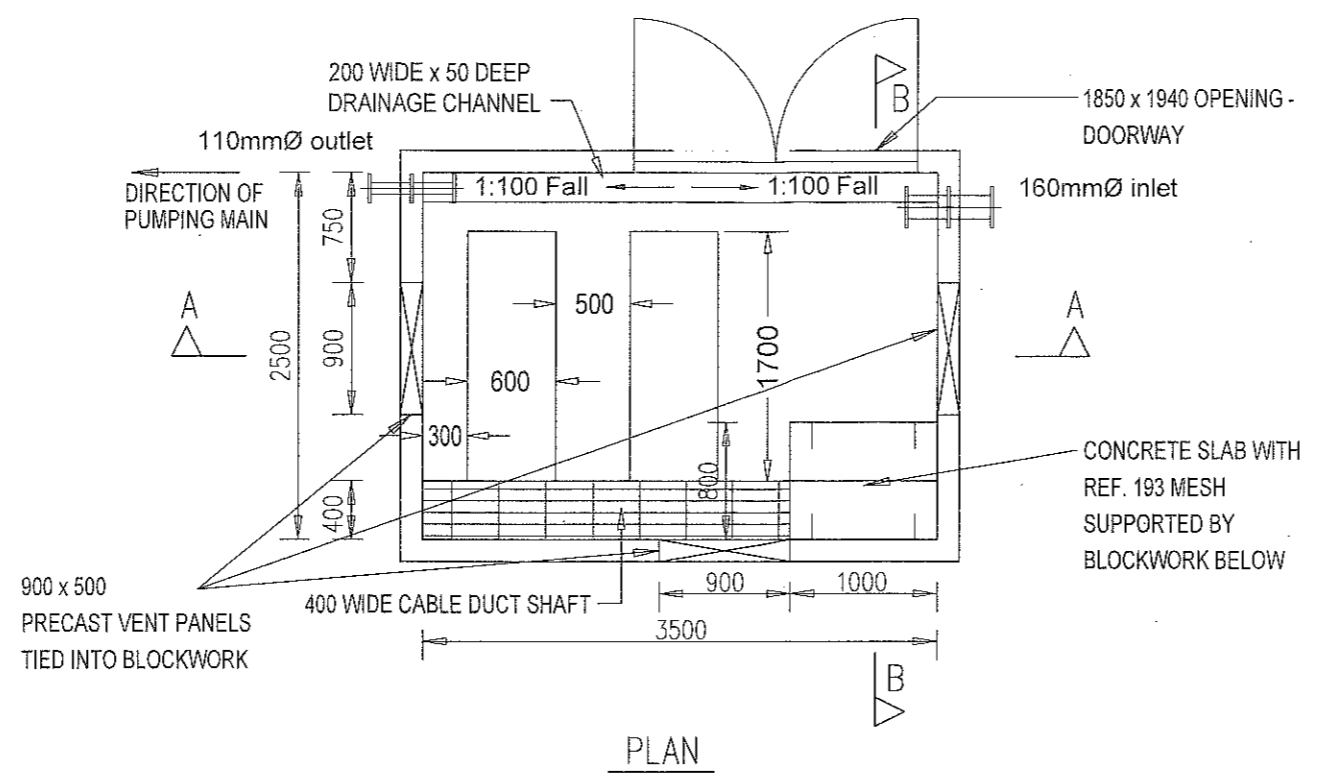


**WATER TANK STAND: FOUNDATION ARRANGEMENT: SECTION A-A**  
 SCALE: 1:20

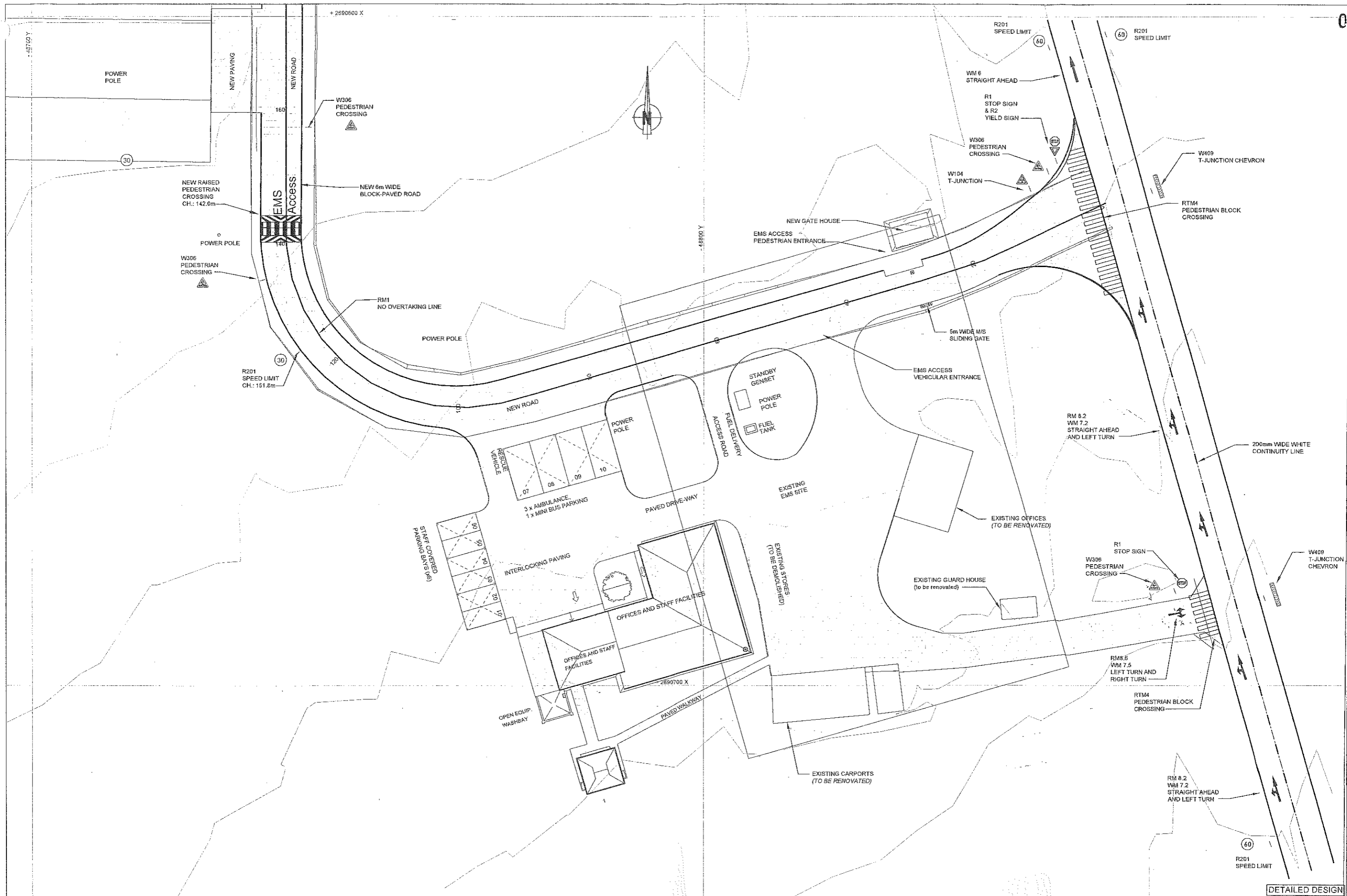
<p>DESIGNED BY: CN                  CHECKED BY: CN                  DRAWN BY: MAM                  APPROVED BY: TM</p>										<p>DEPARTMENT OF PUBLIC WORKS</p>										<p>SKY HIGH CONSULTING ENGINEERS                  Head Office: 11 Progress Street, Bays, 6241                  East London Office: 14 Stoddon Road, Bays, 6241                  George Office: 17 Progress Street, Donwells Drift, 6259                  Tel: +27 (0)18 307 6961                  Fax: +27 (0)18 620 1432                  Email: info@shceconsulting.co.za</p>										<p>CLIENT CONTRACT NUMBER: CONTRACT NO.: -                  PROJECT: LEBOAKGOMO EMS                  DRAWING TITLE: TYPICAL WATER DETAILS</p>										<p>AS BUILT PLAN SHEET 1 OF 1                  SCALE: 1:20                  DRAWING NUMBER: SHCE-008                  PROJECT NUMBER: SHCE-008-WD02_A</p>									
REV. NO.	DATE	DESCRIPTION	CONSULT	DR	REV. NO.	DATE	REFERENCE DRAWING	CONSULT	DR	APPROVED BY	TM																																						

DRAWING NUMBER: SHCE-008-WD02\_A

- Notes:
- CONCRETE TO BE
    - Structural concrete - 30MPa/20mm
    - All other concrete - 30MPa/20mm
    - 50mm thick blinding layer - 15Mpa/20mm
  - BRICK WORK
    - 220mm selected face brick (external)
  - PLASTER
