

**DEPARTMENT OF PUBLIC WORKS
PORT ELIZABETH AND SURROUNDINGS
SERVICING OF REFRIGERATION EQUIPMENT
IN STATE BUILDINGS**

**PART 2.4
PRICE SCHEDULE BASED ON 24 MONTHS**

CONTENTS

SCHEDULE OF QUANTITIES

Bill No 1 PRELIMINARY AND GENERAL

Bill No 2 : MIDDELBURG AND SURROUNDING AREAS

Bill No 3 : PORT ELIZABETH AND SURROUNDING AREAS

Bill No 4 : UITENHAGE AND SURROUNDING AREAS

Bill No 5 : TRANSPORT, LABOUR AND NON-SCHEDULED ITEMS

PRICE SUMMARY

PROJECT: DEPARTMENT OF PUBLIC WORKS - TENDER NUMBER PET13/2021
 SERVICE: PORT ELIZABETH AND SURROUNDINGS - REFRIGERATION INSTALLATIONS
 BILL No: 1: Preliminary and General

Item	Description	Qty	Unit Rate	Amount
1	Conditions of Contract: Compliance with contractual requirements and obligations in terms of Contract and Contract Data			
1,1	Conditions accepted as elsewhere measured: Fixed	sum	1	
1,2	Conditions accepted as elsewhere measured: Time related	sum	1	
1,3	Conditions accepted as elsewhere measured: Value related	sum	1	
1,4	Surety, performance bond: Fixed	sum	1	
1,5	Insurance: Construction works: time related	sum	1	
1,6	Insurance: Public Liability: Time related	sum	1	
1,7	Insurance: Special Risks: (SASRIA): Time related	sum	1	
1,8	Insurance: Occupational Compensation (COID): Time related	sum	1	
1,9	Programme of Works: Compile & Submit: Fixed	sum	1	
1,10	Programme of Works: Maintaine current: Time related	sum	1	
1,11	Preliminary & General: balance of items: Fixed	sum	1	
	Facilities as specified or necessary for the duration of the contract including establishment at commencement and removal upon completion			
1,12	Admin facilities: Site Instruction book, communications etc	sum	1	
1,13	Display boards places at each plant room or container	no	50	
	Occupational Health and Safty: Compliance with the applicable Act including specified additional requirements			
1,14	Safety Officer appoint	sum	1	
1,15	Submit Health and Safety Plan	sum	1	
1,16	First Aid kits: Supply and maintain (to be kept in vehicles)	sum	1	
1,17	Safety meetings: conduct and record proceedings, copy to engineer	sum	1	
1,18	Balance of safety related compliance	sum	1	
	Supervision and Management of the progress of construction works including the attendance at meetings at the site with the Employer or the Engineer as and when required.			
1,19	Supervision and Management	sum	1	
1,20	Access control and identification of staff	sum	1	
1,21	Quality system	sum	1	
CARRIED FORWARD				R

PROJECT: DEPARTMENT OF PUBLIC WORKS - TENDER NUMBER PET13/2021
 SERVICE: PORT ELIZABETH AND SURROUNDINGS - REFRIGERATION INSTALLATIONS
 BILL No: 1: Preliminary and General

Item	Description	Qty	Unit Rate	Amount
	Brought forward			
2	Allow for all costs that the Contractor may incur in terms of any or all of descriptions of these documents and of the drawings covered in the schedule below.			
2,1	As-installed drawings, manuals and operating instructions.	Sum	-	
2,2	Monthly expences - telephone, Fax, cell phone, e.mail facilities - to be available 24hrs/7 days	no	24	
2,3	Contractors Display Boards at plant rooms: (Refer to Part C2.1.1.2.2) including erection at start of contract and removal at completion of	no	50	
TOTAL FOR PRELIMINARY AND GENERAL - CARRIED FORWARD TO SUMMARY PAGE				

BILL No: 2: Middelburg and surrounding areas

Item	Description	Unit	Qty Services	Rate	Amount
	Prices shall include all items as per the service schedules stipulated in the Part C2.5. (Quantity services x rate = Amount) Note: Quartely(minor) and Yearly(major) Service Includes All labour, Material, Transport, Accomodation, etc Quantity represent the number of services for the 2 year contract period NB: On your first and last service you must conduct and submit an inventory list to all sites.				
2,1	MIDDELBURG				
2.1.1	Middelburg Prison				
	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.1.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.2.1	Agricultural College				
	Cold Room	quarterly(minor)	no	54	
		annually(Major)	no	18	
2.2.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.3.0	Cradock Prison				
2.3.1	Cold Room	quarterly(minor)	no	18	
		annually(Major)	no	6	
2.3.2	Freezer Room	quarterly(minor)	no	12	
		annually(Major)	no	4	
2,4	GRAAFF-REINET				
2.4.1	Saps Academy				
	Cold Room	quarterly(minor)	no	18	
		annually(Major)	no	6	
2.4.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.5.	Graaff Reinet Prison				
2.5.1	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.5.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.6.0	Jansenville Prison				
2.6.1	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
2.6.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

Item	Description	Unit	Qty Services	Rate	Amount
	Prices shall include all items as per the service (Quantity services x rate = Amount) Note: Quartely(minor) and Yearly(major) Service Includes All labour, Material, Transport, Accomodation, etc Quantity represent the number of services for the 2 year contract period NB: On your first and last service you must				
3	PORT ELIZABETH				
3,1	New Brighton SAPS - Kitchen				
3.1.1	Cold Rooms	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.2.0	Struandale SAPS - Kitchen				
3.2.1	Cold Rooms	quarterly(minor)	no	12	
		annually(Major)	no	4	
3.3.0	Mount Road SAPS				
3.3.1	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.3.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.4.0	Forest Hill Sandf				
3.4.1	Cold Room	quarterly(minor)	no	24	
		annually(Major)	no	8	
3.4.2	Freezer Room	quarterly(minor)	no	12	
		annually(Major)	no	4	
3,5	Dept of Fisheries(Stanley Str.)				
3.5.1	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.6.0	St Albans Prison				
3.6.1	Cold Room	quarterly(minor)	no	24	
		annually(Major)	no	8	
3,6	Freezer Room	quarterly(minor)	no	24	
		annually(Major)	no	8	
3.6.3	Chiller plant	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.7.0	North End Prison				
3.7.1	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.7.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.8.0	Patensie Prison				
3.8.1	Cold Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
3.8.2	Freezer Room	quarterly(minor)	no	6	
		annually(Major)	no	2	
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

Item	Description	Unit	Qty Services	Rate	Amount
	Prices shall include all items as per the service (Quantity services x rate = Amount) Note: Quartely(minor) and Yearly(major) Service Includes All labour, Material, Transport, Accomodation, etc Quantity represent the number of services for the 2 year contract period NB: On your first and last service you must				
4	GRAHAMSTOWN & Surrounding area.				
4.1.0	Saps Academy: Slagboom.				
4.1.1	Cold Rooms	quarterly(minor) annually(Major)	no no	6 2	
4.1	Freezer Room	quarterly(minor) annually(Major)	no no	6 2	
4.2.0	Grahamstown Prison				
4.2.1	Freezer Room	quarterly(minor) annually(Major)	no no	6 2	
4.3.	Military Base.				
4.3.1	Cold Rooms	quarterly(minor) annually(Major)	no no	30 10	
4.3.2	Freezer Room	quarterly(minor) annually(Major)	no no	12 4	
4.4	Summerset East Prison				
4.4.1	Cold Rooms	quarterly(minor) annually(Major)	no no	6 2	
	Freezer Room	quarterly(minor) annually(Major)	no no	6 2	
4.5	Fort Beaufort Prison				
4.5	Freezer Room	quarterly(minor) annually(Major)	no no	6 2	
4.5.2	Cold Rooms	quarterly(minor) annually(Major)	no no	6 2	
4.6.0	Kirkwood (J.C.Steyn) Prison				
4.6.1	Cold Room	quarterly(minor) annually(Major)	no no	6 2	
4.6.2	Freezer Room	quarterly(minor) annually(Major)	no no	6 2	
4.6.3	Cold Room	quarterly(minor) annually(Major)	no no	6 2	
4.6.4	Milk Tank	quarterly(minor) annually(Major)	no no	12 4	
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

PROJECT: DEPARTMENT OF PUBLIC WORKS - TENDER NUMBER:
 SERVICE: PORT ELIZABETH AND SURROUNDINGS - REFRIGERATION INSTALLATIONS
 BILL No: 6: Transport, Labour & Non-Scheduled Items

Item	Description	Unit	Qty	Rate	Amount
	Provisional amounts for expected transport, material and labour costs over the maintenance period of 24 months				
6,1	TRANSPORT COSTS				
	Transport costs are for a Vehicle with a load of (1) Ton. Inclusive of traveling time for a technician and (1) assistant	km	70 000		
	Prov Amount				
6,2	MATERIAL COSTS				
	Expected Provisional amount to be used for repairs and replacement not scheduled.	Sum	1	R 1 600 000,00	R 1 600 000,00
	Prov Amount				
	Profit %	%	Prov / Amount		
	Amount				
6,3	LABOUR COSTS				
	Labour costs for installations and breakdowns will include for all overhead and statutory rates required by law. (Hours for traveling measured under "Transport")				
	Technician normal time	provisional	hrs	850	
	Assistant normal time	provisional	hrs	850	
	Technician Overtime	provisional	hrs	300	
	Assistant overtime	provisional	hrs	300	
6,4	UN-IDENTIFIED EQUIPMENT				
	Provisional amount for un-identified cold/ and freezer room units. The unit prices as per above districts / towns shall be applicable. The contractor will report on units not stipulated in the Schedules as per Part C 2.5, as part of the survey during the first service module.				
6.4.1	Cold Rooms	quarterly(minor)	no	18	
		annually(Major)	no	6	
	Freezer Room	quarterly(minor)	no	18	
		annually(Major)	no	6	
TOTAL CARRIED FORWARD TO SUMMARY PAGE					

**DEPARTMENT OF PUBLIC WORKS
 PORT ELIZABETH AND SURROUNDINGS
 SERVICING OF REFRIGERATION EQUIPMENT
 IN STATE BUILDINGS**

SUMMARY OF SCHEDULE OF QUANTITIES AND BUDGET PRICE

FOR 24 MONTHS

SCHEDULE	DESCRIPTION	AMOUNT (ZAR)
1	BILL No: 1: Preliminary and General
2	BILL No: 2: Middelburg and surrounding areas
3	BILL No: 3: Port Elizabeth and surrounding areas
4	BILL No: 4: Uitenhage/Grahamstown and surrounding areas
6	BILL No: 5: Transport, Labour & Non-Scheduled Items
SUB-TOTAL	
PLUS 15% VAT	
TOTAL PRICE (to be carried forward to Form of Tender)		

SIGNED: _____

DATE

NAME _____

COMPANY _____

TEL _____
 FAX _____
 CELL _____

**DEPARTMENT OF PUBLIC WORKS
PORT ELIZABETH & SURROUNDING AREA
PREVENTATIVE MAINTENANCE, SERVICING & REPAIRS
OF REFRIGERATION PLANT IN STATE BUILDINGS**

TENDER NUMBER :

