



KOUGA MUNICIPALITY

THE JBCC PRINCIPAL BUILDING AGREEMENT EDITION 6.1 OF MARCH 2014
CONTRACT FOR:
THE CONSTRUCTION OF THE MINI FRESH PRODUCE MARKET AT HANKEY

NOTICE NO: 93/2020

JANUARY 2020

SERVICE PROVIDER		
TELEPHONE / FACSIMILE		
CLOSING DATE	MONDAY, 27 JULY 2020 at 12:00	

ISSUED BY:

Kouga Local Municipality

Physical Address:
33 Da Gama Road
Jeffreys Bay

Postal Address:
P O Box 21
Jeffrey Bay
6330

tenders@kouga.gov.za
apperils@kouga.gov.za

CONTENTS		
SECTION	DESCRIPTION	PAGE NUMBER(S)
<u>THE TENDER</u>		
PART 1	TENDERING PROCEDURES	
T1.1	Tender Notice and Invitation to Tender	4
T1.2	Tender Data	5
PART 2	RETURNABLE DOCUMENTS	
T2.1	List of Returnable Documents	13
T2.2	Returnable Schedules	14
<u>THE CONTRACT</u>		
PART 1	AGREEMENT AND CONTRACT DATA	
C1.1	Form of Offer and Acceptance	60
C1.2	Contract Data	66
C1.3	Form of Guarantee	80
C1.4	Health and Safety Agreement	83
C1.5	Disclosure Statement	86
C1.6	Adjudication Board Member Agreement	87
PART 2	PRICING DATA	
C2.1	Pricing Instructions	91
C2.2	Bill of Quantities	93
C2.3	Summary Page for Bill of Quantities	95
PART 3	SCOPE OF WORK	
C3.1	Description of the Works	97
C3.2	Employers Agenting	100
C3.3	Procurement	102
C3.4	Construction	104
C3.5	Management	119
PART 4	SITE INFORMATION	
C4.1	Scope	125
C4.3	Existing Services, Buildings and Structures	125

TENDER

PART 1 (OF 2): TENDERING PROCEDURES

T1.1	Tender Notice and Invitation to Tender	4
T1.2	Tender Data	5

T1.1: TENDER NOTICE AND INVITATION TO TENDER

KOUGA LOCAL MUNICIPALITY (EC108)
DIRECTORATE: INFRASTRUCTURE AND ENGINEERING
NOTICE NO: 93/2020
CONSTRUCTION OF THE MINI FRESH FOOD MARKET AT HANKEY

Suitably qualified, capable and experienced Contractors are hereby invited to submit tenders for the Construction of a Mini Fresh Food Market at Hankey.

A non-mandatory virtual clarification session will be held on Friday, 10 July 2020 at 10:00am to 11:00am. **A non-mandatory site visits at Erf 2055 Hankey, with the following co-ordinates: 33°49'38.2"S 24°52'25.1"E, will take place at 12:00.**

Tenders

An electronic copy of the tender document will be available on E-Tender portal www.etender.gov.za or the municipal website www.kouga.gov.za as from Friday, 26 June 2020. After downloading the tender document from the website each prospective bidder, **MUST** email their contact details to tenders@kouga.gov.za and copied to apperils@kouga.gov.za.

A non-mandatory virtual clarification session will be arranged for those that have shown interest, such request **MUST** be sent to tenders@kouga.gov.za and copied to apperils@kouga.gov.za before 16h00(end of business), the 9 July 2020. Any tender document downloaded, or invite received after the 16h00 on the 9 July 2020 will not be considered (**A detail of this is in the tender document**)

Please note:

- Telegraphic, telephonic, telex, facsimile, email or late tenders will not be accepted.
- This contract will be evaluated on the 80/20point scoring system.
- The Guidelines for locally produced goods or locally manufactured goods with a stipulated minimum threshold where applicable will be applied.
- **A contractor CIDB Grading of 3GB or higher is required.**
- Proof of registration and good standing with the Construction Industry Board.
- A valid SARS Tax Clearance Certificate and the Tax compliance Status pin to be submitted.
- Prospective Service Providers must register on Kouga Municipality's Supplier database as per the registration requirements.
- The National Treasury Central Supplier Database Summary report must be submitted.
- In order to claim Preference points a valid originally or certified B-BBEE Status level Verification certificate or a Sworn Affidavit completed on the DTI format must be submitted to validate the claim.
- The Council reserves the right to accept any tender and, or part thereof, appoint more than one contractor, and does not bind itself to accept the lowest or any tender. The Council reserves the right to appoint any contractor.
- The validity period for submission must be 120 days from the closing date.
- Tenders that are deposited in the incorrect box or delivered to any other venue will not be considered.

Enquiries relating to this tender must be submitted in writing via e-mail to tenders@kouga.gov.za and copied to apperils@kouga.gov.za

Completed documents in a sealed envelope endorsed "**NOTICE NO: 93/2020: "CONSTRUCTION OF THE MINI FRESH FOOD MARKET AT HANKEY"**", must be placed in the Tender Box 21 St Croix Street (back entrance) or 16 Woltemade Street (front entrance), Jeffrey's Bay, Room 122 on or before **MONDAY, 27 JULY 2020 at 12:00.**

C. DU PLESSIS
MUNICIPAL MANAGER

P.O. Box 21
JEFFREYS BAY
6330

For Placement: Herald – 26 June 2020

Municipal Website/ Municipal Notice Boards in all offices/areas – 26 June 2020

T1.2: TENDER DATA

The conditions of tender are those contained in the latest edition of SANS 10845-3, Construction Procurement – Part 3: Standard conditions of tender.

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

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

Clause	Wording / Data
3.1	The employer is the Kouga Local Municipality.
3.2	Refer to page 1 of this document for a complete and comprehensive list of all Tender Documents.
3.4	The employer's agent: Raj Maharajh Associates Architects and Project Managers Address: 6 Shirley Street Newton Park Port Elizabeth Tel: 041 365 2896 E-mail: rma.arch@mweb.co.za
4.1	Only those tenderers who are registered with the CIDB, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, for a SG class of construction work, are eligible to have their tenders evaluated. Joint ventures are eligible to submit tenders provided that: a) Every member of the joint venture is registered with the CIDB; b) the lead partner has a contractor grading designation in the SG class of construction work; and c) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a SG class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. It is estimated that tenderers should have a CIDB Contractor Grading Designation of Grade 3 GB or higher.
4.2	Add the following to this Clause: “Accept that the employer will not compensate the tenderer for any costs incurred in attending tender interviews in the office of the employer or the employer's agent.”

4.7	The arrangements for the non-compulsory clarification meeting are: <u>Location:</u> 33°49'38.2"S 24°52'25.1"Ey Erf 2055 Hankey <u>Date and Time:</u> Friday, 10 July 2020 at 12:00am The closing date for Notice No: 93/2020 will remain the Monday, 27 July 2020 at 12:00
4.11	Add the following to this Clause: "In order to correct any errors, or to make alterations, or in the event of a mistake having been made in the Pricing Data, it shall be neatly crossed out in non-erasable ink and all signatories to the tender offer shall initial all such alterations."
4.12	No alternative offer will be considered.
4.13.1 & 4.13.3	The original completed tender document (refer Claus 3.2), excluding Drawings, shall be returned with all the required information supplied, duly completed in non-erasable ink in all aspects.
4.13.4	Add the following to this Clause: "Only authorised signatories may sign the original and all copies of the tender offer where required in terms of 4.13.1. In the case of a One-Person Concern submitting a tender, this shall be clearly stated. In case of a Company submitting a tender, include a copy of a resolution by its board of directors authorising a director or other official of the company to sign the documents on behalf of the company. In the case of a Close Corporation submitting a tender, include a copy of a resolution by its members authorising a member or other official of the corporation to sign the documents on each member's behalf. In the case of a Partnership submitting a tender, all the partners shall sign the documents, unless one partner or a group of partners has been authorised to sign on behalf of each partner, in which case proof of such authorisation shall be included in the Tender. In the case of a Joint Venture / Consortium submitting a tender, include a resolution of each company of the Joint Venture / Consortium together with a resolution by its members authorising a member of the Joint Venture / Consortium to sign the documents on behalf of the Joint Venture / Consortium. Accept that failure to submit proof of authorisation to sign the tender shall result in a tender offer being regarded as non-responsive."
4.13.5	The identification details are:

	• The Contract Number: 93/2020 • The Title / Description of the Tender or Project: Construction of the Mini Fresh Produce market at Hankey • The Closing Date: Monday, 27 July 2020 • The Closing Time: 12:00
4.13.5	A two-envelope procedure will not be followed.
4.13.6	Telephonic, telegraphic, telex, facsimile, e-mailed, posted and late tender offers will not be accepted.
4.14	Add the following to this Clause: “Accept that the employer shall in the evaluation of tenders take due account of the tenderer’s past performance in executing similar works of comparable magnitude and the degree to which the tenderer possesses the necessary technical, financial and other resources to enable him to complete the works successfully within the contract period. Satisfy the employer and Employers Agent as to his ability to perform and complete the works timeously, safely and with satisfactory quality, by furnishing details under Part 2 – Returnable Documents of the Tender Portion. Accept that the employer is restricted in accordance with Regulation 4. (4) of the Constructions Regulations (2014), to only appoint a contractor who he is satisfied has the necessary competencies and resources to carry out the work safely. Accept that submitting inferior and inadequate information relating to health and safety, as required under Clause 4.13.4, shall be regarded as justifiable and compelling reasons not to award a contract to a tenderer.”
4.15	The closing date and time as well as the specified address and location of the tender box for submission of tender offers are stated in the Tender Notice and Invitation to Tender.
4.16.1	The tender offer validity period is 120 days.
4.18.2	Add the following new Clause: “The tenderer shall, when requested by the employer to do so, submit details of all management and supervisory staff that will be employed to manage and supervise the works, including the labour intensive portion of the works, together with satisfactory evidence that such staff members satisfy the eligibility requirements as required under Part 3 of the Contract Portion.”
4.19	Access shall be provided by the Tenderer to his premises during working hours for inspections, tests and analysis.
4.20	Add the following to this Clause: “The tenderer is required to submit with his tender a Letter of Intent from an approved insurer undertaking to provide the Performance Guarantee / Bond to the format included under Part 2 of the Tender Portion.”
4.13.4	The tenderer is required to submit with his tender all the documents, schedules and certificates as listed under Part 2 of the Tender Portion.
4.23	Add the following new Clause:

	“Accept that no tenderer shall make any attempt, either directly or indirectly, to canvass any of the employer’s officials or the employer’s agent in respect of his tender, after the opening of the tenders but prior to the employer arriving at a decision thereon. No tenderer shall make any attempt to obtain particulars of any relevant information, other than that disclosed at the opening of tenders.”
4.24	Add the following new Clause: “Accept that the employer is prohibited to award a tender to a person: - who is in the service of the state; or - if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or - a person who is an advisor or consultant contracted with the municipality or municipal entity. “In the service of the state” means to be: - a member of: - any municipal council; - any provincial legislature; or - the National Assembly or the National Council of Provinces; - a member of the board of directors of any municipal entity; - an official of any municipality or municipal entity; - an employee of any national or provincial department; - provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No 1 of 1999); - a member of the accounting authority of any national or provincial public entity; or - an employee of Parliament or a provincial legislature. In order to give effect to the above, the questionnaire for the declaration of interests in the tender for persons in service of state under Part 2 of the Tender Portion must be completed.”
4.25	Add the following new Clause: “Accept that the notes to the employer’s annual financial statements must disclose particulars of any award of more than R 2 000 to a person who is a spouse, child or parent of a person in the service of the state (refer definition under Clause F.2.25), or has been in the service of the state in the previous twelve months, including: - the name of that person; - the capacity in which that person is / was in the service of the state; and - the amount of the award. In order to give effect to the above, the questionnaire for the declaration of interest in the tender of persons in service of state under Part 2 of the Tender Portion must be completed in full and signed.”
4.26	Add the following new Clause: “Municipal Clearance Billing Certificate must be submitted” Accept that no contract will be awarded to a tenderer who is in arrears for more than

	three months (or who fails to make suitable arrangements to settle the arrears) in respect of municipal rates and other charges due any municipality. Should the tender amount be more than R 10 million, the period for arrears reduces to one month.”
5.1	Amend the wording “five working days” to read “six working days.” Working days shall be as per a normal working week, Monday to Saturday between the hours of 08h00 and 17h00 and shall exclude all gazetted public holidays as well as the year-end break as defined by SAFCEC.
5.4	The time and place for the opening of valid tender submissions are stated in the Tender Notice and Invitation to Tender.
5.5	A two-envelope procedure will not be followed.
5.11.1	Tenders will be evaluated in terms of the Tender Data as well as the Kouga Local Municipality's latest Supply Chain Management Policy for Infrastructure Procurement and Delivery Management. The method for the evaluation of responsive tenders shall be Method 3: Financial Offer and Preference as described under 1G Form MBD6. Tenders will be evaluated in terms of the Tender Data as well as the Kouga Local Municipality's latest Supply Chain Management Policy for Infrastructure Procurement and Delivery Management. The method for the evaluation of responsive tenders shall be Method 3: Financial Offer and Preference as described under 1G Form MBD6.
5.11.7	The financial offer shall be scored using Formula 2, within Table 1 with the value of W1 = 80.

5.11.8	Up to 100 minus W1 tender evaluation points will be awarded to tenderers based on the data supplied under Part 2 – Returnable Documents of the Tender Portion. Tender evaluation points will be awarded to responsive tenderers who complete the Preferencing Form MBD 6: Preference Points Claim Form in terms of the Preferential Procurement Regulations 2017 who are found to be eligible for the preference claimed. Preference points can only be obtained by submitting a certified B-BBEE Certificate. Preference points will be awarded to a tenderer for attaining the B-BBEE Status Level of Contribution in accordance with the table below: <table data-bbox="587 584 1238 969"> <tr> <th>B-BBEE Status Level of Contributor</th><th>Number of Points</th></tr> <tr><td>1</td><td>20</td></tr> <tr><td>2</td><td>18</td></tr> <tr><td>3</td><td>16</td></tr> <tr><td>4</td><td>12</td></tr> <tr><td>5</td><td>8</td></tr> <tr><td>6</td><td>6</td></tr> <tr><td>7</td><td>4</td></tr> <tr><td>8</td><td>2</td></tr> <tr><td>Non-compliant Contributor</td><td>0</td></tr> </table> A trust, consortium or joint venture will qualify for points for their B-BBEE Status Level as a <u>legal entity</u>, provided that the <u>entity</u> submits their B-BBEE Status Level Certificate. A trust, consortium or joint venture will qualify for points for their B-BBEE Status Level as an <u>unincorporated entity</u>, provided that the <u>entity</u> submits their consolidated B-BBEE Scorecard as if they were a group structure and that such a consolidated B-BBEE Scorecard is prepared for every separate tender.	B-BBEE Status Level of Contributor	Number of Points	1	20	2	18	3	16	4	12	5	8	6	6	7	4	8	2	Non-compliant Contributor	0
B-BBEE Status Level of Contributor	Number of Points																				
1	20																				
2	18																				
3	16																				
4	12																				
5	8																				
6	6																				
7	4																				
8	2																				
Non-compliant Contributor	0																				
5.13	Replace the entire contents and wording of Clauses 5.13 e) and 5.13 f) with the following: “ e) complies with all legal requirements, f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest, g) submits an original valid Tax Clearance Certificate issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations and can provide proof thereof, h) submits a Letter of Intent from an approved insurer undertaking to provide the Performance Guarantee to the pro-forma format provided under Clause C1.3: Form of Guarantee of the Contract Data. i) is registered with and complies with the Construction Industry Development Board's Regulations in an appropriate Contractor Grading Designation, j) or any of its directors / shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector, k) has not: (i) abused the employer's Supply Chain Management System, or (ii) failed to perform on any previous contract and has been given a written notice to this effect,																				

	l) has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process and persons in the employ of the state are not permitted to submit tenders or participate in the contract, m) submits a letter of Good Standing from the Compensation Commissioner. If the tenderer is in the process of applying for an updated certificate, proof of payment to the Compensation Commissioner must be provided; n) has, in terms of the Construction Regulations (2014) and the Occupational Health and Safety Act (1993), the necessary competencies and resources to carry out the work safely, o) or any of its directors, partners or principals is not in arrears for more than 3 months with municipal rates and taxes and municipal service charges, p) has correctly completed and signed the Form of Offer and Acceptance." q) Provides proof of registration and good standing with the Construction Industry Development Board
5.17	The number of paper copies of the signed contract to be provided by the employer is one.

TENDER

PART 2 (OF 2): RETURNABLE DOCUMENTS

T2.1	List of Returnable Documents	13
T2.2	Returnable Documents	14

T2.1: LIST OF RETURNABLE DOCUMENTS

The original completed tender document (refer clauses 3.2 and 4.13 of the Tender Data), excluding Drawings, shall be returned with all the required information supplied, duly completed in non-erasable ink in all aspects.

The following documents and schedules are to be completed and returned, as they constitute the tender. Whilst many of the returnables are required for the purpose of evaluating the tenders, some will form part of the subsequent contract, as they form the basis of the tender offer. For this reason, it is very important that tenderers submit, return, complete and sign **all the information, documents and schedules, as requested.**

1. RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES (Included hereafter for completion)

- 1A Status of Concern Submitting Tender
- 1B Authority for Signatory
- 1C Certificate of Attendance at Clarification Meeting
- 1D Declaration of Interest in Tender of Persons in Service of the State
- 1E Compulsory Enterprise Questionnaire
- 1F Declaration of Tenderer's Past Supply Chain Management Practises
- 1G Form MBD6: Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2017
- 1H Schedule of Work Satisfactorily carried out by the Tenderer for Private Clients or Organs of State
- 1I Schedule of Contracts Awarded to Tenderer by Organs of State
- 1J Company Information Required for Tenders greater than R 5 million
- 1K Certificate of Independent Bid Determination
- 1L Proposed Amendments
- 1M Proof or Registration and good standing with the Construction Industry Development Board

2. RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES (To be attached with submission)

- 2A Original Valid Tax Clearance Certificate
- 2B Municipal Billing Clearance Certificate
- 2C B-BBEE Status Level Certificates / Consolidated Scorecard
- 2D Declaration certificate for local production and content for designated sectors

3. RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT (included hereafter for completion)

- 3A Record of Addenda to Tender Documents
- 3B Personnel Schedule
- 3C Declaration Concerning Fulfilment of the Construction Regulations
- 3D Schedule of Construction Equipment
- 3E Schedule of Proposed Subcontractors

4. OTHER SCHEDULES AND DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT (included hereafter for completion)

- C1.1 Form of Offer and Acceptance
- C1.2 Contract Data
- C2.2 Bill of Quantities

T2.2: RETURNABLE DOCUMENTS

1A: STATUS OF CONCERN SUBMITTING TENDER

1. General

State whether the tenderer is a company, a closed corporation, a partnership, a sole practitioner or a joint venture:

(Mark the appropriate option below)

Public Company

Private Company

Closed Corporation

Partnership

Sole Proprietary

Joint Venture

Co-operative

2. Information To Be Provided (Attached to the tender)

If the Tendering Entity is a:		Documentation to be submitted with the tender
1	Closed Corporation, incorporated under the Close Corporation Act, 1984, Act 69 of 1984	CIPRO CK1 or CK2 (Copies of the founding statement) and list of members
2	Private Company incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 (Including Companies incorporated under Art 53 (b))	Copies of: a) CIPRO CM 1 – Certificate of Incorporation b) CIPRO CM 29 – Contents of Register of Directors, Auditors and Officers c) CIPRO CM 39 – Notice of Change of Directors for private companies d) Shareholders Certificates of all Members of the Company.
3	Private Company incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 in which any, or all, shares are held by another Closed Corporation or company with, or without, share capital	Copies of documents referred to in 1 and/or 2 above in respect of all such Closed Corporations and/or Companies.
4	Public Company incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 (Including Companies incorporated under Art 21)	A signed statement by the Company's Secretary confirming that the Company is a Public Company. Copy of CM 29
5	Sole Proprietary or a Partnership	Certified Copy of the Identity Document of:

If the Tendering Entity is a:		Documentation to be submitted with the tender
		a) Such Sole Proprietary, or b) Each of the Partners in the Partnership Copy of the Partnership agreement
6	Co-operative	CIPRO CR 2 – Copies of Company registration document. (The percentage of work to be done by each partner must clearly be indicated on Form RDB 1 (or RDB 2 as applicable) of the tender document: MBD 6.1 Preference Points Claim Form in terms of the Preferential Procurement Regulations 2017).
7	Joint Venture	All the documents (as described above) as applicable to each partner in the JV as well as a copy of the Joint Venture agreement. (The percentage of work to be done by each partner of the joint venture must clearly be indicated in the Joint Venture Agreement).

Note:

- (i) If the shares are held in trust provide a copy of the Deed of Trust (only the front page and pages listing the trustees and beneficiaries are required) as well as the Letter of Authority as issued by the Master of the Supreme Court, wherein trustees have been duly appointed and authorised, must be provided.
- (ii) Include a copy of the Certificate of Change of Name (CM 9) if applicable. No. CM 9: name change certificate will be accepted as proof alone, for registration.

3. Bidders Must Register for VAT or be Registered for VAT Purposes in Terms of the Value-Added Tax Act, (Act No. 89 of 1991)

(Make an X in the appropriate space below)

Yes

☐

No

☐

REGISTRATION NO:

1B: AUTHORITY FOR SIGNATORY

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

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

A Certificate for Company

I,, chairperson of the board of directors of, hereby confirm that by resolution of the board (copy attached) taken on 20....., * Mr / Ms acting in the capacity of, and who will sign as follows: be, and is hereby authorized to sign the tender and all documents and correspondences in connection with this tender as well as any contract resulting from it on behalf of the company.

As witnesses:

1. Chairman:
2. Date:

NAME	CAPACITY	SIGNATURE

Note:

* Delete which is not applicable.

This resolution must be signed by all the Directors / Members / Partners of the Bidding Enterprise.

Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

B Certificate for Partnership

We, the undersigned, being the key partners in the business trading as,
hereby authorize * Mr / Ms, acting in the capacity of, and who will sign as follows: be, and is hereby authorized to sign the tender and all documents and correspondences in connection with this tender as well as any contract resulting from it on behalf of the company.

NAME	ADDRESS	SIGNATURE	DATE

Note:

* Delete which is not applicable.

This resolution must be signed by all the Directors / Members / Partners of the Bidding Enterprise.

Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

C Certificate for Joint Venture or Consortia

We, the undersigned, are submitting this tender offer in a * Joint Venture / Consortium and hereby authorise * Mr / Ms, acting in the capacity of lead partner, and who will sign as follows: be, and is hereby authorized to sign the tender and all documents and correspondences in connection with this tender as well as any contract resulting from it on behalf of the company.

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

NAME OF FIRM	ADDRESS	% OF CONTRACT VALUE	AUTHORISING SIGNATURE, NAME AND CAPACITY
(Lead Partner):			

Note:

* Delete which is not applicable.

This resolution must be signed by all the Members / Partners of the Bidding Enterprise.

Should the number of Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

D Certificate for Sole Proprietor

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

As witnesses:

1. Signature:
2. Date:

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as

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

NAME	ADDRESS	SIGNATURE	DATE

Note:

* Delete which is not applicable.

This resolution must be signed by all the Directors / Members / Partners of the Bidding Enterprise.

Should the number of Directors / Members / Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

1C: CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING
--

This is to certify that

..... (Tenderer)

of

.....

..... (address)

was represented by the person(s) named below at the compulsory meeting held for all tenderers at

..... (location) on

..... (date), starting at (time).

We acknowledge that the purpose of the meeting was to acquaint ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting on behalf of **the tenderer**:

Name Signature

Capacity

Name Signature

Capacity

Attendance of the above persons at the meeting is confirmed by the **Employer's Representative**, namely:

Name Signature

Capacity Date & Time

1D: DECLARATION OF INTEREST IN TENDER OF PERSONS IN SERVICE OF THE STATE

1. Where the tenderer is a natural person, state / declare whether the tenderer or an employee is in the service of the state, or has been in the service of the state during the past twelve months.

YES / NO (INDICATE)

If so, state particulars:

.....

If so and where applicable, state the date of resignation:

.....

2. Where the tenderer is not a natural person, state / declare whether any of its directors, managers, principal shareholders or stakeholders is in the service of the state, or have been in the service of the state during the past twelve months.

YES / NO (INDICATE)

If so, state particulars:

.....

3. State / declare whether a spouse, child or parent of the tenderer or any of its directors, managers, shareholders or stakeholders referred to in subparagraph 2 is in the service of the state, or have been in the service of the state during the past twelve months.

YES / NO (INDICATE)

If so, state particulars:

.....

4. State / declare whether the tenderer or any of its directors, managers, shareholders, stakeholders or employees referred to in subparagraph 2 is a person who is an advisor or consultant contracted with the municipality or municipal entity.

YES / NO (INDICATE)

If so, state particulars:

.....

5. State / declare whether the tenderer or any of its directors, managers, shareholders or stakeholders referred to in subparagraph 2 is involved in another entity for this particular tender.

YES / NO (INDICATE)

If so, state particulars:

.....

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

1E: COMPULSORY ENTERPRISE QUESTIONNAIRE

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

SECTION 1: NAME OF ENTERPRISE:

SECTION 2: VAT REGISTRATION NUMBER, IF ANY

SECTION 3: CIDB REGISTRATION NUMBER, IF ANY:

SECTION 4: PARTICULARS OF SOLE PROPRIETORS AND PARTNERS IN PARTNERSHIPS

Name*	Identity Number*	Personal Income Tax Number*

*Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

SECTION 5: PARTICULARS OF COMPANIES AND CLOSE CORPORATIONS

Company registration number

Close corporation number

Tax reference number

SECTION 6: RECORD OF SERVICE OF THE STATE

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

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

If any of the above boxes are marked, disclose the following: (insert separate page if necessary)

Name of Sole Proprietor, Partner, Director, Manager, Principal Shareholder or Stakeholder	Name of Institution, Public Office, Board or Organ of State and Position held	Status of Service (tick appropriate column)	
		Current	Within last 12 months

*Insert separate page if necessary

SECTION 7: RECORD OF SPOUSES, CHILDREN AND PARENTS IN THE SERVICE OF THE STATE

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months been in the service of any of the following:

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

Name of Spouse, Child or Parent	Name of Institution, Public Office, Board or Organ of State and Position held	Status of Service (tick appropriate column)	
		Current	Within last 12 months

*Insert separate page if necessary

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise:

- (i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- (ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- (iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- (iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
- (v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Enterprise name

1F: DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTISES

1. This form serves as a declaration to be used by the Employer in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
2. The tender of any Tenderer may be rejected if that Tenderer, or any of its directors have:
 - a) abused the Municipality's / Municipal entity's supply chain management system or been guilty of any improper conduct in relation to such system;
 - b) been convicted for fraud or corruption during the past five years;
 - c) wilfully neglected, reneged on or failed to comply with any government, Municipal or other public sector contract during the past five years; or
 - d) been listed in the Register for Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act, 2004 (Act 12 of 2004).
3. In order to give effect to the above, this form and the questionnaire must be completed in full and signed. Failure to comply will result in the tender being declared non-responsive.

ITEM	QUESTION	RESPONSE	
4.1	Is the Tenderer or any of its directors listed on the National Treasurer's database as a company or persons prohibited from doing business with the public sector? (Companies for persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied) The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za)	Yes	No
	If so, furnish particulars:		
4.2	Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act, 2004 (Act 12 of 2004)? (To access this Register enter the National Treasury's website, www.treasury.gov.za , click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number 012-326-5445)	Yes	No
	If so, furnish particulars:		
4.3	Was the Tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes	No
	If so, furnish particulars:		

ITEM	QUESTION	RESPONSE	
4.4	Was any contract between the Tenderer and the Municipality / Municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes	No
	If so, furnish particulars:		
4.5	Does the tenderer or any of its directors owe any Municipal rates and taxes or Municipal charges to the Municipality/Municipal entity, or to any other Municipality/Municipal entity, that is in arrears for more than three months?	Yes	No
	If so, furnish particulars:		

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

1G: FORM MDB 6.1 – PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017
--

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

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

1. GENERAL CONDITIONS

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

- (a) The 80/20 system for requirements with a Rand value of up to R50 000 000.00 (all applicable taxes included); and
- (b) The 90/10 system for requirements with a Rand value above R50 000 000.00 (all applicable taxes included).

1.2 The value of this bid is estimated not to exceed R50 000 000.00 and therefore the 80/20 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

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

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

1.4.1.1 PRICE	80 POINTS
1.4.1.2 B-BBEE STATUS LEVEL OF CONTRIBUTION	20 POINTS
Total points for Price and B-BBEE must not exceed	100 POINTS

1.5 Failure on the part of a bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

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

2. DEFINITIONS

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

- 2.2 **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.3 **“B-BBEE status level of contributor”** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.4 **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- 2.5 **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- 2.6 **“comparative price”** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;
- 2.7 **“consortium or joint venture”** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;
- 2.8 **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.9 **“EME”** means any enterprise with annual total revenue of R5 million or less;
- 2.10 **“Firm price”** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- 2.11 **“functionality”** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- 2.12 **“non-firm prices”** means all prices other than “firm” prices;
- 2.13 **“person”** includes a juristic person;
- 2.14 **“proof of B-BBEE status level of contributor”** means:
1) B-BBEE Status level certificate issued by an authorized body or person; 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; 3) Any other requirement prescribed in terms of the B-BBEE Act.
- 2.15 **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.16 **“rand value”** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;

- 2.17 “**sub-contract**” means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.18 “**total revenue**” bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;
- 2.19 “**trust**” means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.20 “**trustee**” means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored must be rounded off to the nearest 2 decimal places.
- 3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- 3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE

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

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

Score the financial offers using the following formula:

For 80/20

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

or

$$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

For 90/10

Where

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

5. Points awarded for B-BBEE Status Level of Contribution

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

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	8	16
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant Contributor	0	0

6. BID DECLARATION

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

7 B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4.1.2 AND 5.1

7.1 B-BBEE Status Level of Contribution: = (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by relevant proof of B-BBEE status level of contributor).

8 SUB-CONTRACTING

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

YES / NO

(delete which is not applicable)

8.1.1 If yes, indicate:

(i) what percentage of the contract will be subcontracted?%

- (ii) the name of the sub-contractor?
.....
- (iii) the B-BBEE status level of the sub-contractor?
.....
- (iv) whether the sub-contractor is an EME or QSE? **YES / NO**
(delete which is not applicable)
- (v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

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

9 DECLARATION WITH REGARD TO COMPANY / FIRM

9.1 Name of firm:

9.2 VAT registration number:

9.3 Company registration number:

9.4 TYPE OF COMPANY/ FIRM [Tick applicable box]

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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

9.6 COMPANY CLASSIFICATION [Tick applicable box]

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

9.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:

9.8 TOTAL NUMBER OF YEARS THE COMPANY/FIRM HAS BEEN IN BUSINESS?

.....

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBEE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct;
- (ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
- (iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- (iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

- (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
- (e) forward the matter for criminal prosecution

WITNESSES:

1.

.....
SIGNATURE(S) OF BIDDER(S)

2.

DATE

SWORN AFFIDAVIT- B-BBEE EXEMPTED MICRO ENTERPRISE

I, the undersigned,

Full name and Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a member/ director/ owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name	
Trading Name	
Registration Number	
Enterprise Address	

3. I hereby declare under oath that:
 - The enterprise is _____ % black owned
 - The enterprise is _____ % black woman owned
 - Based on the latest management accounts and other information available on the _____ financial year, the income did not exceed R 10,000,000.00 (ten million rands)
 - Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% black owned	Level One (135% B-BBEE procurement recognition)	
More than 51% black owned	Level Two (125% B-BBEE procurement recognition)	
Less than 51% black owned	Level Four (100% B-BBEE procurement recognition)	

4. The entity is an empowering supplier in terms of **the DTI** Codes of Good Practice
5. I know and understand contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.
6. The sworn affidavit will be valid for a period of 12 months from the date signed by the commissioner.

Despondent Signature: _____

Date: _____

Commissioner of Oaths
Signature and stamp

1H: SCHEDULE OF WORK SATISFACTORILY CARRIED OUT BY THE TENDERER FOR PRIVATE CLIENTS OR ORGANS OF STATE

(Organs of State include any Local, Provincial or National Government Authority)

The following is a statement of similar work successfully executed by myself/ourselves:

Employer, Contact Person and Telephone Number	Description of Contract	Value of Work Inclusive of VAT (Rand)	Date Completed (State current if not yet complete)

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

1I: SCHEDULE OF CONTRACTS AWARDED TO THE TENDERER BY ORGANS OF THE STATE

(Organs of State include any Local, Provincial or National Government Authority)

In terms of Clause 21(d)(iii) of the Supply Chain Management Policy, the tenderer shall list hereunder, particulars of contracts awarded to him by any Organ of State, during the past 5 years. **Any material non-compliance or dispute concerning the execution of any of these contracts must be mentioned.**

Include only those contracts where the tenderer identified in the signature block below was directly contracted by the Employer. Tenderers must not include services provided in terms of a sub-contract agreement. Where contracts were awarded in the name of a joint venture and the tenderer formed part of that joint venture, indicate in the column entitled "Title of the contract for the service" that the contract was in joint venture and provide the name of the joint venture that contracted with the employer. In the column for the value of the contract for the service, record the value of the portion of the contract performed (or to be performed) by the tender.

Organ of state, i.e. national or provincial department, public entity, municipality or municipal entity	Title of contract for the service	Value of Work Inclusive of VAT (Rand)	Date Completed (State current if not yet complete)

1J: COMPANY INFORMATION REQUIRED FOR TENDERS GREATER THAN R 5 MILLION

1. The tenderer is required by law to prepare annual financial statements for auditing and is therefore requested to provide audited annual financial statements:
- for the past three years; or
 - since their establishment if established during the past three years.

Indicate whether these have been included in the tender: YES / NO

2. Does the tenderer have any undisputed commitments for Municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days?
- YES / NO

If so, state particulars:

.....

.....

.....

3. Has any contracts been awarded to the tenderer by an organ of state during the past five years?
- YES / NO

If so, state particulars:

.....

.....

.....

4. Has there been any material non-compliance or dispute concerning the execution of such contract?
- YES / NO

If so, state particulars:

.....

5. Is any portion of the goods or services expected to be sourced out from outside the Republic?

YES / NO

If so, state what portion and whether any portion of payment from the Municipality is expected to be transferred out of the Republic.

.....

.....

.....

.....

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

1K: CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

.....
(Bid Number and Description)

in response to the invitation for the bid made by:

.....
(Name of Municipality / Municipal Entity)

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

I certify, on behalf of that:
(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium* will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- * Joint Venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.**
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed

Date

Name

Position

Tenderer

1L: PROPOSED AMENDMENTS

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

The Tenderer's attention is drawn to Clause 3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

Page Number	Clause / Item	Proposal

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

1M :

PROOF OF REGISTRATION WITH THE BARGAINING COUNCIL

Tenderers must attach to this page, proof of registration and good standing with the Bargaining Council.
(In the case of Joint Ventures, proof must be provided for each partner).

SIGNED ON BEHALF OF THE TENDERER:.....

2A: ORIGINAL VALID TAX CLEARANCE CERTIFICATE

In terms of Clause 43 of the Municipal Supply Chain Management Policy, tenderers must ensure that they are up-to-date with their payments of taxes.

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

The tenderer must attach to this page an **original(s)** of a **valid** Tax Clearance Certificate(s) and the Tax compliance Status pin must be submitted.

Note:

1. In order to meet this requirement bidders are required to complete in full the form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
2. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
3. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
4. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
5. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za
6. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za

2B: MUNICIPAL BILLING CLEARANCE CERTIFICATE
--

In terms of Clause 38 of the Municipal Supply Chain Management Policy, tenderers must ensure that they are up-to-date with their payments of municipal accounts.

The tenderer shall attach to this page a Municipal Billing Clearance Certificate, which provides proof that his payment of Municipal accounts is up-to-date.

These certificates are obtainable from:

Kouga Local Municipality
33 Da Gama Road
Jeffreys Bay.

Should the tenderer not be based in the Kouga Local Municipality, he shall submit a Municipal Billing Clearance Certificate issued by the municipality in which he is based.

2C: B-BBEE STATUS LEVEL CERTIFICATES / CONSOLIDATED B-BBEE SCORECARD

Bidders who qualify as EMEs in terms of the B-BBEE Act shall submit and attach to this page a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.

Bidders other than EMEs shall submit and attach to this page their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

A trust, consortium or joint venture acting as a legal entity shall submit and attach to this page their B-BBEE status level certificate.

A trust, consortium or joint venture acting as an unincorporated entity shall submit and attach to this page their consolidated B-BBEE scorecard as if they were a group structure and such a consolidated B-BBEE scorecard shall be prepared for every separate bid.

Tertiary institutions and public entities shall submit and attach to this page their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

All EME / B-BBEE certificates must reflect the B-BBEE status level of the bidder and must be certified.

2D: MBD 6.2 - DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

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

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 13) makes provision for the promotion of local production and content.
- 1.2. Regulation 4 prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

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

Where

x is the imported content in Rand

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

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

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

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

2. Definitions

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

3. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is:

70% of all content:

<u>Description of services, works or goods (to be indicated by the Contractor)</u>	<u>Stipulated minimum threshold</u>
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %
_____	_____ %

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

(Tick applicable box)

YES		NO	
-----	--	----	--

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

The relevant rates of exchange information is accessible on www.reservebank.co.za.

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

YES		NO	
-----	--	----	--

- 5.1. If yes, provide the following particulars:

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

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

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

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

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

IN RESPECT OF BID NO.

ISSUED BY: (Procurement Authority / Name of Municipality / Municipal Entity):
.....

NB

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

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

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

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that

- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (ii) the declaration templates have been audited and certified to be correct.

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

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

If the bid is for more than one product, the local content percentages for each product contained in

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

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

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 17 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

3A: RECORD OF ADDENDA TO TENDER DOCUMENTS
--

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

Addendum Number	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Attach additional pages if more space is required.

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

3B: PERSONNEL SCHEDULE

The tenderer shall insert the number of personnel he proposes to employ on this tender/Contract:

JOB DESCRIPTION	NON-LOCAL (Key Personnel) (Permanently employed by Contractor)	LOCAL			
		Women	Men	Youth	SMME
Contract Manager**					
Site Agent**					
Quantity Surveyor					
Surveyors					
General Foreman					
Foremen					
Operators					
Bricklayers					
Carpenters					
Mechanics					
Electricians					
Watchmen					
Gang Bosses					
Pipe Layers					
Labourers					
* Other					
Total					

* To be filled in / completed by tenderer. **The CV's of the Contracts Manager and Site Agent must be attached, in which they highlight their previous experience. The Company Profile of the proposed Sub Contractor is also to be submitted.**

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed Date

Name Position

Tenderer

3C: DECLARATION CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS

In terms of Regulation 4(3) of the Construction Regulations (2014), hereinafter referred to as the Regulations, promulgated on 7 February 2014 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the Employer shall not appoint a Contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

Tenderers shall answer the questions below:

1. I confirm that I am fully conversant with the Regulations and that my company has (or will acquire / procure) the necessary competencies and resources to timeously, safely and successfully comply with all of the requirements of the Regulations.

(Tick)	
Yes	
No	

2. Indicate which approach shall be employed to achieve compliance with the Regulations.

(Tick)	
Own resources, competent in terms of the Regulations (refer to 3 below)	
Own resources, still to be hired and/or trained (until competency is achieved)	
Specialist subcontract resources (competent) - Specify:	

3. **Provide details of proposed key persons, competent in terms of the Regulations, who will form part of the Contract team as specified in the Regulations (CVs to be attached):**

.....

.....

.....

.....

4. Provide details of proposed training (if any) that will be undergone:

.....

.....

.....

.....

.....

5. List potential key risks identified and measures for addressing risks:

.....

.....

.....

.....

.....

6. I have fully included in my tendered rates and prices (in the appropriate payment items provided in the Bill of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects repair period

(Tick)	
Yes	
No	

SIGNATURE OF PERSON(S) AUTHORISED TO SIGN THIS TENDER:

1. ID NO:
(Name in Print):

2. ID NO:
(Name in Print):

3D: SCHEDULE OF CONSTRUCTION EQUIPMENT

The following are lists of major items of relevant equipment that I/we **presently** own or lease and will have available for this contract or will acquire or hire for this contract if my/our tender is accepted.

- (a) Details of major equipment that is owned by and immediately available for use on this Contract should my / our tender be accepted.

Quantity	Description, Size, Capacity, etc.

- (b) Details of major equipment that will be **hired in**, or acquired, for use on the Contract should my / our tender be accepted.

Quantity	Description, Size, Capacity, etc.

Attach additional pages if more space is required.

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

3E: SCHEDULE OF PROPOSED SUBCONTRACTORS
--

We notify you that it is our intention to employ the following Subcontractors to work on this Contract.

If we are awarded a Contract we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the Contract for such appointments. If there are no such requirements in the Contract, then your written acceptance of this list shall be binding between us.

Name and Address of Proposed Subcontractor	Nature and Extent of Work	Previous Experience with Subcontractor

I, the undersigned, warrant that I am duly authorised to do so on behalf of the enterprise and confirm that the contents of this schedule are, to my personal knowledge and best belief, both true and correct.

Signed

Date

Name

Position

Tenderer

CONTRACT

PART 1 (OF 4): AGREEMENT AND CONTRACT DATA

C1.1	Form of Offer and Acceptance	61
C1.2	Contract Data	66
C1.3	Form of Guarantee	80
C1.4	Health and Safety Agreement	83
C1.5	Disclosure Statement	86
C1.6	Adjudication Board Member Agreement	87

C1.1: FORM OF OFFER AND ACCEPTANCE

(Agreement)

1. OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following Works:

.....
.....

The Tenderer, identified in the Offer signature block below, has examined the documents listed in the Tender Data and Addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE-ADDED TAX IS:

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

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

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in terms of the Conditions of Contract identified in the Contract Data.

For the **Tenderer**:

.....
Signature

.....
Name

.....
Capacity

Name and Address of Organisation:

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

Signature and Name of Witness:

.....
Signature
.....
Name

Date:

2. ACCEPTANCE

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

The terms of the contract are contained in

Part C1: Agreements and Contract Data (which includes this Agreement)

Part C2: Pricing Data

Part C3: Scope of Work

Part C4: Site Information

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

Deviations from and amendments to the documents listed in the Tender Data and any Addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviation (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date this Agreement comes into effect. Failure to fulfil any of the obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five (5) days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

For the **Employer**:

.....
Signature

.....
Name

.....
Capacity

Name and Address of Organisation:

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

Signature and Name of Witness:

.....
Signature

.....
Name

Date:

3. SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process, of offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance, either as a confirmation, clarification or change to the tender documents, and which it is agreed by the Parties becomes an obligation of the contract, shall also be recorded here.
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1. Subject:
Details:
2. Subject:
Details:
3. Subject:
Details:
4. Subject:
Details:
5. Subject:
Details:
6. Subject:
Details:
7. Subject:
Details:

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

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

For the Tenderer:

.....

Signature

.....

Name

.....

Capacity

Name and Address of Organisation

.....

.....

.....

.....

.....

.....

For the Employer:

.....

.....

.....

Name and Address of Organisation

.....

.....

.....

.....

.....

.....

.....

Witness Signature

.....

.....

Witness Name

.....

.....

Date

.....

4. CONFIRMATION OR RECEIPT

The Tenderer, (now Contractor), identified on the Offer part of this Agreement, hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the (day)

of (month)

20 (year)

at (place)

For the **Contractor**:

.....
Signature

.....
Name

.....
Capacity

Signature and Name of Witness:

.....
Signature

.....
Name

C1.2: CONTRACT DATA

The Conditions of Contract are clauses 1.0 to 30.0 of the **JBCC Series 2000 Principal Building Agreement (Edition 6.1: March 2014)** prepared by the Joint Building Contracts Committee.

Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors (011-3154140), Master Builders Association (011-205-9000 or 041-3651835) South African Association of Consulting Engineers (011-4632022) or South African Institute of Architects (011-4860684 or 041-5858037).

The JBCC Principal Building Agreement makes several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC Principal Building Agreement.

Each item of data given below is cross-referenced to the clause in the JBCC Principal Building Agreement to which it mainly applies.

A TENDERING INFORMATION

A1 Project name

The Construction of the Mini Fresh Produce Market at Hankey

A2 Works description

The employer's objective is to construct a Fresh Produce market for emerging farmers in the Kouga Local Municipality, that will serve the entire surrounding community. The market will accommodate persons of all ages and races from all across the immediate area and surroundings. The Hankey area is a semi-urban and rural developing area, which is in serious need of local economic facilities. The New Market Precinct is intended to uplift the community in this respect.

A3 Site Description

Erf No. / Suburb	2055
Local authority	Hankey
Co-ordinates	33°49'38.2"S, 24°52'25.1"E

A4 Employer

Name	Kouga Municipality
Tax/VAT registration	
Registered street address	33 Da Gama Road Jeffreys Bay
Postal code	6330
Telephone	042 200 2200
Email	vyake@kouga.gov.za

A5 Principal Agent

Name	Raj Maharajh Associates Architects
Contact person	Raj Maharajh
Mobile	
E-mail	rma.arch@mweb.co.za
Registered street address	6 Shirley Street Newton Park Port Elizabeth
Postal code	6045
Telephone	041 365 2896
Fax	041 365 3611

A6 Architect

Name	Raj Maharajh Associates Architects
Contact person	Raj Maharajh
Mobile	
E-mail	rma.arch@mweb.co.za
Registered street address	6 Shirley Street Newton Park Port Elizabeth
Postal code	6045
Telephone	041 365 2896
Fax	041 365 3611

A7 Quantity Surveyor

Name	Raj Maharajh Associates Architects
Contact person	Raj Maharajh
Mobile	
E-mail	rma.arch@mweb.co.za
Registered street address	6 Shirley Street Newton Park Port Elizabeth
Postal code	6045
Telephone	041 365 2896
Fax	041 365 3611

A8 Structural Engineer

Name	To be appointed
Contact person	
Mobile	
E-mail	
Registered street address	

Postal address	
Telephone	
Fax	

A9 Electrical and Mechanical Engineer

Name	To be appointed
Contact person	
Mobile	
E-mail	
Registered street address	
Postal address	
Telephone	
Fax	

A10 Health and Safety Consultant

Name	To be appointed
Contact person	
Mobile	
E-mail	
Registered street address	
Postal address	
Telephone	
Fax	

B CONTRACT DATA

2.0 Law, regulations and notices

2.1/25.15 Law of the country applicable to this project

Republic of South Africa

5.0 Contract documents

5.1 Signed contract documents held by the **principal agent**, or

Architect

5.5 Number of copies of documents issued to **contractor**

Signed JBCC contract	1 Copy
Signed Priced bills of quantities	1 Copy
Blank bills of quantities	1 Copies
Contract drawings	2 Copies

Priced document

Lump sum priced document

Yes / no?	No
-----------	----

or, Priced bills of quantities

Yes / no?	Yes
-----------	-----

System/method of measurement

Standard system of measuring building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Seventh Edition)

Contract documents comprising...