    - Cement plaster 12mm thick to internal
    - Vertical brick walls
  - PAINTING
    - 1 coat primer and 2 coats polyacrylic emulsion colour to be approved to internal walls.
  - DOORS
    - 1850 x 1940mm steel framed and braced door and rebated frame (D1).
  - WINDOWS
    - Steel windows type NE4 as indicated on drawing.
  - Louvered panels 900 x 500mm as indicated on drawing.
  - Contractor to finalize plinth size once the pumps have been selected.



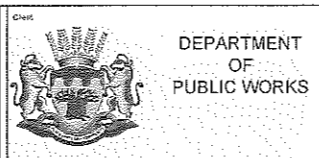
										<b>DETAILED DESIGN</b>	
DESIGNED BY	CH	Client	DEPARTMENT OF PUBLIC WORKS		SKY HIGH CONSULTING ENGINEERS		CLIENT CONTRACT NUMBER	CONTRACT NO. :-		AS BUILT PLAN	SHEET 1 OF 1
CHECKED BY	CH				Head Office: No 14 Pleasance Street, P. O. Box 5816, Tzaneen 0850;	East London Office: 5 Elmke Street, Helshoep, 2291;	PROJECT:	LEBOAKGOMO EMS		FOR APPROVAL BY PROJECT ENGINEER	SCALE
DRAWN BY	MAW				Tel: +27 (0) 15 307 6661; Fax: +27 (0) 15 308 1430; Email: info@shconsulting.co.za	Inhlobo Office: 17 Progress Street, Dornoch's Drift, 6528;	DATE			FOR APPROVAL BY CONSULTANT	1:20
CHECKED BY	TM					George Office:	DATE			CONSULTANT'S PROJECT NUMBER	DRAWING NUMBER/REV.
APPROVED & ADOPTED BY	TM									SHCE-008	SHCE-008-PS01_B
Rev. No.	DATE	DESCRIPTION	CONSULT	DR	Rev. No.	DATE	REFERENCE DRAWING	CONSULT	DR		



DETAILED DESIGN

Rev. No.	DATE	DESCRIPTION	CONTR.	DR.	DATE	REFERENCE DRAWING	CONTR.	DR.