SPECIFICATIONS and SCHEDULES OF QUANTITIES

CONTENTS OF DOCUMENT

Part / Ref	Description	Pages
<u>THE TENDER</u>		
Must be returned together with the tender/bid submitted		
T1	Tendering Procedures	
T1.1	Tender notice and invitation to tender (PA-04 (EC))	T1.1 /1- 3
T1.2	Tender data (DPW -03 (EC))	1- 5
T1.3	Appendix A: Standard Conditions of Tender	87-94
T1.4	Pricing Instructions	1- 5
T2	Returnable Schedules/Documents	
T2.1	List of returnable documents (PA-09 (EC))	1
T2.2	Form of Offer & Acceptance (DPW-07 (EC))	1-4
<u>THE CONTRACT</u>		
C1	Agreement and Contract Data	
C1.1	Contract data (DPW -05 (EC))	1 - 16
C1.2	Forms of Guarantee (DPW 10.2, DPW 10.4)	
C2	Engineering Specifications and Pricing Data	
C2.1	Project Specifications and Scope of the Works	
C2.2	General Specifications	
C2.3	Technical Specifications	
C2.4	Schedules of Quantities (Pricing data)	
C2.5	Pro-forma Reporting Documents	

DEPARTMENT OF PUBLIC WORKS
PORT ELIZABETH & SURROUNDING AREA
PREVENTATIVE MAINTENANCE, SERVICING & REPAIRS OF REFRIGERATION PLANT IN
STATE BUILDINGS

PART: C2.1

PROJECT SPECIFICATION AND SCOPE OF WORKS

CONTENTS

<u>Clause</u>	<u>Description</u>	<u>Page</u>
Sub-section 1	General Information Documentation Site Information Standards Specifications	C2.1/1
Sub-section 2	Engineering Maintenance Works	C2.1/3
1	General Items: Conditions of Contract Facilities Safety Engineering Works Contract Drawings and Equipment Specifications Hazardous Material Removal	
2	Building and General Work General Scope Painting & Surface Coating: Buildings	C2.1/8
3	Plant and Equipment Scope Summery Electronic Controls Corrosive Protection Construction management Warning notices Maintenance of metal plant components Refrigeration Plant Maintenance and Servicing (Planned)	C2.1/9
4	Testing, Commissioning & Maintenance Operating and Maintenance (O&M) Manuals	C2.1/16
5	Day works, Provisional Sums & Contingencies Day Works Unplanned Maintenance	C2.1/16-19

SUBSECTION 1 : GENERAL INFORMATION

DOCUMENTATION

The Department of Public Works proposes to maintain for a period of 24 months the existing refrigeration plants at various state premises in the Port Elizabeth area. The complete scope of the Engineering Works is described in the documents listed on the contents page of this volume.

This Part (C2) contains the engineering specifications and schedules of quantities for the Engineering Works which shall be read in conjunction with the balance of the contract documentation including the Conditions of Contract.

The several parts forming this Part C2 function in the following manner.

Part C2.1 : Project or Supplementary Specification : Subsection one : Describes the scope of the installations and particular requirements for the construction of the Engineering Works and must be read in conjunction with the standard Specifications, the Schedule of Quantities and the Plant Schedule attached.. Subsection 1 provides certain supporting information related to the project.

Subsection 2 describes the scope of the Works by means of particular specifications for measured work.

Where applicable, references to the general and technical clauses of Part 2 and 3 or other documents are shown in brackets thus {..}. Such references shall, however, not be construed as being exclusive or comprehensive and it remains the Contractor's responsibility to make reference to such other specifications, standard or statute as relevant and necessary.

Part C2.2 : General Requirements : Includes the relevant portions of Departmental Standard Specifications. The contractor shall be responsible for referencing the correct & complete standard specifications, notwithstanding any references in the text of this document or specific clauses included in this part of the document.

Part C2.3 : Technical Requirements : Includes reference to the relevant portions of the Departmental Standard technical specifications. The contractor shall be responsible for referencing the correct & complete standard specifications, notwithstanding any references in the text of this document or specific clauses included in this part of the document.

Part C2.4 : Schedules of Quantities (Pricing data) : Quantifies the Scope of the Works.

Part C2.5 : Site information & proforma maintenance record & reporting documents

SITE INFORMATION

General

The sites of the proposed engineering works for this project are located at the premises listed on the Plant Schedule in Part C2.5. The facilities are occupied by various Client Departments.

The contractor shall assess each site to determine relevant data.

The Contractor shall be responsible for making arrangements with the Offices in charge of each site or building regarding the availability of the installation to the Contractor for inspection for the purpose of preparing his Bid, and to execute maintenance work should he be the successful contractor.

Should the work fall within a security area, the contractor must obtain access cards for his personnel and employees who work within such an area.

The contractor must comply with any regulations of instructions issued from time to time, concerning the safety of persons and property, by the various client departments.

The Department may require the Contractor to have his personnel or a certain number of them security classified.

In the event of either the Department, or the S.A Police Services requesting the removal of a person or persons from the site security reasons, the Contractor shall do so forthwith and the Contractors shall thereafter ensure that such person or persons are denied access to the site and/or to any documents or information relating to the work.

The contractor shall inform the Department at least 7 days prior to servicing as to which equipment will be services, so as to enable the Department to arrange for inspections if it is considered necessary.

The appointed Contractor shall be responsible for making arrangements for the purpose of Maintenance, Servicing and Repairs. In the event of the Contractor failing to make such arrangements, admission to the site may be refused by the Officer in charge and the Department will not be responsible for any additional costs which the Contractor may incur by such refusal.

Environmental Conditions

Environmental statistics for Port Elizabeth and surrounding area may be obtained from the SA Weather Office.

Electricity Supply

The permanent supply parameters are : 400/230V 50Hz.

Supplier : The relevant local Municipality or Eskom.

Electricity for the Works : Refer to **Facilities**.

Water supply

The water supply to the property is generally provided by the local Municipality.

Existing Mechanical Plant

The schedule of existing plant is presented in Part C2.5.

STANDARD SPECIFICATIONS

The specifications make reference to certain national and international standard specifications as well as the standard specifications published by the Department of Public Works. Such specifications are not issued with this document but may be obtained from the relevant source. Source details for DPW documents are stated in the preambles to Part C2.2 page 2/contents & Part C2.3 page 3/contents..

The Contractor shall be entirely responsible for referencing all relevant standard specifications of the DPW, SANS or other applicable published standard whether such standard is referenced in this document or not and ensuring compliance of the Engineering Works therewith. The references in this document to standard specifications shall not be construed as limiting, and are given merely as a guide for basic reference. Where SABS is stated, the applicable SANS shall apply.

SUBSECTION 2 : ENGINEERING MAINTENANCE WORKS

1. PRELIMINARY & GENERAL ITEMS

1.1 CONDITIONS OF CONTRACT

1.1.1 Scope

The Contractor shall comply with the obligations and requirements of the Agreement and Contract Data (DPW 05EC) documents contained in Part C1 including the General Conditions of Contract 2004 (GCC 2004).

The Contractor shall allow for all the responsibilities and obligations in terms of the conditions of contract and contract data, including;

- Risks, costs and obligations in terms of the General Conditions of Contract, the Contract Data and of the standardised specifications, except where provision is made in the Project Specifications to cover compensation for any of these items.
- Head office and site overheads and supervision.
- Profit and financing costs.
- Sureties, employment related expenses, statutory expenses.
- Indemnities & insurances : Particular reference shall be made to clauses 33 and 35 of the Contract Data (DPW-05EC). The contractor will only be permitted to perform work on the site if a valid insurance policy document and proof of cover or premium payment have been submitted and approved.
- The Contractor shall maintain current registration and have paid the necessary fees to the Compensation Commissioner in compliance with the Compensation for Occupational Injuries and Diseases Act, 1993 (COID). The contractor will only be permitted to perform work on any site if a valid Letter of Good Standing issued by the Compensation Commissioner has been submitted and approved.
- A detailed program for the execution of the maintenance at all plant for the whole of the contract period, listing each plant, its location and fixed dates of maintenance. The contractor will be required to comply with the program at all times.
- Expenses of a general preliminary and general nature not specifically related to any item or items of permanent or temporary work.

1.1.2 Measurement

Fixed or time or value related sums for the stated items.

(a) Fixed

A sum that is not subject to adjustment as defined in the GCC 2004 clause 46.1.

(b) Time Related

A sum that is proportionately adjustable in accordance with the Time for Completion and any extension of the Time for Completion.

(c) Value Related

A sum that is proportionately adjustable in accordance with the value of the contract excluding the total of all amounts included under clause 1.1 of Sub-Section 2 (Preliminary & General Items).

1.1.3 Payment

- a) Fixed : interim payment as evaluated by the Engineer
- b) Time related : In proportion to the elapsed time of the contract period.
- c) Value related : In proportion to the value certified for payment.

1.2. FACILITIES

The following facilities shall be provided by the contractor for the duration of the contract.

1.2.1 Administrative Facilities, Equipment and Materials

The following administrative facilities shall be provided.

1.2.1.1 Site Instruction Book

A4 carbon paper multiple copy book to be obtained from the DPW Project Manager to whom the book shall be returned on completion. The contractor shall supply carbon paper.

1.2.1.2 Communications Facilities

Telephone (landline), fax (landline) & email services shall be provided at the contractor's offices. Cell phones shall be provided to Management staff. Such facilities shall be reliable since instructions, drawings and documents will be issued electronically to the Contractor. Cell phone facilities will be available on a 24 hour bases.

1.2.1.3 Electricity & Water for the Works

The employer will allow the use of water and electricity for construction free of charge. The contractor shall provide suitable temporary facilities such as electricity extension cables, water hoses & water containers as necessary while work is being performed.

1.2.1.4 Measurement

Administrative facilities, etc : Time related sum

1.2.2 Display Boards

1.2.2.1 Scope

Display signs shall be erected at each plant room or plant container, fixed to the plant room or container door. The panels shall be rigid A4 size and contain the following information in an approved legible format. The panel shall be weatherproof and printed by a sign writer as approved.

- Contract number
- Employer's name
- Name of project
- Name of Consulting Engineer
- This plant is being maintained by Contractor's name, telephone number.
- Contract Period
- Fault reporting telephone number

On completion of the contract the sign shall be removed and any holes filled & sealed or painted as appropriate.

1.2.2.2 Measurement

Display boards: Number of boards installed.

1.3 SAFETY

{Normative Reference Part C2.2 : Occupational Health & safety}

1.3.1 Scope

The Contractor shall comply with the requirements of the Health & Safety Specification referenced above.

The Engineer has been appointed the Agent of the Employer.

The contractor shall refer to the Site information sub-section 1 and the specifications describing the scope of the Engineering Works, for information about the type of environment in which the work is to be executed. Notwithstanding anything stated in this document the contractor shall be responsible for determining the safety requirements of each site.

The premises in which the plant is situated will be occupied by staff during the contract period. Working areas shall therefore be demarcated by means of suitable signs and warning tape which shall be removed on completion of work.

Work in building interiors with gas torches or welding machines for joining pipe work shall be executed with care and temporary protection for any adjacent timber, ceiling, tile roof or other flammable material shall be employed. A dry powder fire extinguisher shall be provided by the contractor in the immediate vicinity of any work involving flame or electric arc.

1.3.2 Health & Safety Plan

A comprehensive H&S Plan shall be prepared and submitted for approval. A copy shall be available in the contractor's vehicle when attending any site to perform maintenance work. Asbestos risk analysis & safe work procedures shall be included as necessary.