Description	Marked?	Notes
JBCC Principal Building Agreement Ed 6.1 – March 2014	Yes	None
JBCC PBA Contract Data Ed 6.1 – March 2014		None

Other documents listed in the Returnable Schedules	None
---	------

Contract drawings

As per Architects Drawings

6.0

Employer's agents

6.3

Interest of agents or other agent in the project other than professional services	no
---	----

10.0

Insurances

By the **employer** in the joint names of the **parties**, yes/no?

No

Contract Works Insurance by Employer or Contractor: for Contract sum plus 30%

Contractor

Public Liability Insurance by Employer or Contractor: for Contract sum R10,000,000

Contractor

Supplementary by Employer or Contractor

Contractor

Removal of Lateral Support by Employer or Contractor

N/A

Policy deductibles by Employer or Contractor: as set out in the policies

Contractor

11.0

Security

11.1.1-5

The **contractor** shall provide a **Guarantee for Construction** to the **employer** in the joint names of the **parties**

Yes / no? Yes

12.0

Duties of the parties = employer = site

9.2.7

Alterations and additions to existing premises?

No

12.1.2

Premises occupied – yes/no?

No

12.1.3

Relevant natural features to be retained / relocated / removed

Yes

12.1.4

Areas the **contractor** may not occupy?

No

12.1.5

Utilities connections - location

To be indicated on site

12.1.6

Statutory and/or other notices to be complied with by the contractor before possession of site can be given

Notification to Department of Labour of intension to start work on site

All Local and National Government statutory and/or other notice and regulations at the time of tender

12.1.7

Possession of the **site** – intended date

To be confirmed

12.1.12

Description of **free issue** by **employer**

N/A

14.0

Nominated subcontractors

14.1.4

Specialisation

To be discussed on award of tender.

16.0

Direct contractors

16.1

Employer to define extent of work **direct contractor** [12.1.2]

Specialisation

To be discussed on award of tender.

19/20/24 Practical completion / penalty for late completion

Inspection= working days	Date of practical completion	Penalty Currency	Penalty amount per calendar day
--------------------------------	---------------------------------	---------------------	------------------------------------

19.0 Practical completion of the works as a whole

?	?	R	?
---	---	---	---

Or

19/20/24 Practical completion of the works in section: 1

?	?	R	?
---	---	---	---

19/20/24 Practical completion of the works in section: 2

?	?	R	?
---	---	---	---

19/20/24 Practical completion of the works in section: 4

?	?	R	?
---	---	---	---

19/20/24 Practical completion of the works in section: 5

?	?	R	?
---	---	---	---

19/20/24 Practical completion of the works in section: 6

?	?	R	?
---	---	---	---

Inspection= working days	Date of practical completion	Penalty Currency	Penalty
--------------------------------	---------------------------------	---------------------	---------

19/20/24 Practical completion of the works in section: 3

?	?	R	?
---	---	---	---

25.0 Payment

25.0

Currency

R	South African Rand
---	--------------------

25.2

Issue of regular payment certificates on

25 th Day of each month

25.3.2

Materials and goods off site – paid subject to

Materials and goods off site will not be included in payment certificates

25.3.4/26.9.5

The contract value shall be adjusted according to CPAP

No

30.0

Dispute Resolution

30.6.1

Alternative dispute resolution nominating body

N/A

31.0

Changes made to JBCC document

11.4/11.5

The **employer** shall provide the **contractor** a JBCC Guarantee for Payment...

Delete clause 11.4 and 11.5

11.10

The **contractor** shall waive his lien...

Delete clause 11.10

12.1.1

The **employer** shall provide a JBCC Guarantee for Payment

Delete clause 12.1.1

25.7

The **employer** shall pay the **contractor**...within fourteen (14) calendar days...

Delete clause 25.7 and replace with the following:

The **employer** shall pay to the **contractor** the amount certified for payment in an interim **payment certificate within thirty (30) calendar** days of the date for issue of the interim payment certificate. Payment shall be subject to the Contractor giving the Employer a tax invoice for the amount due

31.0

Additional contract data

31.1

Scope of mandatory sub-contract works

To be discussed on award of tender

PART 2: DATA PROVIDED BY THE CONTRACTOR

	Description / Wording
	The Contractor is:
	The Contractor's address for receipt of communications and notices is: Address (Postal): Address (Physical): Telephone Number (Work): Telephone Number (After Hours): Facsimile Number: Electronic Mail Address (E-mail):

PRO FORMA
PERFORMANCE GUARANTEE

GUARANTOR DETAILS AND DEFINITIONS

“Guarantor” means:

Physical address:

“Employer” means:

“Contractor” means:

“Employers Agent” means:

“Works” means:

“Site” means:

“Contract” means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

“Contract Sum” means: The accepted amount inclusive of tax of R

Amount in words:

“Guaranteed Sum” means: The maximum aggregate amount of R

Amount in words:

“Expiry Date”: This Performance Guarantee shall remain in full force and effect **until the issue of the Certificate of Completion of the Works** in terms of the Contract. (Refer Clause 2 hereunder).

CONTRACT DETAILS

Employers Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor’s liability shall be limited to the amount of the Guaranteed Sum.

2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the date of issue by the Employers Agent of the **Certificate of Completion of the Works** or the date of payment in full of the Guaranteed Sum, whichever occurs first unless the Guarantor is advised in writing by the Employer of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated. The Employers Agent and / or the Employer shall inform the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
3. The Guarantor hereby acknowledges that:
 - 3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3.2 its obligation under this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employers Agent in an Interim or Final Payment Certificate has not been made in term of the Contract and failing such payment within (7) seven calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
 - 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
 - 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
 - 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and / or the provisional / final sequestration and / or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the **Final Payment Certificate** submit an **expense account** to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear zero percent (0%) interest.
8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

C1.4: HEALTH AND SAFETY AGREEMENT

ARTICLE OF AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL SAFETY ACT (1993)

BETWEEN

THE KOUGA LOCAL MUNICIPALITY
(Hereinafter referred to as the "EMPLOYER")

AND

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

Herein represented by in his/her capacity as
....., duly authorised by virtue of a resolution dated
....., attached hereto as Annexure A, of the said
(Herein after referred to as the "CONTRACTOR")

WHEREAS the CONTRACTOR is the mandatory of the EMPLOYER as contemplated in an agreement in respect of:

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

Contract number:

AND WHEREAS section 37 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993, hereinafter referred to as the "ACT"), imposes certain powers and duties upon the EMPLOYER.

AND WHEREAS the parties have agreed to enter into an agreement in terms of section 37(2) of the ACT.

NOW THEREFORE the parties agree as follows:

- (a) The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
- (b) The CONTRACTOR undertakes that all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations will be fully complied with. Provided that should the EMPLOYER prescribe certain arrangements and procedures, that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
- (c) The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedure, if any, imposed by the ACT and Regulations and the EMPLOYER expressly absolves the EMPLOYER from itself being obliged to comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedure as the case may be.

- (d) The CONTRACTOR agrees that any duly authorised officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with the undertakings as more fully set out in paragraphs (a) and (b) above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to inspect any appropriate records held by the CONTRACTOR or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.
- (e) The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigations, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such an investigation, complaint or criminal charge as the case may be.

Signature(s) of authorised agents:

.....

Name(s) (in block letters):

.....

Capacity of authorized agents:

.....

for and on behalf of the Contractor:

.....

.....

.....

(Name and address of organization)

Witness:

.....

(Full name in block letters as well as signature)

.....

(Signature)

Date:

for and on behalf of the Employer:

Signature of authorized agent:

Name of authorized agent:

Capacity of authorized agent:

for the **Employer:**

**KOUGA LOCAL MUNICIPALITY
P O Box 21
Jeffreys Bay
6330**

Witness:

.....
(Full name in block letters as well as signature)

.....
(Signature)

Date:

C1.5: DISCLOSURE STATEMENT

**PRO FORMA
DISCLOSURE STATEMENT**

Date:

Contract:
(Name)

Contractor:
(Name)

Employer:
(Name)

Employers Agent:
(Name)

Dear Sirs

I am willing and available to serve as (ad-hoc / standing) Adjudication Board Member in the above-mentioned Contract.

In accordance with the General Conditions of Contract for Construction Works Adjudication Board Rules relating to the disclosure statements by selected or nominated persons to the adjudication, I hereby state that:

- I shall act with complete impartiality and know of nothing at this time, which could affect my impartiality.
- I have had no previous involvement in this project.
- I do not have any financial interest in this project.
- I am not currently employed by the Contractor, Employer or Employers Agent.
- I do not have any financial connections with the Contractor, Employer or Employers Agent.
- I do not have or have not had a personal relationship with any authoritative member of the Contractor, Employer or the Employers Agent which could affect my impartiality.
- I undertake to immediately disclose to the parties any changes in the above position which could affect my impartiality or be perceived to affect same.

Should there be any deviation from the foregoing statements, details shall be given.

I further declare that I am experienced in the work which is carried out under the Contract and in interpreting the contract documentation.

Name in full:

Signature:

PRO FORMA
ADJUDICATION BOARD MEMBER AGREEMENT

This Agreement is entered into between:

Adjudication Board Member:

Name:

Physical Address:

Postal Address:

E-mail Address:

Facsimile Number:

Telephone Number:

Mobile Number:

Contractor:

Name:

Physical Address:

Postal Address:

E-mail Address:

Facsimile Number:

Telephone Number:

Mobile Number:

Employer:

Name:

Physical Address:

Postal Address:

E-mail Address:

Facsimile Number:

Telephone Number:

Mobile Number:

The Contractor and the Employer will hereinafter be collectively referred to as the Parties.

The Parties entered into a Contract for

..... (Name of project) which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Second Edition 2015 (GCC), must be referred to **ad-hoc / standing adjudication**.

The undersigned natural person has been appointed to serve as Adjudication Board Member and together with the undersigned Parties agree as follows:

1. The Adjudication Board Member accepts to perform his duties in accordance with the terms of the Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.
2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Employers Agent for the duration of the Adjudication Board proceedings.
3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.
4. The parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.
5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.
6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.
7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication including time spent travelling:
 - a. A monthly retainer of (amount) for (number) of months, and/or
 - b. A daily fee of (amount) based on a (number) hour day, and/or
 - c. An hourly fee of (amount), and/or
 - d. A non-recurrent appointment fee of (amount) which shall be accounted for in the final sums payable
8. The Adjudication Board Member's expense incurred in adjudication work shall be reimbursed at cost.

Upon submission of an invoice for fees and expenses to the Parties, the **(Contractor / Employer)** * shall pay the full amount within 28 days of receipt of the invoice and shall be reimbursed by the other party by half the amount so that fees and expenses are borne equally by the Parties. Late payment of such invoice shall attract interest at prime plus 3% points compounded monthly at a prime rate charged by the Adjudication Board Member's bank.

This Agreement is entered into by:

Contractor's signature:

Contractor's name:

Place:

Date:

Employer's signature:

Employer's name:

Place:

Date:

Adjudication Board Member's signature:

Adjudication Board Member's name:

Place:

Date:

CONTRACT

PART 2 (OF 4): PRICING DATA

C2.1	Pricing Instructions	91
C2.2	Bill of Quantities	93
C2.3	Summary Page for Bill of Quantities	95

C2.1: PRICING INSTRUCTIONS

C2.1.1 PREAMBLE TO THE BILL OF QUANTITIES

- C2.1.1.1 The method of measurement published by the South African Bureau of Standards in Clause 8 of the Standardized Specifications for Civil Employers Agenting Construction is applicable, subject to the variations and amendments contained in the section “Applicable SABS 1200 Standardized Specifications”.
- C2.1.1.2 Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standardized Specifications. Clause 8 of each Standardized Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardized Specification, or the Scope of Work, conflict with the terms of the Bill, the requirements of the Standardized or Scope of Work, as applicable, shall prevail.
- C2.1.1.3 The reference clauses in a specification in which further information regarding the bill item can be obtained appear under the “Reference Clause” or “Payment Refers” column in the Bill. The reference clauses indicated are not necessarily the only sources of information in respect of schedule/billed items. Further information and set specifications may be found elsewhere in the contract documents. Standardized Specifications are identified by the letter or letters which follow SABS in the SABS 1200 series of specifications, e.g. G for SABS 1200 G.
- C2.1.1.4 Work reserved for Labour Intensive construction methods will be numbered with a prefix “LI” in the Bill to distinguish them from the conventional construction works. Such work shall be constructed using local labour who is temporarily employed in terms of the Scope of Work.
- C2.1.1.5 Unless otherwise stated, items are measured nett in accordance with the Drawings, and no allowance is made for waste. The Bill has to be completed in black non-erasable ink and the tenderer is referred to the Conditions of Tender as well as the Tender Data with regard to the correction of errors.
- C2.1.1.6 The quantities set out in the Bill of Quantities are the estimated quantities of the work. The tenderers attention is directed to Clause 6.7 of the Conditions of Contract and the Contractor will be required to determine the actual and final quantities of the Works to be executed and the Contractor shall undertake whatever quantities may be directed by the Employers Agent from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.
- C2.1.1.7 The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.
- C2.1.1.8 A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price / rate is entered will be considered to be covered by the other prices or rates in the Bill.

- C2.1.1.9 Except where rates only are required, the tenderer shall insert all amounts to be included in his total tendered price in the "Amount" column and show the corresponding total tendered price.
- C2.1.1.10 All prices or rates inserted in the Bill of Quantities shall be EXCLUDING VAT. Provision has been made on the Summary Page of the Bill of Quantities, for the addition of VAT.
- C2.1.1.11 Arithmetical errors of responsive tenders shall be corrected in the manner specified under the Conditions of Tender as well as the Tender Data. **(Refer also CIDB Practice Note No. 2 dated February 2008)**
- C2.1.1.12 The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:
- | | |
|--|----------------------------|
| mm = Millimetre | h = hour |
| m = Metre | kg = kilogram |
| km = kilometre | t = ton (1 000kg) |
| m ² = square metre | No = Number |
| m ² .pass = square metre-pass | Sum = Lump Sum |
| ha = hectare | MN = MegaNewton |
| m ³ = cubic metre | MN.m = MegaNewton-metre |
| m ³ .km = cubic metre-kilometre | PC Sum = Prime Cost Sum |
| ℓ = Litre | Prov Sum = Provisional Sum |
| kℓ = kilolitre | Lab.month = Labourer.Month |
| MPa = Mega Pascal | % = per cent (percentage) |
| Mℓ = Mega litre | kW = kilowatt |
- C2.1.1.13 The quantities set out in the Bill are the estimated quantities of the Works but the Contractor will be required to undertake whatever quantities as may be directed by the Employers Agent from time to time. The Contract Price for the completed Contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.
- C2.1.1.14 An item against which no price / rate is entered or where a word or phrase such as "included" or "provided elsewhere" will be accepted as a rate of nil (R 0,00) having been entered against such items and covered by the other prices or rates in the Bill. Any work executed to which such a payment item applies, shall be measured under the appropriate items in the Priced Bill and valued at a rate of nil (R 0,00). The rate of nil shall be valid irrespective of any change in the quantities during the execution of the Contract.

NOTE: CORRECTION OF ENTRIES MADE BY TENDERER

Any entry made by the tenderer in the Bill of Quantities, forms, etc., which the tenderer desires to change, shall not be erased or painted out. A line shall be drawn through the incorrect entry and the correct entry shall be written above in black ink and the full signature of the Tenderer shall be placed next to the correction.

C2.2: BILL OF QUANTITIES

Item No		Quantity	Rate	Amount
	BILL NO. 1 <u>PRELIMINARIES</u> <u>BUILDING AGREEMENT AND PRELIMINARIES</u> The JBCC Principal Building Agreement (March 2014 Edition 6.1) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described. The JBCC Principal Building Agreement contract data form an integral part of this agreement. The Preliminaries revision 1 (February 2016) published by the Association of South African Quantity Surveyors for use with the JBCC Principal Building Agreement Edition 6.1 shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described. The contractor is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause. The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only. Where any item is not relevant to this agreement such item is marked N/A signifying "not applicable". "Note : The amendments contained herein or in the single referenced Annexure constitute the only amendments to the standard JBCC Agreement that will apply. No other amendments shall be of any force or effect".			
	Carried to Collection BILL NO. 1 MODEL PRELIMINARIES		R	

PREAMBLES FOR TRADES

*The Model Preambles for Trades 2008 published by the Association of South African Quantity Surveyors is designed to support and extend the abbreviated descriptions utilised in these bills of quantities by inter alia referring to SANS construction standards. **Where such model preambles are not applicable** (eg where BS or Euro construction standards are applicable or the design consultants provide other preambles/specifications for insertion), users are to ensure that the abbreviated descriptions when read in conjunction with the Standard System of Measuring Building Work (seventh edition) for works within South Africa or the Standard Method of Measuring Building Work for Africa 2015 (first edition) for works elsewhere in Africa, represent the full description by extending the abbreviated bills of quantities descriptions and/or by inserting appropriate preambles or specifications.*

Note that the text of the Standard System of Measuring Building Work (seventh edition) and that of the Standard Method of Measuring Building Work for Africa 2015 (first edition) is the same.

The Model Preambles for Trades 2008 as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these **bills of quantities** and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained.

Supplementary preambles and/or specifications are incorporated in these **bills of quantities** to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the Model Preambles.

The **contractor's** prices for all items throughout these **bills of quantities** shall take account of and include for all of the obligations, requirements and specifications given in the Model Preambles and in any supplementary preambles and/or specifications.

STRUCTURE OF THIS PRELIMINARIES BILL

Section A : A recital of the headings of the individual clauses of the aforementioned **JBCC Principal Building Agreement**.

Section B : A recital of the headings of the individual clauses of the aforementioned Preliminaries document.

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

Section C : Any special clauses to meet the particular circumstances of the project.

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data** for the adjustment of **preliminaries**, the amounts entered against the relevant items in these **preliminaries** are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T).

SECTION A: PRINCIPAL BUILDING AGREEMENT

Interpretation (A1-A7)

- 1 Clause 1.0 - Definitions and interpretation.

Definition of agreement.

The definition of **agreement** is replaced with the following definition:

"**AGREEMENT** : The **JBCC** Principal Building Agreement, the completed **JBCC** PBA contract data, the **contract drawings**, the **priced documents** and any other documents reduced to writing and signed by the **parties**".

Pricing of bills of quantities.

The **contractor** is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this **agreement**. Value Added Tax (VAT) is to be separately stated on the summary page of these **bills of quantities**

Items left unpriced will be deemed to be covered in prices against other items throughout these **bills of quantities** and no claim for any extras arising out of the **contractor's** omission to price any item will be entertained

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

Item

Item

R

Prices for all **construction equipment**, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary

Abbreviated descriptions

The items in these **bills of quantities** utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the **contractor** shall, before submission of his tender, call for a written directive from the **principal agent**, failing which it shall be assumed that the **contractor** has allowed in his pricing for materials and workmanship in terms of international best practice

Legal status of contractor

If the **contractor** constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:

1. These persons are deemed to be jointly and severally liable to the **employer** for the performance of this agreement
2. These persons shall notify the **employer** of their leader who has authority to bind the **contractor** and each of these persons
3. The **contractor** shall not alter its composition or legal status without the prior written consent of the **employer**

Errata by JBCC

Omit from definition of **construction period** the words :
"excluding annual holiday periods"

Omit from definition of **preliminaries** the word : "priced"

F:..... V:..... T:.....

Item

Health and safety

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** (refer to Annexure A for a copy of the relevant specification) and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]

The **contractor** shall:

1. Comply with the health and safety specification for the **works**
2. Prepare and agree with the health and safety consultant the health and safety plan for the **works**
3. Co-operate with the health and safety consultant in all respects
4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification
5. Conform to the conditions contained in the **employer's** health and safety specification

1 Clause 3.0 - Offer and acceptance

F:..... V:..... T:.....

Item

2 Clause 4.0 - Assignment and cession

F:..... V:..... T:.....

Item

3 Clause 5.0 - **Contract documents**

Value Added Tax

Provision is made in the summary page of these **bills of quantities** for the inclusion of Value Added Tax (VAT)

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

Contract drawings

Refer to Annexure C3.2.4 for a list of the **contract drawings** [5.1]

Priced document as specification

Clause 5.3 is deemed to be deleted

The **principal agent** shall decide which portion of the **priced document** may be used as a specification of **materials and goods** or methods, if any

Electronic issue of drawings

All drawings for this project will be issued electronically and the **contractor** shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.5]

Precedence

Clause 5.6 is deemed to be deleted. The provisions of this Bill No. 1 (Preliminaries) shall take precedence over any other documents which constitute this **agreement** [5.6]

F:..... V:..... T:.....

Item

1 Clause 6.0 - **Employer's agents**

Delegated authority

The authority of the **principal agent** to issue **contract instructions** and perform duties for specific aspects of the **works** is delegated to **agents** as follows [6.2]:

1. Architect

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

1.1 Duties :

The architect is responsible for the architectural design, functional design and quality inspection of the **works**

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

1.1 Duties :

The architect is responsible for the architectural design, functional design, quality inspections, overall contract supervision, all measurements, valuations, financial assessments all other quantity surveying and cost control functions of the **works**

1.2 Contract instructions [17.0] :

- 1.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**
- 1.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 1.2.3 The **site** [13.2.4]
- 1.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 1.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**
- 1.2.6 Opening up of work for inspection, removal or re-execution
- 1.2.7 Removal or re-execution of work
- 1.2.8 Removal or substitution of any **materials and goods**
- 1.2.9 Protection of the **works**
- 1.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 1.2.11 Rectification of **defects** [21.2]
- 1.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for works completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 1.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 1.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 1.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 1.2.16 Work by (a) **direct contractor(s)** [16.0]
- 1.2.17 Access by other or previous contractors to remedy defective work
- 1.2.18 Removal from the **site** of any person employed on the **works**
- 1.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 1.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

2. Quantity surveyor

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

2.1 Duties :

The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the **works**

2.2 **Contract instructions** [17.0] :

- 2.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**
- 2.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 2.2.3 The **site** [13.2.4]
- 2.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 2.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 2.2.6 Opening up of work for inspection, removal or re-execution
- 2.2.7 Removal or re-execution of work
- 2.2.8 Removal or substitution of any **materials and goods**
- 2.2.9 Protection of the **works**
- 2.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 2.2.11 Rectification of **defects** [21.2]
- 2.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 2.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**
- 2.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 2.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 2.2.16 Work by (a) **direct contractor(s)** [16.0]
- 2.2.17 Access by other or previous contractors to remedy defective work
- 2.2.18 Removal from the **site** of any person employed on the **works**
- 2.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 2.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

3. Civil and structural engineer

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

3.1 Duties :

The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the **works**

3.2 Contract instructions [17.0] :

- 3.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**
- 3.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 3.2.3 The **site** [13.2.4]
- 3.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 3.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**
- 3.2.6 Opening up of work for inspection, removal or re-execution
- 3.2.7 Removal or re-execution of work
- 3.2.8 Removal or substitution of any **materials and goods**
- 3.2.9 Protection of the **works**
- 3.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 3.2.11 Rectification of **defects** [21.2]
- 3.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 3.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**
- 3.2.14 Appointment of a **subcontractor** [14.0; 15.0]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 3.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 3.2.16 Work by (a) **direct contractor(s)** [16.0]
- 3.2.17 Access by other or previous contractors to remedy defective work
- 3.2.18 Removal from the **site** of any person employed on the **works**
- 3.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 3.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

4. Electrical and mechanical engineer

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

4.1 Duties :

The electrical and mechanical engineer is responsible for all aspects of electrical and mechanical engineering design, quality inspections, commissioning including approving signed off of COC certificates of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

4.1 Duties :

The mechanical engineer is responsible for all aspects of electrical and mechanical engineering design and quality inspection of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

4.2 **Contract instructions** [17.0] :

- 4.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 4.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 4.2.3 The **site** [13.2.4]
- 4.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 4.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**
- 4.2.6 Opening up of work for inspection, removal or re-execution
- 4.2.7 Removal or re-execution of work
- 4.2.8 Removal or substitution of any **materials and goods**
- 4.2.9 Protection of the **works**
- 4.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 4.2.11 Rectification of **defects** [21.2]
- 4.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 4.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**
- 4.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 4.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 4.2.16 Work by (a) **direct contractor(s)** [16.0]
- 4.2.17 Access by other or previous contractors to remedy defective work
- 4.2.18 Removal from the **site** of any person employed on the **works**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

4.2.19 Removal from the **site** of any person not engaged on or connected with the **works**

4.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

5. Health and safety consultant

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

5.1 Duties :

The health and safety consultant is responsible for all aspects of health and safety of the **works**. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the **works**:

5.1.1 Act as the **employer's agent** in terms of Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993

5.1.2 Prepare and update the health and safety specification for the **works**

5.1.3 Agree with the **contractor** the health and safety plan for the **works**

5.1.4 Carry out regular audits to ensure adherence to the safety plan and compliance with the Act and Regulations

5.1.5 Stop the execution of the **works** where the agreed specification or plan is not adhered to

F:..... V:..... T:.....

Item

1 Clause 7.0 - Design responsibility

F:..... V:..... T:.....

Item

2. Civil engineer

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

2.1 Duties :

The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the **works**

2.1 Duties :

The civil engineer is responsible for all aspects of civil engineering design and quality inspection of the **works**

2.2 Contract instructions [17.0] :

2.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**

2.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

2.2.3 The **site** [13.2.4]

2.2.4 Compliance with the **law**, regulations and bylaws [2.1]

2.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**

2.2.6 Opening up of work for inspection, removal or re-execution

2.2.7 Removal or re-execution of work

2.2.8 Removal or substitution of any **materials and goods**

2.2.9 Protection of the **works**

2.2.10 Making good physical loss and repairing damage to the **works** [8.0]

2.2.11 Rectification of **defects** [21.2]

2.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for works completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 2.2.13 Expenditure of **budgetary allowances, prime cost amounts and provisional sums**
- 2.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 2.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 2.2.16 Work by (a) **direct contractor(s)** [16.0]
- 2.2.17 Access by other or previous contractors to remedy defective work
- 2.2.18 Removal from the **site** of any person employed on the **works**
- 2.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 2.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

3. Mechanical engineer

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

3.1 Duties :

The mechanical engineer is responsible for all aspects of mechanical engineering design, quality inspections and including commissioning of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

3.2 **Contract instructions** [17.0] :

- 3.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**
- 3.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 3.2.3 The **site** [13.2.4]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 3.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 3.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**
- 3.2.6 Opening up of work for inspection, removal or re-execution
- 3.2.7 Removal or re-execution of work
- 3.2.8 Removal or substitution of any **materials and goods**
- 3.2.9 Protection of the **works**
- 3.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 3.2.11 Rectification of **defects** [21.2]
- 3.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for works completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 3.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**
- 3.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 3.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 3.2.16 Work by (a) **direct contractor(s)** [16.0]
- 3.2.17 Access by other or previous contractors to remedy defective work
- 3.2.18 Removal from the **site** of any person employed on the **works**
- 3.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 3.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

4. Electrical engineer

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

4.1 Duties :

The electrical engineer is responsible for all aspects of electrical engineering design, quality inspections, commissioning including approving signed off of COC certificates of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

4.2 **Contract instructions** [17.0] :

- 4.2.1 Rectification of discrepancies, errors in descriptions or omissions in **contract documents** other than this **agreement**
- 4.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**
- 4.2.3 The **site** [13.2.4]
- 4.2.4 Compliance with the **law**, regulations and bylaws [2.1]
- 4.2.5 Provision and testing of samples of **materials and goods**, of finishes and assemblies of elements of the **works**
- 4.2.6 Opening up of work for inspection, removal or re-execution
- 4.2.7 Removal or re-execution of work
- 4.2.8 Removal or substitution of any **materials and goods**
- 4.2.9 Protection of the **works**
- 4.2.10 Making good physical loss and repairing damage to the **works** [8.0]
- 4.2.11 Rectification of **defects** [21.2]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

- 4.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion** and a **list for works completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**
- 4.2.13 Expenditure of **budgetary allowances, prime cost amounts** and **provisional sums**
- 4.2.14 Appointment of a **subcontractor** [14.0; 15.0]
- 4.2.15 Termination of a nominated **n/s subcontract agreement** [27.2.8]
- 4.2.16 Work by (a) **direct contractor(s)** [16.0]
- 4.2.17 Access by other or previous contractors to remedy defective work
- 4.2.18 Removal from the **site** of any person employed on the **works**
- 4.2.19 Removal from the **site** of any person not engaged on or connected with the **works**
- 4.2.20 On termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

5. Health and safety consultant

Note that the contract instructions hereinafter are those listed in clause 17.0 of the JBCC PBA

5.1 Duties :

The health and safety consultant is responsible for all aspects of health and safety of the **works**. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the **works**:

- 5.1.1 Act as the **employer's agent** in terms of Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993
- 5.1.2 Prepare and update the health and safety specification for the **works**

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

-104-

Office accommodation

The **contractor** shall provide, maintain and remove on **practical completion** air conditioned office accommodation with suitable tables and chairs for meetings to be held on the **site**. Such offices shall be kept clean and fit for use at all times [12.2.18]

Notice board

The **contractor** shall erect in a position approved by the **principal agent**, maintain and remove on **practical completion** a notice board recommended by the South African Institute of Architects and as approved by the **principal agent** listing the names and logos of the **employer**, the **contractor**, and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the **principal agent** for such notice boards to be erected [12.2.18]

Statutory and other notices

F:..... V:..... T:.....

Item

1 Clause 13.0 - Setting out

F:..... V:..... T:.....

Item

2 Clause 14.0 - Nominated **subcontractors**

F:..... V:..... T:.....

N/A

4 Clause 15.0 - Selected **subcontractors**

F:..... V:..... T:.....

Item

5 Clause 16.0 - **Direct contractors**

Attendance on direct contractors

In respect of **direct contractors** the **contractor** shall:

F:..... V:..... T:.....

N/A

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

1 Clause 17.0 - **Contract instructions**

Site instructions

Instructions issued on **site** are to be recorded in a site instruction book which is to be supplied and maintained on **site** by the **contractor**

Errata by JBCC

Clause 17.1.3 Reference should read "[13.2.4]"

F:..... V:..... T:.....

Item

Completion (A18 - A24)

2 Clause 18.0 - Interim completion

F:..... V:..... T:.....

Item

3 Clause 19.0 - **Practical completion**

F:..... V:..... T:.....

Item

4 Clause 20.0 - Sectional completion

F:..... V:..... T:.....

Item

5 Clause 21.0 - **Defects** liability period and **final completion**

Errata by JBCC

Clause 21.1 Delete the word "final" in the second last line

Reference should read "[21.6.1]"

Clause 21.9 Reference should read "[21.4 ; 21.6.1]"

F:..... V:..... T:.....

Item

6 Clause 22.0 - **Latent defects** liability period

F:..... V:..... T:.....

Item

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

1 Clause 23.0 - Revision of date for **practical completion**

Substitution of materials and goods

The removal or substitution of any **materials and goods** which do not conform to the specification or the **contract drawings** shall not constitute grounds for the extension of the **construction period** nor for the adjustment of the **contract value** [17.1.8, 23.1 & 2]

Errata by JBCC

Clause 23.2 Reference should read "[26.7]"

Clause 23.2.1 Reference should read "[12.1.7]"

F:..... V:..... T:.....

Item

2 Clause 24.0 - **Penalty** for late or non-completion

F:..... V:..... T:.....

Item

Payment (A25 - A27)

3 Clause 25.0 - Payment

Materials and goods prematurely on site

Materials and goods brought onto the site prematurely shall not be authorised for payment [25.3.2]

Materials and goods stored off site

Materials and goods stored off **site** shall not be authorised for payment [25.3.2]

Fluctuations in costs

All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the **contractor** [25.3.4]

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

Prices submitted

Where prices are submitted by the **contractor** or **subcontractor** during the progress of the **works** in respect of **contract instructions** or in regard to a claim under the terms of this **agreement** and notwithstanding the fact that such prices may be used in an interim **payment certificate**, there is to be no presumption of acceptance. Should the **principal agent** wish to accept any such prices prior to the issue of the **certificate of final completion**, it shall be in writing

Errata by JBCC

Clause 25.2 The word : "final" in bold in the second line
 Clause 25.10.3 Reference should read "[25.13 ; 26.10]"
 New clause 25.12.4 Add the words : "Terminate the **agreement** [29.14.7] where the listed options [25.12.1-3] have failed"

F:..... V:..... T:.....

Item

- 1 Clause 26.0 - Adjustment of the **contract value** and **final account**

Errata by JBCC

Clause 26.4.2 Omit the entire clause and renumber thereafter
 New clause 26.4.4 "Other proven or unavoidable costs"

F:..... V:..... T:.....

Item

- 2 Clause 27.0 - Recovery of expense and/or loss

F:..... V:..... T:.....

Item

Suspension and termination (A28 - A29)

- 3 Clause 28.0 - Suspension by the **contractor**

Errata by JBCC

New clause 28.1.5 and renumber thereafter "Or where an **agent** has failed to act in terms of this **agreement** [6.4]"
 Clause 28.2 Replace the word "defect" with "default" in the first line

F:..... V:..... T:.....

Item

- 4 Clause 29.0 - Termination

Carried to Collection

R

BILL NO. 1
 MODEL PRELIMINARIES

Errata by JBCC

Clause 29.1.2 Delete the words : "within the period stated [CD]"

Clause 29.14.1 Change as follows : "Provide or maintain a **guarantee for payment**.....[11.4 - 5]"

Clause 29.14.2 Reference should read "[12.1.7]"

New clause 29.14.8 "Or where an **agent** has failed to act in terms of this **agreement** [6.4]"

F:..... V:..... T:.....

Item

Dispute resolution (A30)

1 Clause 30.0 - Dispute resolution

F:..... V:..... T:.....

Item

2 **Agreement**

The second sentence of the introduction where the **parties** sign the **agreement**, namely "Any provision in this **agreement**..... acceptance by such **subcontractor** at any time." is deemed to be deleted

The required information of the **parties** and the amount of the **contract sum** shall be inserted in the **agreement** for signature of the **agreement** by the **parties**

F:..... V:..... T:.....

Item

3 **Contract data**

Payment of preliminaries

Where Option B is applicable and the initial **construction period** is extended the monthly charge shall be recalculated on the same basis as was initially applied but taking into account the revised **construction period** and the amounts already paid to the **contractor** [CD26.0]

Adjustment of preliminaries

Where the adjustment of **preliminaries** is in terms of Option A, the **construction period** and the initial **construction period** shall be calculated in **working days** [CD 26.0]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

Where the adjustment of **preliminaries** is in terms of Option A and sectional completion is required, the **contractor** shall provide the **principal agent** with the division of the categorised amounts into **sections**. Should the **contractor** fail to provide such information within the period stipulated, the categorised amounts shall be prorated to the value of each **section** [CD 26.0]

Where the adjustment of **preliminaries** is required in terms of Option B and sectional completion is required, the **contractor** shall provide the **principal agent** with details of the resources required for each **section** and those that are common to **sections**. Should the **contractor** fail to provide such information within the period stipulated, Option A shall apply [CD 26.0]

Tenderer's selection

Before submission of his tender the **contractor** is to complete the tenderer's selection in the **contract data**

F:..... V:..... T:.....

Item

SECTION B: PRELIMINARIES

Interpretation (B1)

1 Clause 1.1 - Definitions

F:..... V:..... T:.....

Item

2 Clause 1.2 - Interpretation

F:..... V:..... T:.....

Item

Documents (B2)

3 Clause 2.1 - Checking of documents

F:..... V:..... T:.....

Item

4 Clause 2.2 - Provisional **bills of quantities**

5 Clause 2.3 - Availability of **construction information**

F:..... V:..... T:.....

Item

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

-111-

-112-

-113-

	Clause 11.6 - Environmental disturbance			
	F:..... V:..... T:.....	Item		
1	Clause 11.7 - Works cleaning and clearing			
	F:..... V:..... T:.....	Item		
2	Clause 11.8 - Vermin			
	F:..... V:..... T:.....	Item		
3	Clause 11.9 - Overhand work			
	F:..... V:..... T:.....	Item		
4	Clause 11.10 - Tenant installations by direct contractors			
	F:..... V:..... T:.....	Item		
5	Clause 11.11 - Advertising			
	F:..... V:..... T:.....	N/A		
	<u>Preliminaries schedule (B12)</u>			
6	Information for completion of the preliminaries schedule			
	Information necessary for elections and completion of those clauses contained in the preliminaries schedule which are necessary for tender purposes is given hereunder. Where no information is given it shall mean that no specific requirements are expected or that the clause is not relevant to this specific contract			
	12.1 - Provisional bills of quantities [2.2]			
	The quantities are provisional Yes			
	12.2 - Availability of construction information [2.3]			
	Construction documentation is complete Yes			
	12.3 - Previous work - dimensional accuracy [3.1]			
	12.4 - Previous work - defects [3.2]			
	12.5 - Inspection of adjoining properties [3.3]			
	BILL NO. 1 MODEL PRELIMINARIES		R	

Carried to Collection

R

- 12.6 - Defined **works** area [4.1]
- 12.7 - Handover of **site** in stages [4.2]
- 12.8 - Enclosure of the **works** [4.3]
- 12.9 - Geotechnical investigation [4.4]
- Refer to Annexure A for the results of a geotechnical investigation report
- 12.10 - Existing premises occupied [4.6]
- 12.11 - Services - known [4.7]
- 12.12 - Protection of trees and/or relevant natural features [4.8]
- 12.13 - Water [8.1]
- Option A (by **contractor**) **Yes**
Option B (by **employer** - free of charge) *No*
Option C (by **employer** - metered) *No*
- 12.14 - Electricity [8.2]
- Option A (by **contractor**) **Yes**
Option B (by **employer** - free of charge) *No*
Option C (by **employer** - metered) *No*
- 12.15 - Ablution and welfare facilities [8.3]
- Option A (by **contractor**) **Yes**
Option B (by **employer**) *No*
- 12.16 - Communication facilities [8.4]
- 12.17 - Protection of the **works** [11.1]
- 12.18 - Protection/isolation of existing/sectionally occupied **works** [11.2]
- Protection/isolation is required **No**
- 12.19 - Disturbance [11.5]

Carried to Collection

BILL NO. 1
MODEL PRELIMINARIES

R

All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the **construction period** or **contract value** whatsoever

12.20 - Environmental disturbance [11.6]

Controlling all forms of pollution

The **contractor** shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the **site** during the **construction period** due *inter alia* to noise, artificial light, wind-blown sand, dust, deposits of mud, etc

The **contractor** is to ensure that all roads which border the **site** and is used by the **contractor** during the execution of the **works** are kept clean and free of any dirt or debris caused by the execution of the **works**

F:..... V:..... T:.....

Item

SECTION C: SPECIFIC PRELIMINARIES

1 Warranties for materials and workmanship

Where warranties for materials and/or workmanship are called for, the **contractor** shall obtain a written warranty, addressed to the **employer**, from the entity supplying the materials and/or doing the work and shall deliver same to the **principal agent** on the **final completion** of the contract

The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of **practical completion** and that any **defects** that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written **notice** to do so

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

	The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor F:..... V:..... T:.....	Item		
1	Overtime Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer F:..... V:..... T:.....	Item		
2	Co-operation of the contractor for cost management It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget F:..... V:..... T:.....	Item		
3	Overloading The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense F:..... V:..... T:.....	Item		
	BILL NO. 1 MODEL PRELIMINARIES		R	

Carried to Collection

1 Testing of windows for watertightness

Each window shall be tested for watertightness with water sprayed on using adequate pressure. If in the opinion of the principal agent, the pressure proves to be inadequate, then the pressure shall be boosted by means of compressed air or other approved means

F:..... V:..... T:.....

Item

2 Proprietary Branded Products

The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative. No substitutes for proprietary branded products will be allowed

F:..... V:..... T:.....

Item

3 Application For Certificate

The contractor must complete and sign a cession form with respect to any claim for materials on site, and submit same to the Principal Agent for inclusion in the monthly certificate. Failure to submit the signed cession form will preclude unfixed materials on site from being included in the certificate

F:..... V:..... T:.....

Item

4 Placing Orders For Materials

The contractor is warned to place all orders for materials or special articles as early as possible, failing which he will be held solely responsible for any delay in the delivery of such goods.

Should any specified item, having been timeously ordered by the contractor, prove to be unobtainable, the contractor shall immediately advise the principal agent who will then decide on alternative substitutes

F:..... V:..... T:.....

Item

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

1 **As Built Drawings**

The position of construction breaks and the extent of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the architect and the structural engineer for their records

F:..... V:..... T:.....

Item

2 **Health And Safety Specification And Regulations For Contractors**

Contractors are to comply with the Health and Safety Regulations for Contractors and the Health and Safety Specification as set out in Annexure A included in the back of these Bills of Quantities

F:..... V:..... T:.....

Item

3 **Broad based black economic empowerment (BBBEE)**

Tenders submitted will be evaluated taking into account their empowerment rating

The **employer** will be monitoring the broad based black economic empowerment (BBBEE) status of the **contractor** throughout the execution of the **works**

The **contractor** is to submit to the **principal agent** on an annual basis a schedule of spend, split into vendors engaged as **subcontractors** and suppliers indicating their BBBEE rating including proof of the said rating

F:..... V:..... T:.....

Item

4 **Advertising rights**

The **employer** may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The **contractor** shall not prevent such an arrangement and will assist in the facilitation of same. Position and type of advertising structure to be agreed with the **principal agent** so as not to hinder the **contractor** in meeting the obligations under this **agreement**

F:..... V:..... T:.....

Item

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

1 Confidentiality

The **contractor** undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all **subcontractors** and suppliers. Such information shall not be used in any way except in connection with the execution of the **works**

No information regarding this project shall be published or disclosed without the prior written consent of the **employer**

F:..... V:..... T:.....

Item

2 Media releases

All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the **employer**

The **contractor** together with his **subcontractors** shall not, without the prior written consent of the **employer**, cause any statement or advertisement connected with this project to be printed, screened or aired by the media

F:..... V:..... T:.....

Item

SUMMARY OF CATEGORIES

Category : Fixed R.....

Category : Value R.....

Category : Time R.....

Carried to Collection

R

BILL NO. 1
MODEL PRELIMINARIES

**Hankey Mini Fresh Produce Market
For Kouga Municipality
Draft Specification Committee Document**

BILL NO. 1

MODEL PRELIMINARIES

COLLECTION

Total Brought Forward from Page No.

**Page
No****Amount**

-86-

-87-

-88-

-89-

-90-

-91-

-92-

-93-

-94-

-95-

-96-

-97-

-98-

-99-

-100-

-101-

-102-

-103-

-104-

-105-

Carried Forward**R**

BILL NO. 1

MODEL PRELIMINARIES

BILL NO. 1

MODEL PRELIMINARIES

COLLECTION**Brought Forward**

Total Brought Forward from Page No.

**Page
No****Amount**

R

-106-

-107-

-108-

-109-

-110-

-111-

-112-

-113-

-114-

-115-

-116-

-117-

-118-

-119-

-120-

Carried to Final Summary

R

BILL NO. 1

MODEL PRELIMINARIES

Item No		Quantity	Rate	Amount
	<u>BILL No. 2</u> <u>FOUNDATIONS</u>			
	<u>NOTE:</u> The Model Preambles and the Notes in the various trade bills are to, and do, apply equally to this section. Working space for any work requiring formwork, brick linings, etc, has been determined by the following conditions and shall be measured where: (a) The depth of the excavation does not exceed 1000mm and the distance from the finished face of the structure to the excavated face is less than 250mm for formwork or 600mm for brick linings and (b) The depth of the excavation exceeds 1000mm and the distance from the finished face of the structure to the excavated face is less than 600mm.			
	<u>BULK EARTHWORKS, EXCAVATIONS, FILLING, ETC.</u>			
	<u>Excavations, Filling, Etc.</u>			
1	Excavate in soft material to open face over site to recover topsoil and vegetable matter not exceeding 2000mm deep and stockpile on site for re-use later.	m3	7	
2	Excavate in earth to open face across site to reduce levels under building, including forming faces of excavation to shaped banks, and setting aside in stockpiles on site for re-use or later carting away.	m3	37	
3	G7 filling, selected and supplied by the Contractor, deposited, watered and consolidated to 93% modified MAMDD density in 200mm thick layers to platform below building.	m3	10	
4	Extra over ditto for mixing with minimum 3% cement by volume (approximately 60kg cement/m3).	m3	10	
5	G6 filling, selected and supplied by the Contractor, deposited, watered and consolidated to 95% modified MAMDD density in 150mm thick layers to platform below building.	m3	18	
	Carried to Collection		R	
	BILL NO. 2 FOUNDATIONS			

-124-

**Hankey Mini Fresh Produce Market
For Kouga Municipality
Draft Specification Committee Document**

BILL NO. 2

FOUNDATIONS

COLLECTION

Total Brought Forward from Page No.