DESIGNED BY	CH
CHECKED BY	CH
DRAWN BY	JAM
CHECKED BY	TM
APPROVED & ADOPTED BY	TK



**SKY HIGH CONSULTING ENGINEERS**

Head Office:  
No 14 Pance Street,  
P.O. Box 2816,  
Tzaneen,  
0650.  
Tel: +27 (0) 18 307 6901  
Fax: +27 (0) 18 540 1430  
Email: info@shce.co.za

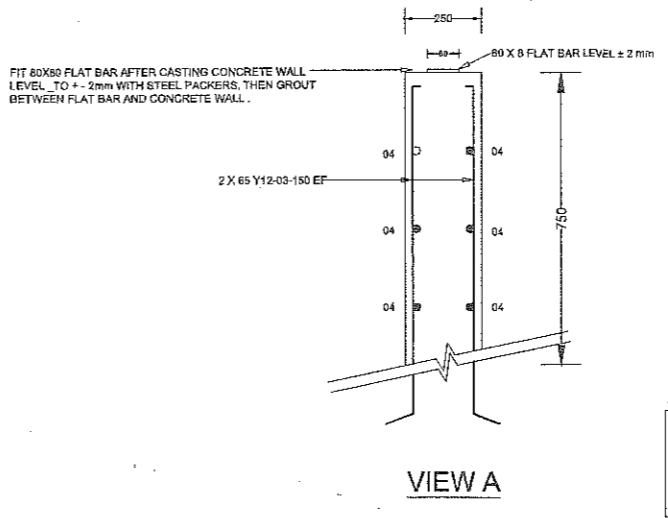
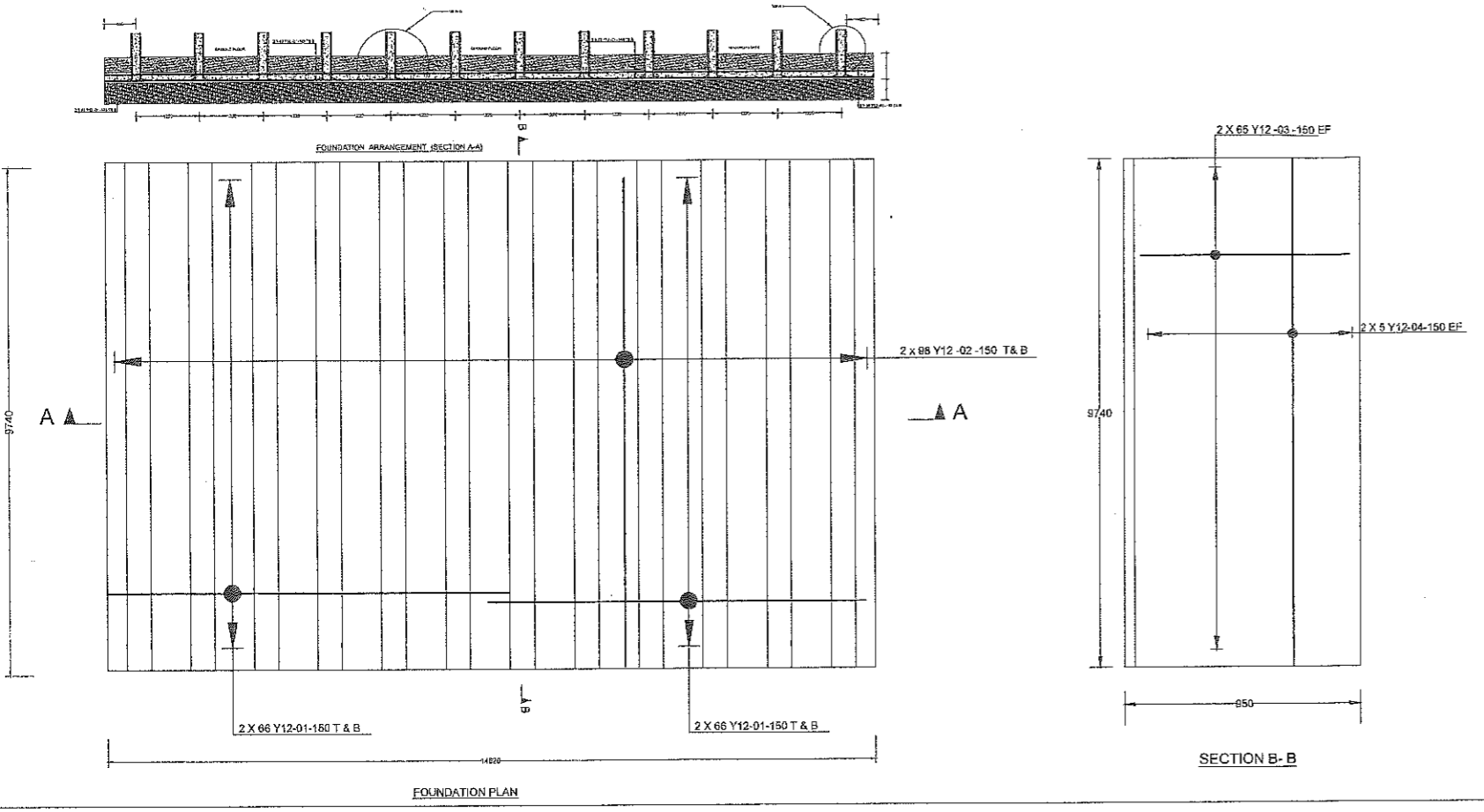
East London Office:  
1A Stockton Road,  
Bereas, 5241  
Tel: 043 721 1096

Nelson Mandela Office:  
5 Ethelma Street,  
Nelson Mandela, 1201  
Tel: 013 752 3014