1.3.3 Safety Officer :

An employee trained as required by the OHS Act shall be appointed for the duration of the contract period. The item shall allow for the costs of such officer during the period in which the safety officer's functions are performed.

1.3.4 First Aid Kit

A comprehensive first aid kit shall be readily available in the contractor's vehicle when attending any site to perform maintenance work.

1.3.5 Safety Meetings

Such meetings shall be at monthly intervals. The safety officer shall chair the meeting and keep written records of the proceedings. A copy of the records of each meeting shall be submitted to the engineer. The engineer or representative may attend the meetings for which written notice shall be issued.

1.3.6 Balance of Safety Related Items

The contractor shall provide for the balance of safety related items such as temporary marking, barriers, protective equipment and clothing, working with care, etc.

1.3.7 Measurement

Fixed or time related sums by item stated.

1.3.8 Payment

In proportion to elapsed time of the contract period.

1.4. ENGINEERING WORKS

1.4.1 Scope

The scope of the Works described in this document shall include the complete servicing and maintenance of existing refrigeration plant (big and small units) and guaranteeing free of defects for the full maintenance period of the complete installations specified comprising the following principal entities which are described under each section of the Project Specification, Part C2.1.

Plant and equipment listed in Part C2.5 form the scope of the Engineering Works;

1.4.2 Purpose of the Proposed Engineering Works

The purpose of the maintenance project is to ensure that the plant and equipment is able to deliver full performance as and when required during normal operating conditions.

1.4.3 Supervision and Management

The contractor shall supervise and manage the scope of work and provide everything necessary for the complete maintenance of the plant whether described in precise detail or not. Such supervision and management shall include regular inspection of the site to check that the installation work complies with the specifications, quality and instructions, attendance at site meetings and inspections as necessary or required. This item shall include allowances for construction tools specific to the installation and all relevant provisions. Arrangements shall be made with the occupants of buildings regarding access to the premises in order to execute the required services

All electrical work shall be performed by subcontractors or employees who are registered or licensed, as required by legal statute. Copies of registration or licence documents shall be submitted on instruction of this project. Electrical testers for single phase do not comply with this requirement. A registered electrician and suitably skilled personnel shall be available to carry out any emergency repair work on a 24 hours basis including week-ends and public holidays.

The Contractor shall provide at his own cost a supply of Job Cards in accordance with the example included herein. The Job Card must be completed legibly in ink after completion of each service. In addition to the original completed Job Card submitted with the account, the contractor must submit a copy of the Job Card to the User Department for audit purposes.

1.4.4 Measurement

Time related sum.

1.4.5 Accommodation of Tenants (Client) Departments

It is possible that staff of the tenant (Client) Department's may be present on the site during the maintenance period. Such presence shall be respected without interference. Where it is necessary to isolate any electrical services, specific arrangements shall be made with the Client Department & confirmed in writing to the Engineer.

1.4.6 Measurement

Time related sum.

1.4.7 Access Control & Identity of Staff

The User Departments maintain various levels of access control systems at the entrances to the sites and at the Refrigeration plant facilities on the site. It may not always be possible to gain entry to such areas upon arrival and delays can occur. In certain areas Contractor's may require escorting by User Department staff. The Contractor shall comply with the requirements and instructions of such staff at all times. The Contractor shall bear the sole responsibility for arranging access to the sites as necessary.

The contractor shall maintain a daily schedule of employees at each site including time of entry to the site and any specific facility. Each employee shall display a company identity card with name, company and photograph. Working garments (not orange in colour) shall identify the contractor.

Should the work fall within a security area, the contractor must obtain, either from the SA National Defense Force (SANDF) or SA Police Services (SAPS), access cards for his personnel and employees who work within such an area. The contractor must comply with any regulations or instructions issued from time to time, concerning the safety of persons and property by the SANDF or SAPS.

The Department or the Chief of the SANDF or the Commissioner of the SAPS may require the Contractor to have his personnel or a certain number of them security classified. In the event of either the Department, the Chief of the SANDF or the Commissioner of the SAPS requesting the removal of a person or persons from the site for security reasons, the Contractor shall do so forthwith and the Contractor shall thereafter ensure that such person or persons are denied access to the site and/or to any documents or information relating to the work.

1.4.8 Measurement

Time related sum.

1.4.9 Rubbish and Waste Management

All rubbish and waste arising from the work must be removed and the site and buildings left clean and tidy All defective items that have been replaced are to be considered redundant, and are to be removed from site by contractor.

Waste oil & refrigerant gas including items such as used filters shall be disposed of in an environmentally safe manner.

1.4.10 Measurement

Time related sum.

1.5 CONTRACTOR'S DRAWINGS & EQUIPMENT SPECIFICATIONS

1.5.1 Scope

Such drawings and/or documents for new and replacement equipment or components where required or necessary shall be submitted for record purposes. Documents for electrical equipment shall include full wiring diagrams and component schedules which are suitable for incorporation into the O&M Manuals.

1.5.2 Particulars of Equipment & Materials

All equipment new & replacement shall be selected with due regard to the installation site conditions

Equipment shall at all times be selected to operate within the limits recommended by the particular manufacturer.

Where equipment will be required to operate at conditions deviating from the manufacturer's standard selection tables, re-rating shall be performed strictly in accordance with the manufacturer's methods.

Product references, where given in this document, shall be taken merely as a guide to product selection, notwithstanding which, all equipment and materials shall comply fully with the specifications.

1.5.3 Material of Equal Quality

Replacement parts, spares and materials used shall be of equal specification to the component that is being replaced and must where possible carry the SANS mark of approval, but can be of a different size if specifically required by the Department. If such equivalent component is not available, then the alternative component must be approved by the Engineer prior to installation.

A representative of the "user" department must sign for spares that have been used in the execution of services and details entered on the Job Cards.

The serial numbers of original and new components shall be entered on job cards and invoices presented for payment. The guarantee cards for items must also be attached to job cards.

1.6 HAZARDOUS MATERIAL REMOVAL

1.6.1 Normative Reference

Occupational Health & Safety Act 1993 (85 of 1993) : Asbestos Regulations

1.6.2 Scope : Insulation, Lagging and sheeting

Certain plant may be fitted with asbestos fibre based lagging or sheeting. In such instances the existing asbestos material shall be removed completely and the equipment and/or system cleaned of all vestiges of the old lagging or sheeting prior to fitting new material.

Risk analysis & safe work procedures relating to all asbestos work shall be included in the Health & Safety Plan as elsewhere measured.

Materials containing asbestos are extremely hazardous to personal health and shall therefore be handled in terms of the Asbestos Regulations.

All handling of asbestos based material shall be executed by an authorised person/s complying with the requirements of the Asbestos Regulations clause 5(1). The certificate of the said authorised person/s shall be submitted to the Engineer. The certificate shall remain valid for the entire period during which the said person/s is/are performing work on hazardous material. Allowance shall be made for everything necessary including but not limited to safety containers, protective clothing, signs, tools & complete decontamination upon the removal of samples or bulk lagging.

All the asbestos material on each affected plant shall be removed and safely disposed in terms of the Asbestos regulations. A disposal certificate shall be submitted on completion of all removals. The waste from individual plant shall be safely stored until such time as the removal of asbestos material from all plant has been completed such that one bulk disposal can be made.

1.6.3 Measurement

Transport is elsewhere measured which shall be excluded from the following items.

1.6.4 Removal : Square meter of the material which has been removed with respect to lagging or sheeting. Per meter length of material in the case of rope wound around the pipe or cylinder circumference or moulded lagging.

1.6.5 Disposal : Mass of material actually disposed of including samples & used parts. The mass shall be recorded by the contractor & submitted for measurement and payment. The mass shall be the net mass of asbestos based material only excluding containers, liquid, etc. The provision of a disposal certificate shall be included.

2. BUILDING & GENERAL WORK

2.1 GENERAL SCOPE

The plant rooms and containers in which plant and equipment is accommodated shall be maintained in a clean & serviceable condition. The requirements for plant room and environs maintenance are specified. The relevant schedules shall be completed at every maintenance visit and submitted for record & payment.

2.2 PAINTING & SURFACE COATINGS: BUILDINGS

2.2.1 Scope

Where instructed, plant room walls, floor and timber structures shall be refinished using approved proprietary products. The finish shall provide full cover and consistent colour. Surface coatings shall be applied complete with appropriate primer, undercoat and finishing coats all in accordance with the manufacturer's specifications.

Surfaces shall be prepared by filling minor cracks & imperfections, removing all loose paint and dust, washing with detergent and rinsing in accordance with the coating manufacturer's specifications. Coatings shall be applied in accordance with the coating manufacturer's specifications.

2.2.2 Particulars

Preparation of Surface as specified

on new plaster & filler :	Alkali resistant primer :	1 coat
on steel window frames:	Self-etch metal primer :	1 coat
Undercoat	Universal white :	1 coat

Finishing coats on the following surfaces :

Walls (plaster) :	Pure acrylic paint min 2 coats.
Floor screed :	Four component self levelling solvent free seamless epoxy coating, 3mm thickness.
Floor screed :	Standard epoxy coating single or two part without self-levelling properties.
Steel window frames :	Enamel gloss min 2 coats
Varnished timber :	Sand to remove all loose & deteriorated varnish. Apply timber re-conditioner & wash prior to applying four coats of UV resistant varnish.

2.2.3 Measurement

Square meter area covered for complete coating system including preparation, primer undercoat and finishing coats. Plaster & screed repairs excluded. Timber structures shall include doors & window frames.

3. PLANT AND EQUIPMENT

3.1 Scope Summary

This tender involves the servicing of refrigeration plants situated in military and police bases, state buildings and structures falling under the control of the Department or other departments hereafter referred to as "user" departments.

It is a specific condition of this contract that all new work or additions of any nature whatsoever are excluded. Where it is necessary to replace any plant or equipment, the Department reserves the right to ask for quotations and to accept the lowest such quotation.

The plant covered under this contract comprise of various configurations, makes and types of equipment. Size and capacities will vary to suit the applications. .

At premises where computers, server rooms, delicate tests, machines and cold storage are in operation, services during normal working hours might not be possible and arrangement must be made for performing the services on Saturdays or after hours, which shall form part of the contract at no extra cost.

Simulated full load tests in conjunction with all parties concerned are also to be arranged at sets where it is not possible for any damage to sets in the event of negligence or poor workmanship. Any damage to user department equipment which results from the contractor's actions shall be an insured risk by the contractor.

No claims will be considered for specialized labour and advice, equipment or special equipment or transportation of same for services/repairs/maintenance.

Certain new replacement components are specified on a provisional basis to be installed as required.

During each visit to a plant the contractor shall attend to all items listed on each checklist. All irregularities and comments must be reported by the contractor in the spaces provided in the check lists. A duplicate copy of the completed check lists for each visit must be kept in the plant room and the contractor must make provision in each plant room for a document holder secured to the wall for this purpose. The contractor shall allow for & arrange for the reproduction of the proforma checklists in the form of a hard copy as well as a live updated digital copy at his own cost, to be handed over to the client at the end of the contract period. The engineer will perform audit checks on the digital copy at periodic intervals.

The work shall be carried out by a competent technician all in accordance with the Basic Conditions of Employment Act no 75 of 1997, as well as the requirements of the SAQCC – safe handling of refrigerant gasses.

All work carried out and all equipment and material supplied in terms of this procedure shall comply with the original equipment manufacturer's specifications and operation and maintenance instructions. The contractor shall be responsible for obtaining such documents, however, copies of the existing operating & maintenance manuals may be obtained from the DPW. The existence or suitability of such DPW documents is not warranted.