**Page
No****Amount**

-123-

-124-

Carried to Final Summary**R**BILL NO. 2
FOUNDATIONS

Item No		Quantity	Rate	Amount
	BILL No. 3 CONCRETE, FORMWORK AND REINFORCEMENT			
	<u>NOTE:</u> All reinforced concrete is to be compacted with a mechanical vibrator. All formwork shall include for propping to not exceeding 3500mm high unless otherwise described. Formwork to sides of walls and columns shall be to walls and columns not exceeding 3500mm high unless otherwise described. Formwork to soffits of solid slabs shall be to slabs not exceeding 250mm thick unless otherwise described. Formwork described as circular on plan shall be to concrete faces exceeding 1000mm radius unless otherwise described.			
	<u>CONCRETE</u>			
1	Set of three concrete test cubes size 150 x 150 x 150mm overall including testing. (Provisional).	Sets	1	
	<u>Breeze Concrete (1.4.8) In</u>			
2	Grading to bottom of channels or gutters.	m3	0.3	
	<u>Cement Concrete (15MPa) In</u>			
3	Filling to cavity of hollow brick walls.	m3	0.2	
	<u>Reinforced Cement Concrete (25MPa) In</u>			
4	Slabs including beams and inverted beams.	m3	1	
	<u>Reinforced Cement Concrete (30MPa) In</u>			
5	Surface beds.	m3	20	
6	Sides and bottom of box gutter.	m3	3	
	Carried to Collection			R
	BILL NO. 3 CONCRETE, FORMWORK AND REINFORCEMENT			

<u>CONCRETE SUNDRIES</u>					
1	Prepare and apply two coats Pro-Struct 611 to powerfloated concrete floors.	m2	68		
2	Powerfloat finish to top of concrete surface beds including adding a Sikafloor -3 QuartzTop ZA or other approved coloured mineral dry shake floor hardener at a rate of 5kg/m2.	m2	68		
3	Y20mm Mild steel dowel 900mm long with one end drilled and epoxy fixed 600mm deep into side of concrete at junction with existing slab and other end heavily coated with bitumen, etc.	No	93		
<u>FORMWORK</u>					
<u>Rough Formwork To</u>					
4	Soffit of slabs.	m2	12		
5	Side and soffit of box gutter.	m2	24		
6	Inverted side of box gutter.	m2	13		
<u>Boxing In Rough Formwork (Degree Of Accuracy II) To Form</u>					
7	20 x 20mm Chamfer to edge of columns, walls, beams, etc.	m	48		
<u>Boxing In Rough Formwork To Form</u>					
8	Edges, risers, ends and reveals.	m2	24		
<u>MOVEMENT JOINTS, ETC.</u>					
<u>Tempered Hardboard Slip Joints</u>					
9	Joint not exceeding 300mm wide formed of two layers of 3mm thick hardboard with smooth faces together, on and including bed of 3:1 cement mortar, as bearing under concrete slabs, beams, etc.	m	28		
<u>REINFORCEMENT</u>					
<u>Mild Steel Bar Reinforcement To Structural Concrete Work</u>					
10	6mm Diameter bars.	t	0.34		
11	8mm Diameter bars.	t	0.28		
Carried to Collection				R	
BILL NO. 3					
CONCRETE, FORMWORK AND REINFORCEMENT					

1	10mm Diameter bars.	t	0.22
2	12mm Diameter bars.	t	0.16
<u>High Tensile Steel Bar Reinforcement To Structural Concrete Work</u>			
3	8mm Diameter bars.	t	0.45
4	10mm Diameter bars.	t	0.56
5	12mm Diameter bars.	t	0.23
6	16mm Diameter bars.	t	0.06
7	20mm Diameter bars.	t	0.19
<u>Fabric Reinforcement To Concrete Work</u>			
8	High tensile steel mesh Ref. 395 to concrete surface beds, slabs, etc.	m2	68

Carried to Collection

BILL NO. 3
CONCRETE, FORMWORK AND REINFORCEMENT

R

BILL NO. 3

CONCRETE, FORMWORK AND REINFORCEMENT

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

-126-

-127-

-128-

Carried to Final Summary

R

BILL NO. 3

CONCRETE, FORMWORK AND REINFORCEMENT

Item No		Quantity	Rate	Amount
	BILL No. 4 MASONRY			
	<u>BRICKWORK</u>			
	<u>Brickwork In Clay Bricks In Cement Mortar In</u>			
	NOTE:			
	a) All cavity walls shall be tied together with 5 Butterfly type wire ties per square metre.			
	b) All 270mm cavity walls shall be reinforced with Ref 150 brickforce every third course.			
	c) All 340mm cavity walls shall be reinforced with Ref 220 brickforce every third course.			
	d) All 460 and 570mm cavity walls shall be tied together with no less than 5 ties per square metre, ties formed from 230mm brickforce built across the cavity and stepped down from inner to outer brick skins.			
	e) All hollow piers and diaphragm walls with a maximum cavity width of 230mm shall be tied together or shotnailed to concrete with no less than 5 ties per square metre, ties formed from 230mm brickforce built across cavity and stepped down from inner to outer brick skins.			
	f) All brick linings to concrete shall be tied back to concrete with no less than 5 ties per square metre, ties cut from 38 x 2mm hoop iron and shot nailed to concrete.			
	g) All metal fixings are to be hot-dipped galvanised.			
	h) Bricks used in external skins of cavity walls shall have a minimum compression strength of 14MPa and shall comply with SABS 021.			
	i) Mortar shall have a minimum compression strength of 5MPa.			
1	Attached piers, projections, etc.	m3	2	
	Carried to Collection		R	
	BILL NO. 4 MASONRY			

1	Half brick wall.	m2	171		
2	One brick wall.	m2	24		
3	270mm Cavity wall in two half brick thicknesses including wire ties.	m2	30		
<u>Brickwork Sundries</u>					
4	Prepare and apply two coats Flintcote or other approved bituminous emulsion waterproofing paint on concrete surfaces behind brick linings.	m2	30		
5	Build 50mm cavity of hollow wall solid vertically for half brick width.	m	4		
6	Build 50mm cavity of hollow wall solid horizontally for half brick width.	m	14		
7	50 x 85mm Triangular cement mortar fillet in cavity wall including forming weepholes.	m	12		
<u>Brick Reinforcement</u>					
8	Brick reinforcement 80mm wide.	m	1 356		
<u>Precast Prestressed Vibrated Cement Concrete (30MPa) Lintols Including Moulds, Reinforcement, Propping, Etc.</u>					
9	Lintol 110mm wide x 75mm deep in lengths not exceeding 3000mm.	m	14		
10	Lintol 160mm wide x 75mm deep in lengths not exceeding 3000mm.	m	14		
<u>Ties, Cramps, Etc.</u>					
11	2 x 30mm Galvanised hoop iron roof truss tie 500mm long with one end securely Hilti shot nailed to concrete and other end wrapped around timber truss members and spiked to wall plate.	No	59		
<u>FACE BRICKWORK</u>					
<u>Selected Corobrik Nevada Trevertine Face Bricks, With Square Recessed Horizontal And Vertical Joints</u>					
12	Extra over brickwork for face brickwork.	m2	108		
13	Extra over brickwork for face brickwork to piers.	m2	7		
Carried to Collection				R	
BILL NO. 4 MASONRY					

**Hankey Mini Fresh Produce Market
For Kouga Municipality
Draft Specification Committee Document**

BILL NO. 4

MASONRY

COLLECTION

Total Brought Forward from Page No.

**Page
No****Amount**

-130-

-131-

Carried to Final Summary

R

BILL NO. 4
MASONRY

Item No		Quantity	Rate	Amount
	<u>BILL No. 5</u> <u>WATERPROOFING</u>			
	NOTE:			
	Waterproofing to roofs, etc. must be done by an approved firm of specialists in this type of work and must be carried out in accordance with the manufacturer's Instructions. The Contractor must provide a ten year guarantee acceptable to the Employer for this work and deposit same with the Architect before the work is put in hand. Such guarantee may not be subject to any qualifications regarding maintenance during the guarantee period.			
	<u>DAMP PROOFING TO WALLS AND FLOORS</u>			
	<u>One Layer 250 Micron Waterproof Sheeting</u>			
1	Under surface beds.	m2	68	
	<u>One Layer 375 Micron Embossed Dampproof Sheeting</u>			
2	On walls.	m2	9	
	<u>WATERPROOFING TO ROOFS, ETC.</u>			
	Note:			
	Waterproofing to roofs, etc. must be done by an approved firm of specialists in this type of work and must be carried out in accordance with the manufacturer's instructions.			
	The Contractor must provide a twenty year guarantee maintenance free in favour and acceptable to the Employer for this work and deposit same with the Principal Agent before the work is put in hand.			

	<u>Carlisle EPDM Or Other Approved 1.15mm Thick Waterproofing Membrane Applied In Strict Accordance With The Manufacturer`s Instructions, Including Laps, Turn-ups, Turn-downs, Etc. And Preparing And Priming Surfaces</u>			
3	On bottom and sides of box gutters.	m2	16	
	Carried to Collection		R	
	BILL NO. 5 WATERPROOFING			

1 Extra for dressing waterproofing into 110mm diameter fullbore outlet.

No

2

BILL NO. 5
WATERPROOFING

Carried to Collection

R

BILL NO. 5

WATERPROOFING

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

-133-

-134-

Carried to Final Summary

R

BILL NO. 5
WATERPROOFING

-136-

Allow For Taking Delivery, Storing, Protecting From Damage, Hoisting, Placing, Assembling And Fixing In Position Approximately 16000mm Above Ground Level, The Following Roof Trusses, Etc, Including Supplying, Fixing And Later Removing Temporary Braces, Etc.

- | | | | |
|---|---|----|------|
| 1 | Roof construction to rectangular shaped roof size ±3371mm long x 3559mm wide overall. | No | 1 |
| 2 | Roof construction to rectangular shaped roof size ±6190mm long x 6472mm wide overall. | No | 1 |
| 3 | Temporary and permanent bracing to suit roof truss design. | | Item |

Carried to Collection

BILL NO. 6
PREFABRICATED ROOF TRUSSES

R

BILL NO. 6

PREFABRICATED ROOF TRUSSES

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

-136-

-137-

Carried to Final Summary

R

BILL NO. 6

PREFABRICATED ROOF TRUSSES

-139-

-140-

JOINERY

Note:

All joinery unless otherwise specified, is to be wrot on all surfaces and prices are to include for this, including leaving clean, smooth, free from tool marks and for rounded arrises.

The sizes of all timbers for joinery are to hold to the full sizes specified.

Commercial veneer shall refer to veneer to be painted. South African Pine shall be referred to as Pine.

DOORS, ETC.

Selected Wrot Meranti

- | | | | |
|---|--|----|---|
| 1 | 44mm Framed, ledged and braced batten door fitted with vertical battens one side and finished flush on internal face with 4mm Sapele veneered plywood, (Hung) size 813 x 2032mm. | No | 1 |
|---|--|----|---|

FLUSH DOORS

Solid Core Flush Doors Finished On Both Faces With Commercial Veneer With Hardwood Edges

- | | | | |
|---|---|----|---|
| 2 | Extra for forming framed opening for metal louvre size 250 x 250mm (louvre elsewhere measured). | No | 1 |
|---|---|----|---|

Carried to Collection

BILL NO. 8
CARPENTRY AND JOINERY

R

BILL NO. 8

CARPENTRY AND JOINERY

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

-140-

-141-

Carried to Final Summary

R

BILL NO. 8

CARPENTRY AND JOINERY

-143-

Item No	Quantity	Rate	Amount
BILL No. 10 <u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u>			
<u>NOTE:</u> Tenderer's are to take note of the requirement for special scaffolding to ceilings in excess of 5000mm high. The sizes of all sawn and wrot timbers are to hold to the full sizes specified. South African Pine shall be referred to as Pine. All items in this section are to be fixed, unless otherwise described, by spiking to wood. Bolts for items described as bolted are measured elsewhere. Items described as plugged are plugged and screwed to brickwork or concrete. ----- <u>SUPPLEMENTARY PREAMBLES</u> <u>Exposed Tee-System Suspended Ceilings</u> The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging. The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes. The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices, etc shall be as described in the items and shall be finished to match the exposed tees.			
Carried to Collection			R
BILL NO. 10 CEILINGS, PARTITIONS AND ACCESS FLOORING			

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

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

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

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

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

Flush Plastered Suspended Ceilings

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

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

Carried to Collection

BILL NO. 10
CEILINGS, PARTITIONS AND ACCESS FLOORING

R

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

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from airconditioning ducting.

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

Bulkheads

Bulkheads are defined as those portions of ceilings which are stepped down from the general ceiling level in a particular room or area and which generally occur along the perimeter. Their purpose is either to conceal services or to create architectural features.

Bulkheads have only been described as such where they conform to the above definition and where the horizontal or vertical dimensions do not exceed 900mm. Where these dimensions are more than 900mm such portions of ceilings have been included in the appropriate general items of ceilings.

Unless otherwise described bulkheads shall be deemed to be horizontal along the length.

Steel Components

All steel components for ceilings, partitions, etc are to be galvanised in accordance with SANS 121.

Carried to Collection

BILL NO. 10
CEILINGS, PARTITIONS AND ACCESS FLOORING

R

CEILINGS

NAILED UP CEILINGS

6,4mm Rhino Gypsum Plasterboard Sheets With 63mm Wide Strips Of Wire Scrim Nailed Over Joints And At Junction With Walls, Surface Of Ceiling Finished With 6mm Thick Rhinolite Plaster, To A Smooth Even Surface

1	Horizontal ceilings fixed to and including 38 x 50mm sawn Pine brandering at 400mm centres in one direction and at 400mm centres in the other direction and with additional brandering at outer edges of rooms and along joints of ceiling plates.	m2	8		
	Raking ceilings fixed to and including 38 x 50mm sawn Pine brandering at 400mm centres in one direction and at 400mm centres in the other direction and with additional brandering at outer edges of rooms and along joints of ceiling plates.	m2	50		
2	Extra over ceilings for hinged trapdoor size 600 x 600mm in clear including 12 x 50mm wrot Pine rebated framing covered with ceiling board, two 75mm brass butts, 100mm chromium plated barrel bolt and keep and fitted flush with ceiling.	No	1		
	<u>Rhino Gypsum Cornice</u>				
3	75 x 75mm Coved cornice.	m	109		

Carried to Collection

BILL NO. 10
CEILINGS, PARTITIONS AND ACCESS FLOORING

R

BILL NO. 10

CEILINGS, PARTITIONS AND ACCESS FLOORING

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

-144-

-145-

-146-

-147-

Carried to Final Summary

R

BILL NO. 10

CEILINGS, PARTITIONS AND ACCESS FLOORING

Item No		Quantity	Rate	Amount
	BILL No. 11 IRONMONGERY			
	<u>PROVISIONAL SUMS</u>			
	<u>The Following Provisional Sums Are Allowances For Work To Be Carried Out By Nominated/Selected Sub-Contractors</u>			
1	Provide the sum of R3,000.00 (Three Thousand Rand) for Ironmongery installation supplied and fixed complete.	Item		3 000 00
2	Allow for general attendance on ditto.	%		
3	Allow for profit if required.	%		
	<u>IRONMONGERY TO DOORS, FRAMES, ETC.</u>			
	<u>NOTE:</u>			
	Ironmongery is fixed to timber or aluminium doors and frames unless otherwise described.			
	Each lock must be supplied with three keys and tags.			
	<u>Take Delivery, Store Until Required And Fix The Following Ironmongery To Doors</u>			
	<u>Hinges, Etc.</u>			
4	Ball bearing butt hinge.	Pairs	1.5	
	<u>En-Suite Locks</u>			
5	Cylinder deadlock.	No	1	
6	Round cylinder escutcheon.	Pairs	2.0	
	<u>Handles, Etc.</u>			
7	Lever handle on plate with cylinder cutout.	Set	1	
	<u>Stops, Holders, Hooks, Etc.</u>			
8	Floor mounted door stop.	No	1	
	Carried to Final Summary		R	
	BILL NO. 11 IRONMONGERY			

Item No		Quantity	Rate	Amount
	<u>BILL No. 12 METALWORK</u>			
	<u>SUNDRY METALWORK</u>			
	<u>Hot Dip Galvanised Mild Steel</u>			
1	30mm Circular hollow section strut including M8 anchors, mortices in brickwork, etc. (Refer detail drawing HHS 09).	No	8	
	<u>HOT DIP GALVANISED PRESSED STEEL DOOR FRAMES</u>			
	<u>1,6mm Thick Double Rebated Frame For Half Brick Wall Complete With Butts, Etc And Including Setting Up, Building In, Filling Back Of Frame With Cement Mortar, Etc</u>			
2	Frame for door size 813 x 2032mm.	No	1	
	<u>POWDER COATED ALUMINIUM GARAGE DOOR</u>			
	<u>Wispeco Manual Operation Garage Doors</u>			
3	Garage door complete with overhead gear, guides, fixing bolts, locking device, etc., to suit clear opening size 1900 x 2100mm fixed in position and including mortices in brickwork or concrete for fixing bolts.	No	12	
	<u>PROVISIONAL SUMS</u>			
	<u>The Following Provisional Sums Are Allowances For Work To Be Carried Out By The Main Contractor</u>			
4	Provide the sum of R10,500.00 (Ten Thousand Five Hundred Rand) for Distribution Box Cage installation supplied and fixed complete.		Item	10 500 00
5	Allow for general attendance on ditto.		%	
6	Allow for profit if required.		%	
	Carried to Final Summary		R	
	BILL NO. 12 METALWORK			

-151-

-152-

Item No		Quantity	Rate	Amount
	BILL No. 15			
	<u>PLUMBING AND DRAINAGE</u>			
	<u>RAINWATER GOODS</u>			
	<u>Alugutter Aluminium Rainwater Goods With Prepainted Colourtech G4 Colour Finish And Approved Joints</u>			
1	100mm U-shaped eaves gutter including gutter connectors and fixing to falls on gutter brackets spaced at maximum 900mm centres fixed to fibre reinforced cement fascia with brass bolts nuts and washers.	m	63	
	<u>Extra For</u>			
2	Stopped end.	No	20	
3	Outlet with 100mm nozzle.	No	18	
	<u>Rigid PVC Socketed Rainwater Goods (SABS 967)</u>			
4	100 x 75mm mm Pipe and fixing to walls, falls, in concrete, etc.	m	41	
	<u>Extra For</u>			
5	110mm Bend.	No	36	
6	110mm Shoe.	No	18	
	<u>Cast Iron</u>			
7	Saint Gobain 3885 100mm full-flow 90 degree side roof outlet with centre bolt including jointing to 110mm PVC pipe including adaptor and embedding in concrete.	No	2	
	<u>PROVISIONAL SUMS</u>			
	<u>The Following Budgetary Allowances Are Allowances For Work To Be Carried Out By The Main Contractor</u>			
8	Provide the sum of R70,000.00 (Sevenrty Thousand Rand) for Plumbing installation supplied and fixed complete.	Item		70 000 00
9	Allow for general attendance on ditto.	%		
10	Allow for profit if required.	%		
	Carried to Final Summary		R	
	BILL NO. 15			
	PLUMBING AND DRAINAGE			

Item No	Quantity	Rate	Amount
BILL No. 16 <u>ELECTRICAL WORK</u>			
<u>SUPPLEMENTARY PREAMBLES</u>			
The electrical installation shall comply with SANS 0142-1. Light fittings shall be complete with lamps, gear, etc. as specified. All fluorescent lamps to be of the Triphosphor type and Colour 840 unless otherwise agreed. Conductors shall be SANS approved PVC insulated copper conductors drawn into conduit, installed in wiring trunking. Socket switched socket outlets flush mounted in draw boxes complete with cover plates shall be of the "Crabtree" or "Clipsal" range which fit into standard outlet boxes. Light switch flush mounted in draw boxes complete with cover plates shall be of the "Crabtree" or "Clipsal" range which fit into standard outlet boxes. Light fittings are covered by a PC provision.			
<u>DRAWINGS</u>			
Tenderers are referred to drawings issued with these Bills of Quantities and prices are to include for the complete reticulation , etc as indicated on the detailed drawings (excluding lights fittings and lamps).			
<u>ELECTRICAL INSTALLATION</u>			
<u>BUILDINGS</u>			
1	Hawkers Stalls 1 and 2 building installation complete, including distribution board, light switches, plug points, conduiting, cabling, etc as required (Refer Drawing HHS 06).	Item	
2	Compost Room building installation complete, including distribution board, light switches, plug points, conduiting, cabling, etc as required (Refer Drawing HHS 06).	Item	
Carried to Collection			R
BILL NO. 16 ELECTRICAL INSTALLATION			

The Following Budgetary Allowances Are Allowances For Work To Be Carried Out By The Main Contractor

Provide the sum of R130,000.00 (One Hundred And Thirty Thousand Rand) for supply of Bulk Electrical Infrastructure installation complete.

- 1 Allow for profit and general attendance on above installation.

LUMINAIRES AND EQUIPMENT

The Following Budgetary Allowances Are Allowances For Work To Be Carried Out By The Main Contractor

- 2 Provide the sum of R18,000.00 (Eighteen Thousand Rand) for supply of light fittings.

Take Delivery And Install Luminaires Or Equipment Covered By Budgetary Allowance Complete With Lamps, Connections, Etc.

- 3 Ceiling mounted fitting. No 12

- 4 Wall mounted fitting. No 8

SUNDRIES

Testing And Commissioning

- 5 Issue relevant certificates. Item

Carried to Collection

BILL NO. 16
ELECTRICAL INSTALLATION

R

18 000 00

BILL NO. 16

ELECTRICAL INSTALLATION

COLLECTION

Total Brought Forward from Page No.

**Page
No****Amount**

-154-

-155-

Carried to Final Summary

R

BILL NO. 16

ELECTRICAL INSTALLATION

Item No	Quantity	Rate	Amount
BILL No. 17 <u>PAINTWORK</u>			
Note: All concrete surfaces have a rough formwork finish unless otherwise described. Prices are to allow for rubbing down before painting. All surfaces of walls are internal unless otherwise described. All plaster surfaces are smooth (floated) unless otherwise described. No skimming has been measured to to achieve an approved smooth plaster wall finish - any costs to rectify sub-standard finish will be to the Contractor's account. Prices for painting all plastered internal walls and soffits (Excluding gypsum partitioning and gypsum ceilings which are measured as skimmed) are to allow for a suitable skim coat prior to painting. Refer to attached Kansai Plascon paint specification for comprehensive details for surface preparation, etc. NOTE: All concrete surfaces have a rough formwork finish unless otherwise described. Prices are to allow for rubbing down before painting. All surfaces of walls are internal unless otherwise described. All plaster surfaces are smooth (floated) unless otherwise described. Prices for painting all plastered internal walls and soffits (Excluding gypsum partitioning and gypsum ceilings which are measured as skimmed) are to allow for a suitable skim coat prior to painting.			
Carried to Collection			R
BILL NO. 17 PAINTWORK			

<u>PAINT ON PLASTER, FIBRE REINFORCED CEMENT, ETC.</u>					
<u>Prepare, Stop And Apply One Coat Alkali Resistant Plaster Primer And Two Coats Plascon PEM950 Waterbased Premium Washable Matt Acrylic PVA Paint On</u>					
1	Skimmed gypsum ceilings, including cornices.	m2	58		
<u>Prepare And Apply One Coat Bonding Liquid And Two Coats Plascon Wall & All Or Other Approved Pure Acrylic Emulsion Paint</u>					
2	Fibre reinforced eaves or verge soffit lining.	m2	26		
3	Fibre reinforced cement fascia and bargeboard not exceeding 300mm girth.	m	128		
<u>Prepare And Apply One Coat Plascon Acrylic Filler, Stop With Mendall 90, Sand And Touch Up with Plascon Acrylic Filler As Required And And Apply Two Coats Plascon Double Velvet On</u>					
4	Plastered walls.	m2	314		
<u>PAINT ON METAL</u>					
<u>Remove All Traces Of Protective Coating From Galvanised Surfaces With Galvanised Iron Cleaner, Prepare And Apply One Coat Galvanised Iron Primer And Two Coats Plascon Velvagio On</u>					
5	Steel door frames.	m2	3		
<u>PAINT ON WOOD</u>					
<u>Prepare And Apply Three Coats Polyurethane Varnish, Sanded Between Coats</u>					
6	On slatted seats.	m2	26		
<u>Prepare, Stop And Apply One Coat Plascon Wood Primer And Two Coats Plascon Velvagio On</u>					
7	Doors.	m2	4		
8	Frames, linings, etc.	m2	20		
Carried to Collection				R	
BILL NO. 17 PAINTWORK					

Hankey Mini Fresh Produce Market
For Kouga Municipality
Draft Specification Committee Document

BILL NO. 17

PAINTWORK

COLLECTION

Total Brought Forward from Page No.

**Page
No****Amount**

-157-

-158-

Carried to Final Summary

R

BILL NO. 17
PAINTWORK

-160-

CARRIED TO FORM OF TENDER

CONTRACT

PART 3 (OF 4): SCOPE OF WORK

	C3.1	Description of the Works	163 94
	C3.2	Employers Agent	166 96
	C3.3	Procurement	168 98
	C3.4	Construction	170 99
	C3.5	Management	185 243

C3.1: DESCRIPTION OF THE WORKS

STATUS

In the event of any discrepancy between the Scope of Work and any part of the SABS 1200 Standardized Specifications, the Bill of Quantities or the Drawings, the Scope of Work shall take precedence and prevail in the Contract.

C3.1.1 EMPLOYER'S OBJECTIVE

The employer's objective is to construct a Fresh Produce market for emerging farmers in the Kouga Local Municipality, that will serve the entire surrounding community. The market will accommodate persons of all ages and races from all across the immediate area and surroundings. The Hankey area is a semi-urban and rural developing area, which is in serious need of local economic facilities. The New Market Precinct is intended to uplift the community in this respect.

C3.1.2 OVERVIEW OF THE WORKS

The successful bidder will be responsible for the Construction of Phase 1 of the Market Stall as per the extent of works of the Tender Document C3.13

C3.1.3 EXTENT OF THE WORKS

The Works to be carried out by the Contractor under this Contract comprise mainly of the following:

- **Construction of two Market Stalls buildings**
- **Compost Room**

Drawings

The contractor shall use the dimensions stated in figures on the drawings in setting out the Work and dimension and shall not be scaled from drawings. All work to be set by the Contractor as per the approved issued construction drawings submitted by the Municipality. The contractor will be responsible to ensure that all dimensions are correctly set out on site and to inform the Municipality if any discrepancies are found on site or drawings approved for construction.

The Municipality will, on the request of the Contractor, and in accordance with the provision of Conditions of Contract provided such dimensions as may have been omitted from the drawings.

The Tender drawings and pricing schedule prepared for the construction of the mini fresh produce market are listed and bound as part of the tender document. The Municipality reserves the right to issues or amend and/or additional drawings during the Contract.

Allowable Working Times

The Contractor should commence work immediately after appointment. The time required to complete the project is 12 months. A work program is to be approved by the Municipality and the successful bidder on working time and insurable risk while performing work on site.

Features requiring special attention

- **Site Maintenance**

During the process of the work and upon completion thereof, the site of works shall be kept and left in a clean and orderly condition.

The Contractor will be responsible for the material and equipment for which he/she is responsible in a safe place. The site must be cleared and cleaned of all construction material after completion of the project.

- Statements and Payment systems.

The statement to be submitted by the Contractor in terms of the work plans approved by the Municipality.

- Workmanship and quality control

The onus to provide work that conforms in quality and accuracy of detail to the requirements of the Specifications and drawings rest with the Contractor and the contractor shall at his own expenses institute a quality control system and provide suitably qualified and experienced technicians and staff together with transport instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

- Public Safety

The Contractor shall at all times ensure that his operation do not endanger any member of the Public.

- Construction Regulations

The Contractor shall be required to comply with the Occupational Health and Safety Act and Construction Regulations. Non-compliance with these regulations, in any way whatsoever, shall be deemed adequate reason for suspension of Works.

- Special Conditions of Contract

All material used must be SABS approved and comply with SANS regulations

- Standard Colour

All internal and external wall colour to be approved by the Kouga Municipality

- Windows

To be glazed as per drawings. As per SANS (SABS) 1263 PART 1 Standard requirements.

Construction methods must be such that no property or life is endangered. The employer accepts no responsibility for work that is done outside the site boundaries without the Employers agent's approval.

Sufficient photos of structures, walls and areas that have to be crossed must be taken by the Contractor and handed over to the Employers agent before such operations commence.

The Contractor must program his work in such a way that no construction is to be done during the holiday season and public holidays.

The above description is not necessarily complete and shall not limit the work to be carried out under this Contract.

Approximate quantities of the Works are provided in the Bill of Quantities.

C3.1.4 LOCATION OF THE WORKS

The location (Coordinates) of the works is indicated in the table below, as well as in the locality plan:

Name	Latitude	Longitude
Hankey Erf 2055	33°49'38.2"S	24°52'25.1"E

C3.1.5 TEMPORARY WORKS

No specific temporary works are envisaged in the current design or planned execution of the works except where the Contractor may want to incorporate it as part of his work method. Refer also C3.2.5.

C3.2: EMPLOYERS AGENTING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

Works designed by, per design stage:

Concept, feasibility and overall process	Employer
Basic Employers Agenting and detail layout to tender stage	Employer
Final design approved for construction stage	Employer
Temporary Works	Contractor
Preparation of As-Built (marked up Employers Agents drawings)	Contractor

- a) The Employer is responsible for the design of the permanent Works as reflected in the Contract Documents, unless otherwise stated.
- b) The Contractor is responsible for the design of the temporary Works and their compatibility with the permanent Works.
- c) The Contractor shall supply all details necessary to assist the Employers Agent in the compilation of the As-Built Drawings.

C3.2.2 EMPLOYER'S DESIGN

All work in this Contract has been designed in full and are specified in the Agent's tender document.

C3.2.3 DESIGN BRIEF

The design of the permanent Works is the responsibility of the Employer.

The Contractor is responsible for the design of the Temporary Works and Workshop Drawings required for the construction and execution of the Permanent Works. Where applicable, the designs shall be completed in accordance with the relevant design codes and shall be executed by competent personnel. The Contractor's attention is also drawn to the relevant health and safety requirements concerning the design of any temporary works.

C3.2.4 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works and dimensions shall not be scaled from the Drawings, unless required by the Employers Agent.

The contractor is to provide the Employer with a full set of Workshop Drawings.

The Employers Agent will, on the request of the Contractor, and in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate As-Built records are kept of all infrastructure installed or relocated during the contract and where necessary, levels shall also be provided.

A marked-up set of Drawings shall be kept and updated by the Contractor on a day to day basis. This information shall be supplied to the Employers Agent's Representative as and when needed.

All information in possession of the Contractor where required by the Employers Agent and/or the Employers Agent's Representative to complete the As-Built/Record Drawings, must be submitted to the Employers Agent's Representative before the Certificate of Completion may be issued.

The Tender Drawings prepared by the Employer for the construction of the Permanent Works are listed and bound under Appendix C. The Employer reserves the right to issue amended and/or additional Drawings during the Contract.

C3.2.5 DESIGN PROCEDURES

The Contractor is responsible for the design of all the Temporary Works/Workshop Drawings/Electrical diagrams and pipework drawings required for the construction and execution of the Permanent Works. This includes, inter alia, bypass pumping, temporary interconnections of pipework, etc., all health and safety measures as well as temporary support systems, until the completion of the Contract.

As guidance to the Contractor, the following Temporary Works that may be required during construction and execution of the Permanent Works are:

- (i) Fall protection and safety when working at heights
- (ii) Record keeping and recording of As Built data for the Employers Agent.

The above description is not necessarily complete and shall not limit the work to be carried out.

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES**C3.3.1.1 Requirements**

Tenders will be evaluated in terms of the Standard Conditions of Tender, the Tender Data and Employer's Supply Chain Management Policy.

Copies of the Employer's Supply Chain Management Policy are obtainable from the Employer's website.

C3.3.1.2 Resources Standards pertaining to targeted procurement

Refer Conditions of Contract.

C3.3.2 SUBCONTRACTING**C3.3.2.1 Scope of mandatory subcontract works**

None

C3.3.2.2 Preferred subcontractors / suppliers

None

C3.3.2.3 Subcontracting procedures

None

C3.3.2.4 Attendance on subcontractors

None

C3.3.3 FEATURES REQUIRING SPECIAL ATTENTION REGARDING USE OF LOCAL LABOUR**C3.3.3.1 SMME & LOCAL LABOUR SPECIAL REQUIREMENTS**

The Tenderer's attention is drawn to the following requirements which will form part of his responsibility and which he needs to take into consideration in his tender price regarding the use of SMME Contractors and the use of Local Labour :

- Worker Contracts need to be set up with each employee (full-time and casual) and sub-contractor.
 - The Contractor is required to register with the South African Revenue Services.
 - Registration with the Unemployment Insurance Fund (UIF) as well as the Compensation of Occupational Injuries and Diseases Fund (Workmens Compensation) is required.
 - Fulfilment of the following employment targets are essential and need to be attained:
 1. **At least 30% of the Contract value must be sub-let to local SMME's (emerging sub contractor's in Humansdorp/Patensie/Hankey/Jeffrey's Bay/St Francis Bay/Oyster Bay areas).**
 2. **Create a minimum of 10 job opportunities on site for the duration of the contract period.**
- The ratio of local labour employed on the project must conform to the following:
- * At least 20% women (Preference must be given to single heads of household)
 - * At least 40% youth (Persons above school going age of 18 to 35 years old)
 - * 40% men (Over the age of 35 years)

C3.3.3.2 **LABOUR INTENSIVE WORK**

Guiding Principle

The guiding principles upon which the labour intensive work to be provided is based, include:-

- creating sustainable job opportunities,
- poverty alleviation,
- local authority empowerment, and
- ensuring financial accountability

In line with the above, the following targets have been set in order to reach objectives and this Contract will be subject to these targets:

- **Labour intensive methods of construction** are to be used where possible.
- **Women** are to make up at least **20%** of the **Total Local Labour** employed on this project with an emphasis on “Women who are the single head of households and have dependants”.
- **Youth** are required to make up at least **40%** of the **Total Local Labour** employed.
- **Men** are required to make the balance of the **Total Local Labour** employed.

The Contractor shall therefore be required to plan his activities to maximise the use of local labour. A “local worker” is defined as a person whose domicilium citandi ex executandi shall be in Kouga. The rates tendered shall cover the full cost of the all labour intensive work.

The Tenderer is required to complete the **Statement of Intent** relating to the use of local labour. This statement is required to indicate the methods which the Contractor intends employing to achieve the employment targets. The Contractor shall be expected to limit the use of non-local persons to his permanent core of key personnel only. The table attached should also be completed in full for tender purposes. The statement will be taken into consideration in the adjudication of the tender.

C3.3.3.3 **PENALTY CALCULATION**

Use of SMME's

Should the contractor fail to meet the minimum requirement of subletting at least 10% of the Contract value to SMME's (emerging sub-contractors), a penalty of 1,2 x the value of the amount to be sublet, minus the actual value sublet, will be implemented. This amount will be deducted from the Contractor's payment certificate.

The Contractor is to indicate to the Client via a report certified by their auditors indicating that at least 10% of the Contract value has been paid to SMME's.

Use of Local Labour

Should the contractor fail to meet the minimum requirement of creating 10 employment opportunities on site for the duration of the contact, a penalty of 1,5 x the value of the amount of employment that was not created, calculated at R240-00 per day per person, will be calculated and imposed. This amount will be deducted from the Contractor's payment certificate.

The Contractor is to indicate to the Client via a report certified by their auditors indicating the payments made to Local Labour and SMME.

C3.4: CONSTRUCTION

C3.4.1 WORKS SPECIFICATION

C3.4.1.1 Applicable SANS standards

The applicable SABS 1200 Standardized Specifications for Civil Engineering Construction, as amended in the various variations and additions listed under C3.4.11 and read in conjunction with the SABS 0120 Code of Practise for use with Standardized specifications for Civil Engineering Construction and Contract Documents shall apply.

Other applicable SANS specifications and standards are specified elsewhere.

C3.4.1.2 Other standards

As specified elsewhere.

C3.4.1.3 Applicable national and international standards

For the purpose of this Contract the latest issues of the following SANS 1200 Standardized Specifications for Civil Engineering Construction as applicable at the date of the tender advertisement and as amended in the various variations and additions listed under C3.4.11, shall apply:

SABS 1200 A	:	GENERAL
SABS 1200 C	:	SITE CLEARANCE
SABS 1200 D	:	EARTHWORKS
SABS 1200 DB	:	EARTHWORKS (PIPE TRENCHES)
SABS 1200 G	:	CONCRETE (STRUCTURAL)
SABS 1200 L	:	MEDIUM-PRESSURE PIPELINES
SABS 1200 LB	:	BEDDING (PIPES)
SABS 1200 M	:	ROADS (GENERAL)
SABS 1200 ME	:	SUBBASE
SABS 1200 MF	:	BASE
SABS 1200 MH	:	ASPHALT BASE AND SURFACING
SABS 1200 MK	:	KERBING AND CHANNELLING
SABS 1200 MM	:	ANCILLARY ROADWORKS

The various variations and additions applicable to the SABS 1200 Standardized Specifications are listed under C3.4.11.

The following Particular Specifications for work not covered by the SABS 1200 Standardized Specifications, as amended, are also bound under the Scope of Work and C3.4.11, namely

PB	Health and Safety Specifications
PC	Building work

C3.4.1.4 Certification by recognised bodies

As specified elsewhere.

C3.4.1.5 Agreement certificates

As specified elsewhere.

C3.4.2 PLANT AND MATERIALS

C3.4.2.1 Plant and materials supplied by the employer

The Employer shall not supply any Plant or materials.

C3.4.2.2 Materials, samples and shop drawings

Materials or work, which does not conform to the approved samples submitted in terms of the Conditions of Contract, will be rejected. The Employers agent reserves the right to submit samples to tests to ensure that the material represented by the sample meets the specification requirements.

The costs of any such test conducted by or on behalf of the Employers agent, the results of which indicate that the samples provided by the Contractor do not conform to the requirements of the Contract, shall, in accordance with the provisions of the Conditions of Contract, be for the Contractor's account.

C3.4.3 CONSTRUCTION EQUIPMENT

C3.4.3.1 Requirements for equipment

All equipment must comply with the requirements as stipulated in the Conditions of Contract, Scope of Work and Environmental Regulations and Specifications and as stipulated in the OHS Act.

C3.4.3.2 Equipment provided by the Employer

The Employer shall not supply any equipment.

C3.4.4 EXISTING SERVICES

As specified elsewhere. The Contractor's attention is directed to the requirements of PSA 5.4.

The Contractor shall familiarize himself with all existing services and liaise with all relevant authorities for the location and detection of existing services. The Contractor shall also use all necessary means to locate and expose services without damage to such services.

C3.4.5 SITE ESTABLISHMENT

C3.4.5.1 Water supply

The Contractor shall make his own arrangements regarding the supply of water.

The Contractor shall, at his own expense, be responsible for obtaining and distributing all water as may be required for the purposes of executing the Contract, including water for both construction purposes and domestic use as well as for making all arrangements in connection therewith. The Contractor shall further, at his own expense, be responsible for providing all necessities for procuring, storing, transporting and applying water required for the execution of the Contract, including but not limited to all piping, valves, tanks, pumps, meters and other plant and equipment, as well as for all work and superintendence associated therewith.

The Contractor shall make himself thoroughly acquainted with the regulations relating to the use of water and shall take adequate measures to prevent the wastage of water.

The sources of all water utilised for the purposes of the Contract shall be subject to the prior approval of the Employers agent, which approval shall not be unreasonably withheld. The Contractor shall comply with all prevailing legislation in respect of drawing water from natural and other sources and shall, when required by the Employers agent, produce proof of such compliance.

The distribution of water shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations. All water provided by the Contractor for construction purposes shall be clean, free from undesirable concentrations of deleterious salts and other materials and shall comply with any further relevant specifications of the Contract.

The Contractor shall, whenever reasonably required by the Employers agent, produce test results demonstrating such compliance. Water provided by the Contractor for human consumption shall be healthy and potable to the satisfaction of the health authorities in the area of the Site.

The Contractor may make application to the Municipality's Water Division for a clean water supply point but shall bear all the costs for the installation of such supply point. Water used by the Contractor from the Employer's mains will be charged for at the tariffs ruling at the time of use. The Contractor shall make himself thoroughly acquainted with the regulations relating to the use of water and shall take adequate measures to prevent the wastage of water.

The Employer accepts no responsibility for the shortage of water due to any cause whatsoever or for the additional costs incurred by the Contractor as a result of such shortage.

The Contractor shall take note that no separate or direct payment of any kind whatsoever will be made for any cost incurred to obtain, distribute, consume and use water or for the provision of a water supply point or for the cost of water drawn. Payment for the aforementioned shall be deemed to be covered by the rates and prices tendered and paid for the various items of work included under the Contract.

Accounts issued by the Kouga Local Municipality, for water drawn, shall also be settled directly by the Contractor.

C3.4.5.2 Power / Electricity supply

The Contractor shall make his own arrangements regarding the supply of electricity.

The Contractor may make his own arrangements with Kouga for a supply of electricity if required and shall pay establishment and consumption costs at the tariffs ruling at the time.

The Contractor shall, at his own expense, be responsible for obtaining and distributing all electricity as he may require for the purposes of executing the Contract, including electricity for construction purposes, domestic use as well as for making all arrangements in connection therewith.

The distribution of electricity shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations. No separate payment will be made to the Contractor for the obtainment, distribution and consumption of electricity, the costs of which will be deemed to be in the Contractor's tendered rates and prices.

C3.4.5.3 Location of site camp and materials storage area

The Employer has agreed that a portion or open area next to the site may be utilised by the Contractor at his own risk. See Attached Architects drawings.

The Contractor may, should he so elect, erect offices, workshops, stores and other facilities on this site as may be required for the purposes of the Contract.

The Contractor shall, at his own cost, be responsible for making all arrangements necessary for securing the area to meet his needs in respect of the erection of the Contractor's offices, stores and other facilities, including the facilities to be provided for the Employers agent, all in accordance with the Contract.

Should the Contractor elect not to use the designated area, any other potential area so proposed by the Contractor shall be within reasonable proximity to the Site of the Works and its location shall be subject to the approval of the Employers agent, which approval shall not be unreasonably withheld.

The Contractor shall be responsible for arranging, at his own cost, for the provision of all services he may so require within this area, or anywhere else. On completion of the Contract Works the surface and areas utilised shall be properly re-instated.

Should the Contractor wish to occupy another location for his material storage and site camp, or should this area fall outside the

bounds of the Site, written confirmation of the owner's permission to occupy the chosen location shall be issued to the Employers agent.

The site of the camp shall be kept clean and tidy, and on completion of the Works, the Contractor shall remove all temporary offices, sheds, etc. and reinstate the area to the Employers agent's and/or the owner's satisfaction.

C3.4.5.4 Temporary offices for the Employers agent and Contract Meetings

Contractor shall ensure suitable venue is available for monthly site meetings.

C3.4.5.5 Sanitary facilities

The Contractor shall, at his own expense, be responsible for safety and hygienically dealing with and disposing of all human excrement and similar matter generated on the Site during the course of the Contract, all to the satisfaction of the responsible health authorities in the area of the Site as well as the Employers agent.

All such excrement shall be removed from the Site and shall not be disposed of by the Contractor on the Site. The Contractor shall further comply with any other requirements in this regard as may be stated in the Contract and Health and Safety regulations.

The Contractor shall further, as a minimum, supply and maintain chemical toilets for use by his workmen. The number of toilets shall be based on one toilet per fifteen personnel on site.

Under no circumstances will the Contractor's staff be allowed to use any other toilet facilities in and around the Site.

C3.4.5.6 Contract name boards and identity boards

See Architects Drawings

C3.4.5.7 Accommodation of employees

The Contractor shall make his own arrangements for the accommodation of his employees.

C3.4.5.8 Security of Contractor's site camp

Security of the Contractor's site camp will be the Contractor's own responsibility and no additional payment will be made should additional security measures need to be taken during the Contract.

C3.4.5.9 Laboratory facilities

The Contractor's attention is directed to C3.4.9.2.

Acceptance Control Testing required and ordered by the Employers agent will be carried out by another separate laboratory designated by the Employers agent.

A Prime Cost or Provisional Sum has been provided in the Bill of Quantities to cover the cost of Acceptance Control Testing ordered by the Employers agent. The Contractor shall however take note that if the work or material tested does not comply with the relevant specification the invoiced cost of tests carried out shall be borne by him.

C3.4.6 SITE USAGE

Access to site shall be limited to the Employer's, Employers agent's and Contractor's personnel only. The Contractor shall be responsible to control unauthorized entry to the site and shall inform the Employers agent of any breach of such rules. The Site shall be properly managed and only used for its intended purpose.

C3.4.7 SURVEY CONTROL AND SETTING OUT OF THE WORKS

All work to be set out by the Contractor as per the approved issued construction drawings from the Employers agent and approved workshop drawings as submitted by the Contractor. The Contractor will be responsible to ensure that all dimensions and levels are correctly set out on site and to inform the Employers agent if any discrepancies are found on site or on any drawings approved for construction.

C3.4.8 FEATURES REQUIRING SPECIAL ATTENTION

C3.4.8.1 Site maintenance

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition in order prevent any dissatisfaction from the Client, Employers agent, and general public.

The Contractor shall store materials and equipment for which he is responsible in an orderly manner and he shall keep the Site free from debris and obstructions.

C3.4.8.2 Testing and quality control

a) Contractor to engage services of an independent laboratory

The Contractor shall be responsible for all Control Testing.

Notwithstanding the requirements of the specifications pertaining to testing and quality control, the Contractor shall engage the services of an independent laboratory certified and approved by the South African National Accreditation Systems (SANAS) to undertake all testing materials, the results of which are specified in, or any reasonably be inferred from, the Contract.

These results will be taken into consideration by the Employers agent in deciding whether the quality of materials utilised and workmanship achieved by the contractor comply with the requirements of the specifications.

The above shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Employers agent or by the Contractor.

The contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Employers agent with copies of the results of all such testing carried out by the independent laboratory.

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" (as defined in subclause PSA 7.2) which is not under the management or control of the contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

b) Additional testing required by the Employers agent

The Employers agent shall be responsible for all Acceptance Control Testing.

In addition to the provisions of sub clause C3.4.9.2 (a), the Employers agent shall be entitled at any time during the Contract to instruct the Contractor to arrange with another independent laboratory to carry out any Acceptance Control Testing, additional to those described in sub clause C3.4.9.2 (a), at such times and at such locations in the Works as the Employers agent shall prescribe.