George Office:  
17 Progress Street,  
Danelia, 6525  
Tel: 044 673 2852

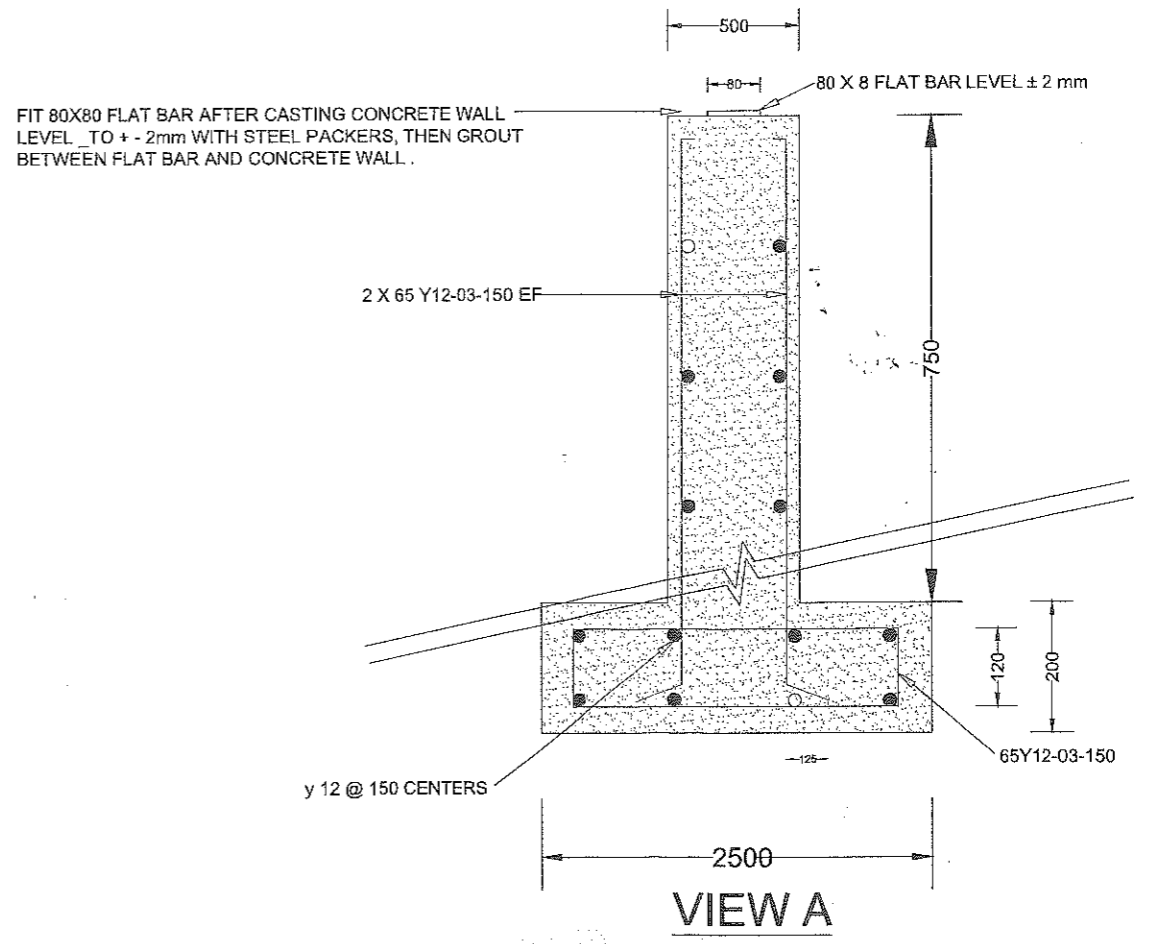
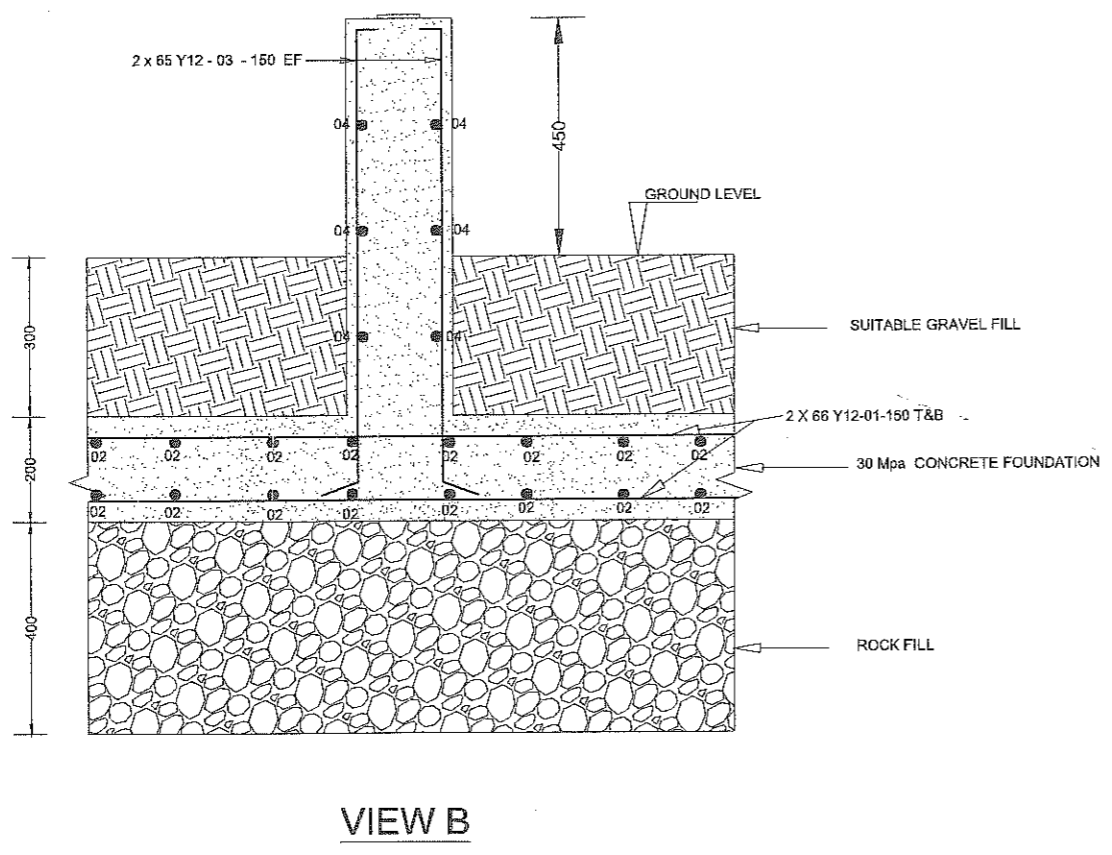
CLIENT CONTRACT NUMBER	CONTRACT NO.:
PROJECT	LEBOAKGOMO EMS
CONSULTANT'S PROJECT NUMBER	SHCE-008
CONSULTANT'S ENGINEER	DATE