The Contactor shall report in writing to the Department any contravention's of the Act and Code as far as the installation is concerned

The Department reserves the right to inspect the Contractor and his Supplier's works to assess calibration, testing, storage and handling facilities to assure itself of the capabilities of the Contactor to perform in accordance with the Specifications and delivery requirements of the Bid

In the event of failure of the Contractor to maintain and/or repair any installation to the satisfaction of the Department, the latter reserves the right to make any arrangements necessary or expedient in regards to said maintenance and/or repairs to any installation appearing in the document attached hereto, and the Contractor shall be liable to the State for payment of any additional expenditure thereby incurred, as well as for payment of damages which the State may have suffered as a result of the Contactor's default or negligence.

In the event of it becoming evident that there is any deterioration or defects, in part or as a whole of the system or systems to be maintained under this contract, especially towards the end of the maintenance contact period, such a deterioration or defect shall be rectified and made good by the Contactor. Failure to do so, either the incoming Contactor or others will do such rectification and the cost thereof shall be then for the account of the outgoing Contactor.

All quantities in this tender are provisional and inserted in order to obtain competitive tenders. The Department reserves the right to increase or decrease quantities during the progress of the contract and such increases or decrease shall not alter the rates for any item.

The Contractor shall be a certified company and employed technician shall have a valid Refrigerant Gas Handling certificate for the full duration of the Bid. The Contractor will be required to have an employee with a valid certificate on site at all times during the services.

3.2.2 ELECTRICAL/ELECTRONIC CONTROLS

3.2.1 Scope

Provision is made in the schedules for the upgrading and/or replacement of control equipment.

3.2.2. Particulars

Control systems on refrigerant plants are of critical nature.

Special attention shall be given to HP, LP and Low Oil safety stats, defrost timer control, thermostatic control, door switches and defrost heater control.

All these controls / safety switches shall be thoroughly checked during each service operation and the necessary setting / re-setting shall be done as part of the routine service.

Faulty equipment shall be reported immediately and arrangement shall be made to replace same as a matter of urgency.

3.3.3 Measurement

Replacement of faulty control equipment electrical connection and testing included – per unit.

Labour, Transport : Elsewhere measured as Dayworks.

3.3. CORROSIVE PROTECTION

3.3.1 Scope

Provision must be made for corrosion protection of equipment, specifically for coastal regions.

3.3.2. Particulars

All condenser coils shall be sprayed with two coats of a corrosive protective product similar or equal to Tectyl or Coilguard.

All body parts shall be sprayed with two coats of protective material (transparent colour), as recommended by paint specialists. Prior approval of the material to be used shall be obtained from the engineer.

All screws, bolts and nuts on electrical components (including items inside electrical panels) shall be sprayed one coat of approved material suitable for electrical components and shall be non-conductive. Prior approval of the material to be used shall be obtained from the engineer.

3.4.2 Measurement

Per meter square area on coils and body works.

Per volume of protective material used on electrical components.

Labour, Transport : Elsewhere measured as Dayworks.

3.4. CONSTRUCTION MANAGEMENT

3.3.1 General

This term Contract is for a single twenty four (24) months period only.

Contractors attention is drawn to any claims for late delivery, all such claims shall be received in writing with in 21 days of the problem arising, this item is non negotiable and strict time penalties will be enforced

The positions of all institutions will be pointed out to the contractor by the Department. The contractor must within 21 days of the date of the letter of acceptance or his Bid, submit to the Department a detailed program for the execution of the service at all institutions for the whole of the contract period, listing each institution, its location and fixed dates of maintenance. The contractor will be required to keep to the program at all times.

The contractor further undertakes to:

- Arrange with the occupants of buildings regarding access to the premises in order to execute the required services
- Take adequate precautions to prevent damage to buildings, fittings and furnishing inside the premise and elsewhere on the site
- Accept liability and to indemnify the Department against any claims whatsoever arising from his conduct and/or the conduct of his employees
- Safeguard all his employees in accordance with the regulations of the Unemployment insurance Act 1966, (Act no.30 of 1966) and any amendments thereof.
- Comply with all By-laws and requirements of the local authority
- Should the contractor be uncertain about the scope of any work to be executed under this contract, the Department must be immediately requested to clarify its instructions.
- The contractor shall only service items as per the Bill of Quantities. Should the contractor upon servicing of the items find that there are more items on the premises to be services in addition to those listed in the activity schedule; **he shall not service those items prior to receipt of written authorization received from the Employer's representative.**
- **No payment will be made for services executed without the necessary written authority**

Unit prices for items of work executed but not specified in this contract, must be verified by means of a quotation submitted for approval. Quotations will be based on the net value of the suppliers price, plus contractors profit as per Bill.

The amount of such invoices, after deduction of any discount, will be taken into account for payments to the Contractor. If such invoices are not submitted, accounts will not be paid.

Payments of accounts complying with all the requirements of this contract will be made within 28 days after certification thereof. All relevant invoice documentation must be attached to each individual account.

Any normal discounts allowed to the contractor shall be passed on to the Department. When determining the profit on non-scheduled material the contractor shall FIRST DEDUCT ANY VALUE ADDED TAX from the cost price of the material AND THEN ADD BACK VAT on the full amount including the contractor's profit.

3.5 WARNING NOTICES

3.5.1 Scope

Where necessary existing signs will be replaced with new items. Existing signs shall be removed and the remaining fixing holes in the wall, door or panel shall be made good and refinished to match the surrounding area. Refinishing is measured elsewhere.

The signs shall comply with Part C2.3 clause 2.2 page 3/2 {Warning Notices) manufactured from a UV resistant ABS plastics sheet 2,5mm thick. Lettering and graphics on the sheet shall consist of either screen-printed or engraved, on UV resistant material. Lettering & graphics shall be non-fading suitable for an outdoors application. Fixing holes (4) shall be formed at each corner of the sign.

The format & artwork of all signs are subject to the approval of the Engineer.

Fixings, including the making of holes in the support surface shall consist of the following :

- On timber : Stainless steel roundhead wood screws and washers
- On brickwork : As for timber but with a plastics wall plug in the wall, hole drilled for the purpose.
- On panels or enclosures: Aluminium “pop” rivets & washers.

3.5.2 Measurement

Existing Signs: Removal by number irrespective of material or size including disposal as scrap & the filling & touch-up of the resulting holes in all materials.

New Signs: Number by description

3.6 MAINTENANCE OF METAL PLANT COMPONENTS

3.6.1 Normative Reference:

Part C2.3 clause 1 page 3/1 : Standard Paint Specification C39

3.6.2 Scope

Where required, any corroded or damaged components and/or enclosures shall be repaired such as to match the surrounding components of the plant. In the case of in-situ repairs, the corroded surface area shall be completely cleaned of corrosion products, degreased, treated with a suitable metal primer and undercoat prior to over-coating the complete panel on which the repair has been made.

Any firmly adhering paint outside the repaired area shall be abraded and degreased prior to over-coating. The edges of surrounding firm paintwork shall be faired such that edges are not visible after the finish coats have been applied. All surface coatings shall be applied strictly in accordance with the product manufacturer's specifications. The contractor shall ensure that the new coating products are compatible with any existing finish which is over-coated.

In-situ repairs shall be performed using an air powered spray applicator. Areas surrounding the work section shall be effectively masked to prevent overspray. Should overspray occur, the contaminated surface shall be immediately cleaned.

All products shall be suitable for interior and exterior use. Manufacturer's data sheets shall be submitted to demonstrate compliance with the specification and for application monitoring purposes.

3.6.3 Particulars

In-situ repair: Gloss air drying spray applied enamel
Minimum two coats of finish colour for an overall minimum dry film thickness (dft) of 100µm, including primer & undercoat.

3.6.4 Measurement

Area in square metres (m²) coated including surface preparations & all coats distinguished by process.

Transport measured in Dayworks.

3.7 REFRIGERATION PLANT MAINTENANCE AND SERVICING (PLANNED)

3.7.1 Scope- General

The routine maintenance work to be performed and executed shall include, but not be limited to, all the items listed in the schedules under each heading. These actions and findings shall be logged and reported to the Department on a Specific Schedule Format which will form part of this specification.

Existing plant and equipment shall be surveyed during the first visit and shall be logged on schedule sheets provided in this document together with single line drawings, showing the approximate positions in the building, make and model numbers, cooling capacities, full load currents etc. The price schedules make provision for pricing. No extra claims will be entertained for plant survey.

3.7.2 Scope- Quarterly Maintenance & Servicing

Plant and equipment shall be maintained and serviced on a quarterly bases in accordance with the inspections schedules contained in Part C2.5, commencing from the first service of plant.

Maintenance shall include the execution of all items listed in Part 2.5, excluding transport which is measured under Dayworks.

The price schedule make provision for consumables such as rags, cleaning agents, grease, small amounts of lubricating oil (less than 1 litre), small amounts of refrigerant oil (less than 1 litre) and small amounts of refrigerant gasses (less than 0.5kg – based on R507). The item prices in the bill (refer to notes in C2.4 Bill 2) related to quarterly services must allow for these items.

3.7.3 Scope- Annually Maintenance & Servicing

All annual maintenance services on large and small Refrigeration systems shall be done during the months of June / July or August. Unless otherwise stipulated on the agreed Program.

For the yearly service, the items shall include (but not limited to) the following:

- The annual services shall include all quarterly service items.
- The entire plant shall be thoroughly cleaned with an approved solvent
- Blower coils shall be defrosted and de-greased.
- Drip pans shall be cleaned out and de-greased.
- All heater elements shall electrical tested.
- Oil levels shall be checked and topped up where applicable.
- Thermometers shall be calibrated against a certified bulb type thermometer (and replaced if necessary).

Electrical components will be covered up with durable plastic material to prevent moisture ingress.

Special attention shall be given to the following:

- Refrigerant gas leaks
- Water leaks at drip pans and drain pipes
- Torn or missing refrigerant pipe insulation

- Hot connections on electrical boards and faulty control systems.
- Inoperative door seals and door latches, cracked wall- ceiling and floor panels
- Systems running on excessive high head pressures.
- Systems short cycling due to low refrigerant charge, faulty expansion valves or blocked liquid line filters.

Maintenance shall include the execution of all items listed in Part 2.5, excluding transport which is measured under Dayworks.

The price schedule make provision for consumables such as rags, cleaning agents, grease, small amounts of lubricating oil (less than 1 litre), small amounts of refrigerant oil (less than 1 litre) and small amounts of refrigerant gasses (less than 0.5kg – based on R507). The item prices in the bill (refer to notes in C2.4 Bill 2) related to annually services must allow for these items.

3.7.4 Scope- Reports after Maintenance & Servicing

The Contractor shall under this Repair and maintenance Contract institute a logging and recording system as part of his maintenance Control Plan. This shall consist of a log and record book, which shall be utilized to log and record all service records system checks, breakdowns, maintenance visits, inspections, etc

The logbook shall be stored in a safe place as agreed with the Client and representative of the Department and shall only be utilized by the Contractor and Regional Representative.

Copies of the entries and recordings into the logbook shall be submitted by the Contractor together with his report to the representative of the Department at the end of the contract for safe keeping.