The Contractor shall promptly and without delay arrange with such independent laboratory for carrying out all such additional testing as required by the Employers agent, and copies of the test results shall be promptly submitted to the Employers agent.

c) Costs of testing

(i) Tests in terms of subclause C3.4.9.2 (a)

The cost of all Process Control Testing carried out by the Contractor's independent laboratory in accordance with the requirements of C3.4.9.2 (a) above shall be borne by the Contractor and shall be deemed to be included in the tendered rates and prices for the respective items of work as listed in the Bill of Quantities and which require testing in terms of the Scope of Work.

No separate payment will be made by the Employer to the Contractor in respect of any testing carried out in terms of subclause c3.4.9.2 (a).

Where, as result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work it becomes necessary to carry out additional tests (e.g. re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

(ii) Additional tests required by the Employers agent

The costs of all the additional Acceptance Control Testing required and instructed by the Employers agent in terms of sub clause C3.4.9.2.(b), shall be reimbursed to the Contractor against substitution of the Prime Cost or Provisional Sum allowed therefore in the Bill of Quantities; provided always that the costs of any such additional tests ordered by the Employers agent, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

C3.4.8.3 Subcontractors

All matters pertaining to subcontractors (including Selected Subcontractors appointed in terms of Clause 4.4.3 of the Conditions of Contract) and the work executed by them shall be dealt with directly between the Employers agent and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Employers agent will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Employers agent will not be involved.

C3.4.8.4 Opening up and closing down of designated borrow pits

Not applicable.

C3.4.8.5 Access to properties (where relevant)

The Contractor shall organise the work to cause the least inconvenience to the public and to the property owners adjacent to or affected by the work, including along the haul road, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to clause 8.1 of the Conditions of Contract.

Where applicable and if as a result of restricted road reserve widths and the nature of the work, the construction of bypass is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties.

Notwithstanding the above, the Contractors may, with prior approval of the Employers agent (Which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven and properties to close off part of the street, road, footpath or entrance temporally, provide the Contractor duly notifies the occupiers of the intended closure and its probable duration, and reopens the route as punctually as possible. Where possible, such streets, roads, footpaths and entrances shall be made safe and reopened to traffic overnight. Such closure shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs, drums and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions.

C3.4.8.6 Employment of local labour

It is the intention that this Contract should make maximum use of the local labour force that is presently under-employed. To this end the Contractor shall limit the utilisation on the Contract of non-local employees to that of key personnel only to employ and train local labour to the extent necessary for the execution and completion of this Contract.

The Contractor shall fill in the form entitled Key Personnel in the Forms to be completed by the Tenderer. The data stated on the above-mentioned form will be strictly monitored during the Contract period and any deviations therefrom shall be subjected to the prior approval of the Employers agent, which approval shall not be unreasonably withheld.

C3.4.8.7 Monthly statements and payment certificates

The statement to be submitted by the Contractor in terms of Clause 6.10 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Employers agent, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement. All supporting documentation including MOS delivery notes, signed MOS cession forms from material suppliers, labour information, etc. shall also be submitted to the Employers agent as requested in an electronic format and two (2) A4 sized hard copies.

For the purposes of the Employers agent's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Employers agent for the purposes of accurately reflecting the actual quantities and amounts, which the Employers agent deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Employers agent within three (3) normal workings days from the date on which the Employers agent communicated to the Contractor the adjustments required. The Contractor shall submit to the Employers agent five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Employers agent the requisite copies of the adjusted statement for the purposes of the Employers agent's payment certificate will be added to the times allowed to the Employers agent in terms of Clause 6.10 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

C3.4.8.8 Construction in restricted areas

Working space is extremely restricted. The construction method used in these restricted areas largely depends on the Contractor's equipment.

Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices tendered will be deemed to include full compensation for any difficulties encountered by the Contractor while working in restricted areas. No extra payment or any claim for payment due to these difficulties will be considered.

C3.4.8.9 Notices, signs, barricades and advertisements

The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal of all notices, signs, barricades and any advertisements and he shall make provision for such within the various tendered rates and prices.

The Employers agent shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works, if in his opinion, it is unsatisfactory, inconvenient or dangerous.

C3.4.8.10 Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably

qualified and experienced employers agents, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates tendered for the related items of work.

The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of Control Testing so required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Employers agent for examination and measurement, the Contractor shall furnish the Employers agent with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the applicable specifications.

C3.4.8.11 Public Safety

The Contractor shall at all times ensure that his operations do not endanger any member of the public.

C3.4.8.12 Sand and Dust Control

The Contractor shall, for the duration of the contract, take appropriate measures to control the dust and soil movement which may arise due to his operations.

C3.4.8.13 Construction Regulations (2014)

The Contractor shall be required to comply with the Occupational Health and Safety Act and the Construction Regulations. Non-compliance with these regulations, in any way whatsoever, shall be deemed adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the various specifications, Bill of Quantities and Drawings as well as in the Employer's health and safety specification, Refer Regulation 4(1) of the Construction Regulations as well as Particular Specification PB.

The Contractor shall, in terms of Regulation 5(1) of the Construction Regulations, provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer or his H&S Agent.

The Contractor shall at times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the above-mentioned plan or regulations.

A payment item is included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the above-mentioned regulations.

The Contractor shall obtain his own copy of the Construction Regulations.

The Employer and the Contractor hereby agrees, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), hereinafter referred to as "the Act", that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act:

- (a) The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all relevant provisions of the Act and the Regulations promulgated in terms of the Act.
- (b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations on the Contractor will be fully complied with.
- (c) The Contractor accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations and expressly absolves the Employer from himself being obliged to comply with any of the aforesaid duties, obligations and prohibitions, with the exception of such duties, obligations and prohibitions expressly

assigned to the Employer in terms of the Act and its associated Regulations.

- (d) The Contractor agrees that any duly authorised official of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the Contractor has conformed to his undertakings as described in paragraphs a) and b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or any appropriate records or safety plans held by the Contractor.
- (e) The Contractor shall be obliged to report forthwith to the Employer, his H&S Agent and Employers agent any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing, to the Employer, his H&S Agent and Employers agent, of such investigation, complaint or criminal charge.

The Contractor shall furthermore, in compliance with Constructional Regulations (2014) to the Act:

- (a) Acquaint himself with the requirements of the Employer's health and safety specification as laid down in Regulation 4(1)(a) of the Construction Regulation (2014), and prepare a suitably and sufficiently documented health and safety plan as contemplated in Regulation 5(1) of the Construction Regulation (2014) for approval by the Employer or his assigned H&S Agent. The Contractor's health and safety plan and risk assessment shall be submitted to the Employer within the time as stated in the Conditions of Contract and shall be implemented and maintained from the Commencement of the Works.
- (b) The Employer, or his assigned H&S Agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations (2014), to ensure that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with the requirements of these Regulations shall entitle the Employers agent, at the request of the Employer or his H&S Agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages or loss incurred as a result of such suspension, until such time that the Employer or his H&S agents are satisfied that the issues in which the Contractor has been in default have been rectified.

C3.4.8.14 Spoil Sites

The Contractor shall spoil material at the nearest spoil site in Hankey. See Architects Drawings. No payment will be made for the cost of hauling material to spoil sites and all relevant costs shall be deemed to be included in the tendered rates.

C3.4.8.15 Benchmarks and Survey Pegs

No plan reflecting the positions and co-ordinate information of benchmarks and survey pegs will be issued to the Contractor on the commencement of the Works as the work performed will be on existing structures.

C3.4.8.16 Finishing and tidying

The Contractor shall take note that progressive and systematic finishing and tidying will form an essential part of this Contract. On no account shall spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily be a hindrance to or impede the activities of others. In the event of this occurring the Employer shall have the right to withhold payment for as long as may be necessary in respect of the relevant works in the area(s) concerned.

C3.4.9 EXTENSION OF TIME DUE TO ABNORMAL RAINFALL

A claim for extension of time in respect of delays suffered by the Contractor in consequence of abnormal wet climatic conditions will be considered by the Employers agent in terms of Clause 5.12 of the Conditions of Contract and in accordance with provisions set out hereunder.

For the purposes of extension of time, a delay caused by abnormal wet climatic conditions will be regarded as a delay only if, in the opinion of the Employers agent, all progress on an item or items of work on the critical path of the Contractor's working programme as approved in terms of Clause 5.6 of the Conditions of Contract has been brought to a halt.

Unless it is customary to carry out the work, in respect of which a delay was suffered, by rotary shifts or by day and by night, only delays to critical path items experienced as a result of wet climatic conditions during normal working hours (as defined in Clause 5.8 of the Conditions of Contract) will be taken into account for extension of time. This will apply notwithstanding the fact

that a delay may have occurred on a portion of the Works on the critical path due to wet climatic conditions, which work was being executed outside the said normal hours with the permission of the Employers agent, granted in terms of Clause 5.8 of the Conditions of Contract.

The Contractor shall make due allowance within his programme submitted in terms of Clause 5.6 of the Conditions of Contract, for the total delay to work items on the critical path resulting from normal wet climatic conditions. The specified allowances for this Contract are defined in Clause 5.12.2.2 of the Conditions of Contract.

Extension of time, if granted by the Employers agent, will be determined as the aggregate number of normal working hours for which all progress on the item or items on the critical path was brought to a halt as a result of wet climatic conditions, less the number of normal working days specified in Clause 5.12.2.2 of the Conditions of Contract.

In determining the revised Due Completion Date of the Contract, the Employers agent shall add the equivalent number of normal working days delay determined in accordance with this Clause and all intervening normal non-working days to the prevailing Due Completion Date.

C3.4.10 VARIATIONS AND ADDITIONS TO SABS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS.

The following variations and additions to the SABS 1200 Standardized Specifications shall apply to this Contract. It should be noted that these variations and additions to the SABS 1200 Standardized Specifications shall be implemented and effect prior to the interpretation and application of such.

The prefix “PS” indicates amendment to SABS 1200 Standardized Specifications. The Prefix “PSA” indicates an amendment to the SABS 1200 A Standardized Specification, “PSDB” to SABS 1200 DB standardized Specifications and so on.

Similarly, the numbers following the applicable “PS” prefix indicate the corresponding SABS 1200 Standardized Specification clause number to which this variation or addition shall apply.

An asterisk (*) placed after to a “ PS letter and clause number” denotes the inclusion of an additional new clause for which no equivalent appears within the relevant SABS 1200 Standardized Specification.

For example, “PSMK 8.2.11” indicates an amendment to clause 8.2.11 within the SABS 1200 MK Standardized Specification, “PSL 5.3” indicates an amendment to clause 5.3 within the SABS 1200 L Standardized Specifications and so on.

The prefix “PSMK 8.2.14” denotes the inclusion of an additional new clause within the SABS 1200 MK Standardized Specification for which no equivalent appears.

The terms “project specification”, “Project Specification” or “Portion 2 of the project specification” appearing in any of the SABS 1200 Standardized Specifications shall be replaced with the term “Scope of Work”.

The term “Scope of Work” shall mean Part 3 of the Contract.

SABS 1200 and SANS 1200 shall have corresponding meanings.

Further to the above it should be noted that where in a specific Standardized Specification reference is made to a sub-clause in another Standardized Specification, any amendment or addition to the sub-clause referred to, as provided for in the specification, shall apply. The aforementioned shall also apply with respect to clauses referred to in a Particular Specification.

The variations and additions to the SABS 1200 Standardized Specifications as well as Particular Specifications follow herewith:

PSA GENERAL

PSA 1 SCOPE

Replace the contents of Clause 1.1, including the notes, with the following:

“1.1 This specification covers requirements, principles and responsibilities of a general nature which are generally applicable to civil employer’s agent construction and building works contracts, as well as the requirements for the Contractor’s establishment on the Site.”

PSA 2 INTERPRETATIONS

PSA 2.3 DEFINITIONS

In the opening phrase, insert the words: “the definitions given in the Conditions of Contract and” between the words “specification” and “the following”.

a) General

Add the following definitions:

“General Conditions and Conditions of Contract The General Conditions of Contract specified for use with this Contract as amended in the Contract Data.

Specified As specified in the Standardized Specifications, the Drawings or the Scope of Work. “Specifications” shall have the corresponding meaning.”

c) Measurement and payment

Replace the definitions for “Fixed charge”, “Time-related charge” and “Value-related charge” with the following:

“Fixed charge. A charge that is not subject to adjustment on account of variations in the value of the Contract Price or the time allowed in the Contract for the completion of the work.

Time-related charge. A charge, the amount of which varies in accordance with the Time for Completion of the Works, adjusted in accordance with the provisions of the Contract.

Value-related charge. A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract.”

PSA 2.4 ABBREVIATIONS

a) Abbreviations relating to standard documents

Add the following abbreviation:

“CKS: SABS Co-ordinating Specification.”

PSA 3 MATERIALS

PSA 3.1 QUALITY

Substitute the second sentence of the first paragraph of A 3.1 with the following

Materials shall bear the official mark of the appropriate standard (SABS or BS specifications).

Substitute the second paragraph with the following:

Samples on which laboratory testing is required, shall be delivered free of charge to an approved laboratory. The contractor is responsible for the cost of all testing to ascertain that the materials do comply with the specified minimum requirements of the relative materials and no additional payment will be made for such testing.

The Contractor shall inform the Employers agent of any control testing to be done at least 48 hours before Such tests are required and must allow in his program for the time necessary for the tests and the processing of the results thereof.

The handling, storage and transport and transport and erection of equipment, machinery and materials shall be strictly in accordance with the requirements of the supplier and or manufacturer.

All materials shall be new and of the best quality available unless otherwise specified. It must function Satisfactorily under prevailing climate and weather conditions at the place of installation.

PSA 4 PLANT

PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

Add the following new paragraph before the existing paragraph in Clause 4.2:

Security of the Contractor's camp and construction site will be the Contractor's own responsibility and no additional payment will be made if additional security measures (crime prevention etc.) need to be employed during the contract period.

The Contractor's shall make his own arrangements for the accommodation of his employees and labourers. The Contractor's shall acquaint himself with the regulations regarding the camp site, housing, sanitary facilities, etc. as required by the relevant authority.

PSA 5 CONSTRUCTION

PSA 5.1 SURVEY

PSA 5.1.1 Setting out of the Works

Setting out of the works is the sole responsibility of the Contractor and shall be done as agreed by the engineer. The Contractor shall, within two (2) weeks after the site has been handed over to him, ascertain for himself the correctness of all pegs and bench marks. Any discrepancy shall immediately be reported in writing to the Employers agent. Any costs or subsequent costs arising from discrepancies which had not been reported to the Employers agent within the aforementioned period, shall be the sole responsibility of the Contractor.
Add the following to A 5.1.1

Setting out of the works will not be measured and paid for directly, and compensation for the work involved In setting out shall be deemed to be covered by the rates and prices tendered and paid for the various Items of work included under the Contract.

The contractor shall check the levels given in a specific area well in advance of construction in that area to

allow both the accurate measurement of quantities for payment purposes, and should major discrepancies be found, to allow the Employers agent sufficient time to check and if required revise the working drawings. Should the Contractor fail to do this, the levels shown or any amendments to these made by the Employers agent will be used for measurement and payment purposes, and should major discrepancies evidence themselves during construction no claim of whatever nature (delay, returning to excavate. Filling, etc.) will be entertained due to the Employers agent revising his requirements at a later stage.

PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Add the following to A 5.4:

The Contractor shall as soon possible after handing over of the site, commence with the detection to existing services, continue with it without interruption and finalize it at least 7 days before excavation starts at that particular section.

PSA 5.5 DEALING WITH WATER ON WORKS

Add the following to A 5.5:

All work must be protected against flooding and damage by water (stormflow, groundwater etc) and the Contractor's prices will be held to include such protection and for any rectification that may be required (including out of material or layerworks or any consequential losses, slow progress, deviations, cofferdams, sums, wellpoint, labour and pumping of water).

Care shall be taken that a free passage for water is maintained in all gutter and waterways. Special precautions shall be taken by the Contractor not to change existing conditions by leaving spoil in waterways or by diverting water onto private property.

The Contractor shall make good any damage and shall settle all claims at his own expense in the event of flooding of private property or public property occurring through waterways being obstructed by his operations or through the effect of any other of his acts or omissions.

The Contractor shall be responsible throughout the duration of the Contract, inclusive of the Defects Liability Period, for the implementation and maintenance of all soil erosion preventative measures necessary to protect any pipeline and properties through which it passes and land utilised by the Contractor during the Contract from any adverse effects of soil erosion, settlement, scour, etc resulting from the contract works.

Notwithstanding the types and quantities of anti-erosion measures executed by the Contractor, whether ordered by the Employers agent or not, and notwithstanding the maintenance work performed on settlement in trench or elsewhere, all erosion of the trench, of the working area and adjacent to it, and on other areas occupied or used by him during the course of the Contract, all wash-aways, scour at waterways, deteriorating of anti-erosion works and any other damage. He shall, therefore, be free to carry out at his own expense, such additional compaction of the backfill and such other anti-erosion or other works as, in his opinion, will reduce his restoration and repair work during the Contractor Period including Defects Liability Period and shall provide therefore in his Tender.

Unless otherwise allowed for in the Bill of Quantities, the Contractor shall be responsible for all costs in dealing with water and must therefore allow for such costs in the tender rates.

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.2 PAYMENT

PSA 8.2.1 Payment of Fixed-Charge and Value-related items

Replace A 8.2.1 with the following:

PSA 8.2.1.1 The value of fixed-charge and time-related items should not exceed 25% of Sub Total A on the Summary of the Bill of Quantities. In this event (ie the value of the fixed-charge and time-related items In a tender is lower than 25% of the abovementioned total), payment of the fixed-charge items will be made as follows:

Fixed-charge items

Two payments will be made as follows:

50% of the amount with first payment certificate, ie after establishment on site and approval of the contractual obligations such as contractual guarantee and insurances.

Final 50% after completion of 1/3 of the work.

PSA 8.2.1.2 If the value of the fixed-charge and time-related items exceeds 25% of Sub Total A in the Bill of Quantities, payment of the fixed-charged and time-related items will be made as follows:

(a)Fixed-charged items

Four payments will be made as follows:

-25% of the amount with the first payment certificate i.e. after establishment on site and approval of the contractual obligations such as contractual guarantee and insurances have been compiled with.

-25% of the amount after completion of 1/3 of the work.

-25% of the amount after completion of 2/3 of the work.

-Final 25% of the amount after completion 100% of the work.

(b)Time-related items

The contractor will be paid equal monthly payments provided that he proceeds with the construction with due diligence, failing which, the time-related items will be paid at the sole discretion of the Employers agent.

PSA 8.2.2 **Time-related items**

Replace the contents of Clause 8.2.2 with the following:

In the event of additional time being authorised for additional work, the specific time related charges will be taken into account to calculate the time-related charges into the extended contract time. The amount will be calculated according to the rates tendered for time-related charges taking into account the original time for completion, the cost of the additional work and the number of employees and machinery required for the additional work, to that of the original contract.

The annual builders holiday will not be taken into account when calculating payment of time-related items.

Add the following to A 8.2

PSA 8.2.5 **Adjusted Payment for Time-Related Items**

The payment to the Contractor for Time-Related Items shall be adjusted in accordance with the following formula in the event of the Contract being extended by means of a Variation Order:

Sum of Tendered amounts for Time Related Items X Extension of Time authorised by Variation Order
Time stated for Achieving Practical Completion

For the purposes of applying this formula "Extension of Time" will exclude the specified year-end break, if applicable.

The abovementioned adjustment of the payment for Time-Related Items shall be made in the completion Payment Certificate and shall be the only payment for additional Time-Related costs irrespective of the actual period required to complete the Contract including its authorised extensions.

"PSA 8.4.6 Standing Time Costs

- (a) Plant Unit: Sum per working day
- (b) Labour Unit: Sum per working day
- (c) Other resources (to be specified by..... Unit: Sum per working day

The sum tendered sum for each item shall include full compensation for all standing time costs of the specified resource of Whatever nature and approved by Employers agent, which are not recoverable by way of the provision made in PSA 8.2.5 for the adjusted payment of time-related items.

For the purposes of calculating the total standing time cost, a working week shall be held to consist of five working days and a working day 9 hours.

Payment for the partial standing of any of the scheduled resources for a day or part thereof, or the standing of a complete resource for a part day, will be made pro-rata in proportion to an appropriate factor assessed by the Employers agent.

"PSA 8.7 DAYWORK

Daywork will be paid according to the percentage allowance method. For calculating the total remuneration the general conditions of contract for the construction of civil employers agent work, edition (2015) shall apply, with the amendments as in the appropriate special conditions of contract as noted in the scope of works.

PSA 8.8 TEMPORARY WORKS

PSA 8.8.2 Accommodation of traffic..... Unit: Sum

The rate shall cover all costs pertaining to the provision, erection, moving, re-erection and maintenance of all temporary Barricades, road signs, lights, flagmen etc. as required, for the guarding and protection of the works, for the construction, gravelling and maintenance of access roads and detours to the site of the works, borrow pits or spoil sites, as well as for lateral removal or the cleaning and tidying u thereof, for making the necessary traffic arrangements and arrangements with regard to the moving and/or re-erection of existing traffic signs, as well as all other costs to accommodate the traffic during construction.

PSA 8.8.4 Existing services

Add the following to A 8.8.4:

Where the Contractor is responsible for the cost of repairs carried out by the Employer or others, the costs will be recovered by means of a deduction from the Contractor's monthly payment certificate. The Employer will attend to the payment of monies due to others.

PSA 8.8.5 Cost of Survey in Terms of the Land Survey Act.....Unit: Sum

Substitute 8.8.5 with the following

The sum shall cover the cost of all labour, plant and material required for the searching and compilation of a list, all in accordance with the requirements as set out in clause A 5.1.2

PSA 8.9.1 Health And Safety Measures.....

The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the health and safety measures required in terms of Clause 5 (Principle Contractor and Contractor) of the Construction Regulations (2014) of the Occupational Health and Safety Act. No other sum shall be paid in this respect and tenderers must therefore ensure that adequate provision has been allowed for.

PSA 8.9.2 Health And Safety Plan.....

The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the health and safety plan as required in the Construction Regulations (2014). The rate shall include for all risk assessments required as well as for the development and implementation of safe work procedures and method statements. No other sum shall be paid in this respect and tenderers must therefore ensure that adequate provision has been allowed for.

PSA 8.9.3 Health and Safety File

The rate shall cover all costs pertaining to the provision and/or collection of data (drawings, design, materials, operation and maintenance manuals etc) to be contained in the file, co-operation with parties, compilation and maintenance of the file during the duration of the contract and handing over of the file to the Client on completion of contract. No other sum shall be paid in this respect and tenderers must therefore ensure that adequate provision has been allowed for.

C3.5: MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

C3.5.1.1 Applicable SANS standards

C3.5.1.2 Particular / generic specifications

C3.5.1.3 Planning and Programming

Refer Clause 5.6 of the Conditions of Contract.

The Contractor is further reminded to incorporate and cater for the following within the programme:

- Allowance for normal weather conditions as specified under Clause 5.12.2.2 of the Conditions of Contract.
- Allowance for the subcontracting procurement and procedures as specified under C3.3: Procurement under the Scope of Work.

If the programme submitted by the Contractor in terms of Clause 5.6 of the Conditions of Contract has to be revised because the Contractor is falling behind in his programme, he shall submit a revised programme of how he intends to regain lost time to ensure completion of the Works within the period defined in Clause 5.12 of the Conditions of Contract or within a granted extension of time.

Proposal to increase the tempo of work must incorporate positive steps to increase production either by more labour and plant on the Site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the programme or revised programmes shall be sufficient reason for the Employers agent to take steps as set out in Clause 9.2 of the Conditions of Contract.

The approval of a programme by the Employers agent shall have no contractual significance other than that the Employers agent will be satisfied if the work is carried out according to the programme. The said approval shall not limit the right of the Employers agent to instruct the Contractor to vary the programme if necessary. The Contractor's attention is also drawn to C3.4.10.

C3.5.1.4 Sequence of the works

To be determined by the Contractor.

C3.5.1.5 Software application for programming

To be determined by the Contractor.

C3.5.1.6 Methods and Procedures

The Works shall be executed in terms of the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.7 Quality plans and control

Refer to the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications, the subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.8 Environment

Refer to the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications, the subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

The Contractor shall, for the duration of the contract, take appropriate measures to control the dust and soil movement which may arise due to his operations.

C3.5.1.9 Accommodation of traffic on public roads occupied by the Contractor

Refer to the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications, the subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.10 Other contractors on site

Refer also to the various and applicable SANS/SABS 1200 Specifications, the EMP, the general health and safety specifications, the subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.11 Testing, completion, commissioning, and correction of defects

Refer to the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications, the subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.12 Recording of weather

Refer C3.4.10.

C3.5.1.13 Format of communications

All contractual communication shall be in writing.

The Contractor shall, for the full duration of the Contract Period, supply and maintain the following documentation:

- (a) Site Communication and Request Book.
- (b) Safety File containing all relevant safety data.
- (c) Daily register of all labour, plant and equipment.
- (d) Quality Control files containing all quality control/assurance forms and records.
- (e) One full set of Contract Drawings and documents.
- (f) Latest revision of the Construction Programme.

The above-mentioned shall be kept on Site and shall be accessible to the Employers agent at all times.

C3.5.1.14 Key personnel

Key personnel shall be on site at all times to control, manage and supervise construction activities.

C3.5.1.15 Management meetings

The Contractor shall have regular site management meetings to coordinate and manage the Works.

Monthly Contract Meeting shall be held on site. This meeting shall be chaired by the Employers agent.

C3.5.1.16 Forms for contract administration

The Employer, the Contractor and the Employers agent shall operate and maintain their own individual contract administration systems.

C3.5.1.17 Electronic payments

Not applicable.

C3.5.1.18 Daily records

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.19 Bonds and guarantees

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.20 Payment certificates

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.21 Permits

Not applicable.

C3.5.1.22 Proof of compliance with the law

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.1.23 Insurance provided by the employer

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and

subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.2 HEALTH AND SAFETY

The Contractor shall comply with the Employers health and safety specifications as specified in Particular Specifications, the Scope of Work as well as the Conditions of Contract.

C3.5.2.1 Health and safety requirements and procedures employer

- a) In terms of the provisions of Section 37(2) of the Occupational Health and Safety Amendment Act, 1993 (Act 85 of 1993), hereinafter referred to as the Act, the following arrangements and procedures shall apply between the Contractor and the Employer to ensure compliance by the Contractor with the provisions of the Act:
- b) The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all relevant provisions of the Act and the Regulations promulgated in terms of the Act.
 - (i) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations on the Contractor will be fully complied with.
 - (ii) The Contractor accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations and expressly absolves the Employer from himself being obliged to comply with any of the aforesaid duties, obligations and prohibitions, with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations.
 - (iii) The Contractor agrees that any duly authorised officials of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to monitor that the Contractor has conformed to his undertakings as described in paragraphs (i) and (ii) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or any appropriate records or safety plans held by the Contractor.
 - (iv) The Contractor shall be obliged to report forthwith to the Employer and Employers agent any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing, to the Employer and Employers agent, of such investigation, complaint or criminal charge.
 - (v) The Contractor shall furthermore, in compliance with Construction Regulations 2014 (Notice No R84, dated 7 February 2014) to the Act acquaint himself with the requirements of the Employer's health and safety specification as laid down in regulation 4(1)(a) of the Construction Regulation 2014, and prepare a suitably and sufficiently documented health and safety plan as contemplated in regulation 5(1) of the Construction Regulation 2014 for approval by the Employer or his assigned agent. The Contractor's health and safety plan and risk assessment shall be submitted for approval, to the Employer or his agent, within 14 days of the Commencement Date and shall be implemented and maintained from the commencement of the Works. The Contractor shall at all times be responsible for full compliance with the approved plan as well as with the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.
 - (vi) The Employer, or his assigned agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations 2014, to monitor that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with the requirements of these Regulations shall entitle the Employers agent, at the request of the Employer or his agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages incurred as a result of such suspension, until such time that the Employer or his agents are satisfied that the issues in which the Contractor has been in default have been rectified.
 - (vii) The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the C3.4: Construction, the Bill of Quantities, the Drawings, and in the Employers' health and safety specification (regulation 4(1) of the Construction Regulations 2014).

Payment items are included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

C3.5.2.2 Protection of the public

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

The Contractor shall at all times ensure that his operations do not endanger any member of the public.

C3.5.2.3 Barricades and lighting

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.2.4 Traffic control on roads

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.2.5 Measures against disease and epidemics

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C3.5.2.6 Aids awareness

Refer the various and applicable SANS/SABS specifications, the EMP, the general health and safety specifications and subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

CONTRACT

PART 4 (OF 4): SITE INFORMATION

	C4.1	Scope	125 49
	C4.3	Existing Services, Buildings and Structures	125 49

C4.1: SCOPE

C4.1.1 GENERAL

For the purposes of the Contract it will be deemed that, prior to submitting their Tender, the Contractor has acquainted himself fully with the specifications, information and data provided within the various and applicable SANS/SABS specifications, the health and safety specifications, subsequent health and safety plan, the Conditions of Contract as well as the various clauses within the Scope of Work.

C4.3: EXISTING SERVICES, BUILDINGS AND STRUCTURES
--

C4.3.1 GENERAL

The Contractor is responsible for locating all existing services and should contact the relevant officials at the Kouga Local Municipality in order to determine the exact location and operation of the services. The Contractor is responsible for the protection of all affected existing services for the duration of construction.

The Contractor's attention is further directed to the various specifications and conditions under the SANS 1200 A Standardized Specification as amended under the Scope of Work as well as to the applicable Clauses within the Conditions of Contract.

APPENDICES

Appendix A: Health and Safety Specification

Appendix B: Tender Drawings Bound Into This Document

Appendix C: Particular Specifications – Building Specification

APPENDIX C: TENDER DRAWINGS

PARTICULAR SPECIFICATIONS

PARTICULAR SPECIFICATION: PB

PB: HEALTH AND SAFETY SPECIFICATIONS

PORTION 1:

GENERAL CONSTRUCTION HEALTH AND SAFETY SPECIFICATION



**ISSUED IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
CONSTRUCTION REGULATIONS, 2014**

INDEX

1	DEFINITIONS
2	INTRODUCTION TO THE GENERAL CONSTRUCTION HEALTH & SAFETY SPECIFICATION
3	LIMITATION OF LIABILITY
4	PURPOSE OF THE GENERAL CONSTRUCTION HEALTH & SAFETY SPECIFICATION
5	IMPLEMENTATION OF THE GENERAL CONSTRUCTION HEALTH & SAFETY SPECIFICATION
6	SCOPE
7	COMPENSATION OF OCCUPATIONAL INJURIES AND DISEASES
8	NOTIFICATION OF INTENTION TO COMMENCE CONSTRUCTION WORK
9	COMPETENCY
10	CONSTRUCTION SAFETY OFFICER
11	PRINCIPAL CONTRACTOR'S HEALTH & SAFETY PLAN
12	HAZARD IDENTIFICATION AND RISK ASSESSMENT
13	HEALTH AND SAFETY FILE
14	INDUCTION
15	HEALTH AND SAFETY TRAINING AND ONGOING RISK COMPETENCY
16	INSPECTION, MONITORING AND FIRE FIGHTING
17	INCIDENT MANAGEMENT
18	AUDITS AND INSPECTIONS
19	PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING
20	OCCUPATIONAL HEALTH & SAFETY SIGNAGE
21	SUB CONTRACTORS
22	PUBLIC HEALTH AND SAFETY
23	NIGHT WORK AND AFTER HOURS WORK
24	FACILITY MANAGEMENT
25	HEALTH AND SAFETY REPRESENTATIVE AND COMMITTEE
26	HOUSEKEEPING, STACKING, STORAGE AND LAY-DOWN AREAS
27	WASTE MANAGEMENT
28	OCCUPATIONAL HEALTH
29	FIRST AID MANAGEMENT
30	ACCESS AND VEHICLE MANAGEMENT
31	WORKING WITHIN OPERATIONAL AREAS OF THE KLM
32	HOT-WORK, FIRE RISKS AND FIRE FIGHTING EQUIPMENT
33	LIVE ENERGY WORK
34	WORK IN CONFINED SPACES
35	ELEVATED WORK
36	LADDERS
37	EXCAVATION WORK
38	EXPLOSIVES AND BLASTING
39	DEMOLITION WORK
40	ELECTRICAL RETICULATION AND MACHINERY
41	FORM WORK AND SUPPORT WORK
42	SCAFFOLDING
43	PILING
44	CONSTRUCTION PLANT [INCLUDING RENTAL / HIRED PLANT]
45	SUSPENDED PLATFORMS
46	MATERIALS HOISTS
47	BATCH PLANTS
48	EXPLOSIVE POWERED TOOLS
49	CRANES
50	STORAGE OF FLAMMABLE LIQUIDS
51	HAZARDOUS CHEMICAL SUBSTANCES (HCS)

Annexure A - Contents and Numbering System for the Health and Safety Plan

Annexure B - Contents and Numbering System for the Health and Safety File

Annexure C - Construction Appointments

Annexure D - Responsibilities / Duties

Annexure E – Section 37 (2) Mandatory H&S Agreement

Annexure F – Construction Project Contractor H&S Plan / File Layout & Document Content

Annexure G - Document Review Panel

1. Definitions

For the purpose of the General construction Health and Safety Specification, the abbreviations or definitions given hereunder shall apply:

- 1.1 “Agent” refers to an occupational health and safety practitioner, appointed by the KLM to act on its behalf, and who is appointed in writing.
- 1.2 “Client” refers to the Kouga Local Municipality
- 1.3 “Competent person” refers to any person having the knowledge, training, experience and qualifications specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training;
- 1.4 “Construction work” refers to any work in connection with –
 - 1.4.1 the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar [structure](#);
 - 1.4.2 the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
 - 1.4.3 the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
 - 1.4.4 the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- 1.5 “Contractor” refers to a Contractor of the Principal Contractor, including the Principal Contractor himself
- 1.6 “CR” refers to the Construction Regulations, 2014
- 1.7 “Excavation work” means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping.
- 1.8 “Fall arrest equipment” refers to equipment used to arrest the person in a fall from an elevated position, including personal equipment, body harness, lanyards, deceleration devices, lifelines or similar equipment, but excludes body belts.
- 1.9 “Fall prevention equipment” refers to equipment used to prevent persons from falling from an elevated position, including personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment.
- 1.10 “Fall protection plan” refers to a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk. “GCHSS” refers to this document, the General Construction Health & Safety Specification
- 1.11 “H&S” refers to Health and Safety
- 1.12 “HCS” refers to Hazardous Chemical Substances
- 1.13 “Health and Safety Plan” refers to a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.
- 1.14 “Health and Safety Specification” refers to a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons.
- 1.15 “Hot Work” means any work where there is a fire or explosion risk, including but not limited to all welding, plasma cutting, LPG-or acetylene gas applications, grinding, work with flammable or explosive substances and work with chemicals with the potential of exothermic reactions.
- 1.16 “Medical certificate of fitness” means a certificate valid for one year issued by an occupational health practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa.
- 1.17 “Method statement” refers to a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in the risk assessment.

- 1.18 "KLM" refers to the Kouga Local Municipality
- 1.19 "OHS Act" refers to the Occupational Health & Safety Act of 1993
- 1.20 "OHSAS 18001" refers to the Occupational Health & Safety Auditing System standard
- 1.21 "Plant" includes fixtures, fittings, implements, equipment, tools and appliances, and anything which is used for any purpose in connection with such plant.
- 1.22 "Principal Contractor" means an employer, as defined in [section 1](#) of [the OHS Act](#) who performs [construction work](#) and is appointed by the KLM to be in overall control and management of a part of, or the whole of a construction site.
- 1.23 "Regulations" refers to the Regulations issued under the Occupational Health & Safety Act.
- 1.24 "Risk Assessment" refers to the systematic & methodical assessment methodology utilised to identify hazards and risks to persons / plant and equipment and the corresponding listing of risk controls; the risk assessment must form part of the health and safety plan to be applied on a site of works
- 1.25 "S" refers to a Section in the Occupational Health & Safety Act of 1993.
- 1.26 "Site" refers to the factories, lands and other places, made available by the KLM for the purposes of the Contract, on, under, over, in, or through which the construction work is to be executed or carried out.
- 1.27 "Structure" includes:
 - 1.27.1 Any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
 - 1.27.2 Any formwork, false work, [scaffold](#) or other structure designed or used to provide support or means of access during [construction work](#); or
 - 1.27.3 Any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two meters or more.
- 1.28 "Work Instruction" [WI] refers to a portion or the whole of a method statement which is essential to ensure employee competence with the relevant task.
- 1.29 "Standard" refers to the OHSAS 18001 auditing system standards covering OH&S management that is intended to provide the KLM with the elements of an effective OH&S management system that can help the KLM achieve OH&S and economic objectives. This OHSAS standard specifies requirements for an OH&S management system to enable the KLM to develop and implement a policy and objectives which take into account legal requirements and OH&S risks.

The Occupational Health and Safety Assessment Series Standard is a recognizable occupational health and safety management system standard against which management systems can be assessed and certified.

OHSAS 18001 has been developed to be compatible with the ISO 9001:2000 (Quality) and ISO 14001:2004 (Environmental) management systems standards, in order to facilitate the integration of quality, environmental occupational health and safety management systems by organizations.

2. Introduction to the General Construction Health and Safety Specification

- 2.1 The KLM aims to execute its health and safety duties as mandatory with the aim of 'zero harm to all'. The KLM is further committed to ensuring that the highest standards of health and safety prevail. For this purpose, the client's duty of the KLM is bestowed on the Public Health Directorate, whose task it is to execute or manage all the statutory duties of the KLM as mandatory for construction.
- 2.2 This General Construction Health & Safety Specification is published in terms of the Occupational Health & Safety Act of 1993, Construction Regulation 5(1)(b). It applies to the Principal Contractor and to all other contractors and all persons who work on a construction project.

- 2.3 This GCHSS formulates the minimum requirements which must be met by Contractors and documented in the contractors' health and safety plan. The specification is not a limited or exhaustive list of legal and corporate compliance requirements. By its very nature, construction work and its occupational health and safety hazards are dynamic; work methods, site conditions or occupational hazards may change or become apparent after the H&S specification's development. The KLM requires each contractor to document and plan ongoing assessments of risks and review of controls in the H&S plan and file. Chapters included in this specification, which do not apply to a project, must be ignored.
- 2.4 The Principal Contractor must appoint contractors where applicable, for each part of the project and the contractor shall submit his H&S plan for approval to the Principal Contractor before commencement of the construction work. Additionally to the requirements of Construction Regulations, a Principal Contractor shall notify the KLM of every H&S plan which has been approved before commencement of the relevant contractor on the site.
- 2.5 Additional to the legal requirement of the Construction Regulations, each sub-contractor appointed by a contractor of the Principal Contractor, must submit his H&S plan for approval to both the appointing contractor and the Principal Contractor; both the appointing contractor and the Principal Contractor shall approve the H&S plan before commencement of the relevant construction work.
- 2.6 The GCHSS does not replace the Construction Regulations, but is a supplementary specification as required in terms of the Regulations. Partial references to or quotes from the Regulations do not imply that the sections not referred to or quoted from are of lesser importance or are not applicable.
- 2.7 All Contractors are, at all times required to and will remain responsible to fully address all requirements and standards of the Occupational Health and Safety Act, Regulations and the full Construction Regulations in the Health and Safety Plan and the implementation thereof. The controls of the approved H&S plans must be strictly and comprehensively implemented and maintained by all contractors.
- 2.8 This Health & Safety Specification must be included in all tender documents for construction work. It shall be known within the KLM as the General Construction Health & Safety Specification.
- 2.9 It may be supplemented on various projects by a specific Construction Health & Safety Specification which deals with health & safety issues relevant to that specific project only.
- 2.10 Through the Public Health Directorate the KLM may appoint an Agent who shall (inter-alia) be responsible for the approval of all Principal Contractors' H&S Plans, for the auditing of the Principal Contractors' implementation thereof, and for maintaining the document control associated with the GCHSS. The Public Health Directorate shall ensure quality control of all agents appointed and shall ensure that no person is appointed as agent, unless the Public Health Directorate is reasonably satisfied that the person it intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by the statutes.
3. Limitation of liability
- 3.1 The KLM and its agent shall not be responsible for any acts or omissions of any Contractor which may directly or indirectly result from the application of the GCHSS or any project specific version thereof.
- 3.2 Contractors must ensure that work, equipment, machinery, plant and work practices are, at all times, compliant to the legal requirements as these apply.
- 3.3 Contractors must ensure that where the scope of work is changed or where, for whatever reason, additional or new risks are identified the H&S plan is adapted accordingly. Any change to the H&S plan must be approved by the Public Health Directorate or its agent. No such work, not included in the approved H&S plan, may be commenced unless discussed and finally approved by the Public Health Directorate or its agent.
- 3.4 The KLM and its agent shall limit its responsibility to the application of the Construction Regulations' Client Requirements only.
- 3.5 Any other potential responsibility on the part of the KLM shall be dealt with in a Mandatory Agreement, as defined in Section 37(2) of the OHS Act. The signed contract must be included in the H&S plan.

- 3.6 Each contractor shall enter into a Section 37(2) mandatory agreement with the KLM prior to starting work on the site. It is the responsibility of the Principal Contractor to ensure that each contractor has a completed and signed Section 37(2) mandatory agreement with the KLM in the contractors' health and safety file on site.
4. Purpose of the General Construction Health and Safety Specification
- 4.1 The purpose of the GCHSS is for the specification to be used as a specific standard on which all Contractors' H&S Planning must be based.
- 4.2 The GCHSS will be applicable on any construction project within the KLM.
5. Implementation of the General Construction Health and Safety Specification
- 5.1 This GCHSS forms an integral part of the Project Contract, and Principal Contractors are required to make it an integral part of their contracts with subcontractors and suppliers. It will be disseminated by the KLM to persons responsible for the design of structures, who will ensure that it is included in the Tender Document(s) issued to prospective Principal Contractors.
- 5.2 The prospective Principal Contractors shall allow in their tenders for the cost of complying with the requirements of the GCHSS. The H&S plan shall outline the budgeted costs for occupational health and safety, applicable to each construction project.
- 5.3 The signing by the Principal Contractor of the Contract with the KLM shall constitute acknowledgement that the Principal Contractor has familiarised himself with the content of the GCHSS and that he will comply with all obligations in respect thereof.
6. Scope
- 6.1 This GCHSS covers the general requirements for addressing, mitigating and controlling Occupational Health and Safety related risks, problems, incidents and injuries on projects constructed or executed for the KLM.
- 6.2 The scope addresses legal compliance, hazard identification, risk assessment, risk control methodology and the promotion of a health and safety culture amongst those working on the KLM projects.
- 6.3 The GCHSS contains clauses that are generally applicable to building, employers agenting and construction and imposes controls associated with activities that impact on human health and safety.
- 6.4 The Principal Contractor is required to comply with the provisions of the OHS Act, all applicable Regulations and this GCHSS.
- 6.5 The KLM, through the Public Health Directorate will monitor the Principal Contractor's compliance with the requirements of the OHS ACT, Regulations and their H&S Plan.
7. Compensation of Occupational Injuries and Diseases
- 7.1 The Principal Contractor shall submit proof of registration as an employer, and proof of Good Standing with the COIDA Commissioner in the H&S plan and prior to starting the work;
- 7.2 A copy of the Letter of Good Standing with the COIDA Commissioner must be included in the H&S Plan.
8. Notification of Intention to Commence Construction Work
- 8.1 After receipt of the Letter of Acceptance from the KLM, the Principal Contractor shall notify the Provincial Director of the Department of Labour of a notifiable project before work commences.
- 8.2 The notification shall be similar in format to Annexure 2 in the Construction Regulations, 2014.
- 8.3 A copy of the notification letter to the Provincial Director and proof of notification must form part of the H&S Plan.

9. Competency
 - 9.1 The H&S plan shall include signed letters of appointment of competent persons.
 - 9.2 The competency of each person shall be documented in an attachment to the letter of appointment.
 - 9.3 Such attachment shall contain verifiable evidence of the competent persons':
 - 9.3.1 Knowledge; and
 - 9.3.2 Training; and
 - 9.3.3 Experience; and
 - 9.3.4 Qualifications specific to the work or task for which the appointee is competent.
 - 9.4 The Principal Contractor shall include a competency matrix linking the competent employees, as per the organisational chart, to the competency required as a result of the risk assessment. The competency matrix forms part of the methodology for assessing the Principal Contractors' overall competence as required in the Construction Regulations.
10. Construction Safety Officer
 - 10.1 The Principal Contractor shall appoint a fulltime competent person to function as Construction H&S Officer for the construction work at the KLM.
 - 10.2 Proof of competence of the appointed construction safety officer must be included in the H&S Plan for approval by the KLM
 - 10.3 The planned functions, including the applicable attendance, inspection- and audit procedure and forms applicable to the work of the Construction Safety Officer must be outlined in the H&S Plan.
11. Principal Contractor's Health & Safety Plan
 - 11.1 The Principal Contractor shall submit an H&S Plan to the Public Health Directorate, in accordance with the legal requirements and the GCHSS, prior to work starting.
 - 11.2 This plan must be presented to and approved by the Public Health Directorate or its agent prior to the site being handed over to the Principal Contractor.
 - 11.3 The content of the H&S Plan shall follow a specific order as per Annexure A and include the following:
 - 11.3.1 A cover page indicating:
 - 11.3.1.1 The contract reference;
 - 11.3.1.2 The name and address of the Principal Contractor and its CEO;
 - 11.3.1.3 The name and signature of the designated person in terms of section 16(2) and of the Construction Supervisor;
 - 11.3.1.4 A space for the client and Agent to sign for approval;
 - 11.3.2 An index of the H&S Plan
 - 11.3.3 The Principal Contractors' Occupational Health and Safety Policy, if any;
 - 11.3.4 A detailed overview of the scope and activities of the project; such overview must identify all activities of the project in a chronological manner, following the planned progress of the project; the scope must include all work done by sub-contractors.
 - 11.3.5 An overview of the machinery and plant used in the project;
 - 11.3.6 An organisational chart of the competent staff deployed in the project, which identifies legal appointments and responsibilities (see Annexure C); the chart must refer to the proof of competence of each person.