AD BUILT PLAN	SHEET 1 OF 1
SCALE	NPL SCALE: 1:500
DRAWING NUMBER/REV.	SHCE-008-AL001_1_A



**Note:**

- ALL REINFORCEMENT BARS ARE HIGH TENSILE 12 mm BARS
- COVER TO ALL REINFORCEMENT TO BE 50 mm
- GRADE OF CONCRETE TO BE 30 Mpa



Rev No	DATE	DESCRIPTION	CONSULT	DATE	REFERENCE MARKING	CONSULT	DATE
A	15/07/2018	Approved					

DEPARTMENT OF PUBLIC WORKS

SKY HIGH CONSULTING ENGINEERS

1411/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200

CONTRACT NO.: -

LEBOWAKGOMO EMS

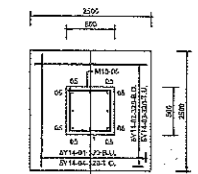
FOUNDATION DETAILS - STEEL TANKS

APPROVAL

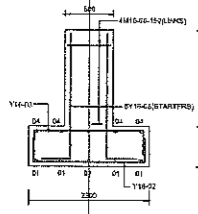
AS BUILT PLAN

1 OF 1

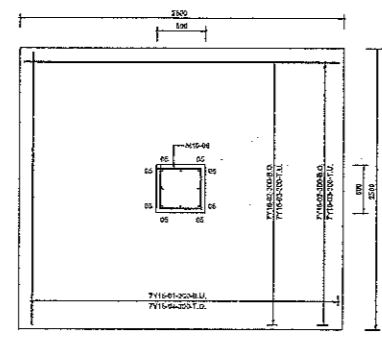
SHCE-008



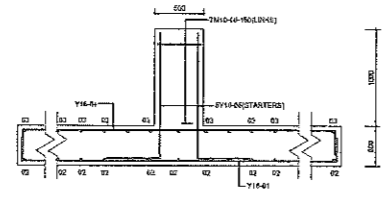
PLAN: PAD FOUNDATION - TYPE 2  
SCALE: 1:25



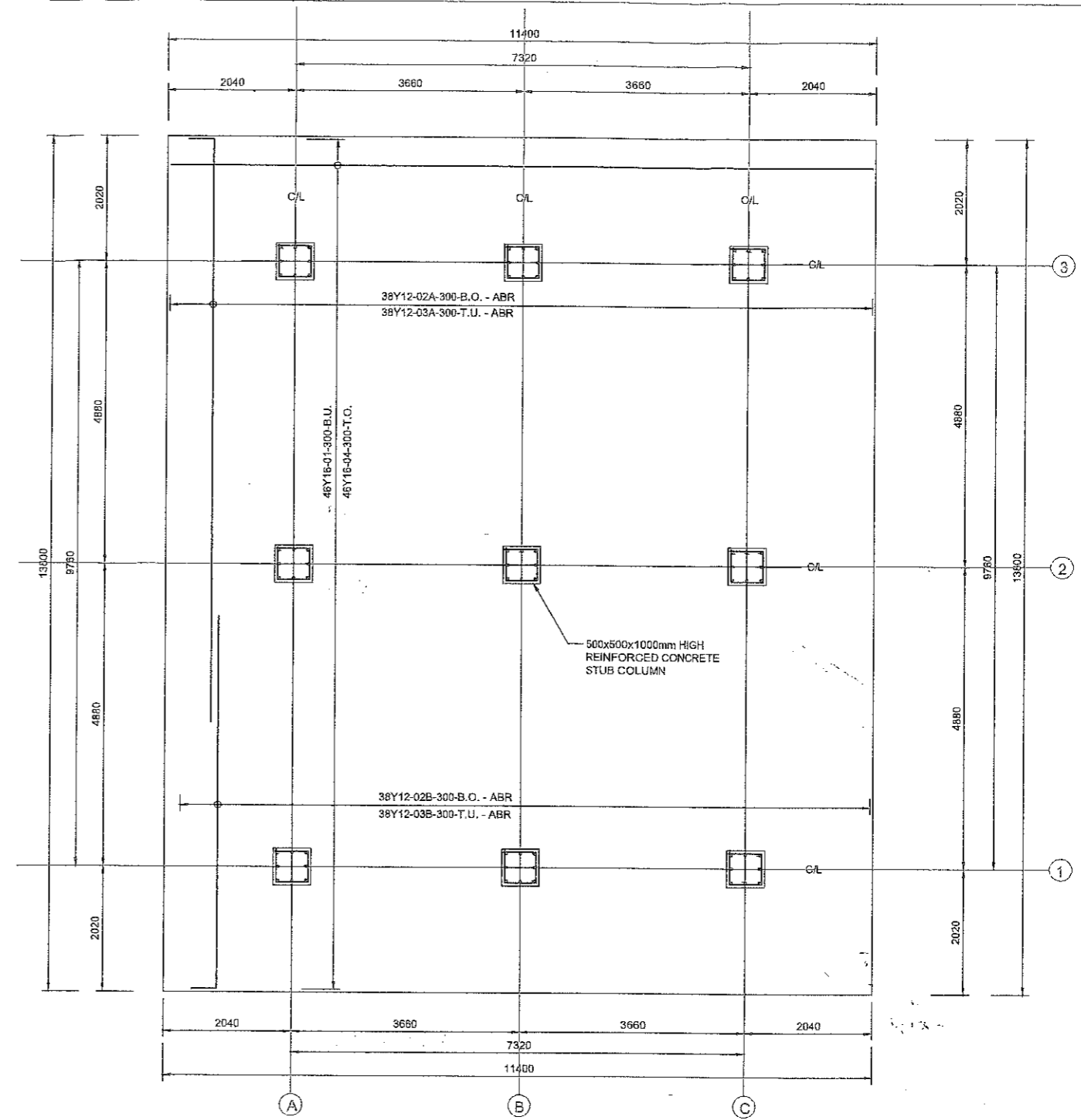
SECTION A-A  
SCALE: 1:25



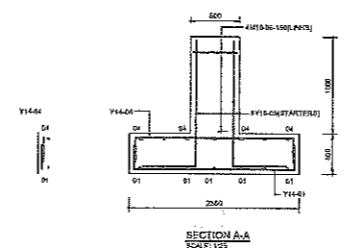
PLAN: PAD FOUNDATION - TYPE 1  
SCALE: 1:25