The logbook shall be structured to at least include the following:

- Service Records
- Inspection and maintenance action
- Breakdown reports
- Technical report
- Inspection and test comments and reports

The Contract shall also institute an attendance register, which shall be kept in a safe place as agreed with the User Client and representative of the Department. This register shall be completed by all persons visiting the installation, including the following:

- Technicians report
- Contractor
- Inspectors from Department Labour
- The Department

This register shall state the date, time-in, time-out, name, company and reason for visit.

On completion of each inspection and service, the contractor shall complete a Job Card and submit to the Engineer with a copy to the facility concerned. The contractor shall attach to the Job Card the following documents associated with the inspection.

- Servicing Checklists pages completed and endorsed with the contractor's original signature.
- Travel Log sheets.

3.7.5 Measurement

Number of service & maintenance visits with distinction between refrigerant plants of different ratings. The rate shall include all necessary labour, materials, parts, consumables, reports, document copies and disposal of used waste materials and parts. Materials and parts shall include but not limited to the maintenance schedules and check lists, which form part of this specification, all as necessary for the complete servicing of the plant.

Transport measured in Dayworks.

3.7.6 Payment

Payment will be subject to submission of claims for payment with acceptable maintenance reports comprising completed job cards, maintenance checklists and travel logs all signed and dated.

4. TESTING, COMMISSIONING & MAINTENANCE

4.1 OPERATING & MAINTENANCE (O&M) DOCUMENTS

4.1.1 Scope

Comprehensive supplementary O&M documents shall be compiled for any new components which have been installed or where plant, circuits, panels etc have been altered in the course of the maintenance and servicing of the plant.

Where control panel alterations have been executed, complete schedules of approved components and wiring diagrams shall be included.

Draft copies of the documents shall be submitted to the Engineer for scrutiny and any necessary revisions shall be made prior to submission of multiple copies of the approved document. The final copies shall be submitted in a ring binder file or files divided into sections per affected plant.

4.1.2 Measurement

Draft copies : Fixed sum for all documents for all affected plant including any resubmissions to achieve approval.

Final copies : Number of copies of the complete set of supplementary documents per affected plant. Copies of each set of documents shall be submitted – 4 x hard copies plus 1 x soft copy on CD in Windows or Excel format.

5. DAYWORKS, PROVISIONAL SUMS & CONTINGENCIES

5.1 DAY WORKS

5.1.1 Scope

Provide for certain works to be executed on the basis of Dayworks where specified or instructed. This item may only be utilised on the specific instruction of the Engineer. All overhead costs shall be included.

In the case of work provided for in terms of Provisional Sums the Contractor shall submit a detailed quotation prior to commencing work. The amount of the quotation shall not be exceeded without approval prior to completion of the work concerned. In the case of Transport for planned maintenance, a prior quotation is not required.

5.1.2 Measurement

Labour : Time (hrs) including the full cost of employment such as wages, transport (excluding authorised transport), insurances, subsistence, allowances, overheads, etc. Materials mark-up as a portion of proven materials cost eg 15% = 0,15.

Materials: An allowance for the cost of materials utilised in connection with work performed in terms of dayworks.

The materials mark-up rate shall include full compensation to the Contractor for quotation profit & attendance costs. The mark-up rate shall be given as a portion of the proven cost of the materials utilised, ie 15% must be entered as 0,15.

Transport: Authorised distance travelled measured in km, is separately quantified.

Vehicular transport measured in km between the reference location and the various sites at which services are performed will be determined on the basis of the following distance table. Transport between the contractor's head office and the reference location is not reimbursable, the costs thereof being an overhead for the contractor's own account. Where more than one service is performed on the same day in the same area transport costs will be calculated on actual distance travelled as defined in this measurement clause. The measured quantity in km is provisional to be adjusted as utilised. The distances travelled shall be recorded in a log book with odometer readings, date, origin & destination places. Logbook copies shall be submitted with the monthly job card claims.

Reference Location: General Post Office, Govan Mbeki Avenue, Central, Port Elizabeth.

The following table illustrates an example of the method of measurement which shall be adopted in order to minimise travel costs. It is the Contractor's responsibility to ensure that all consumables, tools and spares are loaded in the transport for the sites to be visited to avoid the need to make an additional return to the depot during the day before the day's scheduled site visits are completed. Any claims for such return journey shall be rejected unless fully motivated and approved prior to the event.

Reference location to site A	8km
Site A to site B	1km
Site B to site C	2km
Site C to reference location	6km
Total Distance	17km

5.1.3 Payment

Payment will be subject to the submission of a detailed claim for materials utilised and transport, together with the monthly submission of job cards for maintenance & servicing or other tasks instructed to be performed in terms of dayworks. Payment claims shall include full details of the work performed with supporting materials invoices, close-out reports, labour time sheets & transport details with distance travelled log.

5.2 UNPLANNED MAINTENANCE

5.2.1 Scope

The Department operates a reporting system for any plant faults or breakdowns (complaints) which may occur.

The call centre is operated on behalf of the Department by *Advance Call*. The Contractor shall register with the call centre by submitting an application form & paying the required registration fee. The Contractor shall furthermore pay to the call centre a monthly subscription fees, call fees and reporting fees.

Client or tenant department staff report such plant faults or breakdowns to the DPW call centre which will log the complaint and transmit it by fax, e-mail & sms to the Contractor.

The contractor shall respond to the complaint as necessary in accordance with the assigned priority level & the breakdown (complaint) shall be repaired as necessary to restore the plant to full operation in the minimum time. On completion of the complaint remedy the contractor shall complete a Job Card and submit to the Engineer with a copy to the facility concerned. The Contractor shall attach to the Job Card the following documents associated with the complaint.

- Copies of vendor tax invoices for materials used, each endorsed with the Complaint Number, the

Contractor's stamp and the Contractor's original signature.

- Travel log sheet for travel exclusively incurred in attending to the Complaint. If the Complaint was repaired during a scheduled service visit to the plant concerned, then the travel log for the complaint shall be appropriately endorsed.
- Time sheets of staff who attended to the Complaint all stamped and endorsed with the Contractor's original signature.
- Further information which may be necessary or instructed.

The Engineer will be responsible for closing the call. The Contractor shall be responsible for obtaining the fax number of each facility and establishing to whom the said fax must be transmitted.

Should the contractor not be able to complete the required breakdown repair work within the maximum down-time period allowed, it shall be his responsibility to obtain extension of down-time from the Engineer. The written report shall clearly state the reasons for the extension, as well as the actual extension required.

Extension of down-time will only be granted by the Engineer if;

- (a) The maximum down-time is unreasonable in relation to the scope of the repair work required.
- (b) The delivery time of a new component/subassembly/machine or spares required for the repair of the defective component/subassembly does not enable the contractor to successfully complete the repair work within the maximum breakdown down-time allowed.

Priority Level	Maximum Down-Time Allowed (MDTA)	Penalties for non-performance per day
Fatal breakdown where specified	4 hours (immediate response)	R 1,500.00
Emergency breakdown	24 hours	R 750.00
Ordinary breakdown	7 days	R 1000.00
Quoted work	Agreed program - failure	R 1000.00

"Maximum down time" shall mean the period of time allowed repairing a breakdown, and "actual down-time" shall mean the measured period from the instant when the breakdown was logged with the contractor until the installation has been repaired to its functional specification.

5.2.2 Measurement & Payment

a) Breakdown Repair work :

Materials, labour & transport elsewhere measured under Dayworks.

b) Call Centre Services:

The rates shall include all relevant costs associated with the call centre services but excluding the actual repair work. Items shall include the profit & attendance of the contractor on the call centre plus the call centre fees. The rate for Breakdown Calls shall furthermore include the cost of the specified administration actions. The following table of call centre fees represents the current status. Future annual adjustments are deemed to be covered by the Contract Price Adjustment Provisions (CPAP) allowed in terms of the contract.

b1). Registration Fee	R 2 325.64 (initial once off fee)
b2). Monthly subscription	R 1 474.64 (per month per department)
b3). Breakdown calls	R 23.32 (per breakdown includes all telephone calls and faxes)
b4). Breakdown reporting	R 32.86 (per report)

The stated rates exclude VAT.

5.2.3 Payment

Payment will be subject to the submission of detailed claims for materials utilised and transport, together with the submission of unplanned maintenance Job Cards. Payment claims shall include full details of the work performed with supporting materials invoices, Job Cards, labour time sheets & transport details with distance travelled log.

DEPARTMENT OF PUBLIC WORKS
PORT ELIZABETH & SURROUNDING AREA
PREVENTATIVE MAINTENANCE, SERVICING & REPAIRS OF REFRIGERATION PLANT IN
STATE BUILDINGS

PART: C2.2

GENERAL REQUIREMENTS

CONTENTS

<u>Clause</u>	<u>Description</u>	<u>Page</u>
Section 1	Occupational Health & Safety	C2.2 / 1

Part C2.2 consists of clauses relevant to this contract which have been extracted from the following DPW Standard specifications to which Reference shall be made. Such clauses are included in this document for reference only and the said standard document in its complete form will remain the governing document in terms of this contract.

Occupational Health & Safety : Specification SI

Copies of the said standard specifications may be obtained from the offices of the Department of Public Works at the Eben Donges Building, North End, Port Elizabeth. Alternatively, software files may be viewed or downloaded from the DPW website at www.publicworks.gov.za/documents/consultants documents.

Section 1 OCCUPATIONAL HEALTH AND SAFETY

Definition : The “Principal Contractor” as defined in the Construction Regulations and used in this section of the specification shall mean the “Contractor” as defined in clause 1.1.8 of General Conditions of Contract 2004.

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1. Applicable legislation and regulations
2. Scope of work
3. The principle contractor’s general duties
4. The principle contractor’s specific duties
5. The principle contractor’s specific duties with regard to Hazardous work activities

1. APPLICABLE LEGISLATION AND REGULATIONS

This document was prepared to guide the Agent in the compilation of a Health and Safety Specification in terms of Sub-regulation 4(1)a of the Construction Regulation as published under Government Notice R.2003 of 18 July 2003. The content of this document or the fact it was made available for the use of the Agent will not relieve the Agent of any of his obligations in terms of the act.

The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) together with its applicable Regulations (“the Act”) forms part of this Health and Safety Specification. Any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned to it unless the context otherwise indicates

SCOPE OF WORK

All work forming part of this Contract is divided into various sites. The repair work to be performed as well as any installation work under this Contract mainly consists of the works described in the project specification C2.1.

THE PRINCIPAL CONTRACTOR’S GENERAL DUTIES

The Principal Contractor’s general duties in terms of this Health and Safety Specification are, but not limited to, the following:

1. Every Principal Contractor shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees and other contractors.
2. Without derogating from the generality of a Principal Contractor’s duties under subsection (1), the matters to which those duties refer include in particular -
 - a. the provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health;
 - b. taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees and other contractors, before resorting to personal protective equipment;
 - c. making arrangements for ensuring, as far as is reasonably practicable, the safety and absence of risks to health in connection with the production, processing, use, handling, storage or transport of articles or substances;
 - d. establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what

- precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;
- e. providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees and other contractors;
 - f. not permitting any employee or contractor to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken;
 - g. taking all necessary measures to ensure that the requirements of this Health and Safety Specification are complied with by every person in his employment or on premises under his control where plant or machinery is used;
 - h. enforcing such measures as may be necessary in the interest of health and safety;
 - i. ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and
 - j. causing all employees and other contractors to be informed regarding the scope of their authority as contemplated in section 37(1)(b) of the Act.