- 11.3.7 A hazard identification and risk assessment based on the scope of work as indicated in item 11.3.4. and the machinery identified in item 11.3.5 herein;
- 11.3.8 An overview of the management controls, with reference to the hazard identification and risk assessment, to ensure compliance with legislation and the relevant sections of the GCHSS; these controls shall be documented in method statements addressing employers agenting- and administrative risk control.
- 11.3.9 All relevant documents, appointment letters, programmes, instructions, inspection register templates, etc. to support each section of the H&S Plan. Where practical, such documents may be inserted in the H&S file; the H&S file, together with the H&S plan may be submitted for approval by the Public Health Directorate.
- 11.3.10 The Public Health Directorate shall assess and discuss, where applicable, the contents of the H&S plan with the Principal Contractor. The assessment systematically verifies compliance of the H&S plan with the statutory requirements and with the requirements in the H&S specification. The assessment is done in accordance with the KLM H&S procedure for the assessment of construction H&S plans

12. Hazard Identification and Risk Assessment

- 12.1 Interfacing with the Public Health Directorate's H&S structures, a pre-construction baseline risk assessment shall be conducted by the KLM project management team at the pre- construction work / project stage, prior to releasing any tender documentation.
- 12.2 The Principal Contractor shall appoint a competent person to perform a baseline and issue-based hazard identification and risk assessment. The competent persons' proof of training as a risk assessor shall be attached to the letter of appointment.
- 12.3 The baseline assessment shall be included in the H&S Plan.
- 12.4 Risk assessments of all risk-bearing activities identified in the scope of work shall form an integral part of the H&S Plan.
- 12.5 The risk assessment must be based on the scope of work, the materials required and the machinery used.
- 12.6 The risk assessment must refer to all controls which the Contractor plans to put in place [CR 9].
- 12.7 All risk assessments shall be conducted in terms of an acceptable and documented methodology, prior to commencement of work and in accordance with the provisions of the CR.
- 12.8 The methodology shall ensure that:
 - 12.8.1 For each hazardous event, hazards must be identified separately and the risk assessment and identification of controls must be documented separately.
 - 12.8.2 Risk scoring must, at least, identify a residual risk.
 - 12.8.3 Risk controls are referenced to the planning in the H&S plan.
 - 12.8.4 A risk register, listing the residual risks from highest to lowest must be included in the baseline risk assessment.

13. Health & Safety File

- 13.1 The Principal Contractor shall provide and maintain a H&S File, containing all relevant documents as prescribed in the OHS Act and Regulations and all records referred to in the H&S Plan.
- 13.2 The H&S file, in its original start-up format, shall be presented to the Public Health Directorate together with the H&S plan during the discussions for final approval.
- 13.3 The H&S File shall be kept on the construction site and available for inspection by the KLM, its Agent, or the Department of Labour's Inspectors.
- 13.4 The H&S File shall include an index as per Annexure B.
- 13.5 The H&S File becomes the property of the KLM after completion of the project.

14. Induction
 - 14.1 The Principal Contractor shall develop a job- or project-specific induction training programme in health and safety, based on the risk assessment, to ensure that all employees on site are conversant with:
 - 14.1.1 The risks of the construction project
 - 14.1.2 The controls documented in the H&S Plan
 - 14.1.3 The role they are expected to play in ensuring health and safety on the construction site.
 - 14.2 The Principal Contractor shall ensure that all employees are competent in the induction training before commencing duties on site.
 - 14.3 The contents of the induction programme and method of ensuring that all employees are inducted will be documented in the H&S Plan.
 - 14.4 When working in or close to production areas or areas where the KLM employees, visitors or stakeholders are working, each employee of a contractor accessing the site, including management, shall complete the KLM induction; Each contractor shall ensure that none of his employees accesses the KLM site/s unless having been inducted by the KLM.
15. Health and Safety Training and Ongoing Risk Competency
 - 15.1 The Principal Contractor shall ensure that daily pre-task health and safety instructions are given to all employees.
 - 15.2 The methods for ensuring that daily pre-task instructions or start-up talks or toolbox talks occur, including the method of documenting the contents and attendance, shall be described in the H&S Plan.
 - 15.3 Competency of employees and ongoing training in H&S matters shall be documented by including a training matrix indicating; occupation, employee name & surname, subject matter, date of training, reference number and employees' competency in safe working processes:
 - 15.3.1 Each applicable safe work instruction must be included in the H&S Plan;
 - 15.3.2 The method of training and ensuring competence must be included in the H&S Plan.
16. Inspection, Monitoring and Reporting
 - 16.1 The Principal Contractor shall carry out daily safety inspections on the site (or more frequent, where so required in the Regulations), and shall take steps to rectify any unsafe condition of which he is aware.
 - 16.2 The H&S plan shall contain an inspection schedule addressing all identified risks; the schedule and contents of the inspection shall be relative to the residual risks.
 - 16.3 The Construction Supervisor and Safety Officer shall perform regular inspections and document these in the H&S File.
 - 16.4 The relevant inspection templates and the frequency of inspections shall be included in the H&S Plan.
 - 16.5 The H&S Plan shall contain a list and template of all statutory inspection registers which shall be kept on site:
 - 16.5.1 The templates must correlate with the machinery and equipment listed on site;
 - 16.5.2 The inspector responsible for the inspection and maintenance of the register must be appointed in writing, and competency must be documented.
17. Incident Management [Incidents, Accidents and Emergencies]
 - 17.1 All near misses, incidents and accidents must be recorded, investigated and managed in accordance with the statutory provisions.

- 17.2 Each H&S incident and accident must be recorded in a register kept in the H&S file; a template of the register shall be included in the H&S Plan.
- 17.3 Every incident in which an employee sustains any form of injury shall be reported to the Public Health Directorate or its Agent within the working shift in which the incident occurs. Section 24 of the OHS Act incidents shall be reported in the prescribed manner to the Department of Labour, to the COIDA Compensation Commissioner in the prescribed manner [Annexure 1 & WCL2] and to the KLM Public Health Directorate or its Agent
- 17.4 A record of all incidents and investigations shall be kept in the health and safety file.
- 17.5 A record / register [matrix] shall be kept to indicate the categories of injuries [first aid / IOD non-disabling, IOD Disabling and dangerous occurrences] sustained by employees, visitors and sub-contractors to date.
- 17.6 Each contractor shall ensure that a proper incident reporting and investigation management procedure is documented and a site emergency procedure is formulated, documented, implemented (drills) and is available on site, outlined in detail, and included in the H&S Plan. The emergency arrangements shall be displayed on site and shall include:
 - 17.6.1 A comprehensive emergency and evacuation plan;
 - 17.6.2 An site specific emergency evacuation top down plan/flow chart;
 - 17.6.3 An updated list of emergency telephone numbers.
- 18. Audits and inspections
 - 18.1 The Public Health Directorate shall perform regular inspections and audits of the construction site. Unsafe work will be stopped. All inspections and audits are done in accordance with the KLM H&S procedure for the audit and inspection of construction sites.
 - 18.2 Records of audits shall be kept in the H&S File together with a record of any non-conformance report/s, investigation and corrective & preventative actions required by the Principal Contractor.
 - 18.3 The Principal Contractor's H&S Plan shall document the corrective and preventative action procedure applicable to the project, including the planned method to ensure that non-conformities are managed immediately.
 - 18.4 The KLM or its Agent shall stop all or any work activity which does not conform to the H&S Plan, which is contradictory to statutory requirements or which poses a threat to the health and safety of persons.
 - 18.5 The Principal Contractor shall conduct regular health & safety audits (at least once a month) to ensure compliance with the OHS Act, its Regulations and the Contractors' H&S Plan. Each contractor on site, whether appointed by the Principal Contractor or by any of his sub-contractors shall be audited by the Principal Contractor. The H&S plan of the Principal Contractor shall include a contractor's auditing procedure, template and schedule.
 - 18.6 The Principal Contractor shall stop all or any work activity which does not conform to the H&S Plan, which is contradictory to statutory requirements or which poses a threat to the health and safety of persons.
- 19. Personal Protective Equipment (PPE) and Clothing
 - 19.1 The Principal Contractor shall ensure that every employee is issued with, and wears SABS-approved PPE, consisting of all PPE identified in the PPE needs analysis and indicated in the risk assessment.
 - 19.2 The Principal Contractor shall document the procedure applicable for to the issue, use and replacement criteria of PPE in the H&S plan.
 - 19.3 All the contractors' employees shall wear; full length overalls, and shall wear clearly visible identification with respect to their employer.
 - 19.4 All employees performing construction work at the KLM shall wear steel-capped safety boots.

- 19.5 The H&S Plan shall contain an outline of the PPE to be used, the management of such PPE on site, including the issuing of PPE, training in the safe use of PPE, overnight storage, any sanitising of PPE and the disposal of PPE.
- 19.6 Contaminated PPE shall be disposed of in the prescribed manner as referenced in the OHS Act – HCS Regulations and to an approved waste disposal site
- 20. Occupational Health and Safety Signage
 - 20.1 The Principal Contractor shall erect and maintain quality mandatory, warning, general information, prohibiting and firefighting safety signage.
 - 20.2 The signage shall reflect through text & symbolics, all the risks identified in the H&S plan that necessitate the use of PPE as a control factor, including but not be limited to:
 - 20.2.1 A warning on construction activities;
 - 20.2.2 Access restrictions;
 - 20.2.3 The name and telephone number of the responsible person(s);
 - 20.2.4 Emergency telephone number(s);
 - 20.2.5 PPE to be worn at the particular site;
 - 20.2.6 Where falling objects may occur, relevant barricading and warning signs must be erected;
- 21. Sub-contractors
 - 21.1 Sub-contractors must be given a copy of this general H&S Specification and any additional specification issued by Principal Contractor, the KLM or the Public Health Directorate, and shall comply with these specifications integrally.
 - 21.2 The H&S specification applicable to every sub-contractor issued by the Principal Contractor shall be included in the H&S Plan of the Principal Contractor.
 - 21.3 The Principal Contractor shall ensure that all sub-contractors on site, including sub-contractors of his sub-contractors plan the construction work in an H&S Plan, approved by the Principal Contractor.
 - 21.4 Principal Contractors shall ensure that sub-contractors comply with their H&S Plans, based on all applicable H&S Specifications, the requirements of the OHS Act and all other relevant legislation.
 - 21.5 Monthly audits of all sub-contractors must be recorded and filed in the H&S File, for inspection by the KLM or its Agent.
 - 21.6 All sub-contractor H&S Plans and Files must strictly follow the Contents and Numbering system as per Annexure A and B.
 - 21.7 The H&S Plan must include the Principal Contractor's actions to ensure that all sub-contractors fully comply with the Regulations, including but not limited to:
 - 21.7.1 The H&S Plans of sub-contractors, after approval by the Principal Contractor; where sub contractors' H&S plans are approved later in the project, the letter of approval shall be copied to the Public Health Directorate
 - 21.7.2 A signed agreement in terms of Section 37(2) between the Principal Contractor and every subcontractor and a template of such agreement.
 - 21.7.3 A maintained list of all contractors, the date of approval of their respective H&S plan, their registration number with COIDA, the name and telephone number of the Contractors' Construction Supervisor and the date of the last audit of the sub-contractor by the Principal Contractor.
- 22. Public Health and Safety
 - 22.1 Appropriate health and safety signage shall be posted; the type of signage planned for must be documented in the H&S Plan.

- 22.2 The Principal Contractor shall ensure that each person visiting the site shall be inducted to the site and such abridged induction shall outline the hazards likely to arise from on-site activities and the precautions to be observed to avoid or minimise those risks. The template induction and record shall be included in the H&S plan.
- 22.3 No construction work shall be performed, where there is a risk of the activity affecting the KLM employees, the KLM production processes or where there is risk that the KLM employees access the construction site, unless defined through a Specific Construction H&S Specification.
- 22.4 Where the need for public barricading is identified in the risk assessment or in a specific construction H&S Specification, the Principal Contractor shall document a method statement for the erection, maintenance and control of barricades or fences and controlled access points, to prevent the entry of unauthorized persons.
- 22.5 Where the need for traffic deviation is identified in the risk assessment or in a specific construction H&S Specification, the Contractor shall perform an issue based risk assessment and document a method statement compliant to the relevant traffic ordinances and traffic controls standards; the method statement shall include competence of traffic officers, flagmen and operators of traffic control equipment.
- 23. Night Work and After-Hour's Work
 - 23.1 No night work shall be performed unless authorised by the KLM or its Agent.
 - 23.2 Where applicable the risk assessment and method statements in the H&S plan shall include night risks including but not limited to excavations, road obstructions, traffic obstructions or deviation, night security, after hours delivery.
 - 23.3 Where applicable the risk assessment and method statements in the H&S plan shall include after hour work and the safe management thereof.
- 24. Facilities Management [Facilities for Employees]
 - 24.1 The Principal Contractor shall document the construction site's method to ensure the statutory application of employee's rights in terms of employee facilities as defined in the OHS Act, the General Safety Regulations and the Construction Regulation, including:
 - 24.1.1 The provision of facilities for safekeeping and changing;
 - 24.1.2 The method of ensuring that employees requiring to change on site can do so in privacy;
 - 24.1.3 The provision of an eating area;
 - 24.1.4 The provision and maintenance of sufficient toilets and showers / washing / cleaning on site.
 - 24.2 Where the construction work includes access to production or utility areas, such access shall be planned and authorised by the KLM or the Public Health Directorate.
- 25. Health and Safety Representatives and Committees
 - 25.1 The Principal Contractor and all contractors must ensure that for any workplace where more than 20 employees work, the minimum legislative prescribed number of Health and Safety Representatives in a ratio of 1:50 employees be nominated, elected, designated in writing and trained to carry out their prescribed functions.
 - 25.2 In areas where twenty (20) or less employees are engaged in an activity, at least one Health and Safety Representative shall be designated in writing and operate as above.
 - 25.3 Health and Safety Representatives shall be required to conduct monthly inspections within their area of responsibility; all deviations recorded must immediately be reported to the Construction Supervisor and Construction Safety Officer where applicable and appropriate action must immediately be taken to eliminate the identified health or safety hazard.

- 25.4 The Principal Contractor shall ensure that Health and Safety Committee meetings are held monthly and are chaired by the Construction Supervisor. Meeting agendas and minutes shall be filed in the H&S file.
- 25.5 The H&S plan shall include a Work Instruction (WI) on the management of H&S representatives and committees.
- 26. Housekeeping, Stacking, Storage, Drop Zones and Lay-down Areas

DROP ZONE = AN ELEVATED AREA WITHIN THE WORKING ENVIRONMENT WHERE THERE IS A POTENTIAL RISK OF FALLING MATERIALS AND OR OBJECTS THAT MAY CAUSE INJURIES

LAY-DOWN AREA = AN AREA WHERE MATERIALS, EQUIPMENT AND SUNDRY IS STAGED THAT IS REQUIRED FOR PROJECT RELATED PURPOSES

- 26.1 The principal contractor shall appoint a person responsible for general housekeeping, and stacking and storage of materials and equipment on the entire site.
- 26.2 Where the baseline risk assessment identified the risk of falling tools, items, objects and materials, the area shall be barriered or demarcated, appropriate warning signage installed and such hazards included in a method statement & issue based risk assessment prior to or when work activities are performed within such zones. Furthermore, the same stipulation is required for site lay-down areas where equipment, plant, materials, substances and other items are stored / staged for the site project works. A method statement & issue based risk assessment must be generated for the safe raising and lowering of materials, equipment and plant to ensure safe management of the lay-down area. A lifting and lowering work instruction shall be included in the H&S Plan.
- 26.3 Stacking and storage areas shall be clearly defined and demarcated on the site with the appropriate symbolic signs.
- 26.4 Offloading of building materials equipment and plant shall occur under the direct supervision of the appointed person responsible for general housekeeping, and stacking and storage.
- 26.5 Where offloading may occur after normal working hours, a method statement and risk assessment for such offloading will be included in the H&S plan.
- 27. Waste Management
 - 27.1 The principal contractor shall appoint a person responsible for site-wide control & removal of scrap, waste and debris;
 - 27.2 No waste, including scrap, debris, hazardous waste, combustible materials and containers shall accumulate on the construction site;
 - 27.3 The principal contractor shall document a waste management method statement in the H&S Plan. Such method statement shall include all liquid, gaseous or solid waste produced during the construction process and shall define appropriate legislative – Local & National required waste management & disposal requirements.
- 28. Occupational Health
 - 28.1 The H&S Plan shall include all medical certificates of fitness for those employees legally requiring such.
 - 28.2 Medical certificates must be issued by an occupational medical practitioner after personally performing the medical tests
 - 28.3 Medical certificates must be on the doctors' letter head and conform to the applicable statutory requirements.

- 29. First Aid Management
 - 29.1 Principal Contractors & sub-contractors shall ensure that every site where they are engaged in work activities, has adequately trained first aiders at all times.
 - 29.2 Where high risk substances, toxic, corrosive or similar hazardous substances are used, handled, or processed, the Principal Contractor shall ensure that the First Aider is trained in the first aid procedures to treat injuries that may result from such activities.
 - 29.3 First aiders shall be identified and shall have immediate access to a comprehensively stocked first aid box.
 - 29.4 Such first aid box/s shall be stocked to include all first aid equipment as per the minimum requirements listed under General Safety Regulation 3, and any additional items identified in the risk assessment.
 - 29.5 All the above first aid controls, including the letter of appointment, proof of competency, signage, injury-record and stock-control registers shall be documented in the H&S Plan.
- 30. Access and traffic management
 - 30.1 Where access to the construction site or to the KLM has been identified as a risk, an 'Access and traffic' method statement shall be included in the H&S Plan.
 - 30.2 The risk of all traffic arrangements included in the scope of the work shall be assessed and a traffic control method statement included in the H&S plan. Any alteration to this method statement during the course of the project shall be assessed and, where applicable, any amended & reviewed method statement shall be presented to the Public Health Directorate prior to being implemented.
- 31. Work within operational areas of the KLM
 - 31.1 The Principal Contractor shall ensure that all employees working inside municipal buildings in which business is conducted have been subjected to the required induction.
 - 31.2 The Principal Contractor shall discuss and agree with the KLM contract manager and the health and safety officer responsible for that directorate in order to define the procedure and subject matter for induction.
 - 31.3 Such health and safety induction shall, as a minimum, include instructions with respect to emergency exits, location of fire equipment, smoking arrangements, mustering points, special hazards in the building and housekeeping arrangements.
- 32. Hot Work, Fire Risks, Fire Extinguishers and Fire Fighting Equipment
 - 32.1 No open fires are allowed on site.
 - 32.2 No smoking is allowed on site, except in designated smoke areas, identified in the H&S Plan.
 - 32.3 All combustible and all flammable products must be stored in an adequate storage facility; this process shall be documented in a method statement in the H&S Plan.
 - 32.4 Where hot work is performed on a production site, the contractor shall interface with the Public Health Directorate in order to establish dangerous work permission; such interface will be documented in the H&S Plan.
 - 32.5 The Principal Contractor shall provide suitable fire extinguishers, as defined in the H&S controls, which shall be serviced regularly, in accordance with the manufacturer's recommendations.
 - 32.6 Safety signage shall be prominently displayed in all areas where fire extinguishers are located. The Principal Contractor shall arrange for the training of the relevant personnel, in the use of fire extinguishers. The following are minimum requirements for competency in the use of fire extinguishers:
 - 32.6.1 At least one employee on each construction site;
 - 32.6.2 All employees engaged in hot work;
 - 32.6.3 All store men;

- 32.6.4 All persons involved in re-fuelling;
- 32.6.5 All persons handling flammable substances;
- 32.7 The fire extinguisher inspection register, the inspection methodology and the letter of appointment of the competent inspector shall be included in the H&S Plan.
- 33. Live Energy Work
 - 33.1 Where live energy work (electrical-, chemical-, pneumatic-, hydraulic-, gravity and or kinetic energy) will be done, a competent person shall be appointed.
 - 33.2 Where live energy work is planned, the H&S Plan shall include:
 - 33.2.1 Proof of competency and signed letters of appointment of the responsible person;
 - 33.2.2 The 'dangerous work, method statement' and its interface with the KLM and relevant documents;
 - 33.2.3 A Zero Potential, Energy-Purge, Lock Out and Tag Out method statement;
 - 33.2.4 The method statement, shall apply at all times.
- 34. Work in Confined Spaces
 - 34.1 Confined space work shall not be performed unless defined through a Specific Construction H&S Specification.
 - 34.2 Where confined space work is performed, the contractor shall interface with the Public Health Directorate in order to establish dangerous work permission; such interface shall be documented in the H&S Plan.
 - 34.3 A method statement and issue based risk assessment for all confined space work must be presented in the H&S Plan or prior to such work starting.
- 35. Elevated Work [Fall Protection and Work on Heights]
 - 35.1 The Principal Contractor shall submit the name and proof of competency of the competent person who has been appointed to prepare a fall protection plan, in terms of the CR, together with the signed letter of appointment, in the H&S Plan.
 - 35.2 The fall protection plan shall strictly comply with the requirements of the OHS Act. Besides the legal requirements, the plan shall include:
 - 35.2.1 A method statement and risk assessment of all work at heights or work with a risk of falling;
 - 35.2.2 All risk controls and method statement relevant to heights work;
 - 35.2.3 Fall prevention methods applicable to the project;
 - 35.2.4 Fall arrest methods applicable to the project;
 - 35.2.5 Fall recovery method applicable to the project;
 - 35.2.6 Attachment methods and points and the management thereof;
 - 35.2.7 The method to ensure that employees working at heights present is fit for heights-duty
 - 35.3 The contractor shall ensure that:
 - 35.3.1 All heights work is planned. Its risks are assessed and all heights work forms part of the daily safe task instructions;
 - 35.3.2 Only trained and competent persons with a valid medical certificate of fitness are permitted to work on heights;
 - 35.3.3 All medical certificates of fitness for heights work are issued by a registered occupational medical practitioner and are included in the H&S Plan;

- 35.3.4 All elevated areas are reached by means of a ladder, scaffold or man cage; and climbing on machinery, installations or make-shift means of access is not permitted; where work, with a risk of falling, is to be performed from structures other than ladders, scaffolds or a man cage, such work will be documented in a method statement, which must be approved by the Public Health Directorate
 - 35.3.5 No persons are allowed to work under an area where there is a risk of falling tools or materials;
 - 35.3.6 All openings through which persons can fall are closed off with material which can support the weight of a person; such material shall be permanently fixed over the opening; where such openings are present, clear signs will indicate this at all access points;
 - 35.3.7 Where openings cannot be closed, a sturdy barricade of at least 1.5 m high, which adequately prevents persons from falling through the opening (withstands 2kN force), shall be in place at all times.
 - 35.3.8 A copy of the fall protection plan, the signed appointment letter and proof of competency must be included in the H&S Plan.
 - 35.3.9 Where elevated work is performed in production areas or where the elevated work may affect the KLM 's employees, visitors or stakeholders, the contractor shall interface with the Public Health Directorate in order to establish dangerous work permission; such interface will be documented in the H&S Plan.
 - 35.3.10 No contractor shall access any of the existing KLM properties sheeted roofs unless defined through a Specific Construction H&S Specification.
 - 35.3.11 No work on existing KLM buildings, including windows, roofs, stacks, shall be performed unless defined through a Specific Construction H&S Specification issued by the Public Health Directorate.
 - 35.3.12 Where the use of harnesses is indicated in the fall protection plan, the H&S Plan shall contain the following:
 - 35.3.12.1 The need for the use of fall prevention-or fall arrest harnesses; [double lanyard type)
 - 35.3.12.2 The safe application, attachment and maintenance processes for harnesses;
 - 35.3.12.3 The type of hook to be used and the attachment points applicable to the heights work;
 - 35.3.12.4 The method of storing the harnesses when not in use;
 - 35.3.12.5 The method and register for the safety inspection of harnesses.
 - 35.3.13 Where a fall-risk is identified in work requiring access to roofs or free-standing structures with a residual fall risk, a life line will be made available and used at all times; the life line will be designed and erected by a competent person appointed in writing; a life line inspection method and record will be included in the H&S Plan;
36. Ladders
- 36.1 Ladders shall be compliant with statutory requirements.
 - 36.2 Ladders shall only be used for the purpose for which they are designed.
 - 36.3 Ladders shall be inspected regularly and the record of the inspection shall be kept in the H&S file.
 - 36.4 A-frame ladders shall have a patent spreader bar system.
 - 36.5 Ladders shall extend at least 1 metre above any level or opening accessed with the ladder.
 - 36.6 No ladders shall be accessed by any person unless held in place by a fixed installation or a buddy.
37. Excavation Work
- 37.1 The Principal Contractor shall submit the name and proof of competency of the competent person who has been appointed to supervise all excavation work, in terms of the CR.
 - 37.2 Should the opinion of a professional employers agent or professional technologist be sought, in terms of the CR, the Principal Contractor shall submit the name and the curriculum vitae of the said professional.
 - 37.3 Proof of competency and the appointment letters must form part of the H&S Plan.
 - 37.4 The records of the inspections contemplated in the CR shall be maintained in the H&S File; a template of the register shall be included in the H&S Plan.

- 37.5 The Principal Contractor shall make provision in his tender for all shoring, dewatering or drainage of any excavation unless otherwise stipulated in the Contract.
- 37.6 The Principal Contractor shall make sure that:
 - 37.6.1 The excavations are inspected before the shift starts and that a record is kept; the record template shall be included in the H&S Plan.
 - 37.6.2 There are no unguarded excavations, regardless of depth;
 - 37.6.3 Guarding of excavation must be of solid and sturdy material so as to prevent persons from falling into the excavation; barrier tape alone is not sufficient.
 - 37.6.4 No person is allowed to work in or near an excavation which has any instability that is not adequately protected, shored or braced.
 - 37.6.5 No load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to collapse or endanger the safety of any person – spoil to be moved back minimum of 1m.
 - 37.6.6 Safe means of access and exiting is provided at every excavation.
 - 37.6.7 Any open excavation is backfilled at the end of each shift, unless a method statement managing open excavations is included in the H&S plan. Such method statement shall be assessed and approved by the Public Health Directorate
- 37.7 Detailed method statements and risk assessments, including but not limited to depth of excavation, anticipated stability, battering, shoring, bracing, length of excavation, proximity to the public and duration of exposure shall be included in the H&S Plan.
- 37.8 Where excavation work may interface with existing services; surface-, below-ground- or aerial- services, method statements and risk assessments shall include the location-, exposure- and rendering safe of such services; method statements and risk assessments shall also include work above or underneath such services.
- 38. Explosives and Blasting
 - 38.1 The Principal Contractor shall ensure that the use of explosives and blasting (where required) be undertaken by a competent specialist contractor, with proven track record in the type of work to be performed.
 - 38.2 The letter of appointment and proof of competency must be included in the H&S Plan.
 - 38.3 A method statement and risk assessment encompassing all processes of working with explosives, blasting and potential blasting non conformities shall be included in the H&S Plan.
 - 38.4 No use of explosives or blasting shall be planned unless such need and the applicable conditions are defined through a Specific Construction H&S Specification issued by the Public Health Directorate.
- 39. Demolition Work
 - 39.1 Demolition must be addressed through the method statement and risk assessment process and, both of which must be included in the H&S Plan.
 - 39.2 The method statement must include the employers agenting survey, where applicable, and shall be approved in writing by the KLM-appointed designer (employers agent) or another person appointed by the KLM, its agent or the Public Health Directorate.
 - 39.2.1 The H&S Plan must document the name, signed letter of appointment and competency of the competent person who has been appointed to supervise all demolition work.
 - 39.2.2 The Principal Contractor shall ensure that demolition work complies with the CR at all times.
 - 39.2.3 Safe work instructions for employees working on demolition must be documented in the H&S Plan.
 - 39.2.4 No demolition work shall be performed unless defined through a Specific Demolition H&S Specification.

- 39.2.5 Demolished materials, which are not used on site, must be removed off site within the shorted delay. The staging, removal and disposal activities and procedures must be covered in a Work Instruction (WI) that will include the separation methodology and disposal medium and is to be recorded, ensuring a cradle to grave compliance of all demolished materials. Such activities shall be referenced in the Waste Management Method Statement
40. Electrical Installations and Machinery
- 40.1 All electrical installations and cables shall be deemed to be “alive” and, where applicable, the Principal Contractor shall take adequate steps to ensure that employees, including the KLM employees and members of the public are prevented from accessing any electrical cables and equipment.
- 40.2 The Principal Contractor shall not allow or permit any of his personnel to work on or manhandle any electrical reticulation equipment (Distribution Boards, transformers, Switchgear etc.), unless explicitly authorised by the KLM or the Public Health Directorate.
- 40.3 Where work is performed on existing structures or where work is performed in production areas or where the work may affect the KLM employees, visitors or stakeholders, the principal contractor shall communicate with the Public Health Directorate and plan all electrical work prior to any work on the KLM electrical reticulations starting.
- 40.4 Such planning shall be documented in a method statement and risk assessment and included in the H&S Plan.
- 40.5 The Principal Contractor shall appoint a competent person to identify and inspect all exposed underground cables, overhead cables and any electrical installations such as transformers or distribution boxes, to ensure that these are not a hazard to employees or to members of the public. The competent person shall inspect all temporary electrical installations and machinery at least once a week and recorded in a register.
- 40.6 The letters of appointment, proof of competency and registers applicable to these inspections shall be included in the H&S Plan.
- 40.7 The principal Contractor shall ensure that all electrical testing equipment to be used on the KLM site has a valid calibration certificate and that a calibration sticker is affixed to the equipment, clearly indicating the calibration date and the next due date.
- 40.8 Any unsafe condition shall be reported immediately to the Public Health Directorate and the Principal Contractor shall take immediate steps to prevent employees or members of the public from gaining access to the dangerous installation and the area surrounding it.
- 40.9 No live electrical work shall be performed unless defined through a Specific Construction H&S Specification.
- 40.10 Where live electrical work is to be performed in a KLM production area or potentially affecting the production areas or where the work may affect the KLM employees, visitors or stakeholders, the contractor shall interface with the Public Health Directorate in order to establish work permission.
- 40.11 Where the need arise to de-energise plant & equipment, permission for the de-energisation of energy sources and lock out requirements shall be obtained via the Public Health Directorate or project employers agent in order to establish work permission and permit controls; such interface will be documented in the H&S Plan.
- 40.12 The Principal Contractor shall appoint a competent person to inspect all portable electrical tools, including leads. No electrical extension leads or fixed machinery to be used during the project work, shall be allowed to have any joined leads.
- 40.13 The letter of appointment and template of the inspection register shall be included in the H&S Plan.
- 40.14 The Principal Contractor shall include a method statement for the safe use of portable electrical tools, including the management of the hazards of extension leads.
- 40.14.1 All portable electrical equipment must be on a register and be inspected monthly by a SHE Representative.
- 40.14.2 Identify and record all portable electrical equipment in a register.

- 40.14.3 Ensure that regular checks are carried out according to the requirements of the equipment usage.
- 40.14.4 The frequency must, depending on circumstances, be determined by a competent person to ensure maximum safety.
- 40.14.5 The user is responsible that all identified defects of electrical equipment are reported.
- 40.14.6 Remove faulty portable electric equipment from use.
- 40.14.7 Determine the frequency of polarity tests and, depending on circumstances, be determined by a competent person to ensure maximum safety

- 40.15 Where temporary installations are installed, including those in the site office or employee facilities, a COC for these installations shall be included in the H&S File.
- 40.16 Where applicable, the contractor shall include a method statement covering dangerous work w.r.t electrical installations and include it in the H&S Plan.
- 40.17 Where applicable, the contractor shall include a zero Potential, Lock Out and Tag-Out method statement and safe work instruction(s) in the H&S Plan.

- 41. Form work and Support work

- 41.1 The Principal Contractor shall submit the appointment letter of the competent person(s) appointed to supervise all formwork and support work operations in terms of the CR; the H&S Plan must include the signed letters of appointment and the proof of competency.
- 41.2 The H&S Plan shall include a comprehensive method statement ensuring health and safety controls, of all risks assessed i.r.o the erection and removal of form work and support work and with the concrete casting of the structures.
- 41.3 The Principal Contractor shall ensure that all formwork and support work complies with the requirements of the OHS Act and Regulations. [Method statement and issue based risk assessment shall be generated prior to activities commencing].
- 41.4 Form work designers, supervisors, erectors and inspectors must be formally trained and certified competent.
- 41.5 Support work must be clearly tagged with safety signage and inspected prior to load bearing and daily thereafter.
- 41.6 Inspections of support work must be documented in a register; a template of the register shall be included in the H&S Plan.
- 41.7 All Support structures must be differentiated from scaffolds; where access is required, such access must be means of a ladder only.
- 41.8 Formwork and support work erectors working at heights must attach a fall prevention harness at all times to safe structures, or plant where appropriate; the double lanyards must be fitted with safe and sufficient strength hooks [steel line hook (small) or scaffold line hook (large), allowing it to be attachment to a point of anchorage. Where such anchorage is not available, anchorage points shall be made available and life lines erected when and where necessary.
- 41.9 The H&S Plan shall include the safe work instruction applicable to all employees working on form work and support work and the method of ensuring competency.

- 42. Scaffolding [Accessing and Descending Scaffolding / SUSPENDED SCAFFOLDING]

- 42.1 The Principal Contractor shall submit the appointment letter of the competent person(s) appointed to supervise all scaffolding operations, in terms of the CR; the H&S Plan must include the signed letters of appointment and the proof of competency.
- 42.2 The H&S Plan shall include a comprehensive method statement ensuring health and safety controls of all risks assessed with the erection, work on and removal of scaffolds.
- 42.3 The Principal Contractor shall ensure that all scaffolding complies with the requirements of the OHS Act and Regulations.

- 42.4 Scaffold erectors and inspectors must be formally trained and certified competent; such training must conform to the requirements of SANS 10085-1.
- 42.5 Scaffolds must be clearly tagged with safe access signage; scaffolds must be inspected daily prior to use and weekly by the scaffold inspector.
- 42.6 Inspections by the scaffold inspector must be documented on the scaffold tag and in a register; a template of the tag and of the register shall be included in the H&S Plan. Daily pre-start inspections of all scaffolds must be planned for in the H&S plan.
- 42.7 All scaffolds must only be accessed with a ladder fitted inside the scaffold and extending to at least 90 cm above the working surface.
- 42.8 All scaffold decks must be fitted with safety rails and toe-boards / kick-plates so as to prevent persons working there from falling through or off.
- 42.9 Scaffold erectors must attach a fall prevention harness at all times; the double lanyards must be fitted with scaffold hooks only
- 42.10 The H&S Plan shall include the safe work instruction applicable to all employees working on scaffolds and the method of ensuring competency.

- 43. Piling Operations
- 43.1 The Principal Contractor shall ensure that piling, (where required) is undertaken by a competent specialist contractor, or a Contractor with proven record in the type of work to be performed.
- 43.2 Risk assessments, method statements and safe work instructions shall be submitted as part of the H&S Plan.
- 43.3 No piling activities shall be performed unless defined through a Specific Construction H&S Specification.

- 44. Construction Plant, [including Rented / Hired Plant]
- 44.1 The Principal Contractor shall ensure that all construction vehicles and mobile and fixed plant, whether owned, rented or hired, complies with the requirements of the OHS Act and Regulations.
- 44.2 The Principal Contractor shall inspect and keep records of inspections of plant and equipment used on site. A template of the daily inspection record for each type of construction vehicle or mobile plant shall be included in the H&S Plan.
- 44.3 A method statement applicable to each type of construction plant, for which H&S risks were identified, shall be included in the H&S Plan, together with the contractor's procedure for ensuring that only employees who are competent in the safe use of the plant are using such plant.
- 44.4 Only competent and authorised / appointed persons with a valid medical certificate of fitness are to operate plant and machinery, under proper supervision. Competency of operators and medical fitness shall be documented individually for each operator accessing the work site.
- 44.5 Appropriate safety equipment and clothing shall be provided for the operators and maintained in good condition at all times.
- 44.6 The risks of access, egress, parking and on-site movement of construction vehicles and mobile plant and the corresponding method statement shall be included in the H&S plan of every project in which such vehicles and plant are used.

- 45. Suspended Platforms
- 45.1 In the H&S Plan, the Principal Contractor shall submit proof of competency and the appointment letters of:
 - 45.1.1 The competent person(s) appointed to supervise all suspended platform work operations;
 - 45.1.2 The competent person who performs the performance tests;
 - 45.1.3 The suspended platform erectors, operators and inspectors;

- 45.1.4 The suspended platform operators, together with their medical certificate of fitness.
- 45.2 The H&S Plan shall include:
 - 45.2.1 A copy of the certificate of system design;
 - 45.2.2 The operational compliance plan;
 - 45.2.3 Proof of submission of the above to the Department of Labour;
 - 45.2.4 The inspection registers of the safety harness;
 - 45.2.5 The inspection registers of the whole installation, including the performance test;
 - 45.2.6 The inspection registers of the hoisting ropes, hooks or other load-attaching devices;
 - 45.2.7 The inspection registers of the daily inspection by the suspended platform Supervisor.
 - 45.2.8 The method statement for safe use of the scaffold, including procedures dealing with emergencies, malfunctioning and the discovery of defects, and the isolation process of the scaffold when not in use.
- 46. Material Hoists
 - 46.1 With regard to material hoists and towers on construction sites, the Principal Contractor shall ensure he / she or their sub-contractors construct / erect such structures with materials that is technically and operationally of good standard, erected by experienced persons and operated by trained and competent persons.
 - 46.2 In the H&S Plan, the Principal Contractor shall submit proof of competency and the appointment letter of the competent person who performs the daily inspections on the material hoists.
 - 46.3 The H&S Plan shall include the method statement for safe erection, use, inspection, maintenance and dismantling of the material hoist.
 - 46.4 A template of the maintenance inspection register shall be included in the H&S Plan.
- 47. Batch Plants
 - 47.1 Batch plants shall be operated by trained persons and the Principal Contractor shall ensure that his / her or their sub-contractors batch plant operations are supervised by an appointed competent person.
 - 47.2 In the H&S Plan, the Principal Contractor shall submit proof of competency and the appointment letter of the batch plant supervisor.
 - 47.3 The H&S Plan shall include the method statement for safe erection and dismantling of the plant, for safe batching, for safe maintenance and repair work to be done and the training material used to ensure operator competency in the H&S controls of the batch plant.
 - 47.4 The Principal Contractor shall ensure that the placement of a batch plant is conducted in such a manner as not to present a safety risk to persons and erection to be performed as prescribed by the manufacturer to ensure safe operating conditions
 - 47.5 The Principal Contractor shall ensure that appropriate controls and safety interlocking devices are installed on batch plants;
 - 47.5.1 Placed in an easily accessible position; and
 - 47.5.2 Constructed in such a manner as to prevent accidental starting.
 - 47.6 The Principal Contractor shall ensure that all dangerous moving parts are adequately guarded and placed beyond the reach of persons by means of doors, covers or other similar preventative measures.
 - 47.7 The Principal Contractor shall ensure that no employee, sub-contractor employee or other persons remove or modify any guard or safety device
 - 47.8 The H&S plan shall include a method statement and risk assessment of elevated work and fault finding-, maintenance- and repair work to the Batch Plants.
 - 47.9 The Principal Contractor shall ensure that all lifting machines and lifting tackle used in the operation of a batch plant complies with the requirements of the Driven Machinery Regulations 18

- 47.10 The Principal Contractor shall ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo, as contemplated in the Electrical Installation Regulations
- 47.11 A template register of installation, maintenance and repair shall be included in the H&S Plan.
- 47.12 The H&S Plan shall include the method statement for entry and work in the confined spaces of a batch plant, where applicable

- 48. Explosive Powered Tools
 - 48.1 No explosive powered tool shall be used by The Principal Contractor unless persons making use thereof is provided with and uses suitable protective equipment; and is adequately trained in the operation, maintenance and use of such a tool.
 - 48.2 In the H&S Plan, the Principal Contractor shall submit proof of competency and the appointment letter of the person in charge of explosive powered tools and of the person in charge of the issuing and collection of cartridges and nails.
 - 48.3 The H&S Plan shall include the Work Instruction (WI) for the safe use of explosive powered tools, including the type of PPE, barricading and warning notice which the contractor intends to use and the method of accounting for cartridges and nails.
 - 48.4 The H&S Plan shall include proof of training and competency of all operators using explosive powered tools.
 - 48.5 A template inspection register of the explosive powered tools shall be included in the H&S Plan.
 - 48.6 A template record for the issuing and collection of cartridges and nails shall be included in the H&S Plan.

- 49. Cranes [Mobile]
 - 49.1 The H&S Plan shall include the method statement for safe use of the crane, including the method of communication, the protection of fall zones and the method of determining whether the weather permits safe crane work of which shall also be reflected in the risk assessment
 - 49.2 In the H&S Plan, the Principal Contractor shall submit proof of competency and the appointment letter of competency:
 - 49.2.1 The registered person/s testing and certifying the crane;
 - 49.2.2 The registered person/s testing and certifying the lifting gear;
 - 49.2.3 The crane operator/s, as well as their medical certificate of fitness;
 - 49.3 The H&S Plan shall include the method statement and risk assessment for the erection, maintenance, inspections and dismantling of the crane.
 - 49.4 The crane's load test certificates shall be included in the H&S Plan.
 - 49.5 All lifting gear used with the crane shall be identified and listed in a register contained in the H&S Plan.
 - 49.6 A template inspection register of the lifting gear shall be included in the H&S Plan.

- 50. Storage and use of flammable liquids
 - 50.1 Where work is done on a construction site or where the work may affect KLM employees, visitors or stakeholders, the contractor shall interface with the Public Health Directorate before flammable liquids may be brought on site.
 - 50.2 The Principal Contractor shall ensure that where flammable liquids are being used, applied or stored at the workplace concerned, this is done in such a manner which would cause no fire or explosion hazard.
 - 50.3 Dangerous work permission shall be obtained where applicable and defined in a specific H&S specification.
 - 50.4 Should flammable substance need to be stored on the construction site, a flammable store or cabinet approved by the Municipal Chief Fire Officer must be used, and no flammable liquids shall be stored outside this facility; no other materials shall be stored in the flammable store or cabinet.
 - 50.5 The H&S Plan shall include a method statement detailing the safe use, storage, decanting and spill controls for all flammable liquids used or stored on site.
 - 50.6 The H&S Plan shall include the appointment and proof of competency of the persons controlling the use, storage, decanting and spill controls of all flammable liquids used or stored on site

51. Hazardous Chemical Substances

- 51.1 Where hazardous chemical substances are used, the contractor shall ensure that:
 - 51.1.1 All MSDS are included in the H&S Plan.
 - 51.1.2 The safe use, storage, decanting, labelling, transport, emergency procedures and safe disposal of hazardous substances are addressed in a method statements included in the H&S Plan.
 - 51.1.3 Proof of competency and signed letters of appointment of the person responsible for chemical handling, is included in the H&S Plan.
- 51.2 A hazardous chemical substance intended to be applied on site during the project (i.e. after approval of the H&S Plan) shall be subject to a method statement and issue-based risk assessment, which must be presented to the Public Health Directorate for approval prior to the substance being introduced on site.

52. Water Environments [Work in Proximity of Water]

- 52.1 The Principal Contractor shall ensure that where a worker is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the worker.
- 52.2 The hazards and risks identified in the base line risk assessment, the Principal Contractor shall document a method statement and issue based risk assessment for work in the proximity of water, in the H&S Plan.
- 52.3 The method statement shall include preventative safety measures and environmental controls to prevent pollution, as well as corrective measures in case of an accidental spill.