SECTION A-A  
SCALE: 1:25



PLAN LAYOUT OF REINFORCED  
CONCRETE SLAB AND STUB COLUMNS  
SCALE: 1:100



SECTION A-A  
SCALE: 1:25

Rev. No.	DATE	DESCRIPTION	CONSULT	DR	Rev. No.	DATE	REFERENCE DRAWING	CONTRACT	DR

DESIGNED BY	CN
CHECKED BY	CN
DRAWN BY	VK
CHECKED BY	TM
APPROVED & AUTHORIZED BY	TM



**SKY HIGH CONSULTING ENGINEERS**

Head Office:  
No. 5 Sime Street  
P. O. Box 2516  
Tlokweng  
GABORONE

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P. O. Box 2818  
Tlokweng  
GABORONE

Tel: +27 (0)15 307 0141  
Fax: +27 (0)15 510 1420  
Email: info@skyhigh.co.za

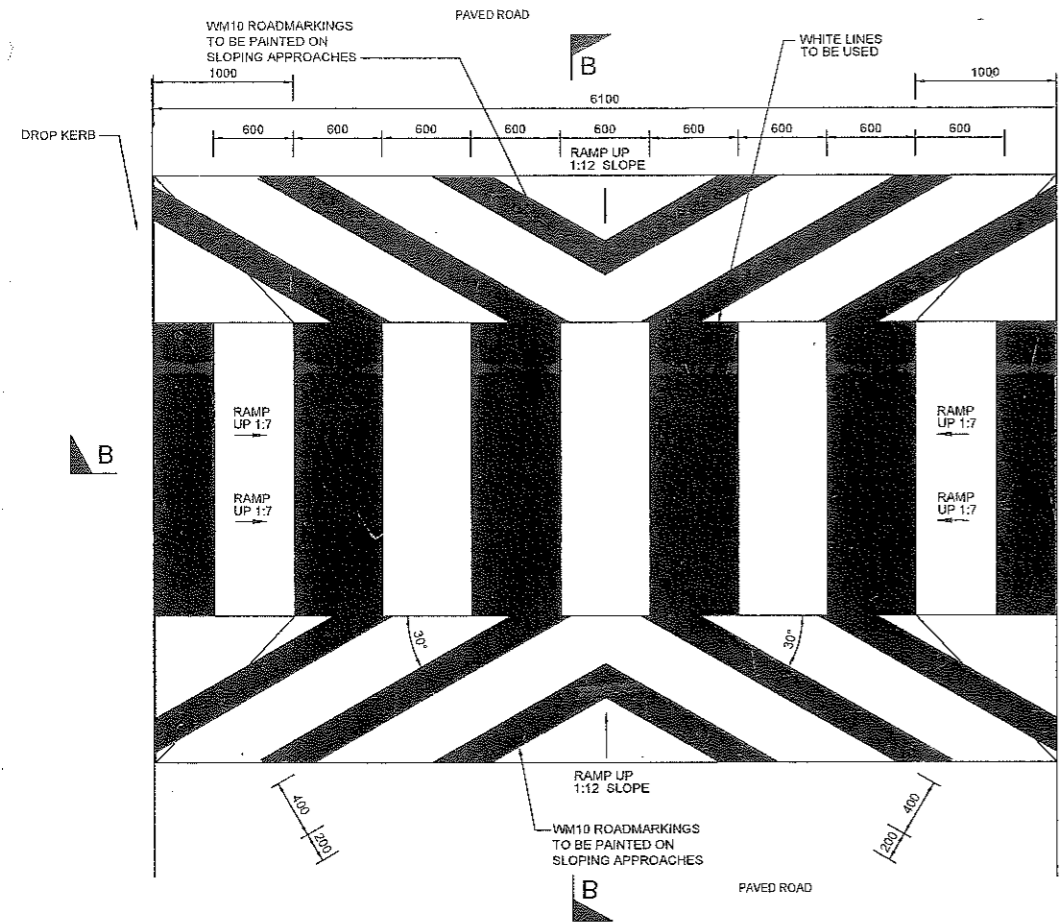
CLIENT CONTRACT NUMBER	CONTRACT NO.:-
PROJECT	LEBOWAKGOMO EMS
CONSULTANT'S PROJECT NUMBER	SHCE-008

AS BUILT PLAN	SHEET 1 OF 1
DRAWING TITLE	TANKSTAND FOUNDATION DETAILS AND BASE REINFORCEMENT LAYOUT
DRAWING NUMBER	SHCE-008-SL03-A