THE PRINCIPAL CONTRACTOR’S SPECIFIC DUTIES

Principal Contractor’s specific duties in terms of this Health and Safety Specification are specified in the Construction Regulation as published under Government Notice R. 2003 of 18 July 2003. (Hereinafter referred to as “Construction Regulation, 2003”).

The Principal Contractor is specifically referred to the following sub regulations of the Construction Regulation, 2003:

	Applicable subregulation of the Construction Regulation, 2003.
	1
Scope of application	2
Notification of construction work	3
Principal Contractor and Contractor	5
Supervision of construction work	6
Risk assessment	7
Approved inspection authorities	29
Offences and penalties	30
Withdrawal of regulations	31

Principal Contractor will acquaint himself with these duties and will make provision in his Contract price for the implementation and supervision of these duties.

THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES WITH REGARD TO HAZARDOUS WORK OR ACTIVITIES

The following work or activities are defined as hazardous in terms of the Construction Regulations, 2003 and it is the duty of the Principal Contractor to ensure that the said work and activities are performed or carried out in terms of the relevant subregulations of the Construction Regulation, 2003 and other applicable Regulations.

Hazardous work or activity	Applicable subregulation of the Construction Regulation, 2003.	Other applicable Regulations
Fall protection	8	
Structures	9	
Formwork and support work	10	
Excavation	11	Precautionary measure as stipulated for confined spaces under the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.
Demolition work	12	Asbestos related work will be conducted in accordance with the Asbestos Regulations published under Government Notice R. 155 of 10 February 2002 as amended. Lead related work will be conducted in accordance with the Lead Regulations published under Government Notice R. 236 of 28 February 2002 as amended.
Tunnelling	13	Any tunnelling activities will comply with the Tunnelling Regulations published under the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) as amended.

Hazardous work or activity	Applicable subregulation of the Construction Regulation, 2003.	Other applicable Regulations
Scaffolding	14	Section 44 of the Act.
Suspended scaffolds	15	Section 44 of the Act.
Boatswains chairs	16	
Material hoists	17	
Batch plants	18	<p>Precautionary measure as stipulated for confined spaces under the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.</p> <p>The Principal Contractor will ensure that all lifting machines and lifting tackle used in the operation of batch plant complies with the requirements of the Driven Machinery Regulations as published under Government Notice R.295 of 26 February 1988, as amended.</p> <p>The Principal Contractor will ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres when entering a silo, as stipulated in the Electrical Installation Regulations as published under Government Notice R.2271 of 11 October 1995, as amended.</p>
Explosive powered tools	19	
Cranes	20	Applicable provisions of the Driven Machinery Regulations as published under Government Notice R.533 of 16 March 1990, as amended.

Hazardous work or activity	Applicable subregulation of the Construction Regulation, 2003.	Other applicable Regulations
Construction vehicles	21	
Electrical installations and machinery on construction sites.	22	Applicable provisions in the Electrical Installation Regulations published under Government notice R.2920 of 23 October 1992 and the Electrical Machinery Regulations published under Government Notice R.1953 of 12 August 1988 respectively as amended.
Use and temporary storage of flammable liquids on construction sites.	23	Applicable provisions as stipulated in the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.
Water environments	24	
Housekeeping on construction sites.	25	Applicable provisions as stipulated in the Environmental Regulations for Workplaces published under Government Notice R.2281 of 16 October 1987, as amended.
Stacking and storage on construction sites.	26	Applicable provisions as stipulated in the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.
Fire precautions on construction sites.	27	Applicable provisions as stipulated in the Environmental Regulations for Workplaces published under Government Notice R.2281 of 16 October 1987, as amended.
Construction Welfare facilities	28	Applicable provisions as stipulated in the Facilities Regulations under Government Notice R.1593 of 12 August 1988, as amended.

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PORT ELIZABETH & SURROUNDING AREA
PREVENTATIVE MAINTENANCE, SERVICING & REPAIRS OF REFRIGERATION PLANT
IN
STATE BUILDINGS

PART: C2.3

TECHNICAL REQUIREMENTS

CONTENTS

Clause	Description	Page
1	Standard Paint Specification (C39)	3/1

Part C2.3 consists of clauses relevant to this contract which have been extracted from the following DPW Standard specifications to which Reference shall be made. Such clauses are included in this document for reference only and the said standard document in its complete form will remain the governing document in terms of this contract.

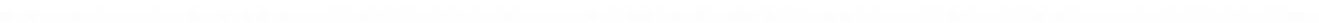
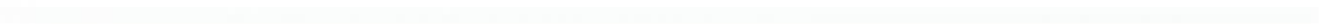
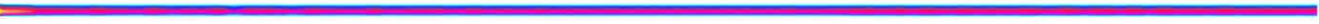
*Quality Specification for Material & Equipment of Mechanical Installations.
Specification for the supply, delivery & installation of air conditioning and refrigeration equipment.*

Copies of the said standard specifications may be obtained from the offices of the Department of Public Works at the Eben Donges Building, North End, Port Elizabeth. Alternatively, software files may be viewed or downloaded from the DPW website at www.publicworks.gov.za/documents/consultants documents scroll to mechanical

Dep

PI

Te



PE: Preventative Maintenance, Servicing & Repairs
Tender No :

1. STANDARD PAINT SPECIFICATION (DPW SPECIFICATION C39)

1.1 Finish Required

Metalwork of electrical equipment such as switchboards, equipment enclosures, sheet steel luminaire components, purpose-made boxes, etc shall be finished with a high quality paint applied according to the best available method. Baked enamel, electrostatically applied powder coating or similar proven methods shall be used.

1.2 Corrosion Resistance

Painted metal shall be corrosion resistant for a period of at least 168 hours when tested in accordance with SANS method 155.

1.3 Edges

Care shall be taken to ensure that all edges and corners are properly covered.

1.4 Surface Preparation

Surface preparation shall comply with SANS 064. Prior to painting all metal parts shall be thoroughly cleaned of rust, mill scale, grease and foreign matter to a continuous metallic finish. Sand or shot blasting or acid pickling and washing shall be employed for this purpose.

1.5 Baked Enamel Finish

Immediately after cleaning, all surfaces shall be covered by a rust inhibiting, tough, unbroken metal-phosphate film and then thoroughly dried.

Within forty-eight (48) hours after phosphatising, a passivating layer consisting of a high quality zinc chromate primer shall be applied, followed by two coats of high quality alkyd-based baked enamel.

The enamel finish on metal luminaire components shall comply with SANS 783, type III.

Other metal parts eg switchboard panels, etc shall comply with SANS 783, type IV with a minimum paint thickness after painting of 0,06mm, In coastal areas, the dry film thickness shall be increased to at least 0,1mm.

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

1.6 Powder Coated Finish (Not to be used in Areas Less Than 50km From Seaside and Areas With High Humidity)

Immediately after cleaning the metal parts shall be pre-heated and then covered by a microstructure paint powder applied electrostatically.

The paint shall be baked on and shall harden within 10 minutes at a temperature of 190C.

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

1.7 Touch-Up Paint

In the case of switchboards and larger equipment enclosures, a tin of matching touch-up paint not smaller than 1 litre shall be provided.

PE: Preventative Maintenance, Servicing & Repairs
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1.8 Colours

The colour of HV switchboards and HV switchgear enclosures shall be “DARK ADMIRALTY GREY”, colour G12 of SANS 1091.

The colour of LV switchboards and equipment enclosures in buildings shall be “LIGHT ORANGE”, colour B26 of SANS 1091 as recommended in SANS 0140, part II unless specified to the contrary.

The colour of LV distribution kiosks and miniature substations shall be “AVOCADO GREEN”, colour C17 or “LIGHT STONE”, colour C37 of SANS 1091.

The standby power section of LV switchboards in buildings shall be coloured “SIGNAL RED”, colour All of SANS 1091.

Switchboards for No-break Power supplies or sections of switchboards containing No-break power supplies, shall be coloured “DARK VIOLET”, colour F06 or “OLIVE GREEN”, colour H05 of SANS 1091.

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PART : C2.4
SCHEDULES OF QUANTITIES

CONTENTS :

	Page
Preamble to Schedules of quantities	C2.4/1
Schedules of Quantities: Maintenance Works	C2.4/1.....10
Final Summary	C2.4/11

PREAMBLE TO THE SCHEDULE OF QUANTITIES

General

The Schedules of Quantities define the scope of the Engineering Works in terms of the measurement and payment parameters specified.

The Schedules shall be read in conjunction with the General Conditions of Contract, the Special Conditions of Contract, the Conditions of Tender, the Specifications and the documents referenced in Part C2.1, C2.2, C2.3 & C2.5.

The quantities stated on the schedules are provisional and are subject to re-measurement upon completion.

Descriptions & measured items

The Schedule of Quantities consists of Descriptions followed by measured items (Item lines) which specify the items of differing dimensions, ratings, etc which comply with the overall requirements of such Description. The measured items may add, subtract or in any other way vary the Description. The reference number which precedes each description refers to the relevant specification clause.

Below each Item line the measured quantities applicable to each of the applicable sections of the Works appears under the relevant column heading, the total of which is shown under the Quantity column.

The Schedule of Quantities is based upon the Standard system of measurement modified as necessary.

Fixed Rates

Rates shall be fixed for the duration of the contract.

All inclusive

The Descriptions and item lines are of necessity abbreviated summaries of the specifications and unless otherwise stated or elsewhere measured, shall include all necessary components and accessories required or necessary for the correct functioning or performance of the item when incorporated into the Engineering Works.

The rates and prices shall accommodate the nature of the engineering Works and any restrictions which apply to the Works environment and the site of the Works, shall include all the costs and expenses that may be required in and for the construction of the Works described and shall include the cost of all general obligations, risks and liabilities stated or implied in the contract documents.

Such rates and prices shall, however, exclude Value Added Tax (VAT), which shall be applied only where specified.

Quantities net

Items are measured in accordance with the Engineer's drawings net of waste. The quantities set out in the Schedule are therefore intended for measurement and payment purposes only. Material and equipment orders shall not be based upon such quantities but upon the Contractor's own assessment.

Quantities Provisional

The quantities set out in the schedules are measured provisionally and will be subject to re-measurement on completion of the Maintenance Works

Completion of Schedule of Quantities

Refer to the Tender Data and Conditions of Tender (Part T) .