ANNEXURE A

CONTENTS AND NUMBERING SYSTEM FOR THE HEALTH AND SAFETY PLAN

No	Content			Approved	
				Yes	No
1	Index to H&S Plan / File				
2	Scope of Work				
3	Notification to Commence Construction Work		Current		
4	H&S Agreement (S37(2))		Signed		
5	Letter of Good Standing		Current		
6	H&S Budget				
7	H&S Plan	7.1	Refer H&S Specification		
		7.2	Fall Protection Plan		
		7.3	Environmental Management Plan (<i>"Process" Waste management / Spillage Control / Disposal certificates</i>)		
8	Hazard Identification Risk Assessment & Applicable Method Statement	8.1	Baseline Risk Assessment		
		8.2	Issue Based Risk Assessment		
		8.3	Risk Register		
9	Emergency Plan & Response				
10	H&S Policy		Signed		
11	Organisational Chart				
12	Appointments	12.1	Signed		
13	Medical Certificates	13.1	Mobile Plant & Equipment		
		13.2	Working in Elevated Positions		
		13.3	Confined Space Entry		
14	Training & Competency Management	14.1	CV's		
		14.2	Competency Certificates		
		14.3	Induction		
		14.4	Safety / Tool Box Talks		
		14.5	Safety Awareness Posters		
15	Accident / Incident Management including First Aid Facilities	15.1	Section 24 Procedure – Annexure.1 & WCL.2		
		15.2	Injury recording		
		15.3	Incident investigation		
		15.4	Noncompliance reporting		
		15.5	Preventative & corrective actions		
16	Construction Plant, Machinery & Equipment Management		Vehicles / Mobile Crane / Skyjacks & Material Hoist / Compactors / TLB's, Batch Plants etc.		
17	Access, Traffic Control & Public Safety Management	17.1	Security		
		17.2	Employee / Visitors / Public		
		17.3	Vehicular		

No	Content			Approved	
				Yes	No
18	Hazardous & Flammable Substance Management	18.1	MSDS		
		18.2	Storage		
		18.3	Demarcation		
		18.4	Signage		
		18.5	Handling & Decanting		
		18.6	Disposal		
19	Hazardous & Dangerous Work Management & Control	19.1	Confined Spaces		
		19.2	Demolition Work		
		19.3	Electrical Installations, Equipment & Machinery		
		19.4	Explosives & Blasting		
		19.5	Explosive Powered Tools		
		19.6	Excavation / Trenching		
		19.7	Energy Sources & Lockout		
		19.8	Elevated Working @ Heights		
		19.9	Formwork & Support Work		
		19.10	Hot Work		
		19.11	Hazardous Chemical Substances		
		19.12	Moving Equipment		
		19.13	Piling		
		19.14	Scaffolding		
		19.15	Suspended Platforms		
		19.16	Welding / Cutting & Grinding		
		19.17	Water Environments		
20	Facilities Management (male / female)	20.1	Washing		
		20.2	Sanitary		
		20.3	Change room		
		20.4	Sheltered Eating		
		20.5	Accommodation / Transportation		
21	PPE Management	21.1	PPE Needs Analysis		
		21.2	PPE Issue		
22	Contractor Management	22.1	H&S Agreement (S37(2) (signed)		
		22.2	Appointments (signed)		
23	H&S Committee				
24	Work Procedures				
25	Work Instructions				
26	Audits & Inspections		Internal & External		
27	Record Keeping Management		Completed Audit / Inspections / Registers / Checklists		

ANNEXURE B

CONTENTS AND NUMBERING SYSTEM FOR HEALTH AND SAFETY FILE

1. Index to H&S Plan / File
2. Scope of Work
3. Notification to Commence Construction Work
4. H&S Agreement (S37(2))
5. Letter of Good Standing
6. H&S Budget
7. H&S Plan
8. Hazard Identification Risk Assessment
9. Emergency Plan & Response
10. H&S Policy
11. Organisational Chart
12. Appointments
13. Medical Certificates
14. Training & Competency Management
15. Accident / Incident Management including First Aid Facilities
16. Construction Plant, Machinery & Equipment Management
17. Access, Traffic Control & Public Safety Management
18. Hazardous & Flammable Substance Management
19. Hazardous & Dangerous Work Management & Control
20. Facilities Management
21. PPE Management
22. Contractor Management
23. H&S Committee
24. Work Procedures
25. Work Instructions
26. Audits & Inspections
27. Record Keeping Management

ANNEXURE C

CONSTRUCTION APPOINTMENTS

#	DESIGNATION	LEGAL REFERENCE	TYPE OF CONSTRUCTION WORK WHEN REQUIRED
1.	Assigned Responsibility Designation	OHS Act S16(2) & CR 5.3(B)	All construction work
2.	Construction Manager	CR 8(1)	All construction work
3.	Construction Manager Assistant(s)	CR 8(2)	All construction work
4.	Construction Supervisor	CR 8(7)	All construction work
5.	Construction Supervisor Assistant(s)	CR 8(8)	All construction work
6.	Contractor	Contractor - CR 7(1)(c)(v)	When using sub-contractors
7.	Emergency / Fire Co-ordinator	OHSAct S 8	All construction work
8.	Fire Extinguisher Inspector	CR 29	All construction work
9.	First Aider	GSR 3	All construction work
10.	Health & Safety Officer	CR 8(5)	All construction work
11.	Health & Safety Reps	OHSAct S 17	Min. 3 and then 1 for every 10 persons
12.	H&S Committee Members	OHSAct S 19	Equal no. of management & OHS reps
13.	Incident Investigator	GAR 9	All construction work
14.	Risk Assessor	CR 9	All construction work
15.	Excavation Work Supervisor	CR 13	When excavating
16.	Demolition Work Supervisor	CR 14	When demolishing
17.	Explosives Manager	Exp R12(1)	When using explosives for blasting
18.	Explosives Supervisor	Exp R 12(3)	When using explosives for blasting
19.	Fall Protection Plan Developer	CR 10(1)(a)&(b)	When there is a risk of persons falling
20.	Fall Protection Plan Supervisor	CR 10(1)(a)&(b)	When there is a risk of persons falling
21.	Bulk Mixing Plant Supervisor	CR 20	As required
22.	Bulk Mixing Plant Operator	CR 20	As required
23.	Construction Vehicle & Mobile Plant Inspector	CR 23	When using construction vehicles; When using mobile plant;
24.	Construction Vehicle & Mobile Plant Operators	CR 23	When using construction vehicles; When using mobile plant;
25.	Electrical Installation Inspector	CR 24	When any electrical installations are brought to site or used on site or installed on site
26.	Explosive Actuated Fastening Device Inspector	CR 21	As required
27.	Explosive Actuated Fastening Device Controller / Issuer	CR 21	As required
28.	Explosive Actuated Fastening Device Operator	CR 21	As required
29.	Temporary Works Designer	CR 12(1)	As required
30.	Temporary Works Supervisor(s)	CR 12(2)	As required
31.	Ladder Inspector	GSR 13A	When ladders are used

#	DESIGNATION	LEGAL REFERENCE	TYPE OF CONSTRUCTION WORK WHEN REQUIRED
32.	Lifting Machine & Equipment Inspector	DMR 18(5)	When cranes, block and tackle, gantries or A frames are used for lifting; When rigging is done;
33.	Lifting Machine Operator	DMR 18	When cranes, block and tackle, gantries or A frames are used for lifting; When rigging is done;
32	Material Hoist Operator	CR 19	When material hoist is used
33	Mixer Operator	CR 20 / OHSA 8	When a concrete mixer is used
34	Portable Electrical Equipment Inspector	EMR 9	When portable electrical equipment is used
35	Pressure Vessel Inspector	PER	When compressors with pressure vessels are used
36	Scaffold Erector	SANS 10085-1:2004 Item 16.1(a)	When scaffolds are used
37	Scaffold Inspector	SANS 10085-1:2004 16.1(c)	When scaffolds are used
38	Scaffolding Supervisor	CR 14(2)	When scaffolds are used
39	Scaffold Team Leader	SANS 10085-1:2004 Item 16.1(b) and 10.1.1.	When scaffolds are used
40	Stacking & Storage Supervisor, including chemicals	CR 25 & CR 27	All construction work
41	Suspended Platform Supervisor	CR 17	When suspended platforms are used
42	Suspended Platform Erector	CR 17	When suspended platforms are used
43	Suspended Platform Operational Compliance Plan Developer	CR 17	When suspended platforms are used
44	Suspended Platform Inspector	CR 17	When suspended platforms are used
45	Tower Crane Operator	CR 22	When tower cranes are used
46	Tower Crane Inspector	DMR 18	When tower cranes are used
47	Hand tool inspector	OHSA 8	When hand tools are used
48	Combustion machinery inspector	OHSA 8	When petrol or diesel engines are used

ANNEXURE: D

RESPONSIBILITIES / DUTIES

Definitions:

- “Client” means any person for whom construction work is performed; the Kouga Local Municipality, as established in the Province of the Eastern Cape.
- “Principal Contractor” means a Principal Contractor, as defined in the Construction Regulations, 2014, who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site; who has also been appointed as the Contractor as defined in the General (and / or Special) Conditions of Contract.
- “Agent” means any person who acts as a representative for a client in the managing the overall construction work; employee, the firm of consulting employers agents, or other practitioner, who is appointed by the Municipality to act on its behalf, and who is named in the Letter of Acceptance given to the Principal Contractor.

Roles and Responsibilities

Client:

1. Shall be responsible for the following in order to ensure compliance with the provisions of the Act;
 - To prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same;
 - To promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;
 - To appoint each principal contractor in writing for the project or part thereof on a construction site;
 - To take reasonable steps to ensure that each principal contractor's health and safety plan as determined in the CR is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;
 - To stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan contemplated in the CR for the site or which poses to be a threat to the health and safety of persons;
 - To ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely
 - To ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
 - To ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.
2. Shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in the CR and thereafter finally approve the health and safety plan for implementation.
3. Shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.
4. Shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

5. May appoint an agent in writing to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by these regulations upon a client, shall as far as reasonably practicable apply to the person so appointed.
6. Shall appoint any person as his agent, unless the client is reasonably satisfied that the person he or she intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by these regulations.

Principal Contractor:

1. Shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan, based on the client's documented health and safety specification contemplated in the CR, which shall be applied from the date of commencement of and for the duration of the construction work.
2. Shall take reasonable steps as far as is necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.
3. A principal contractor shall be responsible for the following in order to ensure compliance with the provisions of the Act:
 - To provide any contractor who is making a bid or appointed to perform construction work for the principal contractor, with the relevant sections of the documented health and safety specification contemplated in the CR pertaining to the construction work which has to be performed;
 - To appoint each contractor contemplated in the CR in writing for the part thereof of the project on a construction site;
 - To take reasonable steps to ensure that each contractor's health and safety plan contemplated in the CR is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the principal contractor and contractor(s), but at least once every month;
 - To stop any contractor from executing construction work which is not in accordance with the principal contractor's and/or contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
 - To ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the contractor to execute the work safely;
 - To ensure that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
 - To ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process.
4. A Sub-contractor shall provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the principal contractor's health and safety specification contemplated in the CR provided by the principal contractor, which plan shall be applied from the date of commencement of and for the duration of the construction work.
5. Shall discuss and negotiate with the contractor the contents of the health and safety plan contemplated in the CR, and shall finally approve that plan for implementation.
6. Shall ensure that a copy of his or her health and safety plan contemplated in the CR, as well as the contractor's health and safety plan contemplated in the CR, is available on request to an employee, inspector, contractor, client or client's agent.
7. Shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and these Regulations, is opened and kept on site and made available to an inspector, client, client's agent or principal contractor upon request.
8. Shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in the CR, include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

9. Shall ensure that in addition to the documentation required in the health and safety file as determined in the CR, a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done is included and available.
10. Shall not appoint a contractor to perform construction work unless the principal contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.
11. Where a contractor appoints another contractor to perform construction work, the responsibilities as determined in the CR that apply to the principal contractor shall apply to the contractor as if he or she were the principal contractor
12. Shall not appoint another contractor to perform construction work unless he or she is reasonably satisfied that the contractor he or she intends to appoint has the necessary competencies and resources to perform the construction work safely.
13. Shall co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act.
14. Ensure every Sub-contractor shall as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.
15. The Contractor shall establish and maintain, and ensure that all his sub-contractors establish and maintain safety, health and environmental standards and systems as necessary, and to comply with local laws, the Occupational Health & Safety Act & Regulations and Municipality's Occupational Health & Safety requirements under the Contract.
16. The Contractor shall be solely responsible for carrying out the work under the Contract, having the highest regard for the safety of his employees, Municipality's employees and persons at or in the vicinity of the site, as well as the safety of the Works, temporary work, materials and the property of third parties.

Agent:

Ensure compliance to the duties of a client as set out in the Construction Regulations

- To prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same;
- To promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;
- To appoint each principal contractor in writing for the project or part thereof on a construction site;
- To take reasonable steps to ensure that each principal contractor's health and safety plan as determined in the CR is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;
- To stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan contemplated in the CR for the site or which poses to be a threat to the health and safety of persons;
- To ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely
- To ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
- To ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.

- Shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in the CR and thereafter finally approve the health and safety plan for implementation.
- Shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.
- Shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

The responsibilities for the key management and supervision roles include (but are not limited to) the following:

1. Directors

- Develop a culture in which safety is integral.
- Maintain adherence to the standards at all times.
- Ensure safety responsibility is an integral part of all management systems and processes.
- Ensure systems are in place to guarantee the safety of employees, clients, contractors and visitors.
- Provide resources and ensure that actions to address safety issues are implemented
- Implement the Municipality safety policy and safety standards into the business.
- Maintain adherence to the policy and standards at all times.
- Incorporate safety, health and environmental targets into Business Plans and Achievement Appraisals of direct reports.
- Foster a risk management approach to all projects and business decisions.
- Review all high potential incident investigations.
- Monitor OH&S performance for trends and learning's.

2. Project Manager

- Promote a culture in which safety is the prime concern that shall never be compromised.
- Ensure that adequate safety, health and environmental hazard evaluations are made on all projects, plant and equipment purchases.
- Prepare project plans that comply with the Municipality OH&S policy and safety management standards.
- Provide resources to eliminate hazards and improve safety.
- Incorporate safety, health and environmental targets into Achievement Appraisals of direct reports.
- Ensure that safe systems of work are defined and documented, and that hazards analysis and risk control methods have been incorporated during the preparation.
- Ensure that any Safety Committee established functions effectively.
- Ensure thorough investigation of all incidents to avoid recurrence.
- Ensure safe management of contractors, vendors and visitor's on sites.
- Conduct safety audits and ensure safety meetings are held.
- Promote the involvement of all employees in improving safety
- Focus on the elimination of unsafe acts, and rectify unsafe conditions quickly.
- Ensure safety responsibility is an integral part of all management systems and processes.
- Provide resources and ensure that actions to address safety issues are implemented.
- Ensure that adequate safety and environmental evaluations are made of all modification designs, plant and equipment purchases.
- Ensure systems are in place to guarantee the safety of employees, contractors and visitors.
- Review training needs for all employees and provide the training as required.
- Ensure that drills and exercises are carried out to test the effectiveness of Emergency Response Plans
- Ensure safe management of contractors on the site.
- Ensure competent and trained, responsible employers agents and supervisors exist to manage contractors on the works.

3. Employers agenting Manager

- Ensure management systems are in place and understood to give safe design and operation.
- Ensure hazards and risks are identified for all plant and major equipment.
- Ensure designs are fit for purpose and safe to implement.
- Ensure a safe workplace is provided for employers agenting staff.
- Ensure all employers agenting staff is inducted and have received the required training to enable safe access to site.
- Contribute to and participate in the Project safety program.
- Provide Employers agenting support as required to assist in the implementation and compliance of these Rules.

4. Construction Manager

- Contribute to a positive safety culture by example.
- Ensure that management systems are in place and understood to provide a safe construction workplace.
- Ensure that hazards and risks are identified on all construction activities.
- Arrange construction pre-start-hazard-analysis studies for all “at risk” operations.
- Contribute to and participate in the Project safety program.
- Participate in safety committees and safety meetings.
- Participate in safety inspections and serious incident investigations.
- Be seen to “walk the talk.”
- Participate in safety audits.
- Focus on the elimination of unsafe acts, and rectify unsafe conditions quickly.
- Ensure safe management of contractors on the site.
- Ensure competent and trained, responsible employers agents and supervisors exist to manage contractors on the works.
- Coordinate and participate in daily Safety Management walkabouts.
- Chairperson of weekly contractor’s safety meetings.
- Final approval of all Risk Assessments.

5. Assistant Director OHS

- Promote a culture in which safety is the prime concern and shall never be compromised
- Promote the involvement of all employees in improving safety.
- Coordinate the implementation of the site safety management plans.
- Conduct comprehensive site safety audits to evaluate contractor’s compliance with safety management plans and systems as per the audit / inspection schedule, at least once a month.
- Reporting of OH&S matters and performance to the Municipality Management Team.
- Liaise with Safety management to ensure full understanding and communication of all safety issues impacting on Municipality and Contractor activities and vice versa.
- Ensure appropriate Municipality personnel are involved in local dept OH&S Committees.
- Facilitate reviews by these Rules.
- Participate in a pre-start safety review with the Vendor’s / Contractor’s Management to facilitate a “bridging document” to remove any uncertainty/differences between these Rules and the Vendor’s / Contractor’s SMP.
- Co-ordinate the preparation of Emergency Response Plans.
- Co-ordinate and participate in drills and exercises to test the effectiveness of Emergency Response Plans.
- Facilitate and lead all LTI investigations.
- Safety pre-qualification of all contractors at tender invitation stage.
- Interview and approval of site and contractors Safety Officers

6. Area Managers

- Ensure compliance and keep all required records as per the Construction Regulations.
- Ensure hazards and risks are identified in design stage.
- Ensure that management systems are followed to give safe designs.
- Ensure self and others safety awareness at all times.
- Be aware of hazards and risks in the plant area of activity.
- Participate in and contribute to the Municipality Management team safety plan.
- Promote a culture in which safety is the prime concern and shall never be compromised.
- Define and document safe systems of work and, through consultation, ensure they are applied.
- Ensure that the Safety Committee functions effectively.
- Ensure that all incidents are thoroughly investigated to avoid re-occurrence.
- Ensure safe management of contractors on the site.
- Ensure competent and trained, responsible employers agents and supervisors exist to manage contractors on the works.
- Know that contractors and employees understand the hazards associated with performing tasks.
- Promote the involvement of all employees in improving safety.
- Focus on the elimination of unsafe acts, and rectify unsafe conditions quickly.
- Conducting safety inspections, monitoring safety behaviour on site and participating in audits.
- Ensuring that all involved personnel prior to commencement of any work complete Risk Assessment (RA) and Daily Safety Task Instruction (DSTI). Then, by a review process, verifying that the development process is appropriate, communicated and understood by the users and subsequently complied with.
- Notifying of incidents and addressing unsafe acts and conditions in accordance with these Rules and following-up to ensure corrective and preventative actions are timely and effective.
- By their actions, demonstrating to contractors at all times the commitment of these Rules to the highest standards of safety management.
- Participation in accident /incident investigations.
- Facilitate Contractors Risk Assessments and sign of and approval thereof before submitting to the site Safety Officer.
- Participate in daily management Safety walkabouts and ensure Contractors in your discipline comply to these rules and rectify deviations.
- Ensure Contractors implement and compliance with the Construction Regulations.

7. Health & Safety Officers & Coordinators

- Implement and maintain the Municipality Safety Management Plan on site for all Contractors.
- Advise the Site Management team on safety issues and suggested solutions.
- Report directly to the Construction Manager and act on his authority regarding safety issues.
- Promote a culture in which safety is the prime concern and shall never be compromised.
- Promote the involvement of all employees and Contractors in improving safety.
- Focus on and establish a culture of the elimination of unsafe acts, and rectification of unsafe conditions quickly, by Management and supervision.
- Ensure self and others safety awareness at all times.
- Facilitate and participate in all Contractors accident /incident investigations. Ensure that all incidents are thoroughly investigated to avoid re-occurrence.
- Participate in and contribute to the Municipality Management team Safety Plan.
- Ensure that all involved Municipality and Contractors personnel prior to commencement of any work complete Risk Assessments (RA) and Daily Safety Task Instruction (DSTI). Then, by a review process, verifying that the development process is appropriate, communicated and understood by the users and subsequently complied with by means of at least two daily site inspections.
- Ensure Safety Management Information Boards are erected in each working area, and the following minimum information is displayed – Method Statement, Risk Assessment, DSTI, Supervisor, First Aider and Safety Representative.

- Coordinate all safety induction training requirements and conduct Municipality specific induction for Municipality and contractor supervision.
- Coordinate site accesses and security.
- Coordinate and implement comprehensive daily incident reporting by management, supervision, foremen and Safety Officers.
- Compile and present a weekly safety report to include: Incident trend analyses & preventative measures. Injury trend analysis and preventative measures. Contractors Planned Tasked Observations for week ahead. DSTI quality and effectiveness. Management walkabouts including participation and findings. High risk activities for the week ahead. Risk Assessment plan for week ahead, based on the construction plan. Statistics for previous week regarding man-hours, complement, RA's completed, induction & medicals (entry and exit). Estimates for week ahead regarding, complement, RA's, induction & medicals (entry and exit).
- Conduct a monthly internal contractors audit to ensure implementation and continuous compliance with the Safety Management Plan. Record findings and issue action sheets for deviations to include an action close out plan and report.
- Accompany injured people to doctor/hospital and ensure prompt treatment and return to work. Report all medical treatment cases immediately (telephonic) to the Municipality OHS Director and follow it up with an initial SSO report before the end of work day and a complete investigation within 24 hours.
- Coordinate and ensure the pre check and recording thereof for all tools, plant and equipment.
- Final check and sign of RA's before submitting to the Construction Manager for approval.
- Implement and maintain the Construction Regulations.

ANNEXURE E

SECTION 37(2) MANDATORY H&S AGREEMENT:

**WRITTEN AGREEMENT ON
OCCUPATIONAL HEALTH AND SAFETY**

In accordance with the provisions of Section 37(2) of the Occupational Health and Safety Act 85 of 1993 as amended

AS ENTERED INTO BY AND BETWEEN

(Hereinafter referred to as “the Employer”)

AND

(Hereinafter referred to as “the Mandatory”)

Compensation Fund number:

**Common Law Liability
Insurance in respect of Third
Parties for the Minimum Sum of R...**

1. Reporting

The Mandatory and/or his designated person appointed in terms of Section 16 (2) of the Occupational Health and Safety Act 85 of 1993 ("the OHS Act") as amended shall report to the Site Manager CR6.1 and/or a representative designated by the Employer prior to commencing the work at the premises.

2. Warranty of compliance

2.1 In terms of this agreement the Mandatory warrants that he agrees to the arrangements and procedures as prescribed by the Employer and as provided for in terms of Section 37 (2) of the OHS Act for the purposes of compliance with the Act.

2.2 The Mandatory acknowledges that this agreement constitutes an agreement in terms of Section 37 (2) of the OHS Act, whereby all responsibility for health and safety matters relating to the work that the Mandatory and his employees are to perform on the premises shall be the obligation of the Mandatory.

2.3 The Mandatory further warrants that he and/or his employees undertake to maintain such compliance with the OHS Act. Without derogating from the generality of above, neither from the provisions of the said agreement, the Mandatory shall ensure that the clauses as hereunder described are at all times adhered to by himself and his employees.

3. Refer:

- Occupational Health & Safety Act No.85 of 1993 as amended including Regulations
- Hazards Chemical Substance Regulations of 1995
- Compensation for Occupational Injuries and Diseases Act 130 of 1993 as amended
- Hazardous Substance Act 15 of 1973
- National Environmental Management Act 107 of 1998
- National Environmental Management: Air Quality Act 39 of 2004
- National Road Traffic Act No.83 of 1996
- National Water Act 36 of 1989
- National Building Regulations and Building Standards Act 103 of 1977

4. Mandatory an employer

The Mandatory shall be deemed to be an employer in his own right while on the Employer's premises. In terms of Section 16 (1) of the OHS Act, the Mandatory shall accordingly ensure that himself, and/or his nominated Chief Executive Officer comply with the requirements of the OHS Act.

5. Appointments and training

5.1 The Mandatory shall appoint competent persons as per Section 16 (2) and/or the CR of the OHS Act.

5.2 Any such appointed person shall be trained on any occupational health and safety matter and the OHS Act provisions pertinent to the work that is to be performed under his responsibility.

5.3 Copies of any appointments made by the Mandatory shall immediately be provided to the Employer.

5.4 The Mandatory shall further ensure that all his employees are trained on the health and safety aspects relating to the work and that they understand the hazards associated with such work being carried out on the premises.

5.5 Without derogating from the foregoing, the Mandatory shall in particular, ensure that all his users or operators of any materials, machinery or equipment are properly trained in the use of such materials, machinery or equipment.

5.6 Notwithstanding the provisions of the above, the Mandatory shall ensure that he, his appointed responsible persons and his employees are at all times familiar with the provisions of the OHS Act, and that they comply with the provisions of the Act.

6. Supervision, discipline and reporting

The Mandatory shall ensure that all work performed on the Employer's premises are done under strict supervision and that no unsafe or unhealthy work practices are permitted.

Discipline regarding health and safety matters shall be strictly enforced against any of his employees regarding non-compliance by such employee with any health and safety matters.

The Mandatory shall further ensure that his employees report to him all unsafe or unhealthy work situations immediately after they become aware of the same and that he in turn immediately reports these to the Employer and/or his representative.

7. Access to the OHS Act

The Mandatory shall ensure that he has an updated copy of the OHS Act on site at all times and that this is accessible to his appointed responsible persons and employees, save that the parties may make arrangements for the Mandatory and his appointed responsible persons and employees to have access to the Employer's updated copy/copies of the Act.

8. Cooperation

8.1 The Mandatory and/or his responsible persons and employees shall provide full co-operation and information if and when the Employer or his representative inquiries into occupational health and safety issues concerning the Mandatory.

8.2 It is hereby recorded that the Employer and his representative shall at all times be entitled to make such inquiry.

8.3 Without derogating from the generality of the above, the Mandatory and his responsible persons shall make available to the Employer and his representative, on request, all and any checklists and inspection registers required to be kept by him in respect of any of his materials, machinery or equipment

9. Work procedures

9.1 The Mandatory shall be entitled to utilise the procedures, guidelines and other documentation as used by the Employer for the purposes of ensuring a healthy and safe working environment.

9.2 The Mandatory shall then ensure that his responsible persons and employees are familiar with and utilise the documents.

9.3 The Mandatory shall implement safe work practices as prescribed by the Employer and shall ensure that his responsible persons and employees are made conversant with and adhere to such safe work practices.

9.4 The Mandatory shall ensure that his employees prior to the obtaining of such a permit do not perform work for which the Employer requires a permit.

10. Health and safety meetings

10.1 If required in terms of the OHS Act, the Mandatory shall establish his own health and safety committee(s) and ensure that his employees, being the committee members, hold health and safety meetings as often as may be required and at least once every three (3) months.

10.2 The Employer may elect to permit the Mandatory's health and safety representatives or a mandatory representative to attend the Employer's health and safety committee meetings.

11. Compensation registration
- 11.1 The Mandatory shall ensure that he has a valid registration with the Compensation Commissioner, as required in terms of the Compensation for Occupational Injuries and Diseases Act 130 of 1993, and that all payments owing to the Commissioner are discharged.
- 11.2 The Mandatory shall further ensure that the cover shall remain in force while any such employee is present on the premises.
12. Medical examinations
- The Mandatory shall ensure that all his employees undergo routine medical examinations and that they are medically fit for the purposes of the work they are to perform.
13. Incident reporting and investigation
- 13.1 The Mandatory to the Department of Labour and to the Employer shall report all incidents referred to in Section 24 of the OHS Act.
- 13.2 The Employer shall further be provided with copies of any written documentation relating to any incident.
- 13.3 The Employer retains an interest in the reporting of any incident as described above as well as in any formal investigation and/or inquiry conducted in terms of Section 32 of the OHS-Act into such incident.
14. Statutory Obligations of the Mandatory & Contractor
- 14.1 The Mandatory shall notify the Employer of any subcontractor he may wish to perform work on the Employer's premises.
- 14.2 It is hereby recorded that all the terms and provisions contained in this clause shall be equally binding upon the subcontractor prior to the subcontractor commencing with the work.
- 14.3 Without derogating from the generality of this paragraph:
- 14.3.1 The Mandatory shall ensure that training as discussed under Appointments and training, is provided prior to the subcontractor commencing work on the Employer's premises.
- 14.3.2 The Mandatory shall ensure that work performed by the subcontractor is done under strict supervision and discipline enforced, as well as reporting of incidents and / or injuries.
- 14.3.3 The Mandatory shall inform the Employer of any health and safety hazard and/or issue that the subcontractor may have brought to his attention.
- 14.3.4 The Mandatory shall inform the Employer of any difficulty encountered regarding compliance by the subcontractor with any health and safety instruction, procedure and/or legal provision applicable to the work the subcontractor performs on the Employer's premises.
- 14.3.5 The Mandatory hereby undertakes to ensure that the health and safety of any other person on the premises is not endangered by the conduct and/or activities of all his employees while they are on the Employer's premises i.e.
- Horseplay, scuffling, fighting, running or throwing of objects.
 - The possession, consumption or offering for consumption to any person of intoxicating liquor or habit-forming drugs.
 - Any employee suspected of being under the influence of alcohol or other intoxicating substance will not be allowed to enter or remain on the Employer's premises.
 - The tampering with or misuse of any safety equipment installed or provided to any person by an employer or user of machinery.

- The failure to use any safety equipment at a workplace, or in the course of employment or in connection with the use of machinery which is provided by an employer or user of machinery.
- The doing of anything at a workplace or in connection with the use of machinery, calculated to threaten the safety of any person.
- Contractors are required to take all reasonable measures to ensure that the requirements of the Act and the regulation are observed by his employees.
- Contractors must, in the interests of safety, enforce discipline.

15. Security and access

- 15.1 The Mandatory and his employees shall enter and leave the premises only through the main gate(s) and/or checkpoint(s) designated by the Employer.
- 15.2 The Mandatory shall ensure that employees observe the security rules of the Employer at all times and shall not permit any person who is not directly associated with the work from entering the premises.
- 15.3 The Mandatory and his employees shall not enter any area of the premises that is not directly associated with the work.
- 15.4 The Mandatory shall ensure that all materials, machinery or equipment brought by him-self onto the premises are recorded at the main gate(s) and/or checkpoint(s). A failure to do this may result in a refusal by the Employer to allow the materials, machinery or equipment to be removed from the premises.
- 15.5 The Mandatory shall ensure that no persons carry firearms on the company's or Employer's premises unless written permission has been obtained from the designated person.

16. Fire precautions and facilities

- 16.1 The Mandatory shall ensure that an adequate supply of fire-protection and first-aid facilities are provided for the work to be performed on the Employer's premises, save that the parties may mutually make arrangements for the provision of such facilities.
- 16.2 The Mandatory shall further ensure that all his employees are familiar with fire precautions at the premises, which include fire-alarm signals and emergency exits, and that such precautions are adhered to.

17. Hygiene and cleanliness

- 17.1 The Mandatory shall ensure that the work site and surrounding area is at all times maintained to a reasonably practicable level of hygiene and cleanliness.
- 17.2 In this regard, no loose materials shall be left lying about unnecessarily and the work site shall be cleared of waste material regularly and on completion of the work.

18. No nuisance

- 18.1 The Mandatory shall ensure that neither he nor his employees undertake any activity that may cause environmental impairment or constitute any form of nuisance to the Employer and/or his surroundings.
- 18.2 The Mandatory shall ensure that no hindrance, hazard, annoyance or inconvenience is inflicted on the Employer, another Mandatory or any tenants. Where such situations are unavoidable, the Mandatory shall give prior notice to the Employer.

19. Intoxication not allowed

- 19.1 No intoxicating substance of any form shall be allowed on site. Any person suspected of being intoxicated shall not be allowed on the site.

- 19.2 Any person required to take medication shall notify the relevant responsible person thereof, as well as the potential side effects of the medication.
20. Personal protective equipment
- 20.1 The Mandatory shall ensure that his responsible persons and employees are provided with adequate personal protective equipment (PPE) for the work they may perform and in accordance with the requirements of General Safety Regulation 2 (1) of the OHS Act.
- 20.2 The Mandatory shall further ensure that his responsible persons and employees wear the PPE issued to them at all material times.
21. Plant, machinery and equipment
- 21.1 The Mandatory shall ensure that all the plant, machinery, equipment and/or vehicles he may wish to utilise on the Employer's premises is/are at all times of sound order and fit for the purpose for which it/they is/are intended, and that it/they complies/comply with the requirements of Section 10 of the OHS Act.
- 21.2 In accordance with the provisions of Section 10 (4) of the OHS Act, the Mandatory hereby assumes the liability for taking the necessary steps to ensure that any article or substance that it erects or installs at the premises, or manufactures, sells or supplies to or for the Employer, complies with all the prescribed requirements and will be safe and without risks to health and safety when properly used.
- 21.3 The Mandatory shall further ensure that all plant, machinery and equipment is inspected by a competent person as prescribed by legislation & records thereof retained.
22. No usage of the Employer's equipment
- The Mandatory hereby acknowledges that his employees shall not be permitted to use any materials, machinery or equipment of the Employer unless the prior written consent of the Employer has been obtained, in which case the Mandatory shall ensure that only those persons authorised to make use of same, have access thereto.
23. Transport / Vehicles
- 23.1 The Mandatory shall ensure that all road vehicles used on the premises are in a roadworthy condition and are licensed and insured.
- 23.2 All drivers shall have relevant and valid driving licences and no vehicle shall carry passengers unless it is specifically designed to do so.
- 23.3 All drivers shall adhere to the speed limits and road signs on the premises at all times.
- 23.4 In the event that any hazardous substances are to be transported on the premises, the Mandatory shall ensure that the requirements of the Hazardous Chemical Substances Act of 1995 are complied with at all times.
24. Clarification
- In the event that the Mandatory requires clarification of any of the terms or provisions of this agreement, he should contact the Public Health, Safety & Wellness Sub-Directorate of the Employer.
25. Duration of agreement
- This agreement shall remain in force for the duration of the work to be performed by the Mandatory and/or, while any of the Mandatory's workmen would be present on the Employer's premises.

26. Headings

The headings as contained in this agreement are for reference purposes only and shall not be construed as having any interpretative value in them or as giving any indication as to the meaning of the contents of the paragraphs contained in this agreement.

Thus done and signed at on

For, and on behalf of the Employer

Date

For and on behalf of the Mandatory

Date

Witness

Date

ANNEXURE F

Construction Project Contractor H&S Plan / File Layout & Document Content

#	DESCRIPTION	REMARKS
1	Scope of Work	
2	H&S Specification	▪ Where Applicable
3	H&S Plan [Environment Management Plan]	
4	Notification to Department of Labour	▪ Where Applicable
5	Letter of Good Standing	
6	Organisational	▪ Organogram / Contact Details / Sub Contractor Contact Details Sheet
7	Appointments	▪ Management / Supervision / H&S Officer Sub-Contractor / Mobile Plant & Equipment Operators / Drivers / First Aid / Risk Assessor / Incident Investigator / Fire Fighters / Excavation Supervisor / Stacking & Storage Supervisor, Scaffold Supervisor, Scaffold Erector etc., etc.
8	CV, Training & Competency	▪ Management / Supervision / H&S Officer ▪ Sub-Contractor / Mobile Plant & Equipment Operators / Drivers / First Aid / Risk Assessor / Incident Investigator / Fire Fighters / Excavation Supervisor / Stacking & Storage Supervisor, Scaffold Supervisor, Scaffold Erector / Blasters etc., etc.
9	Medicals	▪ Mobile Plant & Equipment Operators / Drivers / Elevated Work / Confined Spaces
10	Method Statement [MS]	▪ All Work Activities
11	Risk Assessment [RA]	▪ All Work Activities
12	Incident Management & Emergency Response	▪ First Aid / IOD-Non Disabling / IOD Disabling / Fire / Evacuation
13	Inspection Registers	▪ Plant & Equipment
14	Daily Safety Task Instruction [DSTI]	▪ All Work Activities
15	Safe Work Procedures [SWP]	▪ All Work Activities
16	Work Instructions [WI]	▪ All Work Activities
17	Permits	▪ Safe Work & Excavations
18	Legal	▪ Section 37(2) / BCEA / OHSA / Annexure.1 / WCL.2
19	Auditing & Inspections	
20	Document Masters	

ANNEXURE G

DOCUMENT REVIEW PANEL:

NAME	SURNAME	DESIGNATION
		Director: Occupational Health, Safety & Wellness
		Doctor: Occupational Medical Practitioner & H&S Consultant
		Safety Employers agent
		Acting Chief Health & Safety Officer
		Health & Safety Officer
		Health & Safety Officer
		Health & Safety Officer
		Health & Safety Officer
		Health & Safety Officer
		Health & Safety Officer

PORTION 2 :
PROJECT- AND SITE-SPECIFIC CONSTRUCTION HEALTH AND SAFETY
SPECIFICATION (ADDENDUM)



ISSUED IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
CONSTRUCTION REGULATIONS, 2014

This Project- and Site-specific Construction Health and Safety Specification (Portion 2) is issued as an Addendum to the General Construction Health and Safety Specification (Portion 1) of the KOUGA MUNICIPALITY.

Together, Portion 1 and Portion 2, make up the Construction Project Health and Safety Specification, as contemplated in the Construction Regulation 5(1)(b).

Project- and Site-specific Requirements and Considerations Include:

Potential principal contractors shall demonstrate in their tender to the client that they have the necessary competencies and resources to carry out the work safely.

The bill of quantities includes a dedicated portion for occupational health and safety (OHS); to allow the potential principal contractor's to make adequate provision for the cost of OHS during the construction process (relating to statutory and contractual obligations).

The aforementioned aspects are deemed critical during tender adjudication.

The successful tenderer will be appointed as the principal contractor as contemplated in the CR 5(1)(k).

The principal contractor must be fully compliant with the provisions of the Construction Regulations, 2014 before construction commence.

The principal contractor shall keep records that demonstrate that he has carried out similar processes to the abovementioned; leading up to the appointment of any (sub-) contractors.

Evidence of the following competencies must be submitted at tender stage as returnables:

Applicable Legislation	Designation	Evidence of Competency
OHSA 16(1)	Chief Executive Officer	N/A
OHSA 16(2)	Contracts Director	CV & Certificates
CR 8(1)	Construction Manager	CV & Certificates
CR 8(2)	Construction Manager Assistant(s)	CV & Certificates
CR 8(5)	Part-time Construction OHS Officer	CV & Certificates
CR 8(7)	Construction Supervisor	CV & Certificates
CR 8(8)	Construction Supervisor Assistant(s)	CV & Certificates

Evidence of the following competencies must be submitted by the successful principal contractor when submitting the project- and site-specific OHS plan and file (OHS plan and file) for approval – at least 14 (fourteen) days prior to scheduled commencement of physical works on the site:

Applicable Legislation	Designation	Evidence of Competency
OHS 16(1)	Chief Executive Officer	N/A
OHS 16(2)	Contracts Director	CV & Certificates
CR 8(1)	Construction Manager	CV & Certificates
CR 8(2)	Construction Manager Assistant(s)	CV & Certificates
CR 8(5)	Part-time Construction OHS Officer	CV & Certificates
CR 8(7)	Construction Supervisor	CV & Certificates
CR 8(8)	Construction Supervisor Assistant(s)	CV & Certificates
CR 9(1)	Risk Assessor	CV & Certificates
CR 9(3)	Work Procedure Trainers	CV & Certificates
GAR 9(2)	Incident Investigator	CV & Certificates
CR 29 (l)	Emergency Coordinators	CV & Certificates
CR 13(1)	Excavation Work Supervisor	CV & Certificates
CR 12(1)	Temporary Works Designer(s)	CV & Certificates
CR 12(2)	Temporary Works Supervisor(s)	CV & Certificates
CR 10(1)(a)	Fall Protection Plan Developer / Supervisor(s)	CV & Certificates
CR 16(1)	Scaffold Supervisor	CV & Certificates
CR 16(1) & SANS 10085: 16.1(a)	Scaffold Erector	CV & Certificates
CR 16(1) & SANS 10085: 16.1(b) and 10.1.1.	Scaffold Team Leader	CV & Certificates
CR 16(1) & SANS 10085: 16.1(c)	Scaffold Inspector	CV & Certificates
CR 24(d)&(e) & EMR & EIR	Temporary Electrical Installations & Machinery Inspector	CV & Certificates
HCSR 3(3)	Hazardous Chemical Substances Supervisor	CV
GSR 9(1)(a)	Welding, Flame Cutting & Soldering Operator	Certificates

Please note that the items in the table above are only relevant and required to be submitted if the specific project's components require these items.

Once the principal contractor's construction OHS plan and file has been approved for implementation; ongoing OHS compliance monitoring and at least monthly audits of the principal contractor's performance will be carried out on the client's behalf.

The client is required to (and will) stop work which, in the opinion of the client-appointed OHS agent, poses a threat to the health and safety of persons.

The principal contractor will be responsible for the site as detailed in the tender / contract document. Access, egress and accommodation of own and other parties on site, including fire and emergency services / other local authorities, shall be managed by the principal contractor.

The Occupational Health and Safety Act and Regulations (Act No. 85 of 1993) [OHS] forms part of this Construction Project Health and Safety Specification – any word or expression to which a meaning has been assigned in the OHS shall have the meaning so assigned to it unless the context otherwise indicates.

1. Part-time Construction OHS Officer CR 8(5)

The successful principal contractor shall appoint a part-time Construction OHS Officer to the contract for its duration.

The candidate needs to have a competency profile that is at least equivalent to the following:

<u>Education:</u>	Grade 12 (Matric) + 3 years further study (360 NQF credits in OHS). Alternatively, Grade 12 (Matric) + all of the following accredited courses: ▪ Risk Assessment (RA) (SAQA U/S 120330) ▪ Incident Investigation (SAQA U/S 120335) ▪ SAMTRAC or equivalent (minimum SAQA U/S 244283)
<u>Experience:</u>	3 (five) years of relevant work experience in construction OHS practice.
<u>Professional Registration:</u>	In the Construction Health and Safety Officer category, as contemplated in the Construction Regulations, 2014, Government Notice No. R. 85, Item 3, and, as to be demonstrated by contractors by the 07 August 2014.

2. Medical Examinations and Certificates of Fitness

It should be noted that all contractor's must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3 to the Construction Regulations, 2014.

3. Practical Matters that Impact / May Impact upon OHS

The items mentioned below are indicative of the concerns to the client – with regards to the health and safety of contractor's employees, client's employees and those people who are not involved with this contract, but may be affected by the execution of the works – and include:

- 3.1. Working in confined spaces – The structure involves the construction of canals and will involve building in confined spaces of widths of 600mm or less.
- 3.2. Working with electrical equipment – The use of an angle grinder and other electrical equipment will be required in order to complete the work.
- 3.3. Lifting of heavy equipment – the proposed filters/valves/pipework will be required to be placed in position and connected to the existing pipework which may require heavy lifting.