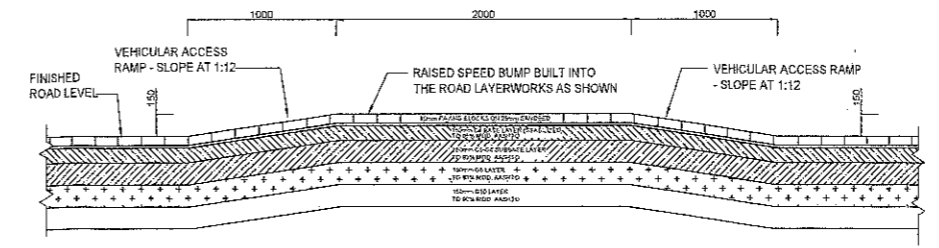
APPROVAL	

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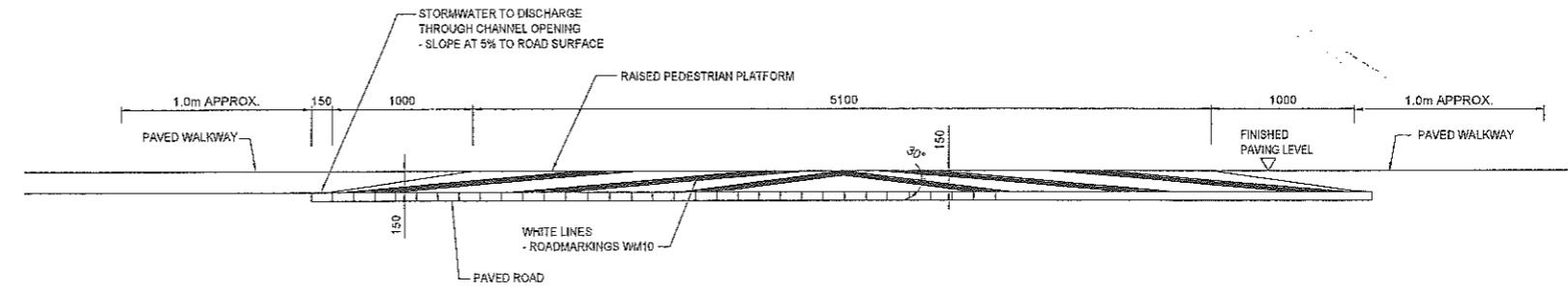