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PART C2.5
PLANT SCHEDULES

CONTENTS :

	Pages
1. Refrigeration Plant Schedules	5/1...5/4
1.1 BILL No: 2: Middleburg and surrounding areas	
1.2 BILL No: 3: Port Elizabeth and surrounding areas	
1.3 BILL No: 4: Uitenhage / Grahamstown and surrounding areas	
2. Maintenance & Service Schedule for Refrigeration Plant Equipment	
2.1 QUARTERLY SERVICE	5/5
2.2 ANNUAL SERVICE	5/6
2.3 PLANT ROOM AND ELECTRICAL SERVICE	5/7
4. Job Card (Planned) & Travel Log	5/8...5/9
5. Job Card (Unplanned) & Travel Log	5/10...5/11
6. Planned work spread sheet – sample	5/12
7. Un Planned work spread sheet – sample	5/13
8. Area map with zones indicated	5/14

1.1 PLANT SCHEDULE: Refrigeration.

BILL No: 2: Middelburg and surrounding areas

Instalation: Location & Description		Room Size L x W x H		Indoor Unit		Outdoor Unit		Refrigerant
Bill	Site Description	Building	Description	Make	Model number	Make	Model number	
1	2.1.1 Middelburg Prison	Kitchen	Cold room	RECOIL	NST600	RHC100	CA54511Y	R134A
2	2.1.2 Middelburg Prison	Kitchen	Freezer room			DYNAPACK	NTZ136A	R404A
3	2.2.1 Grootfontein Agricultural College	Meat processing	Cold room	NO STICKER	NO STICKER	PRO-FREEZE	PL20x/0036P-24T	406
4	2.2.1 Grootfontein Agricultural College	Huis Karoo	Cold room	FRIGIDAIRE	NO STICKER	HASA	HASA-011E-TAD-200	406
5	2.2.1 Grootfontein Agricultural College	Magasyn	Cold room	CARRIER	NO STICKER	CARRIER	HAC1250	R22
6	2.2.1 Grootfontein Agricultural College	Milk processing	Cold room	MEIRACLARH	M3T500	CARRIER	AHM22ES	R22
7	2.2.1 Grootfontein Agricultural College	Vetenary	Cold room	YOCAN	YHT105	NO STICKER	NO STICKER	406
8	2.2.1 Grootfontein Agricultural College	Vetenary	Cold room	CENTURATOR	NO STICKER	FRIGIDAIRE	DCH628	406
9	2.2.1 Grootfontein Agricultural College	Aker bou	Cold room	MRP	MRP2080	PRO-FREEZE	PH295X2C-4FT1	R22
10	2.2.2 Grootfontein Agricultural College	Aker bou	Freezer room	JLC	GLE28	NO STICKER	NO STICKER	R404
11	2.2.1 Grootfontein Agricultural College	Huis Bersig	Cold room	HOOLMASTER	HMP570	NO STICKER	NO STICKER	R22
12	2.2.1 Grootfontein Agricultural College	Huis Bersig	Cold room	RECOIL	NST2600	MANUFROOR	MT50	R22
13	2.3.1 Cradock Prison	Kitchen	Cold room	RECOIL	NST600	THERCUMSH	TAJ4519T	R22
14	2.3.2 Cradock Prison	Kitchen	Freezer room	RECOIL	RLT3900	DYNAPACK	NTZ36	404
15	2.3.1 Cradock Prison	Logistics	Cold room	RECAM	88	THERCUMSH	TAJ4519T	R22
16	2.3.1 Cradock Prison	Logistics	Cold room	RECAM	88	THERCUMSH	TAJ4519T	R22
17	2.3.2 Cradock Prison	Logistics	Freezer room	CARRIER	NO STICKER	MANUROPE	NTZ36	R404
Quantity			13	4				

BILL No: 2: Middelburg and surrounding areas (continued)										
Instalation: Location & Description										
Item #	Bill	Site Description	Building	Description	Room Size L x W x H	Indoor Unit		Outdoor Unit		Refrigerant
						Make	Model number	Make	Model number	
18	2.4.1	Graaff Reiniet SAP Academy	Morning Star	Cold room	3.5x3.5x2.4	RECOIL	NST1100	COPELAND	TFH4524F	R22
19	2.4.1	Graaff Reiniet SAP Academy	Aloe House	Cold room	3x2.5x2.4	RECAM	SU72H	TECUMSEH	FH4518YHR	R134A
20	2.4.1	Graaff Reiniet SAP Academy	College House	Cold room	3x3 x2.4	CENTURATOR	NO STICKER	BITZER	2560164	R22
21	2.4.2	Graaff Reiniet SAP Academy	College House	Freezer room	3x3x2.4	RECOIL	NLT1300	PRESCOLD	PL-300005009	R22
22	2.5.1	Graaff Reiniet Prison		Cold room				Not available		
23	2.5.2	Graaff Reiniet Prison		Freezer room				Not available		
24	2.6.1	Jansenville Prison		Cold room				Not available		
25	2.6.2	Jansenville Prison		Freezer room				Not available		
				Quantity	5					3

BILL No: 3: Port Elizabeth and surrounding areas

Installation: Location & Description			Indoor Unit		Outdoor Unit		Refrigerant		
Bill No	Site Description	Building	Description	Room Size L x W x H	Make	Model number		Make	Model number
26 3.1.1	New Brighton SAPS	Kitchen	Cold room	3x2.5x2.5	LUNITE	CAJ9513TMMR	EMBRACO	NJ9226E	R22
27 3.2.1	Struandale Riot Squad	Kitchen	Cold room	3.9x1.9x2.6	RECAM	69	TECUMSEH	CAJ9513T	R22
28 3.2.1	Struandale Riot Squad	Kitchen	Cold room	2.6x2.8x2.8	RECOIL	NST750	RECO	310521	R22
29 3.3.1	Mount Road SAPS	Single Quarters	Cold room	4x2.1x2.5	L'UNITE HERMETIQ	CAJ95102	TECUMSEH	5262	R22
30 3.3.2	Mount Road SAPS	Single Quarters	Freezer room	1.8x1.9x2.3	BOCK	HG22P	EBMPAST	M4Q045-EF01	R404
31 3.4.1	Forest Hill SANDF	Officers Mess	Cold room	2.7x2.6x2.2	RECOIL	PHC2800/CBMR	CARRIER	SU072H	R134A
32 3.4.1	Forest Hill SANDF	NCO Building 1	Cold room	3x3x2.4	MAN-EURO	MT22JC4AVE	FRIGA	MT22'254	R22
33 3.4.1	Forest Hill SANDF	Building 126	Cold room	2.1x2.1x2.2	RECAM	88	EMBRACO	TG222F	R22
34 3.4.2	Forest Hill SANDF	Building 126	Freezer room	3x4x2.4	MAN-EURO	NTZ215A4LRIA	RECOIL	RBA2570	R404
35 3.4.1	Forest Hill SANDF	Building 122	Cold room	4x5x2.4	COPELAND	CK24K3	RECOIL	R11000RDA	R22
36 3.4.2	Forest Hill SANDF	Building 123	Freezer room	3x4x2.4	HC	NO STICKER	RECOIL	RBA2570	R404
37 3.5.1	Stanley Street DAFF	DAFF	Freezer room	3x4x2.4	RECOIL	NO STICKER	FRIGAPACK	NTZ68	R404
38 3.6.1	St. Albans Prison	Logistics	Cold room	11x4x3	RECOIL	NST2600	CARRIER	HAC2424	R22
39 3.6.1	St. Albans Prison	Logistics	Cold room	11x5.5x3	RECOIL	NST2600	CARRIER	HAC2424	R22
40 3.6.2	St. Albans Prison	Logistics	Freezer room	12x5.5x3	RECOIL	RLT3900	FRASCOLD	S7-39Y	R22
41 3.6.1	St. Albans Prison	East Mess	Cold room	3.5x3x3	EUROMAN	ENST600	12R4PASS	3/8"ELB	R134A
42 3.6.2	St. Albans Prison	East Mess	Freezer room	3.5x1.8x3	COOLMASTER	KMTEK500	CARRIER	NTZ136A	R134A
43 3.6.2	St. Albans Prison	Abattoir	Freezer room	3x4.5x2.4	RECAM	RB750L	DORIN	K1500CC-02	R404
44 3.6.1	St. Albans Prison	West Mess	Cold room	3.5x2.6x2.6	RECOIL	R890ST	BITZER		R134A
45 3.6.2	St. Albans Prison	West Mess	Freezer room	3.5x2.6x2.8	RECOIL	NLT1300	EUROMAN	EQRBA890	R404A
46 3.6.3	St. Albans Prison	Abattoir	Chiller pl't			Not available			
47 3.7.1	North End Prison		Cold room			Not available			
48 3.7.2	North End Prison		Freezer room			Not available			
49 3.8.1	Patensie Prison		Cold room			Not available			
50 3.8.2	Patensie Prison		Freezer room			Not available			
Quantity			15	10					

BILL No: 4: Uitenhage/Grahamstown and surrounding areas

Installation: Location & Description		Indoor Unit			Outdoor Unit			Refrigerant	
Bill No	Site Description	Building	Description	Room Size L x W x H	Make	Model number	Make		Model number
51	4.1.1 Slagboom Academy	Kitchen	Cold room	2.12x2.8x3	RECOIL	NST900	FRIGA	MT22/25	R134A
52	4.1.2 Slagboom Academy	Kitchen	Freezer room	3x3x2.4	RECOIL	NLT100	FRIGA	LTZ40/55	R404A
53	4.2.1 Grahamstown Prison	Kitchen	Freezer room	2.5x3x2.4	RECOIL	NST1600	MANEUROPE	NTZ136A4	R404
54	4.3.1 Grahamstown Military base	T140	Cold room	4x3.4x2.75	RECOIL	HSR-303-5Rx6F	FRIGA	FSMTZ64-5S	R134
55	4.3.1 Grahamstown Military base	T109	Cold room	4.1x3.8x2.3	RECAM	SU201H	COPELAND	CR41KQTFD-267RZ	R134
56	4.3.1 Grahamstown Military base	T109	Cold room	1.8x3.8x2.4	THERMOCOIL	TB031-E-1-4	COPELAND	CR22K6M	R22
57	4.3.1 Grahamstown Military base	T109	Cold room	3.2x3.5x2.5	THERMOCOIL	TB031-E-1-4	TECUMSEH	TEB031 1-B-2-4	R134
58	4.3.2 Grahamstown Military base	T109	Freezer room	2x3.8x2.06	RECAM	SU201H	MAN-EUROPE DYNAPAC	MTZ096A44RIA	R404
59	4.3.2 Grahamstown Military base	T109	Freezer room	4x6x2.5	RECOIL	HSR351-4	FRIGA	FSNTZ068-2S	R404
60	4.3.1 Grahamstown Military base	T153	Cold room	2.2x2.2x2.7	THERMOCOIL	GS34TB	HC	TEB031 1-B-2-4	R134
61	4.4.1 Somerset East Prison	Kitchen	Cold room	2x3.5x2.4	HC	UKNOWN	FRIGA SYSTEM	RBA750	R22
62	4.4.2 Somerset East Prison	Kitchen	Freezer room	2x3.5x2.4	HC	UKNOWN	FRIGA SYSTEM	R132	R404
63	4.5.1 Fort Beaufort Prison	Kitchen	Cold room	3x2x3	TELEMECANIQUE	LC1D25	THERCUMSH	CAJ4519T	R22
64	4.5.2 Fort Beaufort Prison	Kitchen	Freezer room	3x2x3	RECOIL	R1320LT	MAN-EUROPE	NTZ108A	404A
65	4.6.1 JC Steyn Prison	Abbotoir	Cold room	1.71x2x2.4	RECOIL	SY201H	COPELAND	NO STICKER	R22
66	4.6.2 JC Steyn Prison	Abbotoir	Freezer room	1.71x2x2.4	CARRIER	NO STICKER	MANEUROPE	NO STICKER	R404
67	4.6.1 JC Steyn Prison Dairy	Dairy	Cold room	2.4x3.1x2.2	RECOIL	NO STICKER	TECUMSEH	CAJ4511YLRA29	R134A
68	4.6.3 JC Steyn Prison Dairy	Dairy	Milk Tank	N/A	N/A	N/A	MANEUROPE	HZBG129DBEE	R22
69	4.6.4 JC Steyn Prison Dairy	Dairy	Milk Tank	N/A	N/A	N/A	MANEUROPE	HAC3000B	R22
			Quantity	12	7				
			Total Quantity	45	24				

2. MAINTENANCE AND SERVICE SCHEDULES FOR REFRIGERATION PLANT

(to be submitted with claim for payment) Service to be carried out to manufacturer's specification.