PARTICULAR SPECIFICATION: PC
BUILDING WORK

Appendix C: Particular Specifications - Building Works

PARTICULAR SPECIFICATION BUILDING WORKS

CONTENTS

PA. STANDARD CONDITIONS

PA.1 USE OF LOCALLY MANUFACTURED MATERIALS	1
PA.2 APPLICATION OF CLAUSES	1
PA.3 SAMPLES	1
PA.4 WATER	1
PA.5 STANDARD DETAIL DRAWINGS	1
PA.6 SCALES	1
PA.7 UNITS OF MEASUREMENTS	1
PA.8 INTERPRETATION OF DRAWINGS ETC	2
PA.9 DETAILS	2
PA.10 SOUTH AFRICAN NATIONAL STANDARDS	2
PA.11 ACCURACY IN BUILDING WORK	4

PB. SECURITY AND FENCING

PB.1 GENERAL	5
PB.2 SECTION 3.1.1	5
PB.3 SECTION 3.1.5	5
PB.4 SECTION 3.1.6A	5
PB.5 SECTION 3.1.7	5
PB.6 SECTION 3.2.2	5
PB.7 SECTION 4.1.1	5
PB.8 SECTION 4.1.3	5
PB.9 SECTION 4.2.6	5
PB.10 MEASUREMENT AND PAYMENT	5
PB.11 IDENTIFYING PAINTWORK	6

PC. STOCKPROOF FENCING

PC.1 SCOPE	7
PC.2 SUPPORTING SPECIFICATIONS	7
PC.3 MATERIALS	7
PC.3.1 STRAINING POSTS, GATE POSTS AND STAYS	7
PC.3.2 INTERMEDIATE POSTS (STANDARDS)	7
PC.3.3 DROPPERS	7
PC.3.4 WIRE	7
PC.3.5 BOLTS, NUTS AND WASHERS	7
PC.3.6 PEDESTRIAN AND VEHICULAR GATES	7
PC.3.7 CONCRETE	8
PC.4 ERECTION	8
PC.4.1 GENERAL	8
PC.4.2 FOUNDATIONS	8
PC.4.3 POSTS	8
PC.4.4 STAYS	9
PC.4.5 BARBED AND PLAIN WIRE	9
PC.5 MEASUREMENT AND PAYMENT	9
PC.5.1 FENCE	9

PD. CONCRETE BLOCK PAVING (INTERNAL ROADS, PARKING AND PATHS) 10

PD.1 MATERIALS	10
----------------------	----

PD.1.1 BED SAND.....	10
PD.1.2 JOINTING SAND.....	10
PD.2 CONSTRUCTION.....	10
PD.2.1 SAND BED (LAYING COURSE).....	10
PD.2.2 SURFACE COURSE.....	10
PD.2.3 EDGE RESTRAINTS.....	11
PD.2.4 INFILL AT EDGES.....	11
PD.2.5 LAYING BLOCKS AROUND CURVES.....	11
PD.3 MEASUREMENT AND PAYMENT.....	11
PE. EARTHWORKS	
PE.1 EARTHWORKS (GENERAL).....	12
PE.2 MATERIAL CLASSIFICATION.....	12
PE.2.1 PICKABLE MATERIAL.....	12
PE.2.2 SOFT ROCK.....	12
PE.2.3 HARD ROCK.....	12
PE.3 SITE CLEARANCE (GENERAL BUILDING).....	12
PE.4 EXCAVATIONS FOR FOUNDATIONS AND FLOORS.....	12
PE.4.1 EXCAVATIONS TO REDUCE LEVELS.....	13
PE.4.2 EXCAVATIONS FOR WORKING SPACE.....	13
PE.5 DISPOSAL OF EXCAVATED MATERIAL:.....	13
PE.5.1 PART RETURN.....	13
PE.5.2 CART AWAY.....	13
PE.5.3 SURPLUS MATERIAL.....	13
PE.6 MAINTENANCE OF EXCAVATIONS:.....	14
PE.7 BLASTING.....	14
PE.8 KEEP EXCAVATIONS FREE OF WATER.....	14
PE.9 RISK OF COLLAPSE OF EXCAVATIONS.....	14
PE.10 EARTH FILLING.....	14
PE.11 GARDEN SOIL FILLING.....	15
PE.12 HARDCORE.....	15
PE.13 PROTECTION AGAINST TERMITES.....	15
PF. FRAMEWORK	
PF.1 STANDARD SPECIFICATION.....	16
PF.2 FORMWORK (GENERAL).....	16
PF.3 DESIGN OF FORMWORK.....	16

PF.4 CLASSES OF FORMWORK.....	17
PF.5 TOLERANCES	18
PF.6 SOFFIT GROOVE FORMERS	19
PF.7 HORISING UP	19
PF.8 ADEQUATE SUPPORT FOR PROPS	19
PF.9 RE-USE OF FORMS	19
PF.10 FORMWORK MOULD OIL	19
PF.11 HOLES FOR ELECTRICAL WORK.....	20
PF.12 PRICES	20
PG. STEEL REINFORCEMENT	
PG.1 STANDARD SPECIFICATION.....	21
PG.2 DEFINITION.....	21
PG.3 STORAGE OF REINFORCEMENT.....	21
PG.4 REINFORCING STEEL.....	21
PG.5 WELDED STEEL FABRIC REINFORCEMENT	22
PG.6 RATES.....	22
PH. PRECAST CONCRETE WORK	
PH.1 TOLERANCES	23
PH.1.1 LENGTH.....	23
PH.1.2 SQUARENESS	24
PH.1.3 TWIST.....	24
PH.1.4 FLATNESS	24
PH.1.5 WARPAGE	24
PH.1.6 ABSORPTION	24
PI. GENERAL CONCRETE WORK	
PI.1 GENERAL.....	25
PI.2 CEMENT	25
PI.3 SAND (FINE AGGREGATE)	25
PI.4 STONE (COARSE AGGREGATE)	25
PI.5 CONCRETE GENERAL.....	26
PI.6 VOLUME BATCHING	26
PI.7 CAST IN-SITU CONCRETE.....	26
PI.7.1 TRIAL MIXES.....	27
PI.7.2 DURABILITY.....	27

PI.7.3 CONSISTENCY.....	27
PI.7.4 WORKABILITY.....	27
PI.8 EXPANSIVE ALKALI-AGGREGATE REACTION.....	27
PI.9 PUMPING OF CONCRETE	28
PI.10 ADMIXTURES TO CONCRETE:.....	28
PI.11 SLUMP TEST:.....	28
PI.12 CONCRETE TEST CUBES:.....	28
PI.12.1 SAMPLING AND MAKING CUBES.....	28
PI.12.2 CURING CUBES ON SITE:.....	29
PI.12.3 TESTING CUBES	29
PI.13 CONCRETE QUALITY:.....	29
PI.14 CONCRETING:.....	29
PI.15 FINISHED CONCRETE FLOOR LEVELS	30
PI.16 CONSTRUCTION ON CONCRETE STRUCTURES.....	31
PI.17 CURING OF CONCRETE	31
PI.18 CONCRETE LINTELS.....	31
PI.18.1 CAST IN-SITU LINTELS	31
PI.18.2 PRE-CAST LINTELS.....	31
PI.19 MOVEMENT JOINTS:	31
PI.20 CUTTING, PUNCHING OR HACKING CONCRETE:.....	31
PI.21 POWER FLOATED FINISH:.....	32
PJ. MASONRY (General)	
PJ.1 MATERIALS	33
PJ.2 BURNT CLAY BRICKS:	33
PJ.3 FIREBRICKS	33
PJ.4 WORKS MORTAR TESTS:	33
PJ.4.1 SAMPLING.....	33
PJ.4.2 MOULDING	33
PJ.4.3 CURING	34
PJ.4.4 TESTING OF CUBES	34
PJ.5 CEMENT MORTAR:	34
PJ.6 COMPO MORTAR.....	34
PJ.7 BUILDING N.....	35
PK.BLOCKWORK	
PK.1 SAND.....	36

PK.2 LIME	36
PK.3 CEMENT	36
PK.4 MORTAR PLASTICS	36
PK.5 LIME MORTAR	36
PK.6 CEMENT MORTAR	36
PK.7 COMPOSITION MORTAR	37
PK.8 AGGREGATES FOR BLOCKS	37
PK.9 WATER	37
PK.10 CONCRETE BLOCKS	37
PK.11 CUTTING OF BLOCKS	38
PK.12 RAKING BACK OF BLOCKWORK	38
PK.13 SEALING OF BLOCKWORK IN FOUNDATION WALLS	38
PK.14 BEAM FILLING	38
PK.15 CORNERS	38
PK.16 REVEALS	38
PK.17 JOINTING AND POINTING	38
PK.18 STORAGE OF BLOCKS	38
PK.19 BAGGING	39
PK.20 BLOCK REINFORCING FABRIC	39
PK.21 HOOP IRON STRAPS (TO DOORS/WINDOWS)	39
PK.22 SECURING OF ROOFS	39
PK.23 CRAMPS TO WOOD FRAMES:	39
PK.24 WATERPROOFING CODE OF PRACTICE	39
PK.25 CLEANING DOWN	39
PK.26 REMOVAL OF MORTAR DROPPINGS	40
PK.27 WEEP HOLES	40
PK.28 DAMP-PROOF COURSES	40
PK.29 BLOCKWORK OVER OPENINGS	40
PK.30 BEARING PLATES ON BLOCKS	40
PK.31 CONTROL JOINTS	40

PK32 PROTECTION AGAINST DAMAGE	40
PK33 PROTECTION OF NEW WORK.....	40
PK.34 BRACING DURING CONSTRUCTION	41
PL. BRICKWORK	
PL.1 SAND.....	42
PL.2 LIME.....	42
PL.3CEMENT.....	42
PL.4 LIME MORTAR.....	42
PL.5 CEMENT MORTAR.....	42
PL.6 BRICKS.....	42
PL.7 BRICKWORK INCEMENT MORTAR:.....	43
PL.8 MORTAR JOINTS.....	43
PL.9 GROUT INJOINTS IN BRICK FOUNDATION WALLS:	43
PL.10 BRICKWORK REINFORCEMENT	43
PL.11 BRICKWORK LINTELS.....	44
PL.12 BAGGED FINISH TO BRICKWORK	44
PL.13 RAKING OUT FOR AND POINTING FLASHINGS.....	44
PL.14 BRICKWORK INTICKNESSES:	44
PL.15 BRICKWORK IN LININGS:	44
PL.16 HALF BRICK THICK WALLS.....	44
PL.17 CAVITY WALLS	44
PL.18 BEAM FILLING	45
PL.19 BAGGING.....	45
PL.20 BRICK REINFORCING FABRIC	45
PL.21 HOOP IRON CRAMPS	45
PL.22 HOOP IRON ROOF TIES.....	46
PL.23 WATERPROOFING - CODE OF PRACTICE	46
PL.24 FACE BRICKWORK	46
PL.25 CLEANING OFF	46
PM. WATERPROOFING	

PM.1 GENERAL.....	47
PM.2 DAMP-PROOFING TO WALLS.....	47
PM.3 DAMP-PROOFING TO FLOORS, ETC.....	47
PM.4 INSTALLATION	47
PM.5 DAMP-PROOF MEMBRANE	47
PN. ROOF COVERINGS	
PN.1 GENERAL	49
PN.2 UNDERTILE MEMBRANE	49
PN.3 VALLEYS	49
PN.4 ROOFING TILES (CLAY).....	50
PN.5 ROOFING TILES (CONCRETED).....	50
PN.6 FIBRE CEMENT ROOFING	51
PN.7 ROOFING SHEETS (METAL).....	51
PN.8 ALUMINIUM/ZINC ROOFING SHEETS.....	52
PN.9 RIDGING (METAL);.....	53
PN.10 ROOFING SHEETS (FIBRE CEMENT)	53
PN.11 RIDGING (FIBRE CEMENT)	54
PN.12 FLASHINGS (FIBRE CEMENT)	55
PO. CARPENTRY AND JOINERY	
P0.1 TIMBER	56
P0.2 MOISTURE CONTENT.....	56
P0.3 NOMENCLATURE OF TIMBERS.....	56
P0.4 STORAGE OF TIMBER.....	56
P0.5 TIMBER DIMENSIONS.....	56
P0.6 PRE-TREATMENT OF TIMBER.....	56
P0.7 WROUGHT FACES.....	57
P0.8 ANGLES OF WROUGHT WOODWORK:.....	57
P0.9 STRUCTURAL SOFTWOOD.....	57
P0.10 GRADED TIMBER.....	58
P0.11 FINGER JOINTING ETC.....	58

P0.12 LENGTHS OF TIMBERS AND METHODS OF JOINTING.....	58
P0.13 PRE-FABRICATED ROOF TRUSSES.....	59
P0.14 VALLEYS IN ROOFS.....	59
P0.15 FIXING OF WOOD (GENERAL).....	59
P0.16 FLOOR AND WALL PLATES.....	60
P0.17 BATTENS AND PURLINS.....	60
P0.18 PURLIN TIES.....	60
P0.19 CEILING JOISTS (WHERE REQUIRED).....	60
P0.20 FRAMED JOINERY.....	61
P0.21 PRESSED FIBRE CEMENT ROOF TRIM.....	61
P0.22 STORAGE OF TIMBER.....	61
P0.23 FIR.....	61
P0.24 OREGAN PINE (DOUGLAS FIR).....	61
P0.25 HARDWOODS.....	61
P0.26 LAMINATED TIMBER.....	61
P0.27 PLYWOOD.....	61
P0.28 HARDBOARD.....	61
P0.29 BLOCKBOARD.....	62
P0.30 PARTICLE BOARD PRODUCTS.....	62
P0.31 DECORATIVE PLASTIC LAMINATES.....	62
P0.32 GYPSUM PLASTER BOARD AND CORNICES.....	62
P0.33 ASBESTOS CEMENT CELLULOSE SHEETS.....	62
P0.34 JOINERY.....	62
P0.35 MITRES, ETC.....	63
P0.36 PLUGS, NAIL SETC.....	63
P0.37 SHOT FIXING.....	63
P0.38 PROTECTION.....	63
P0.39 WOODEN DOORS.....	63
P0.40 INTERNAL DOORS.....	64
P0.41 HANGING OF DOORS.....	64

P0.42 SETUP IN POSITION FOR BUILDING IN OF TIMBER FRAMES.....	65
P0.43 FLUSH DOOR.....	65
P0.43.1 GENERAL REQUIREMENTS.....	65
P0.43.2 CONSTRUCTION.....	66
P0.44 CLEANING OUT ETC.....	67
P0.45 WINDOWS.....	67
PP. CEILINGS, PARTITIONS AND ACCESS FLOORING	
PP.1 TREATMENT OF TIMBER.....	68
PP.2 DIMENSIONS OF SAWN SOUTH AFRICAN SOFTWOOD.....	68
PP.3 FIXING OF WOOD (GENERAL).....	68
PP.4 BRANDERING TO CEILINGS.....	68
PP.4.1 GYPSUM PLASTER BOARD.....	68
PP.4.2 GYPSUM PLASTER BOARD WITH PLASTER FINISH:.....	68
PP.5 COVERING TO CEILINGS:.....	68
PP.5.1 GYPSUM PLASTER BOARD.....	68
PP.5.2 GYPSUM PLASTER BOARD WITH PLASTER FINISH.....	69
PP.6 COVE CORNICES TO CEILINGS:.....	69
PP.6.1 GYPSUM PLASTER BOARD:.....	69
PP.7 TRAP DOORS IN CEILINGS.....	69
PP.8 CEILING INSULATION.....	69
PQ. FLOOR COVERINGS, PLASTIC LININGS, ETC	
PQ.1 RESILIENT FLOOR FINISHINGS AND SKIRTINGS.....	70
PQ.1.1 SEMI-FLEXIBLE VINYL FLOORING.....	70
PQ.1.2 FLEXIBLE VINYL (UPVC) FLOORING.....	70
PQ.1.3 MARBLE LINOLEUM.....	70
PQ.1.4 LAYING AND FIXING.....	70
PR. IRONMONGERY	
PR.1.1 GENERAL.....	71
PR.1.2 DIMENSIONING.....	71
PR.1.3 CARCASS, SHELVING & CUPBOARD DOORS.....	71
PR.1.4 KEYS.....	71
PS. METALWORK	
PS.1 WROUGHT IRON.....	72
PS.2 NON-STRUCTURAL STEELWORK.....	72

PS.3 HOT DIP GALVANISING TO METALWORK.....	72
PS.4 PRIMING MANUFACTURED METALWORKS.....	73
PS.5 STEEL WINDOWS.....	73
PS.6 PRESSED STEEL DOOR FRAMES.....	73
PS.7 FITTINGS.....	74
PS.8 SIZES ETC.....	74
PS.9 FIXING.....	74
PS.10 ALUMINIUM AND ANODISED ALUMINIUM.....	74
PS.10.1 ALUMINIUM.....	74
PS.10.2 ANODISING.....	74
PS.10.3 CHROME-PLATING.....	75
PS.10.4 ANODISED ALUMINIUM LOUVRE UNITS.....	75
PS.10.5 VITREOUS ENAMELED CHALK BOARDS.....	75
PT. PLASTERING & SCREEDS	
PT.1 CEMENT, LIME AND SAND.....	76
PT.2 PREPARATION OF PLASTER.....	76
PT.3 PROPORTIONS OF CONSTITUENT PARTS OF PLASTER, RENDERING, ETC.....	76
PT.4 LIME PLASTER FOR WALLS.....	76
PT.5 CEMENT PLASTER.....	77
PT.6 PREPARATION FOR PLASTERING GENERALLY.....	77
PT.7 PREPARATION FOR PLASTER TO RECEIVE MOSAIC TILING.....	77
PT.8 PLASTERING GENERALLY.....	77
PT.9 CONCRETE FLOORS.....	78
PT.9.1 CODE OF PRACTICE.....	78
PT.9.2 PREPARATION OF SURFACES.....	78
PT.9.3 CEMENT SCREEDS (FLOOR COVERINGS ONLY).....	78
PT.9.4 CEMENT RENDERING.....	78
PT.9.5 GRANOLITHIC.....	78
PT.9.6 NON-SLIP GRANOLITHIC.....	79
PT.9.7 HARDENED GRANOLITHIC.....	79
PT.9.8 GENERALLY.....	79
PU. TILING	
PU.1 MATERIAL.....	81
PU.1.1 CEMENT.....	81
PU.1.2 SAND.....	81
PU.1.3 GLAZED CERAMIC WALL TILES.....	81

PU.2 PREPARATORY WORK.....	81
PU3 TILING.....	81
PV.PLUMBING AND DRAINLAYING	
PV.1REGISTERED PLUMBERS AND DRAINLAYERS.....	82
PV.2DIAMETERS.....	82
PV3 REGULATIONS.....	82
PV.4EARTHWORKSFORDRAINLAYING.....	82
PV5 MEASUREMENT OF ROCK EXCAVATIONS IN DRAIN TRENCHES.....	82
PV.6 BEDDING MATERIAL.....	83
PV.7 BACKFILLING TO DRAIN TRENCHES.....	83
PV8 SURPLUS EXCAVATED MATERIAL.....	83
PV.9 PIPELAYING.....	83
PV.10 DRAIN PIPES.....	83
PV.11 RODDING (CLEANING) EYES.....	83
PV.12 GULLIES.....	83
PV. 13 DISHED GULLIES.....	84
PV.14 UNIVERSAL TRAPS.....	84
PV.15 RAINWATER GOODS.....	84
PV.16 CONCRETE PIPES FOR STORMWATER.....	84
PV.17 JUNCTION BOXES.....	84
PV.18 STAINLESS STEEL PIPES.....	84
PV.19 GALVANISED MILD STEEL PIPES.....	85
PV.20 COPPER PIPES.....	85
PV21 UPVC WASTE AND VENT PIPES.....	85
PV.22 FIXING OF PIPES.....	85
PV23 STOP COCKS, BIB COCK SETC.....	85
PV24 TAPS.....	85
PV.25 WATER CLOSETS.....	85
PV.26 SINKS.....	86
PV.27 BALL VALVES.....	86

PV.28 SANITARY FITTINGS.....	86
PV.29 DESCRIPTIONS AND PREAMBLES.....	86
PW. GLAZING	
PW.1 GLASS.....	87
PW.2 GLAZING.....	87
PW.3 SAFETY GLAZING.....	88
PW.4 PREAMBLES.....	88
PX. PAINTING	
PX.1 PREPARATORY WORK.....	89
PX.1.1 GENERAL.....	89
PX.1.2 ON PLASTER, BAGGING, ETC.....	89
PX.1.3 ON METAL.....	89
PX.1.4 EXTERIOR TIMBER (NEW TIMBER).....	90
PX.2 MATERIALS AND APPLICATION.....	90
PX.2.1 PAINTS.....	90
PX.2.2 ON PLASTER, BAGGING, ETC.....	92
PX.2.3 LINE WASH.....	92
PX.2.4 COLOUR WASH.....	92
PX.2.5 DISTEMPER.....	92
PX.2.6 EMULSION PAINTS, INTERNALLY.....	92
PX.2.7 EMULSION PAINTS, EXTERNALLY.....	92
PX.2.8 GLOSS, FLAT OR EGGSHELL OIL PAINTS AND HIGH GLOSS ENAMEL PAINTS.....	93
PX.2.9 ON METALWORK.....	93
PX.2.10 ON WOODWORK.....	93
PX.3 GENERALLY.....	93
PX.3.1 MAKING GOOD.....	93
PX.3.2 MIXING PAINTS.....	93
PY. LANDSCAPING AND GRASSING	
PY.1 FERTILISER.....	94
PY.2 FERTILISER.....	94
PY.3 FERTILISER.....	94
PY.4 FERTILISER.....	94
PZ. GENERAL RECTIFICATION WORK	
PZ.1 PREAMBLE.....	95
PZ.2 DEMOLISH AND RE-CONSTRUCT UNIT.....	95
PZ.3 WARRANTS FOR DEMOLISHING OF AN EXISTING HOUSE.....	95

PZ.4 MAINTENANCE OF EXISTING SERVICES.....	95
PZ.5 SETTING OUT.....	95
PZ.6 CONSTRUCTION OF NEW HOUSING UNITS.....	95
PZ.7 RECTIFICATION OF AN EXISTING UNIT.....	96
PZ.8 PROVISION OF TEMPORARY HOUSING.....	96
PZ.9 SITE PREPARATION.....	96
PZ.10 MATERIALS.....	96
PZ.11 SAMPLES OF ALL MATERIALS.....	96
PZ.12 FOUNDATIONS.....	96
PZ.13 REINFORCING.....	96
PZ.14 BLOCK WORK.....	96
PZ.15 EXTERNAL BEAM FILLING.....	97
PZ.16 STEPS (IF REQUIRED).....	97
PZ.17 MORTAR.....	97
PZ.18 BLOCKFORCE.....	97
PZ.19 NEW EXTERNAL DOOR FRAMES AND DOORS.....	97
PZ.20 NEW INTERNAL MERANTI DOOR FRAMES AND DOOR.....	97
PZ.21 NEW MERANTI WINDOWS FRAME.....	97
PZ.22 PREPARATION OF EXIST. WOODEN WINDOW FRAME.....	97
PZ.23 CONCRETE WORKS.....	97
PZ.24 REPAIR/REPLACEMENT OF ROOF STRUCTURE.....	98
PZ.25 CEILING.....	99
PZ.26 REPAIR TO PLASTERING.....	99
PZ.27 REPAIR TO EXISTING PLASTERED WALLS.....	99
PZ.27.1 SLIGHT CRACKING.....	99
PZ.27.2 MODERATE CRACKING.....	99
PZ.27.3 SEVERE CRACKING.....	99
PZ.28 PLUMBING.....	100
PZ.29 FINISHES.....	101
PZ.30 REPAINTING.....	101
PZ.30.1 EXTERIOR TIMBER (NEW TIMBER).....	101

PZ.30.2 ON METALWORK.....	101
PZ.30.3 ON PLASTER.....	102
PZ.30.4 ON CEILINGS BOARDS.....	102
 PZ.31 BATH AND KITCHEN CUPBOARD.....	 102
PZ.32 RUBBLE REMOVAL.....	103

SASS 42 Pentachlorophenol for Timber Preservation
 SANS 62-1 Steel Pipes and Pipe Fittings up to 150 mm nominal bore
 SANS 282 Bending Dimensions of Bars for Concrete Reinforcement
 SANS 92 Bituminous Roofing Felt
 SANS 151 Fixed Electric Water Storage Heaters
 SANS 226 Water Taps (Metallic)
 SANS 227 Burnt Clay Masonry Units
 SANS 242 Stainless Steel Sinks with Draining Boards (for Domestic Use) SANS 248 Bituminous Damp-Proof Courses
 SANS 266 Gypsum Plasterboard
 SANS 281 Hardwood Block and Strip Floorings
 SANS 297 Mastic Asphalt for Roofing
 SANS 307-309 Bitumen Emulsion
 SANS 312 Red Lead Base Primers for Structural Steel
 SANS 460 Copper and Copper Alloy Tubing
 SANS 471 Portland Cement (ordinary, rapid hardening and sulphate resisting) SANS 497 Glazed Ceramic Sanitaryware
 SANS 509 Malleable Cast-Iron Pipe Fittings
 SANS 515 Decorative Paint with a Non-Aqueous Solvent Base for Interior SANS 523 Lime for Use in Buildings
 SANS 540 Wood fibre Building Board SANS 542 Concrete Roofing Tiles
 SANS 543 Fire Hose Reels (with hose) SANS 545 Wooden Doors
 SANS 546 Cast Iron Fittings for Fibre Cement Pressure Pipes
 SANS 558 Cast Iron Surface Boxes and Manhole and Inspection Covers and Frames
 SANS 559 Vitrified Clay Sewer Pipes and Fittings
 SANS 563 Stress-graded Softwood: General Structural Timber
 SANS 565 Pentachlorophenol-Zinc Naphthenate Timber Preservative
 SANS 581 Semi-Flexible Vinyl Floor Tiles
 SANS 622 Gypsum Cove Cornice
 SANS 626 Portland Blast furnace Cement
 SANS 629 Softwood Flooring Boards
 SANS 631 Decorative Oil Gloss Paint for Interior and Exterior Use
 SANS 632 Clay Roofing Tiles
 SANS 633 Emulsion Paints for Interior Decorative Purposes SANS 634 Emulsion Paints for Exterior Use
 SANS 653 Softwood Bracking and Battens
 SANS 675 Zinc-coated Fencing Wire (plain and barbed)
 SANS 677 Concrete Non-Pressure Pipes
 SANS 678 Primers for Wood for Interior and Exterior Use SANS 680 Glazing Putty for Wood and Steel Sashes
 SANS 681 Undercoats for Paints
 SANS 682 Finishing Paint, Aluminium-type
 SANS 683 Roof Paints
 SANS 684 Structural Steel Paint
 SANS 685 Fibre-Cement Sheets: Profiled and Flat SANS 723 Wash Primer (Metal Etch Primer)
 SANS 727 Windows and Doors made from rolled mild steel sections
 SANS 746 Cast-Iron pipes and pipe fittings for use above ground in drainage installations SANS 752 Float Valves: Part I and Part II
 SANS 763 Hot-dip (Galvanised) Zinc Coatings other than on zincionict-icnouaotuesdly sheet and wire
 SANS 786 Flexible Vinyl Flooring
 SANS 801 Epoxy-tar Paints
 SANS 802 Bituminous Aluminium Paint SANS 803 Fibre-Cement Boards
 SANS 821 WC Flushing Cisterns

PA. STANDARD CONDITIONS

PA.1 USE OF LOCALLY MANUFACTURED MATERIALS

Materials and products manufactured in South Africa shall be used in carrying out the work to which this specification refers, unless an imported product is prescribed specifically, or when no suitable locally manufactured product for the specific use is available.

PA.2 APPLICATION OF CLAUSES

All clauses in this specification which describe the materials and methods to be used in carrying out the work specified in the specification of work to be done, or indicated on the drawings, or included in the bills of quantities, or in any detail drawings, or instructions issued by the Client Representative/Clerk of Works/Principal Agent to the Contractor during the progress of the work, shall be considered as applying to the performance of the contract.

PA.3 SAMPLES

The Contractor shall furnish without delay, such samples and/or certificates as called for or may be called for by the Representative/Principal Agent. Materials and/or workmanship not corresponding with approved samples may be rejected.

PA.4 WATER

Clean, fresh water free from vegetable or organic matter, earth, clay, acid or alkaline substances either in suspension or in solution, other than those used for purification thereof by the responsible authority, shall be used through-out.

Where there is any reason to suspect the presence of impurities, the Representative / Principal Agent may require the Contractor to obtain a chemical analysis of the water by a competent analyst at his own cost. Should the water prove unsuitable for use the Contractor must procure water fit for domestic consumption.

PA.5 STANDARD DETAIL DRAWINGS

All standard detail drawings applying to a particular service and referred to in this document, in the specification or in the bills of quantities, will be issued to the Contractor upon request, for the carrying out of the work.

PA.6 SCALES

The scale to which the drawings are prepared is only to be made use of when no figured dimensions are given, either on the drawings or in the specification. Figured dimensions are always to be followed though they may not coincide with the scale of the drawings.

PA.7 UNITS OF MEASUREMENTS

Units of measurements have been standardised in accordance with "Système International d'Unités" (SI).

PA.8 INTERPRETATION OF DRAWINGS ETC.

Should any part of the drawings, specification or bills of quantities not be clearly intelligible to the Contractor or that the materials or articles to be used in the execution of the works be considered insufficiently described, the Representative/Agent shall be requested in writing, to make clear, also in writing, his requirements, failing which the Contractor shall be liable to make, at his own expense, any alterations or substitutions rendered necessary through incorrect interpretation of such drawings, specification or bills of quantities.

PA.9 DETAILS

Upon receipt of detail drawings for any work the Contractor shall, before putting that work in hand, ascertain that the dimensions given on the Detail Drawings correspond with the dimensions of any work already built or to be built, which governs the sizes of the work for which the detail is given. In the event of the detail drawings not agreeing with the work already built, the drawings shall be at once returned for alterations as no claim for extra work will be entertained in this respect.

PA.10 SOUTH AFRICAN NATIONAL STANDARDS

SANS 2 Glazed Ceramic Wall Tiles and Fittings

SANS 28 Metal Ties for Cavity Walls

SANS 38 Metallic Naphthenates for Timber Preservation

SASS 831 Portland Cement 15 (Ordinary and Rapid Hardening)

SANS 887 Varnish for Interior Use

SANS 903 Aluminium Alloy Corrugated and Troughed Sheets

SANS 906 Stainless Steel Wash Hand Basins and Wash Troughs SANS 907 Stainless Steel Sinks for Institutional Use

SASS 909 Red Oxide Zinc Chromate Primer for use on Steel Windows and Doors

SASS 912 Calcium Plumbate Primer

SANS 920 Steel Bars for Concrete Reinforcement

SASS 926 Two pack zinc-rich epoxy primer

SANS 929 Plywood and Composite Board
 SASS 934 Hot-dip (Galvanised) Zinc Coatings on Steel Sheet and Strip
 SANS 949 Strongroom Doors
 SANS 952 Polyolefin film for damp-proofing and waterproofing in buildings
 SANS 978 Wood Mosaic Flooring
 SANS 1024 Welded Steel Fabric for Concrete Reinforcement
 SANS 1039 Wooden Ceilings and Panelling Boards
 SANS 1083 Aggregates from Natural Sources SANS 1090 Sand for Plaster and Mortar
 SANS 1099 Hardwood Furniture Timber
 SANS 1128 Fire Fighting Equipment
 SANS 1200 Standardized Specifications for Civil Employers agenting Construction
 SANS 1223 Fibre-cement Pressure Pipes and Couplings
 SANS 1227 Textured wall coatings, emulsion base, for interior and exterior use
 SANS 1236 Silvered Glass Mirrors for General Use
 SASS 1245 Stress-graded Softwood Employers agenting Timber. SANS 1263 Safety and security glazing materials for buildings SANS 1288 Preservative-Treated Timber
 SASS 1300 Particle board: Exterior and Flooring Type
 SASS 1301 Particle board: Interior Type
 SASS 1359 Softwood timber for industrial use
 SANS 1373 Chain-Link Fencing and its wire accessories
 SANS 1381 Materials for thermal insulation of buildings
 SANS 1388 Tributyltin Oxide-Lindane Timber Preservative
 SANS 1460 Laminated Timber (Glulam)
 SANS 1466 Portland fly ash cement
 SANS 1491 Portland cement extenders

CODES OF PRACTICE:

SANS 03 The Protection of Buildings against Lightning SANS 05 Preservative Treatment of Timber
 SANS 021 Waterproofing of Buildings
 SASS 043 The laying of Wood Floors
 SANS 064 Preparation of Steel Surfaces for coating
 SANS 070 The laying of thermoplastic and similar types of flooring SANS 096 Manufacturing of Finger-Jointed Structural Timbers
 SASS 0107 The fixing of Glazed Wall Tiles
 SANS 0137 The installation of glazing materials in buildings
 SANS 0155 Accuracy in building
 SANS 0400 The application of the National Building Regulations

NATIONAL HOME BUILDERS REGISTRATION COUNCIL

NHBRC Home Building Manual - Parts 1 to 3

CKS SPECIFICATIONS:

CKS 208 Concrete Flooring Tiles
 CKS 451 Specification for Anti-intruder Fences

STANDARD TEST METHODS:

SANS 5861 Sampling of freshly mixed concrete SANS 5862 Slump of freshly mixed concrete
 SANS 5863 Compressive strength of concrete

(IN ALL CASES THE LATEST PUBLICATION OR REVISION SHALL APPLY.)

PA.11 ACCURACY IN BUILDING WORK

The method of measurement and accuracy of dimensions required for the setting out of structures and for completed building work shall be as described in SABS Code of Practice 0155, unless otherwise specified in this document.

PB. SECURITY AND FENCING

PB.1 GENERAL

The specification for Fencing shall be that as published by the South African Bureau of Standards, CKS 451-1976 entitled Specification for Anti-Intruder Fences, with the following specific requirements.

PB.2 SECTION 3.1.1

The material of the posts, extension arms (cast integrally with the posts) and stays shall be pre-stressed concrete).

PB.3 SECTION 3.1.5

The material of the wire (other than barbed wire) shall be galvanised and plastic coated mild steel wire.

PB.4 SECTION 3.1.6A

The mesh shall be of 2,4 m width.

PB.5 SECTION 3.1.7

The barbed wire shall be double-stranded mild steel wire of diameter 2,5 mm with first class galvanised coating

PB.6 SECTION 3.2.2

The extension arm shall be a single straight arm cast at an angle to the post of $\pm 135^\circ$.

PB.7 SECTION 4.1.1

The fence shall be erected in the position indicated on the drawing or as directed on site

PB.8 SECTION 4.1.3

There shall be at least 5 straining wires.

PB.9 SECTION 4.2.6

The bottom of the mesh shall be attached to the ground by the following method:

A continuous trench of depth and width approximately 100 mm shall be provided between the posts. The bottom of the mesh shall be positioned at a depth of at least 50 mm in the trench. Anchor pegs shall be attached to the bottom row of apertures of the mesh at spacing not exceeding 1,0 m and their free ends driven into the base of the trench to a depth of at least 40 mm. The trench shall be filled with earth or other suitable material, well rammed

PB.10 MEASUREMENT AND PAYMENT

Measurement shall be by the linear meter of the fence and the price tendered and paid shall cover the full cost of supplying and erecting the fence completed, as specified

PB.11 IDENTIFYING PAINTWORK

A horizontal bar of paint approximately 200 mm wide shall be painted centrally on all security fencing and gates with an approved quality paint in accordance with specification PX.2.1.

PC. STOCKPROOF FENCING PC.1

SCOPE

This specification covers the requirements for stock proof fencing and gates.

PC.2 SUPPORTING SPECIFICATIONS

The specification shall be read in conjunction with the following specifications published by the South African Bureau of Standards. CKS 451-1976
:"Specification for Anti-intruder Fences

PC.3 MATERIALS

PC.3.1 Straining posts, gate posts and stays

Straining posts, gate posts and stays shall be of timber and comply with the relevant requirements of SABS 457. The straining posts and gate posts shall have a minimum diameter of 125 mm and shall be 2,15m long. The stays shall have a minimum diameter of 100 mm and shall be 2,15m long.

PC.3.2 Intermediate posts (standards)

Intermediate posts (standards) shall be steel Y-section posts enable of withstanding a bending moment of 700 Nm imposed over their length. These standards shall be 1,86m long and have a mass per unit length of 2,5 kg/m

PC.3.3 Droppers

Droppers shall be of steel T-sections and have a ridged crosspiece. Droppers shall be 1,4m long and have a mass per unit length of 550g/m –

PC.3.4 Wire

All wire shall comply with the relevant requirements of SABS 675 and shall be light class galvanised.

Barbed wire shall be double stranded mild steel of 2,5mm diameter. Plain wire shall be 2,24mm diameter high tensile. Tie wire shall have a diameter of 1,6mm

PC.3.5 Bolts, Nuts and Washers

Strain eye bolts, hinge bolts, bolts and nuts shall comply with the relevant requirements of SABS 135. Washers shall comply with the requirements of SANS 1700.

The nominal diameter of the bolts shall be M10 in the case of strain eye bolts, M12 in the case of bolts for bolting stays to straining posts, and M16 in the case of hinge bolts for gates

PC.3.6 Pedestrian and vehicular gates

Pedestrian and Vehicular gates shall be general purpose single gate with tubular frame and strained wire filling. Pedestrian gates to be 1,5m high and 800 mm wide. Vehicular gates to be 1,5m high and 3,6m wide.

The main frame and bracing shall be manufactured of ductile weldable mild steel tubing with nominal internal diameters of 25 mm and 20 mm, respectively.

The gate frame and fittings shall have a hot-dip galvanised finish and the corners of the main frame shall be round.

Strained wire filling shall be of galvanised steel wire complying with the requirements of SANS 675 for mild steel wire with Class C (light) galvanised, spaced to suit the fence

PC.3.7 Concrete

All concrete used in fencing foundations shall have a minimum compressive strength of 10MPa and shall comply with SABS 1200 GA.

PC.4 ERECTION

PC.4.1 General

The fence shall have a nominal height of 1,50m. Both the bottom and the top strands of wire shall be barbed wire with alternating strands of plain and barbed wire between (6 strands barbed wire and 5 strands plain wire).

The bottom strand of wire shall be fixed nominally 100mm above ground level, the next 5 strands shall be fixed 100 mm apart with the remaining top strands being 120mm apart

PC.4.2 Foundations

Each straining post, gate post, intermediate post and stay shall be embedded to full depth in a foundation hole of the following minimum dimensions:

Straining Post and Gate Post: 450 x 450 x 800 mm deep.

Intermediate Posts: 300 x 300 x 500 mm deep.

Stays: The hole shall have a length of 500 mm along the line of the fence and a width of 300mm. The stay when position, is to be approximately 45° to the post.

All foundation holes shall be at least half filled with concrete, except in the case of gate posts where the concrete shall be brought up to the height of approximately 50 mm above ground level.

The holes half filled with concrete shall be backfilled with soil, which shall be well rammed and consolidated

PC.4.3 Posts

Straining posts shall be provided at all corners and other changes of direction, at acute variations in the level of the fence and along straights at

minimum 500 m centres. Intermediate posts shall be spaced at 16 m centres. Droppers shall be spaced at 4 m centres and shall be attached to the fence by tie wires using three full turns.

Gates shall not be hung on staining posts; instead, two additional posts shall be provided as gate posts at each gate.

PC.4.4 Stays

In general, two stays shall be bolted to each straining post. Straining posts at pedestrian access points and gateposts shall have only one stay. All stays shall be at 45° to the main posts, behind the wire and on the line of the fence.

PC.4.5 Barbed and Plain Wire

Each strand of wire shall have one end taken at least twice around a straining post or passed at least twice through the eyebolt, with the free end twisted at least three times around the strand itself.

The wire shall be secured to each intermediate post by a tie wire, and the tie wire shall be secured to the barbed or plain wire by at least three complete turns on both sides of the post.

PC.4.6 Bolts, Nuts and Washers

One washer shall be placed under all nuts, and the end of bolts shall be burred over after erection has been completed.

PC.4.7 Vehicular Gates

Vehicular gates shall be erected such that:

- (a) There is a gap of not less than 25 mm and not more than 50 mm between the hinge stiles and the gatepost.
- (b) There is a clearance of not less than 75 mm and not more than 150 mm between the bottom horizontal frame members and the ground.
- (c) When closed, there is a space of not more than 75 mm between the closing stile and the gatepost.

PC.5 MEASUREMENT AND PAYMENT

PC.5.1 Fence

Measurement shall be per linear metre of fence, with deductions made for all openings or gaps, and the price tendered and paid shall cover the full cost of supplying and erecting the fence complete, as specified.

Gates will be measured separately by number.

PD. CONCRETE BLOCK PAVING (INTERNAL ROADS, PARKING AND PATHS)

PD.1 MATERIALS

PD.1.1 Bed Sand

Sand shall be a sharp washed sand containing not more than 3% of silt by weight and with not more than 15% retained on a 2.36 mm sieve.

PD.1.2 Jointing Sand

Jointing sand shall pass a 1.18 mm sieve and contain 90% material passing the 75 µm sieve. The sand shall be free of all soluble salts or contaminants likely to cause efflorescence or staining.

PD.2 CONSTRUCTION

PD.2.1 Sand Bed (Laying Course)

The laying course of sharp sand as specified shall be screeded to level between screed rails set to precise levels on the base course. Care is to be taken to avoid uneven compaction of the screeded sand and workmen should not be permitted to walk over the screeded area either during or after the screeding operation.

The road is to be screeded to a surcharge level to allow for compaction. In order to establish the correct level, an allowance of 1.4 x compacted thickness is generally adopted to ensure that the surcharge is correct. The final road level must be checked after the first few metres of blocks have been laid and vibrated into place. If the level is incorrect, the blocks must be lifted and the sand raked and re-screeded to the correct level.

To help maintain uniformity the sand should be obtained from a single source and allowed to drain before use and covered over to minimise moisture changes.

PD.2.2 Surface Course

The blocks are to be laid in a herringbone pattern unless they are of an interlocking type.

The positioning of the first blocks demand extra care and they should be placed at the correct angle against a firm starting edge such as a kerb or channel. The order of laying must ensure that the blocks can be placed easily and in such a way that it is not necessary to force a block between those already laid. Each block must be placed firmly against its neighbours, being held slightly above the laying course so as not to disturb the sand until the block is in its correct position. Any damaged or disturbed blocks should be rejected.

All blocks must be laid so that they fit closely together. If joints begin to open they should be knocked together with a wooded mallet. Care must be taken not to tilt the blocks on the leading edge by standing on them.

Blocks up to and including 80 mm thickness are to be vibrated to their final level with a plate vibrator having an area of 0,2 to 0,4 m² and a centrifugal force of approximately 7 to 16 kN at a frequency of 75- 100 Hz. For greater thickness the plate vibrator shall have an area of 0,35 to 0,5 m² and a centrifugal force of approximately 1620 kN at a frequency of 75- 100 Hz.

The vibrator should be passed at least 3 times over the whole area and should not be brought closer than 2m to the working face where blocks are unrestrained.

After this initial vibration, dry jointing sand as specified shall be brushed over the surface of the blocks and vibrated into the joints by a further 2 or 3 passes of the plate vibrator.

After all the joints are filled surplus sand is to be swept away.

The finished surface of the paved area shall be uniform, true to cross-section and level and shall have not broken blocks or joint openings greater than 5 mm in width. When tested with a 3 mm straight edge the surface shall not vary from the underside by more than 10 mm. Levels of adjacent blocks shall not differ by more than 3 mm and the line of the pattern shall not deviate more than 15 mm from a 3 m straight edge

PD.2.3 Edge Restraints

Adequate edge restraint in the form of kerbs, channels or concrete edgings suitably bedded and haunched in concrete must be provided around the paved areas.

PD.2.4 Infill at Edges

Areas against kerbs, manholes, etc. requiring infilling and which exceed 25% of the full block unit shall be filled with units cut to size using an approved cutting machine. Infill areas constituting less than 25% of a full block area and of 25 mm minimum dimension shall be filled with 25 MPa concrete. Smaller areas shall be filled with a 4:1 sand cement mortar.

PD.2.5 Laying Blocks Around Curves

The herringbone pattern should not be disturbed in an attempt to follow curves.

PD.3 MEASUREMENT AND PAYMENT

Measurement and payment shall be per m² of block paving laid. Payment shall include for the supply of blocks, bedding and jointing sand and all labour, tools and plant involved in spreading the sand, placing the blocks, compaction and filling joints, and for the cutting of blocks where necessary

PE. EARTHWORKS

PE.1 EARTHWORKS (GENERAL)

Before commencing any earthworks the Contractor shall satisfy himself as to the accuracy of any levels indicate on the drawings as no claim will be entertained at a later date for any alleged inaccuracy in such levels.

Excavation to trenches, bases, etc., is measured the net width of concrete or other foundations and no allowance is made for battering sides. In measuring excavations this rule will be adopted irrespective of the size and extent to which excavations may have been executed.

Rates are to include for trimming sides and stepping, levelling and ramming trench bottom

PE.2 MATERIAL CLASSIFICATION

Material shall be classified in the following categories:

PE.2.1 Pickable Material

Pickable Material is understood to include sand, earth, clay, gravel, soft shale, loose boulders less than 75 mm diameter, made up ground, etc., which is removable with pick and shovel.

PE.2.2 Soft Rock

Soft Rock is understood to include outcrop, hard shale, mountain overburden, decomposed and weathered rock or rock of similar hardness and loose boulders from 75 mm diameter up to 0.03 m³

PE.2.3 Hard Rock

Hard Rock is understood to include granite, quartzite, sandstone, mountain stone or rock of similar hardness that can only be removed effectively by blasting.

PE.3 SITE CLEARANCE (GENERAL BUILDING)

Site clearance for the whole area of the ground to be built upon is to extend up to a distance of at least 3m beyond the perimeter of the structure of building(s) and/or extent of steps, pavings, etc. This operation shall be deemed to include the digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees, bush, etc. as well as the digging up of top soil and examining for and removal of all dead roots and other vegetable matter

PE.4 EXCAVATIONS FOR FOUNDATIONS AND FLOORS

Excavations for the formation of basements, vaults and the like, shall be of such area and depths shown on drawings, together with any such additional prescribed excavations that may be required for working space.

Trenches and holes for foundations shall be excavated to the several lengths, widths and depths shown on drawings or to such other depths as may be directed by the Representative/Agent to ensure a good foundation.

Bottoms of trenches and holes shall be level, with sides trimmed vertical for the full width from top to bottom. The bottoms of trenches shall be stepped as shown but if the stoppings are not shown on drawings or are not otherwise directed on site, the stepping shall be of at least the thickness specified for the concrete footings but shall be adjusted downwards to conform with an exact number of brick courses where necessary. Any excavations taken out too deep shall be made up to correct levels with Class 25/19 concrete, at the Contractor's expense. Back filling and ramming is not acceptable.

All excavations shall be checked and signed off by the municipal building inspector & Representative/Agent before foundations are cast. Note that soil compaction testing are required before excavation commences.

The ground under solid floors shall be excavated where necessary and levelled in readiness for the laying of the surface beds

PE.4.1 Excavations to reduce levels

The ground outside the buildings shown to be reduced in levels, shall be excavated and levelled or graded to fall as directed by the Representative/Agent (generally away from structures/buildings).

Sloping banks shall be of such gradient as will maintain the stability of the ground above, and shall be neatly trimmed. For purposes of landscaping and the planting of grass the gradient must not exceed 30° to the horizontal

PE.4.2 Excavations for working space

Excavation for working space for formwork shall be deemed to be included in the normal excavation rates and no separate payments shall be made.

The excavations for working space shall be deemed to include any additional risk of collapse so incurred and the returning and compacting of the excavated material as described.

PE.5 DISPOSAL OF EXCAVATED MATERIAL :

PE.5.1 Part Return

Material from the excavation, where suitable and approved by the Representative/Agent, is to be returned, filled in and rammed against foundation walls, under floors, around aprons as necessary.

No clay shall be used as filling.

PE.5.2 Cart away

Surplus material is to be carted away to the closest approved municipal waste site. The contractor shall submit his proof of delivery of surplus material to the Municipal waste site to the Employer's agent's Representative/Agent upon request. Such proof of delivery records shall be kept on site until the end of construction.

PE.5.3 Surplus Material

The item measured for carting away of surplus excavated material is to include for bading onto transport and removing completely from the site. The volume measured is net as excavated, and the Contractor is to allow for bulking in his rate.

When an item is measured for carting away surplus excavated material and the Representative/Agent's permission has been obtained to use such surplus material for filling, the measured volume of material to be carted away will be adjusted accordingly.

PE.6 MAINTENANCE OF EXCAVATIONS:

The Contractor shall carry the risk of collapse of excavated faces whether or not he takes any precautions, the nature of which shall be entirely at his own discretion.

PE.7 BLASTING

In the event of the Contractor deciding to resort to blasting for the loosening of the ground to be worked, he must conform to the relevant Government Regulations governing blasting and must indemnify the Employer against any possible claims which might arise.

PE.8 KEEP EXCAVATIONS FREE OF WATER

Allow for keeping excavations free from water and mud accumulating by seepage, rain, storms, floods, or any other water by pumping or baling or as may be necessary.

PE.9 RISK OF COLLAPSE OF EXCAVATIONS

The items measured hereafter to the superficial area of the sides of the excavations (all sides measured) are to be priced by the Contractor to include for maintaining the sides of these excavations by such methods as he may choose to adopt, either by cutting back the soil to its natural angle of repose, or by open or close planking and strutting, or for any risk incurred by his failure to adopt any of the preceding methods.

Should any ground fall in other than that required to be excavated, owing to omission or inefficiency of planking and strutting, it will not be paid for as

excavation and must be dug out and deposited on site or carried away, returned and refilled as directed by the Employers agent.

Where excavations exceed 1,5m deep the Contractor shall maintain all excavated faces in accordance with Government Regulations, as separately provided for.

PE.10 EARTH FILLING

Filling under solid floors and over site is to be executed with approved dry earth, free from clay & vegetation or other organic material and spread in layers not exceeding 150mm thick, well-watered, rammed and consolidated to optimum density. Prices for filling over site are to include for forming to falls, slopes, banks, etc.

When in the opinion of the Employers agent, the density of the natural ground under surface beds is insufficient for the duty required, the surface shall be scarified to a depth of 150mm with a mechanical ripper or other approved equipment watered as necessary and re-compacted as specified.

In fills, if the final layer required to bring the level of the surface up to that specified is less than 75 mm thick the preceding layer shall be scarified to a depth of 100 mm, the final layer spread on the scarified surface and the whole compacted as described.

Only on written instruction from the Employers agent may fill levels exceed 400mm.

PE.11 GARDEN SOIL FILLING

Garden soil filling shall be rich, selected, well-sifted soil containing proper proportions of bam and leaf mould, and shall be lightly compacted.

PE.12 HARDCORE

Hardcore filling to be composed of hard broken bricks, stone or other approved hard material (not less than 25 mm and not exceeding 75 mm in section), evenly spread and levelled with the finer material on top, well consolidated by ramming and levelled off under solid floors, steps, landings, etc.

PE.13 PROTECTION AGAINST TERMITES

Ant-proofing under solid floors is to be executed by an approved and registered specialist firm of pest exterminators, who will be required to provide a written guarantee to the Employers agent, that no subterranean termites will appear within the treated area, for a minimum period of 10 years. Particular care is to be taken in treating the soil on both sides of foundations, walls, piers, etc., and to ensure that the ground surface treated is not ruptured. Should the poisoned layer be ruptured at any point, it shall be made good and the affected area treated again.

PF. FRAMEWORK

PF.1 STANDARD SPECIFICATION

All work involving formwork in the construction of concrete shall conform to the requirements of SANS 1200 G except where otherwise specified.