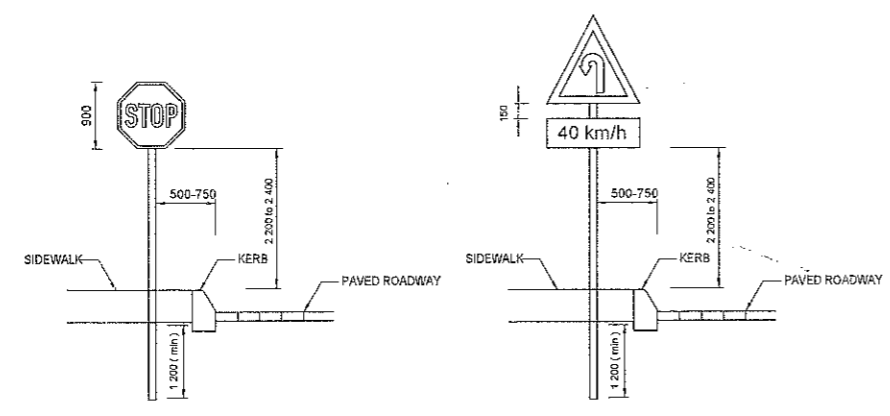
PLAN VIEW OF RAISED SPEED BUMP / RAISED PEDESTRIAN CROSSING  
1:25



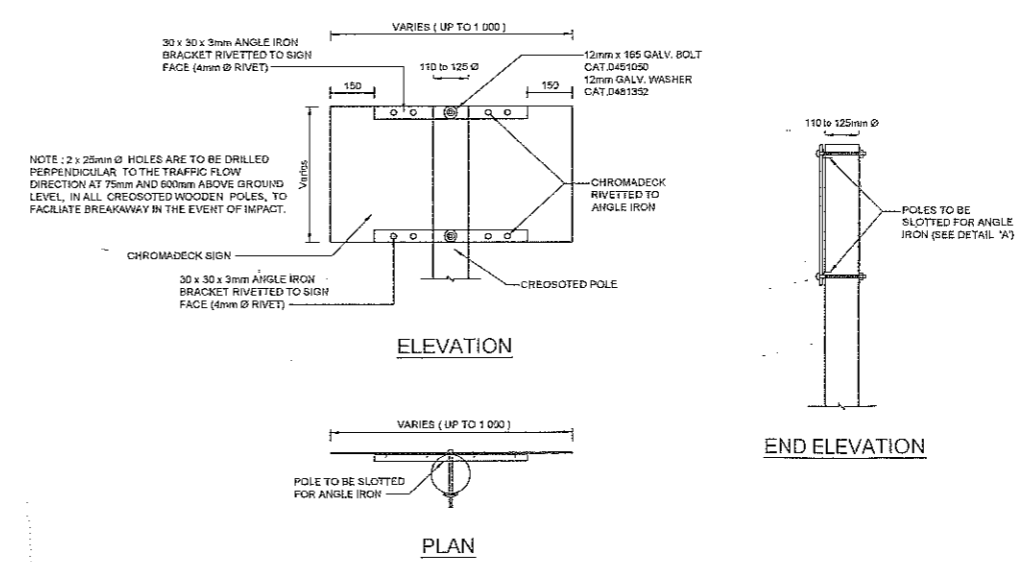
SECTIONAL VIEW A-A OF RAISED SPEED BUMP / RAISED PEDESTRIAN CROSSING  
1:25



LONGITUDINAL SECTION B-B OF RAISED PEDESTRIAN PLATFORM  
1:25

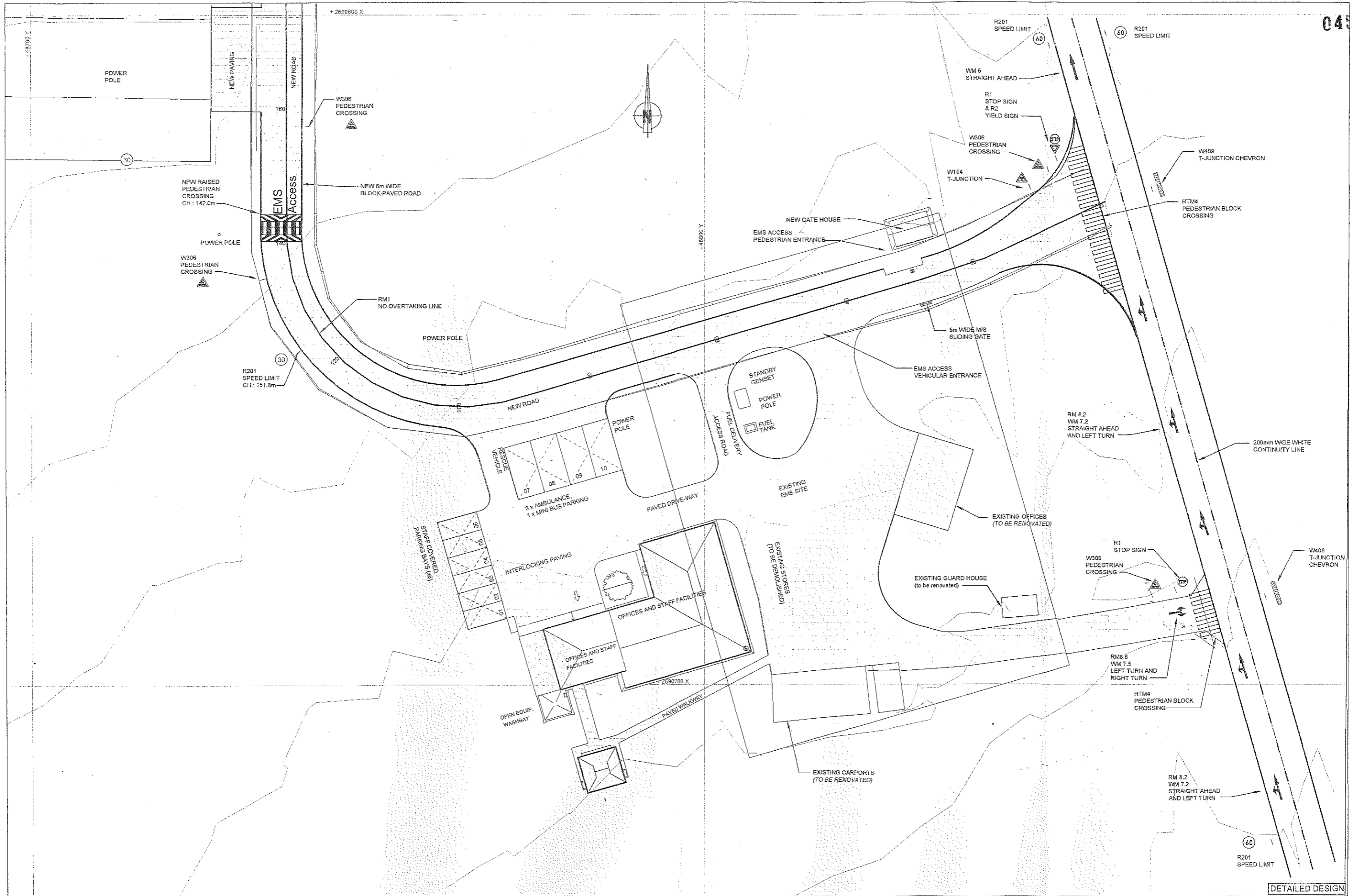


TYPICAL SIGNPOSTING ERECTION DIMENSIONS  
REGULATORY AND WARNING SIGN  
N.T.S.





FIXING OF SIGNS OF 1 METRE AND LESS ON ONE SUPPORT POLE

<table border="0"> <tr> <td>DESIGNED BY</td> <td>CN</td> <td>CHKD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHECKED BY</td> <td>CN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRAWN BY</td> <td>UAM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHECKED BY</td> <td>TM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>APPROVED &amp; ACCEPTED BY</td> <td>TM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										DESIGNED BY	CN	CHKD								CHECKED BY	CN									DRAWN BY	UAM									CHECKED BY	TM									APPROVED & ACCEPTED BY	TM									<p>DEPARTMENT OF PUBLIC WORKS</p>		<p>SKY HIGH CONSULTING ENGINEERS</p>		<p>Head Office No 14 Peace Street P.O. Box 2016 Tzaneen 0205; Tel: +27 (0)15 307 6561 Fax: +27 (0)85 540 1450 Email: hie@skyhighconsulting.co.za</p>		<p>East London Office 1A Station Road Berea, 5241 N.T.S. Tel: 043 721 1995</p>		<p>George Office 17 Progress Street, Dunelm, Unit, 6029 Tel: 044 873 2892</p>		<p>CLIENT CONTRACT NUMBER: - CONTRACT NO.: - PROJECT: LEBOAKGOMO EMS DRAWING TITLE: RAISED PEDESTRIAN CROSSING CHAINAGE: 142.0m</p>		<p>AS BUILT PLAN PROJECT: SHCE-008 SHEET 1 OF 1 SCALE: AS SHOWN DRAWING NUMBER: SHCE-008-AD001_A</p>	
DESIGNED BY	CN	CHKD																																																																							
CHECKED BY	CN																																																																								
DRAWN BY	UAM																																																																								
CHECKED BY	TM																																																																								
APPROVED & ACCEPTED BY	TM																																																																								



DETAILED DESIGN

DESIGNED BY: GN CHECKED BY: CH DRAWN BY: MAM CHECKED BY: TM APPROVED & ADOPTED BY: TM		 <p>DEPARTMENT OF PUBLIC WORKS</p>		 <p>SKY HIGH CONSULTING ENGINEERS</p> <p>Head Office: No 14 Pease Street, P.O. Box 2816, Tzaneen, 0850. Tel: +27 (0)15 307 8951, Fax: +27 (0)86 540 1430, Email: info@skhigh.co.za</p> <p>East London Office: 14 Station Road, Berek, 5241, Tel: 043 721 1996 Ningopong Office: 5 Ethimke Street, Nelspruit, 5201, Tel: 013 762 3014 George Office: 17 Progress Street, Donsheib, DR: 6529, Tel: 044 872 2982</p>		CLIENT CONTRACT NUMBER: - CONTRACT NO.: - PROJECT: LEBOAKGOMO EMS CHIEF ENGINEER: PJO-DHVSST DRAWING TITLE: ROAD SIGNAGE LAYOUT PLAN CONSULTING ENGINEER: -		AS BUILT PLAN SHEET 1 OF 1 SCALE: 1:100 HGA SCALE: 1:100 DRAWING NUMBER: SHCE-008 DRAWING REVISION: SHCE-008-AL001_1_A	
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