2.1 QUARTERLY SERVICE

NAME OF BUILDING/PLACE:		Date:	
PLANT NAME and/or NUMBER:		Job Card No:	
ITEM NO.	DESCRIPTION OF ITEM	ITEM CHECKED (TO BE TICKED OFF)	
		YES	NO
A	QUARTERLY SERVICES:		
1.	General items on Refrigeration plant to attend to		
1.1	Visually inspect all components of plant and report defects		
1.2	Log all pressures and temperatures. Report faulty gauges.		
1.3	Check blower coil and condenser fans and compressor motor bearings for abnormal temperatures and report malfunction		
1.4	Measure defrost heater power consumption		
1.5	Check operation of humidifier & Clean strainer (where applicable)		
1.6	Test operation of automatic and safety control for correct operation		
1.7	Check condition of drives and report malfunction		
1.8	Check un-loader operation (where applicable)		
1.9	Check cooling of hermetic/semi-hermetic compressor motors		
1.10	Check holding down bolts and vibration eliminators.		
1.11	Check correct operation of expansion valves and defrost control		
1.12	Check timer settings and start delay – re-set if required		
1.13	log all settings of safety devices		
1.14	Check refrigerant and oil levels and trim as necessary. Repair minor leaks		
1.15	Clean condenser coils – wash if required		
1.16	Check Vee belt alignment and tension and adjust		
1.17	Clean out drain pans, sumps (and strainers where installed).		
1.18	Generally clean and touch-up paint work to keep the whole plant clean and corrosion free.		
1.19	Check all refrigerant piping and insulation. Repair minor defects		
1.20	Check cold room insulation and door gaskets. Report broken door gaskets		
1.21	Check and clean all plant rooms		
1.22	Record visit in plant logbook		
Signature (Technician):		Engineer:	
Comments:			

2.2 ANNUAL SERVICE

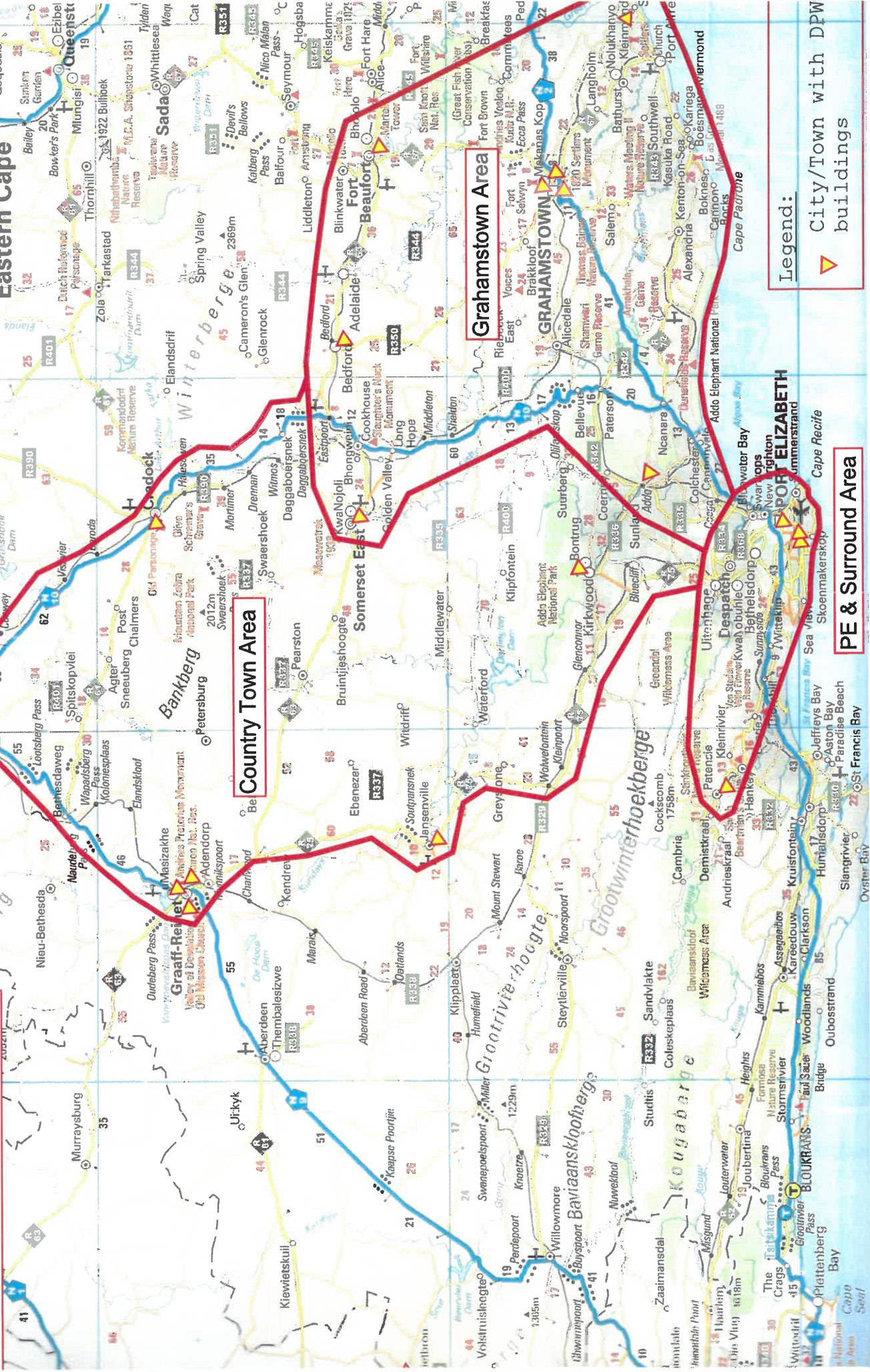
NAME OF BUILDING/PLACE:		Date:	
PLANT NAME and/or NUMBER:		Job Card No:	
ITEM NO.	DESCRIPTION OF ITEM	ITEM CHECKED (TO BE TICKED OFF)	
B	ANNUAL (MAJOR) SERVICE	YES	NO
1	All as per Quarterly clause A1.1 to A1.22		
2	Change oil (use only oil recommended by Manufacturer)and clean oil strainer where installed		
3	Replace all refrigerant filters		
4	De-grease blower coils and wash down with clean water		
5	Wash down condenser coils		
6	Check operation of expansion valves and pressure switches.		
7	Test defrosts cycle and all defrost heaters and replace if necessary.		
8	Check accuracy of all thermometers and pressure gauges where installed		
9	Adjust door latches and strikes- report broken parts		
10	Check gas leaks on shaft seals (where applicable) and report back.		
Signature (Technician):		Engineer:	
Comments:			

2.3 PLANT ROOM AND ELECTRICAL SERVICE

NAME OF BUILDING/PLACE:		Date:	
PLANT NAME and/or NUMBER:		Job Card No:	
ITEM NO.	DESCRIPTION OF ITEM	ITEM CHECKED (TO BE TICKED OFF)	
		YES	NO
C	ELECTRICAL : (quarterly and annually)		
1	All work under this heading shall be carried out by a licensed electrician		
2	Clean out switchboards internally and externally		
3	Check and tighten all connection within switchboard		
4	Visually check all starter overload settings		
5	Check and clean all contactor contacts		
6	Check main switch-door interlock		
7	Check all switch gear and wiring terminals for burnt terminal points and repair where required.		
8	Dress all wiring in a neat fashion and tie down with cable ties.		
9	Check operation of pilot lights (replace faulty lamps)		
10	Check operation of voltmeters and ammeters		
11	Check operation of board ventilating fan if fitted		
12	Check operation of all switchboard panel hinges and latches		
Signature (Technician):		Engineer:	
Comments:			

D	PLANT ROOMS AND CONTAINERS – (quarterly and annually)		
1	De-grease floors and condenser bases, wash and clean		
2	Clean Walls, windows and ceilings where fitted		
3	Report on deteriorated paint work. To be re-painted after permission received		
Signature (Technician):		Engineer:	
Comments:			

Port Elizabeth & Surrounding Areas:
Refrigeration Plant Maintenance -
Servicing and Repairs.



Legend:
City/Town with DPW buildings

PE & Surround Area



public works

Department
Public Works
REPUBLIC OF SOUTH AFRICA

JOB CARD

TO BE COMPLETED BY CONTRACTOR / ARTISAN

COMPLAINT NO.		ORDER NO.	
TOWN:	BUILDING	DEPT.	
SERVICE DESCRIPTION:			
CONTRACTOR:		TEL. NO.	
		CELL NO.	
WORK EXECUTED DESCRIPTION:			
DESCRIPTION OF WATERING USED (WATER DELIVERY PERIODS) QUANTITY			

(use Addendum if additional space is required. Detailed invoice to indicate Labour, Material, Travelling, Mark-up and VAT separately).

ARTISAN'S NAME: NUMBER OF LABOURERS:

DATE OF ARRIVAL: TIME:

COMPLETION DATE: TIME:

ACTUAL HOURS WORKED ON SITE: SIGNATURE OF ARTISAN/
CONTRACTOR:

GUARANTEE	YES/NO	TIME PERIOD	COMMENT
Equipment			Guarantee period will start at date of signing of Job Card.
Workmanship			

NB: A SEPARATE JOB CARD MUST BE SUBMITTED FOR EACH DAY WORKED ON SITE

REMARKS BY CLIENT DEPARTMENT/NDPW: *(To be completed by the Complainant / Designated officer)*

I certify that I personally checked and am satisfied that the work that has been executed satisfactorily. (However I do not certify technical correctness)

NAME: RANK: TEL. NO.

DATE:

SIGNATURE:

Departmental stamp please.

Lelapha is Ditloko la Setshaba Department of Public Works Lelapha is Mosebetsi ya Setshaba
yaMaurantse Yemphahala (Sabe) Mfisebetzi yaKholo Umhlango wazamaBabazi yomPhak
Tshabeha Department van Openbare Werke

CLIENT DEPARTMENT/
NDPW DEPARTMENTAL USE



public works

Department:
Public Works
REPUBLIC OF SOUTH AFRICA

Works Completion Certificate Email to: FacilitiesPE@dpw.gov.za.

To be completed in full by contractor and client (except for final amount) and returned immediately by fax or e-mail to the relevant Works Manager

Contractor

Order Number: _____ Complaint Number: _____
 Town: _____ Department: _____
 Building: _____ Service Description: _____
 Contractor's Name: _____ Telephone: _____
 Works Manager's name: _____ Cell no: _____

Summary of Work Done

Serial No/No's of all newly installed Equipment:

Date Work started: _____ Date Work Completed: _____

Estimated amount _____ Final Amount _____ INVOICE NO _____

Has the work been completed to the Departmental standards? Y N

Are the buildings, equipment, and machinery safe for use by the client? Y N

Are all electrical elements shock free and compliant with safety standards? Y N

Other: _____

Remarks by the Client Department (If Any) _____

I certify that I personally checked and I'm satisfied that the work has been executed satisfactorily.
(However I do not certify technical correctness)

Client stamp

Client Signature: _____ Name: _____ Tel: _____ Date _____

Client

Manager

Has the works been inspected? Y N

Works Manager Signature: _____ Date: _____