PF.2 FORMWORK (GENERAL)

Formwork shall include all shuttering, casing and centering of wever material required for the laying and forming of concrete floors & slabs and any other concrete work requiring moulds or forms and shall embrace all cleats, battens, fillets, wedges, struts, trestles, braces, props, shores and other requirements of wever material for keeping all in correct position. All materials used for formwork must be suitable and substantial and all joints must be tight enough to prevent leakage of liquid matrix.

All formwork designed is the responsibility of the Contractor and must be performed by a competent person and if requested to do so, he must submit fully detailed and dimensioned working drawings to the Representative/Agent for checking purposes.

Acceptance of the proposals shall not relieve the Contractor of his responsibility for the safety and stability thereof nor for any loss or damage arising out of defective design, materials and/or workmanship.

The formwork must be so constructed that its partial removal can be carried out to the satisfaction of the Representative/Agent and in such stages as are required by the working conditions.

As far as possible, wedges and clamps must be used in preference to nails. All formwork in its various sections for floors, beams, etc. must be so arranged that the whole may be raised or lowered either independently or together with other sections by means of wedges or other approved methods.

Immediately before concreting is begun, the formwork in contact with the concrete must be thoroughly cleaned, wetted and kept damp whilst the concrete is being placed.

Great care must be taken to keep the formwork wedged up to its correct height and this must be checked by taking levels immediately before concreting is commenced and immediately after it has been completed.

Formwork may be struck immediately after the concrete in the various parts of the structure has attained the crushing strengths required by the Representative/Agent. The crushing strengths must be determined by proper tests, which shall be carried out by the Contractor.

No formwork of any nature whatever shall be struck without the prior consent of the Representative/Agent. Such consent will not absolve the Contractor of his responsibility for the safety of the structure.

PF.3 DESIGN OF FORMWORK

The Contractor shall be wholly responsible for the design, sufficiency and strength of the formwork. If required, the Contractor shall submit design calculations and formwork proposals to the Employers agent for approval before construction.

All formwork shall be constructed of timber, sheet metal or other approved material. The soffits of beams shall be erected to an approved upward camber, which shall not be less than 1 in 1000 except where windows are fixed directly to beam soffits in which case the soffits shall be level unless otherwise

specified. The maximum deflection of any formwork component supporting wet concrete shall not exceed $1/360$ of the span of that component. Gum-poles used as props shall not be less than 100 mm at any diameter.

No timber shall be used which shrinks or warps or swells to such an extent that the corners of concrete members will be damaged before the concrete has set hard.

1. On formwork to faces which will be permanently exposed, all horizontal and vertical formwork joints shall be so arranged that joint lines will form an approved uniform pattern on the face of the concrete. Where the Contractor proposes to make up the formwork from standard sized manufactured formwork panels, the size of such panels shall be approved by the Employers agent before they are used in the construction of the Works. The finished appearance of the entire elevation of the structure and adjoining structures shall be considered when planning the pattern of joint lines caused by formwork and construction joints to ensure continuity and vertical lines.
2. Faces of formwork in contact with concrete shall be free from adhering foreign matter, projecting nails and the like, splits or other defects, and all formwork shall be clean and free from standing water, dirt, shavings, chippings or other foreign matter. Joints shall be sufficiently watertight to prevent the escape of mortar or the formation of fins or other blemishes on the face of the concrete.

Formwork shall be provided for the top surfaces of sloping work where the slope exceeds fifteen degrees from the horizontal (except where such top surface is specified as spaded finish) and shall be anchored to enable the concrete to be properly compacted and to prevent flotation. Care shall be taken to prevent air pockets being trapped against the upper shutter.

Openings for inspection of the inside of the formwork and for the removal of water used for washing down shall be provided and so formed as to be easily closed. Before placing concrete all bolts, pipes or conduits or any other fixtures which are to be built in shall be fixed in their correct positions, and cores and other devices for forming holes shall be held fast by fixing to the formwork or otherwise.

All exterior angles on the finished concrete of 90 degrees or less shall be given 20 mm by 20 mm chamfers unless otherwise shown on the drawings or as ordered by the Employers agent.

No nails shall be driven nor ties or bolts or other devices shall be built into the concrete for the purpose of supporting formwork without the prior approval of the Employers agent. The whole or part of any such supports shall be capable of removal so that no metal part remaining embedded in the concrete shall be nearer than 50 mm from the surface in the case of reinforced concrete and 150 mm in the case of unreinforced concrete. Small tubes of fibre cement may be used up to the shutter. Holes left after removal of such supports shall be neatly filled with well rammed dry-packed mortar.

PF.4 CLASSES OF FORMWORK

Formwork may be of steel or timber and will be specified for use in accordance with the following classifications:

Class 1 - Rough formwork intended for use in forming concrete faces which will be covered by earth or brickwork,

e.g. foundations, external faces of retaining walls and the like.

While the concrete faces resulting from the use of this class of formwork may be rough, the joints shall nevertheless be sufficiently tight to prevent leakage of mortar from the concrete.

Class 2 - Formwork intended for use in forming concrete faces which will be plastered or covered with tiles, mosaic or other similar finishes shall be such as to impart to the resultant concrete face a finish equal to that which would be obtained by use of sawn timber or ordinary steel plates.

Class 3 - Formwork intended for use in forming concrete faces which will not be covered other than by painting, if at all, shall be such as to impart to the resultant concrete face a finish equal to that which would result from the use of plywood faced shutter boards or special steel forms which are new when concreting commences and are thoroughly cleaned after each use.

The concrete surfaces shall be free from porosities, blowholes and surface aggregate. If not attained after stripping of formwork, the Contractor shall achieve the specified finish and tolerance by the proper use at the correct time of carborundum blocks or other approved means.

When this class of formwork is used to form the soffits of slabs or the faces of walls or columns, no wire ties passing through the face of concrete shall be used and the arrangement of panels shall be symmetrically set out from edges or centre lines. Odd dimension fill-in panels shall be cut to size and symmetrically placed in approved positions. All joints between shutter panels shall be straight and tight to approval.

Class 4 - Special formwork for forming kerbs, pedestals and the like. This formwork shall be in the form of special moulds and shall be made of a non-staining material with a smooth unblemished surface such as sanded plywood, hard compressed fibre board or purpose made steel forms.

The finish shall be as for Class 3 formwork and trial casts shall be made with the forms and the Employers agents approval obtained in writing before the forms may be used.

PF.5 TOLERANCES

Concrete surfaces resulting from the concrete have been cast against the formwork shall not depart from the intended lines or plane surfaces shown on the drawings by more than the following distances. Gradual departures from plane surfaces being defined as the out-of-true measurements of the concrete surfaces falling between the ends of a 3 metre long straight edge placed against such surfaces in all directions.

Abrupt departures shall include lips between successive casts of concrete, fins and the like shall be brought to within tolerance by grinding or other acceptable means at the Contractor's expense.

In particular the departures from the levels of soffits of beams and slabs shown on the drawings shall not exceed the tolerances shown in the following table.

A tolerance of 3 mm or $1/2$ of 1%, whichever is the larger, shall be permitted on cross-section dimensions of structural members. For concrete stairs, the maximum variation permitted in successive dimensions between nosings shall be 3 mm vertically and 6 mm horizontally.

PF.6 SOFFIT GROOVE FORMERS

Where specified, forming strips of approved extruded plastic or similar material shall be inserted between adjacent formwork elements forming the soffit

shutters to slabs or the face shutters to walls, in such a manner as to form grooves in the concrete soffits or faces along the formwork joints. The resultant groove shall have the shape of an inverted letter V and shall be 10 mm deep and 10 mm wide at the bottom. The grooves shall be straight and arranged in patterns to the Employers agent's approval. Alternative shapes for the grooves will be considered.

PF.7 HORISING UP

Unless otherwise stated all horsing up under formwork is exceeding 1,5 metres and not exceeding 4,5 metres high.

PF.8 ADEQUATE SUPPORT FOR PROPS

Where props must be supported on filled material or on the natural ground, suitable precautions shall be taken to prevent settlement of the props. All vertical strutting and propping shall be founded on earlier construction which will afford the required support without settlement or damage. Particular care shall be taken with the propping of cantilevered beams and slabs in successive stories of construction. Props shall be placed vertically above one another and all props shall remain in position or be replaced immediately after striking the soffit formwork until all floors have been constructed.

In structures having in whole or part, two or more reinforced concrete floors, props to the approval of the Employers agent, shall be provided under the soffits of beams and slabs or any floor which is being used to support the formwork and wet concrete of the floor above.

These props shall not be removed until the formwork supporting the concrete of the floor above has been struck. No formwork, however, is to be removed without the prior consent of the Employers agent.

PF.9 RE-USE OF FORMS

Immediately after stripping, forms intended for re-use shall be thoroughly cleaned and re-conditioned and, in the case of steel forms, be oiled to prevent rusting. They shall be neatly stacked and protected from damage until required for re-use. Any formwork elements which have become damaged or distorted to such an extent that their re-use, in the opinion of the Employers agent, result in the concrete or the surface of the concrete not complying with the requirements of this Specification, shall be removed from the Site.

PF.10 FORMWORK MOULD OIL

Formwork in contact with the concrete shall be treated with an approved non-standing mould oil to prevent adherence of the concrete, except where the surface is subsequently to be rendered. The Contractor shall ensure that the mould oil is completely compatible with the concrete surface treatment to be used, paint work and the like. Every precaution shall be taken to prevent the oil from coming in contact with the reinforcement or with concrete at construction joints. Surface retarding agents shall be used only when ordered by the Employers agent.

PF.11 HOLES FOR ELECTRICAL WORK

Should steel formwork to be used by the Contractor must either allow the Electrical Specialist to drill holes through the formwork for fixing of junction boxes, or make other arrangements so that the junction boxes can be properly fixed.

PF.12 PRICES

Prices for formwork are to include for all straight cutting and waste, beam columns and wall intersections, fixing, horsing and wedging, also for easing, striking and removing, except where described as "left in".

PG. STEEL REINFORCEMENT

PG.1 STANDARD SPECIFICATION

All work involving steel reinforcement in reinforced concrete shall conform to the requirements of SABS 1200G

PG.2 DEFINITION

Reinforcement shall mean all or any of the following: steel wire, round twisted or deformed steel bars and steel wire fabric mesh which are to be embedded in concrete for the purpose of assisting the concrete to resist forces which may be imposed on it or to prevent its cracking.

(a) Reinforcing bars shall be of the grades specified on the drawings and in accordance with the "Standard Specification for Steel Bars for Concrete Reinforcement" SANS 920.

(b) Steel wire fabric mesh shall be of the grade specified on the drawings and in accordance with SABS 1024

PG.3 STORAGE OF REINFORCEMENT

Further to the requirements of SABS 1200 G the Contractor shall stack separately and label different types of reinforcement for positive identification. Care shall be taken in stacking the reinforcement to avoid bending or twisting the bars or cages at the bottom of the stack due to the weight of the steel in the upper part of the stack.

PG.4 REINFORCING STEEL

Mild steel reinforcement shall comply to SANS 920, Type A or B. High tensile steel shall comply with the requirements of SANS 920 Type C or D. Reinforcing bars shall be bent in accordance with SANS 282.

PG.5 WELDED STEEL FABRIC REINFORCEMENT

All welded steel fabric reinforcement shall comply with the requirements of SANS 1024.

The preferred dimensions are as follows:

*These mass values are based on the wires having mass of 0,00785 kg/mm² per metre of length. The actual mass of the fabric should not differ from the nominal value by more than 6%

PG.6 RATES

Rates for all steel reinforcement to concrete shall be deemed to include cutting and waste, bending, hooked ends, binding at lappings and intersections with annealed wire as above described, hoisting or lowering and maintaining in position whilst the concrete is being deposited and cover blocks and spacers in accordance with the relevant SABS Codes of Practice.

Rates of standard fabric reinforcement as included in Table 1 of SANS Specification 1024 shall be deemed to include 300 mm wide laps.

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

PH. PRECAST CONCRETE WORK

Cement, sand and stone shall be as described under the specification for General Concrete Work.

The manufacturer of precast units shall be so arranged as to ensure that the concrete units are cured for the correct time before handling.

Precast concrete units shall, where appropriate be constructed in accordance with British & SANS Standards as follows, being hydraulically pressed where possible.

Type of Unit Standard

- Concrete Blocks BS 2028
- Concrete Kerbs and the like BS 340
- Concrete Flags BS 368
- Concrete Cills BS 1237
- Concrete Lintels BS 1239 & SANS 1504

Other precast concrete units shall be manufactured from class 30 concrete or the class of concrete and to the sizes and details shown on the drawings and the concrete shall comply in every respect with the provisions of the Contract whether such units are manufactured on Site or obtained from approved manufacturers. The Contractor shall satisfy himself that the reinforcement detailed on the drawings is adequate to deal with the stresses which are likely to be imposed on the units by the method of handling, lifting and transporting adopted.

Units shall be adequately protected during storage, handling, lifting and transporting to avoid any straining or damage to the units. Any units so strained or damaged shall be rejected and replaced at the Contractor's expense. Projecting reinforcement, bolts, etc. shall be protected so that they are maintained in their correct position.

All units shall be clearly marked with date of manufacture and identification marks so that the marking will not be visible on the final structure.

PH.1 TOLERANCES

All units shall be within the tolerances below:

PH.1.1 Length

- For dimensions not exceeding 300 mm + 3 mm to 0 mm
- For dimensions exceeding 300 mm but not exceeding 3 m $\pm$ 3 mm
- For dimensions exceeding 3 m + 3 mm to 6 mm

PH.1.2 Squareness

When considering the squareness of a corner, the longer of two adjacent sides being checked should be taken on the baseline. The shorter sides should not vary in its distance from a perpendicular from the corner by more than 6 mm.

PH.1.3 Twist

Any corner should not be more than the tolerance stated below from the plane containing the other three corners:

PH.1.4 Flatness

The maximum deviation from a 1,5 m straight edge placed in any position on nominally plane surfaces, shall not exceed 3 mm.

PH.1.5 Warpage

Warpage shall not be more than 1 mm for each 600 mm run.

PH.1.6 Absorption

Total water absorption shall not exceed 6,5% by weight. Care must be taken during manufacture that no damage or staining of finished surfaces is caused

by any releasing agents. Prices are to include for all casing and moulds and for reinforcement as described. Unless otherwise described, finished work is to be finished to the proper surface described in the moulds.

All units shall be laid, bedded, jointed and fixed in accordance with the lines, levels and other details shown on the drawings.

Pre-stressed concrete lintels are to be precast stock lengths wherever possible, but in all cases, are to have a minimum bearing of 220 mm each side of opening. Prices for lintels are also to include for propping in accordance with the manufacturer's instructions.

PI. GENERAL CONCRETE WORK PI.1 GENERAL

All in situ concrete work (mass and reinforced) shall comply with SASS Specification 1200G. Where SASS Specification 1200G and the clauses in this section are in conflict the clauses in this section shall take precedence. Where the term "plain concrete" appears in SANS Specification 1200G it shall be read as "mass concrete"

PI.2 CEMENT

Cement shall be Portland cement complying with the requirements of SANS 50197-1/EN 197-1 strength class 32.5 or higher. Samples of cement from any one, or from every consignment, may be required by the Representative/Agent for test purposes. Cement in any consignment from which a sample may have been taken for testing shall not be used until it has been approved. Allowance must be made for possible delay in that tests may take 10 days to carry out. Bags of cement shall be stacked in a waterproof, solidly constructed shed with a central door and a floor rendered damp-proof with a tarpaulin. The bags of cement shall be closely stacked (but not against walls) in order to reduce air circulation in such a manner that the cement is used in the order in which it was received.

Units shall be adequately protected during storage, handling, lifting and transporting to avoid any straining or damage to the units. Any units so strained or damaged shall be rejected and replaced at the Contractor's expense. Projecting reinforcement, bolts, etc. shall be protected so that they are maintained in their correct position.

All units shall be clearly marked with date of manufacture and identification marks so that the marking will not be visible on the final structure.

PH.1 TOLERANCES

All units shall be within the tolerances below:

PH.1.1 Length

- For dimensions not exceeding 300 mm + 3 mm to 0 mm
- For dimensions exceeding 300 mm but not exceeding 3 m $\pm$ 3 mm
- For dimensions exceeding 3 m + 3 mm to 6 mm

PH.1.2 Squareness

When considering the squareness of a corner, the longer of two adjacent sides being checked should be taken on the base line. The shorter side should not vary in its distance from a perpendicular from the corner by more than 6 mm.

PH.1.3 Twist

Any corner should not be more than the tolerance stated below from the plane containing the other three corners:

PH.1.4 Flatness

The maximum deviation from a 15m straight edge placed in any position on nominally plane surfaces, shall not exceed 3mm.

PH.1.5 Warpage

Warpage shall not be more than 1 mm for each 600 mm run.

PH.1.6 Absorption

Total water absorption shall not exceed 6,5% by weight. Care must be taken during manufacture that no damage or staining of finished surfaces is caused by any releasing agents. Prices are to include for all casing and moulds and for reinforcement as described. Unless otherwise describe, finished work is to be finished to the proper surface described in the moulds.

All units shall be laid, bedded, jointed and fixed in accordance with the lines, levels and other details shown on the drawings.

Pre-stressed concrete lintels are to be precast stock lengths wherever possible, but in all cases, are to have a minimum bearing of 220 mm each side of opening. Prices for lintels are also to include for propping in accordance with the manufacturer's instructions.

PI. GENERAL CONCRETE WORK PI.1 GENERAL

All in situ concrete work (mass and reinforced) shall comply with SABS Specification 1200G. Where SABS Specification 1200G and the clauses in this section are in conflict the clauses in this section shall take precedence. Where the term "plain concrete" appears in SANS Specification 1200G it shall be read as "mass concrete"

PI.2 CEMENT

Cement shall be Portland cement complying with the requirements of SANS 50197-1/EN 197-1 strength class 32.5 or higher. Samples of cement from

any one, or from every consignment, may be required by the Representative/Agent for test purposes. Cement in any consignment from which a sample may have been taken for testing shall not be used until it has been approved. Allowance must be made for possible delay in that tests may take 10 days to carry out. Bags of cement shall be stacked in a waterproof, solidly constructed shed with a central door and a floor rendered damp-proof with a tarpaulin. The bags of cement shall be closely stacked (but not against walls) in order to reduce air circulation in such a manner that the cement is used in the order in which it was received,

All work involving steel reinforcement in reinforced concrete shall conform to the requirements of SASS 1200 G

PG.2 DEFINITION

Reinforcement shall mean all or any of the following: steel wire, round twisted or deformed steel bars and steel wire fabric mesh which are to be embedded in concrete for the purpose of assisting the concrete to resist forces which may be imposed on it or to prevent its cracking.

- (a) Reinforcing bars shall be of the grades specified on the drawings and in accordance with the "Standard Specification for Steel Bars for Concrete Reinforcement" SANS 920.
- (b) Steel wire fabric mesh shall be of the grade specified on the drawings and in accordance with SASS 1024

PG.3 STORAGE OF REINFORCEMENT

Further to the requirements of SASS 1200 G the Contractor shall stack separately and label different types of reinforcement for positive identification.

Care shall be taken in stacking the reinforcement to avoid bending or twisting the bars or cages at the bottom of the stack due to the weight of the steel in the upper part of the stack.

PG.4 REINFORCING STEEL

Mild steel reinforcement shall comply to SANS 920, Type A or B. High tensile steel shall comply with the requirements of SANS 920 Type C or D. Reinforcing bars shall be bent in accordance with SANS 282.

PG.5 WELDED STEEL FABRIC REINFORCEMENT

All welded steel fabric reinforcements shall comply with the requirements of SANS 1024.

The preferred dimensions are as follows:

*These mass values are based on the wires having mass of 0,00785 kg/mm² per metre of length. The actual mass of the fabric should not differ from the nominal value by more than 6%

PG.6 RATES

Rates for all steel reinforcement to concrete shall be deemed to include cutting and waste, bending, hooked ends, binding at lappings and intersections with annealed wire as above described, hoisting or lowering and maintaining in position whilst the concrete is being deposited and cover blocks and spacers in accordance with the relevant SABS Codes of Practice.

Rates of standard fabric reinforcement as included in Table 1 of SANS Specification 1024 shall be deemed to include 300 mm wide laps.

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

PH. PRECAST CONCRETE WORK

Cement, sand and stone shall be as described under the specification for General Concrete Work.

The manufacturer of precast units shall be so arranged as to ensure that the concrete units are cured for the correct time before handling.

Precast concrete units shall, where appropriate be constructed in accordance with British & SANS Standards as follows, being hydraulically pressed where possible.

Type of Unit Standard

- Concrete Blocks BS 2028
- Concrete Kerbs and the like BS 340
- Concrete Flags BS 368
- Concrete Cills BS 1237
- Concrete Lintels BS 1239 & SANS 1504

Other precast concrete units shall be manufactured from class 30 concrete or the class of concrete and to the sizes and details shown on the drawings and the concrete shall comply in every respect with the provisions of the Contract whether such units are manufactured on Site or obtained from approved manufacturers.

The Contractor shall satisfy himself that the reinforcement detailed on the drawings is adequate to deal with the stresses which are likely to be imposed on the units by the method of handling, lifting and transporting adopted.

PI.7.1 Trial Mixes.

The Contractor must ensure that samples of the constituent materials of the concrete, together with evidence that they comply with the provisions are

supplied for approval in good time and provide the Employers agent with-

- i) a statement from an approved independent laboratory of the results of tests, or
- ii) an authoritative and acceptable report, or record of the previous use of, and experience with, the material concerned.

The cement, types of aggregate and their origins may not be changed throughout the duration of the contract without giving prior notification to the Employers agent who shall verify that the above requirements are complied with and that the important qualities of the concrete will not be impaired.

PI.7.2 Durability

For each grade of concrete the Employers agent will, notwithstanding strength considerations, specify the cement/water ratio appropriate to the exposure conditions indicated in Table 5, SASS Specification 1200G, Sub-clause 5.5.15.

PI.7.3 Consistency

Unless otherwise indicated by the general workability of the concrete, method of transportation, conditions of placement or otherwise specified by the Employers agent, the suggested slump values, for different mixes of concrete shall be as specified in Error! Reference source not found.

PI.7.4 Workability

Ensure that the concrete is of such workability that it can be readily compacted into the corners of the formwork and around reinforcement without segregation of the materials and without excessive "bleeding" of free water at the surface.

PI.8 EXPANSIVE ALKALI-AGGREGATE REACTION

The use of some local aggregates may lead to an expansive alkali-aggregate reaction if the concrete in the structure will be exposed to continual dampness, or will be subject to alternate wetting and drying.

Alkali reactive aggregates, i.e. certain granites, quartzites and Malmesbury homfels (shale), shall not be used in conjunction with high alkali cement for concrete in any part of the works. High alkali cement is one in which the equivalent alkali content exceeds 0.60% by mass of the cement.

If the Contractor chooses to use one of the aggregates stated above in lieu of stone as described in Clause PI.4 of this section he shall comply with the following requirements regarding the cement:

(a) He shall ensure that no high alkali cement is delivered to the site. Any such high alkali cement shall be rejected and the cost of its removal and replacement with cement having an acceptable alkali content shall be borne by the Contractor.

(b) Certificates stating the alkali content of each delivery of cement to the site shall be supplied by the Contractor. These certificates shall be based on tests carried out at a laboratory approved by the Employers agent. The cost of testing, including sampling, transporting of samples and issuing of certificates, shall be borne by the Contractor.

(c) The Contractor shall be entitled to use an approved brand of cement as a means of ensuring that the permissible alkali content is not exceeded. The Contractor shall make allowance for the higher price of such approved brand, if he chooses to use this method.

PI.9 PUMPING OF CONCRETE:

The placing of concrete by pumping in any section of the works shall be subject to the written approval of the Employers agent. The Contractor shall furnish full details regarding the mix proportions of the concrete that he intends to place by pumping.

PI.10 ADMIXTURES TO CONCRETE:

The use of admixtures in concrete will only be considered should special circumstances warrant this and then only with the prior written approval of the Employers agent. The Contractor shall provide the following information:

- (a) The trade name of the mixture, its source and the Manufacturer's recommended method of use,
- (b) Typical dosage rates and possible detrimental effects of both under and over dosage;
- (c) The expected average air content of freshly mixed concrete containing an admixture which causes air to be entrained when used at the Manufacturer's recommended rate of dosage.

PI.11 SLUMP TEST:

i.e. first in first out.

Unless otherwise specified in the tender documents the use of ordinary Portland cement blended with ground granulated blast furnace slag complying with SABS Specification 1491, or ordinary Portland Cement blended with Pulverised Fly Ash complying with SABS Specification 1466 will be allowed in certain instances as an alternative, after acceptance of tender, but only with the approval of the Representative/Agent.

PI.3 SAND (FINE AGGREGATE)

The fine aggregate shall comply with the requirements of SANS Specification 1083. No aggregate may be used until it has been approved by the Representative/Agent.

If cast in-situ concrete is used, samples having a mass of 25 kg (16.51 litre) of the aggregate proposed to be used is to be submitted to an accredited laboratory for testing and the results forwarded to the Representative/Agent for approval. The cost for testing will be for the contractors' account.

PI.4 STONE (COARSE AGGREGATE):

The coarse aggregate shall comply with the requirements of SANS Specification 1083.

If cast in-situ concrete is to be used, samples having a mass of 25 kg (16.51 litre) of the aggregate proposed to be used is to be submitted to an accredited laboratory for testing and the results forwarded to the Representative/Agent for approval. The cost for testing will be for the Contractors' account.

NB: Certain fine grained sand and stone originating from the Beaufort Series and Karoo Systems which are known by reputation, local experience or tests, to exhibit excessive shrinkage when used in concrete, may be deemed unacceptable by the Representative/Agent.

A certificate of proof may be required from the Contractor that the aggregates are not alkali-reactive. The cost of testing and certification are to be borne by the Contractor.

PI.5 CONCRETE GENERAL

Concrete shall be of the classes given below: Class Application

- 15/19 MPa Foundations, apron slabs
- 20/19 MPa Floor, raft foundation, other

The strength given in the above table shall be the minimum required at 28 days. Maximum concrete slumps acceptable for different types of construction concrete are as follows:

- (a) Vibrated reinforced concrete = 50 mm
- (b) Unvibrated reinforced concrete = 75 mm
- (c) Mass concrete = 75 mm

When so required by the Representative/Agent, and whilst concreting is in progress, the consistency of the mixture shall be ascertained by means of the slump test as later described herein.

PI.6 VOLUME BATCHING

The coarse and fine aggregate shall be measured by volume and, unless otherwise directed, cement shall be measured by mass; the volume of a 50 kg bag of cement shall be taken as 33 litre. Suitable measuring boxes for the coarse and fine aggregates shall be provided to the approval of the Employers agent.

The proportions given above are approximate only, and should the Representative /Agent consider that the voids in the coarse aggregate require more or less matrix than is formed by the proportions specified, he may vary the quantities of coarse and fine aggregates to obtain the required density and workability of the concrete, provided that the proportion of cement to the total volume of the aggregate shall not be less than that specified.

When the sand is not completely dry, allowance must be made for bulking due to the moisture content. The amount of bulking shall be determined by the Contractor in the presence of the Representative/Agent. On no account shall the amount of water exceed 34 litres to every bag of cement used. This figure includes the water contained in the sand. Effective screens shall be provided to protect the mixing of concrete during windy weather.

PI.7 CAST IN-SITU CONCRETE

Any application to use cast in-situ concrete shall be submitted by the Contractor to the Representative/Agent.

The Contractor shall be responsible for the design of strength concrete and for the measurement of the constituent materials to produce concrete that complies with the specified requirements.

The apparatus and the method of determination of the slump of freshly mixed concrete shall comply with SANS 5862 and shall be taken for every truck or concrete batch supplied or mixed on site. The results of all slump tests shall be recorded and submitted to the Representative/Agent for approval.

PI.12 CONCRETE TEST CUBES:

The apparatus for making and testing of concrete cubes shall comply with SABS STM 863.

PI.12.1 Sampling and making cubes

Sampling shall comply with SANS 5861.

One set of three cubes shall be required for every 10 cubic metres, or every floor cast in the case of floor slabs smaller than 50 m².

The sample taken from a batch of concrete and sufficient to make three cubes shall be placed in a tray or on a platform and mixed thoroughly.

The moulds shall each be filled in three layers approximately 50 mm thick. Each layer shall be compacted with the tamping rod as previously specified, with at least 35 blows to give full compaction of the concrete.

After the top layer has been compacted, strike off the surface of the concrete with a trowel, level with the top of the mould.

Any small hollows shall be filled in with additional concrete. Cement/sand slurry shall not be worked into the surface. At this stage, the identity of each sample shall be placed on the moulded cube, by means of a label of absorbent material and not by scouring of the surface of the concrete.

Laboratory test results of cubes shall be submitted to the Employers agent for approval once available

PI.12.2 Curing cubes on site:

Cover the test cubes in their moulds with an impervious sheet or wet sacking and store indoors in a place that is free from vibration, excessive draughts, cold and direct sunlight.

After 24 hours the cubes shall be demoulded, remarked with a waterproof crayon or marker and placed in a curing tank for seven days before being transported to the laboratory.

PI.12.3 Testing Cubes

The testing of all concrete cubes will be done by an accredited laboratory in accordance with SASS STM 863.

PI.13 CONCRETE QUALITY:

Should the Contractor dispute any results obtained from concrete test cubes, the concrete represented by the cubes will be considered acceptable if the Contractor, at his own cost, proves to the satisfaction of the Employers agent that the estimated actual strength of cores taken from the structure (by an approved independent testing laboratory and determined in accordance with SASS STM 865) is not less than the specified strength.

If the concrete fails to meet the strength criteria stipulated, the Employers agent may at his sole discretion and in addition to the options listed in SASS Specification 1200G, accept the concrete subject to approved remedial measures being undertaken by the Contractor at his own cost.

PI.14 CONCRETING:

It is essential that the foreman who has charge of the construction of all concrete work, whether reinforced or not, shall be skilled in this class of work and shall personally superintend the whole construction, paying special regard to:

- (a) the quality, testing and mixing of the materials.
- (b) the laying of the material in place and the thorough compaction of the concrete to ensure solidity and freedom from voids;
- (c) the construction and removal of formwork; and
- (d) the sizes and positions of the reinforcement.

Particular care shall be taken to work concrete against formwork and around reinforcement. Internal vibrators may be used with the approval of the Representative / Agent but external vibrators which act only on the formwork will not be permitted.

Concrete to be reinforced shall be deposited in such quantities as will permit of it being properly compacted around the reinforcement.

The placing of concrete shall be completed within half-an-hour after mixing or within half-an-hour after agitating and within 2.5 hours after mixing in the case of ready mixed concrete. On no account shall concrete be incorporated into the work after it has attained its initial set.

Care shall be taken to prevent, as far as possible, the formation of laitance or scum.

Laitance is to be understood to mean the scum of strengthless and inert material which forms on the surface of concrete.

Concrete must not be dropped into position from a height greater than 2.5m unless prior approval is obtained from the Employers agent.

If an inclined chute is used for transporting concrete, it shall be of such slope as will ensure a continuous flow of concrete without the use of an excessive quantity of water and without segregation of the aggregates. The chute must be flushed out and properly cleaned before and after each working period. All waste from flushing shall be discharged outside the formwork.

All concrete in quantities smaller than 10m³ which forms part of a structure's foundations or floor slab, shall be cast in one continuous operation unless instructed otherwise.

On resuming concreting, the old surface shall be roughened and all laitance thoroughly and carefully removed before any new concrete is deposited. This must be carried out by brushing the surface of the concrete while it is still green. Great care must be taken to avoid any weakness at the junction of old and new concrete, and the old surface shall be coated with a thin layer of cement and sand mortar, in the same proportions as that of the adjoining concrete.

While the concrete is setting it shall not be disturbed or shaken by traffic, either on the concrete itself or upon adjoining formwork.

No holes in concrete elements shall be patched or filled in without inspection, instruction and approval of the Representative / Agent.

No concreting shall be carried out when the air temperature is below 4°C when it is rising and 8°C when it is falling. Before concreting is commenced the Contractor shall give the Representative / Agent 24 hours' notice of his intention to do so. On sites further than 200 km from the Representative / Agent, 48 hours' notice must be given.

PI.15 FINISHED CONCRETE FLOOR LEVELS

Unless instructed or shown otherwise, all finished concrete floor levels in structures shall be at least 150mm above the surrounding ground level.

PI.16 CONSTRUCTION ON CONCRETE STRUCTURES

Any construction work imposing a load on a load bearing concrete structure shall only commence minimum 3 days after such concrete structure is cast on a mass concrete foundation and 7 days in the case of a reinforced foundation.

PI.17 CURING OF CONCRETE:

After the concrete has been placed, all exposed surfaces shall be kept continuously damp for at least 10 days by methods as may be approved by the Representative / Agent, such as covering with approved building paper, or by means of wet canvas, wet sacks, wet sand, by continuous hosing or ponding with water.

PI.18 CONCRETE LINTELS

PI.18.1 Cast in-Situ lintels

Concrete lintels cast in situ shall be of Class 25 concrete, reinforced with steel reinforcement & comply with SANS 10400-K & SANS 1504. Each lintel shall be the full thickness of walls into which they are cast and 450 mm longer than width of openings.

PI.18.2 Pre-cast lintels

Pre-cast lintels shall be supplied from a reputable concrete panel manufacturing company. The concrete in pre-cast lintels shall be minimum Class 25 concrete & shall exhibit no cracks & shall be supported by the door or window frame when placed.

Should a lintel crack after placement these shall be replaced at the Contractor's expense.

Only pre-cast lintels which are sawn to achieve the desired width shall be used. The minimum overlap over windows & door openings shall be 230 mm.

Reinforcement shall comply with the following:

PI.19 MOVEMENT JOINTS:

All movement joints (if required) are to be filled in with approved bitumen impregnated softboard or expanded polyethylene strip unless otherwise specified or detailed on drawings. Form similar movement joints where pathways adjoin buildings externally.

PI.20 CUTTING, PUNCHING OR HACKING CONCRETE:

No reinforced concrete shall be cut or hacked without the approval of the Representative/Agent.

PI.21 POWER FLOATED FINISH:

Power floated finish to floors etc. means that surfaces shall be floated mechanically to a smooth and even finish before the concrete has set. Small areas inaccessible to the machine are to be floated by hand. Under no circumstances is cement mortar to be added while floating the concrete.

PJ. MASONRY (GENERAL)

(Including brickwork and stone masonry)

NB: Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick.

PJ.1 MATERIALS

Lime shall be hydrated bedding mortar lime complying with the requirements of SANS Specification 523. Cement shall be as described in Clause 3.1. Sand shall comply with the requirements of SANS Specification 1090, unless otherwise stated.

PJ.2 BURNT CLAY BRICKS:

Burnt clay bricks shall comply with the requirements of SANS Specification 227, and shall be equal in all respects to the selected samples.

Clay bricks for foundations shall be as described as above, but extra hard burnt.

Where bricks with holes are used the holes in such bricks must only be filled in solid with mortar where specifically specified.

All bricks that do not carry the SANS Mark, must be tested by the accredited laboratory.

PJ.3 FIRE BRICKS:

Fire bricks shall be of well burnt refractory fireclay, resistant to spalling and cracking and of same size as ordinary bricks.

PJ.4 WORKS MORTAR TESTS:

PJ.4.1 Sampling

The frequency of sampling will be decided by the Representative/Agent. Sufficient mortar shall be taken from each of the points of laying to prepare a composite sample to make a set of three mortar cubes

PJ.4.2 Moulding

Cube moulds with a nominal size of 100 mm that comply with SANS 5863 must be used.

Fill each mould with mortar in three equal layers and compact each layer by means of a tamper.

The tamper must be made of hard wood with a flat tamping surface with nominal dimensions of 50 x 25 mm and shaped to provide a round stem of approximately 25 mm diameter and long enough to afford sufficient hand grip. Immerse the tamper in water for 15 minutes before use.

Each layer of mortar must be compacted by means of 8 evenly spaced pressing strokes of the tamper. After the final layer has been tamped the excess mortar must be struck off level with the top edges of the moulds.

PJ.4.3 Curing

Cover the test cubes (in their moulds) with an impervious sheet followed by wet matting, sacks or similar material, and store them in a place free from vibration, excessive draughts and direct sunlight.

After 24 hours mark each cube so that it can be identified. After 48 hours the cubes must be removed from their moulds and placed into water in a curing tank at 22° -25 °C for a minimum period of 7 days before they are transferred to the testing laboratory.

Ensure that loss of moisture is prevented during transportation and that they are well protected against damage.

PJ.4.4 Testing of Cubes

The testing of all mortar cubes will be done by an accredited by the Employers agent.

PJ.5 CEMENT MORTAR:

Cement mortar shall be composed of 6 parts (by volume) of sand and 1 part (by volume) of cement. The material shall be mixed dry until of uniform colour and then water added and the mixture turned over until the ingredients are thoroughly incorporated. Cement mortar shall be produced in such quantities as can be used before commencing to set as no cement mortar that has once commenced to set shall be used in any way.

Cement mortar shall be mixed on a surface free of contaminants and of batch size such that it is used within 2 hours of mixing. Mortar not used within 2 hours must be discarded.

Care shall be taken in mixing cement mortar to remove from the mixing machine or platform any old mortar that has already set as such mortar may not be incorporated into any new batch.

PJ.6 COMPO MORTAR:

Compo mortar shall be composed of 6 parts (by volume) of sand -depending on the quality of the sand available, 1 part of lime and 1 part of cement (by volume). The lime and sand shall be mixed dry, then mixed wet, before the cement is added, approximately half an hour before using and the adding of the necessary additional water as required.

Compo mortar shall be produced in such quantities as can be used before commencing to set as no compo mortar that has once commenced to set shall be used in any way.

In all cases the mortar should achieve the minimum required strength (in MPa) for the classes of mortar as set out in the National Building Regulations.

PJ.7 BUILDING N:

Ends of timbers, dowels, etc. shall be built-in cement mortar.

Door and window frames, lift door frames and the like shall be set up in position for building in and securely strutted to prevent distortion whilst the brickwork, lintels, etc. are being built.

Wood slips, fixing bricks, hoop iron roof ties, etc. shall be built in as the work proceeds.

Voids in blockwork shall be filled with Class 15/19 MPa concrete flush to the edge of the door or window frame. Before placing the frame in position, a wet to dry epoxy adhesive for structural bonding (Sikadur-31 SBA or similar approved) shall be applied to the outside frame structure.

PK. BLOCKWORK PK.1 SAND

Sand shall be as obtained from an approved source and shall conform with the requirement of SANS 1090-2009 or all of the following:

- a) It shall contain no organic material,
- b) Not contain any particles which are retained on a sieve with nominal aperture size 5mm,
- c) Have a sufficiently small clay content such that a 'worm' 3mm in diameter cannot be rolled in the palm of the hand, by adding a few drops of water to material obtained from sieving of a sample of dry sand through a nylon stocking,
- d) When 2,5kg of common cement is mixed to 125kg of air dry sand, the mixture does not require more than 3,0 litres of water to be added to reach a consistency suitable for plastering and the laying of masonry, and
- e) When mixed with common cement in accordance with the mix proportions had adequate workability

PK.2 LIME

All lime used shall be hydrated bedding mortar lime complying with the requirements of SANS Specification for Building Lime 523

PK.3 CEMENT

Cement is to be as described under "Concrete Work".

PK.4 MORTAR PLASTICS

Mortar Plastics shall comply with BS 4887 and shall be used in the proportions and manner recommended by the manufacturer.

PK.5 LIME MORTAR

Unless otherwise described, lime mortar shall be composed of four parts sand to one part lime by volume and allowed to slake for at least ten days before use. The mortar shall be kept moist until required for use by covering with wet sacks or other approved means.

PK.6 CEMENT MORTAR

Unless otherwise described, cement mortar shall be composed of 6 parts sand to 1 part cement by volume, or 3 standard wheelbarrows sand to one bag 50kg cement CEM-1 32,5 (wheelbarrow to SANS 795, Type 50, mixed in small batches which can be reasonably used up within half an hour of mixing.

No mortar is to be retained and subsequently re-used the following day by the mixing in of additional cement. Cement mortar shall be a class 2 & must have a compressive strength of not less than 7 MPa in respect of laboratory testing & 5 MPa for works tests in accordance with SANS 0164-1 & comply to SANS 10400K & SANS 2001-CM1.

PK.7 COMPOSITION MORTAR

Unless otherwise described, composition mortar is to be composed of 12 parts sand to 2 parts lime and 1 part cement by volume, the cement added to the mixture in small batches, immediately before use

PK.8 AGGREGATES FOR BLOCKS

Aggregates for blocks shall be obtained from an approved source, shall be hard, durable and chemically inert, shall conform to the requirements of SANS 1083 and shall be washed clean.

PK.9 WATER

Clean fresh water from the Local Authority supply fit for drinking purposes is to be used throughout the Works. Where there is no such supply the water shall be clean and free from injurious amount of acids, alkalis, sugar and other organic substances.

PK.10 CONCRETE BLOCKS

Unless otherwise described, concrete blocks are to be good, hard, sound, dry and well cured and shall comply with SANS 1215. All soft wet or insufficiently cured blocks will be rejected and samples of all blocks are to be submitted to the Employers agent and approved by him before the blocks are delivered on site in bulk. Blocks for foundations are to be selected for hardness.

All blocks used will be Class B unless otherwise approved by the Employers agent.

Unless otherwise described, all blockwork is to be in stretcher bond with galvanised block for the 1st course and every 3 subsequent courses in accordance with SANS 28.

110mm wide x 2.8mm thick block for shall be used on external block work and 60mm wide x 2.8mm thick block for on internal block work as specified. (Applicable to all block work).

Blocks shall under no circumstances be wetted in any manner before laying and at the stoppage of work at any time the top of the wall shall be covered to prevent moisture entering the blocks. The blockwork is to have the joints flushed up at every course solid throughout the whole width of each course and to be laid on a solid bed of mortar. The joints of all walls to be plastered are to be raked out as the work proceeds to form key for plaster. All walls to be carried up regularly so that no part be built more than 1.0m higher than the adjoining walls. Mortar joints generally are not to exceed 10 mm thickness.

Walls are to be true and plumb with all alternate perpendicular joints in the vertical alignment. Cross wall shall be built up flush against the existing wall with a control joint at the link.

If the cross wall is of hollow concrete blocks, the two walls shall be tied together with hoop iron straps, starting at the first course above the damp-proof course and spaced at a vertical distance every second course or as directed on the drawings.

The anchors shall be at least 3 mm thick, at least 30 mm wide and approximately 700mm long, with a 50 mm right angle bend at each end, and these bends shall be embedded in mortar or concrete that is placed in the cores

PK.11 CUTTING OF BLOCKS

Where cutting is necessary, blocks shall be cut with a mechanical cutting disc. Where cavities are exposed at ends, angles, joints, reveals or elsewhere, the cavities shall be filled with mortar and finished flush with the block face.

PK.12 RAKING BACK OF BLOCKWORK

Corners and other advanced work shall be raked back and not raised above the general level of the remaining blockwork by more than 1 m at one lift.

PK.13 SEALING OF BLOCKWORK IN FOUNDATION WALLS

All joints in block foundation walls shall be filled with 15 MPa low slump concrete to the level of the DPC course. On concrete raft foundations the DPC shall be bedded between 2 layers of mortar not less than 10mm thick on the outside and not more than 30mm on the inside and slopes to the outside of the structure. The first block shall be properly wedged in the second layer of mortar.

PK.14 BEAM FILLING

Beam filling shall be 90mm thick blocks, built up in mortar as used in external walls cut in between roof timbers and carried hard up to underside of roof covering and flushed up with mortar.

PK.15 CORNERS

All corners shall be accurately constructed and the height of courses shall be checked by a gauge rod as the work rises. The bonding of corners shall be done in such a way as to preserve symmetry in the appearance of the work.

PK.16 REVEALS

The depth of reveals and rebates shall conform as far as practicable to the block size, in order to maintain the strength of the masonry and to avoid cutting of blocks.

PK.17 JOINTING AND POINTING

As the work proceeds mortar joints on the face of the wall shall be compacted to give a (concave, or, trowelled, or, V, or, flush) joint. Tooling shall be delayed until the mortar has stiffened slightly.

When joints are to be subsequently pointed, the face joints shall be raked out to a depth of from 13 to 20 mm and later refilled with mortar and pointed to give an approved joint. Tooling shall be delayed until the mortar has stiffened slightly.

Block joints shall be raked out where required for fixing cover flashings and flashings, which shall be pointed in 3:1 cement mortar.

PK.18 STORAGE OF BLOCKS

Blocks shall be carefully unloaded and handled so as to prevent chipping and breakage. Blocks shall be stacked on a level site. The top of each stack shall be kept covered at all times during rainy weather.

PK.19 BAGGING

Bagging down blockwork and exposed faces of concrete occurring in block walls, is to include for filling all joints, crevices and any defects with 3:1 sand and cement mortar and then rubbing over with wet rough sacking or brushes soaked in liquid 5:1 sand and cement grout.

PK.20 BLOCK REINFORCING FABRIC

Unless otherwise described, blockwork reinforcement is to be of approved S.A. manufactured welded high-tensile steel wire reinforcing fabric of the widths stated, cut to lengths and lapped full width at angles and passings.

PK.21 HOOP IRON STRAPS (TO DOORS/WINDOWS)

Straps to be 2mm galvanised hoop iron 30mm wide and 230mm girth with one end twice screwed to frame and other end built into the blockwork in cement mortar and turned up into brick joint (PL.5) or as detailed on the drawings.

PK.22 SECURING OF ROOFS:

Roof trusses shall be fixed at each support to walls with ties of 16mm thick galvanised hoop iron, 32 mm wide, built 750 mm deep into blockwork or embedded 300 mm deep into concrete or wrapped around bottom layer of reinforcing in a reinforced concrete beam and wrapped over truss and fixed with four galvanised nails, 40 mm bng, alternatively double stranded 4mm 0 galvanised wire built minimum 600mm (3 block courses) into walls.

PK.23 CRAMPS TO WOOD FRAMES:

Wood frames to doors, windows, etc. shall be set up in position for building in as described and built in as the work proceeds with cramps to jambs of 16mm thick galvanised hoop iron, 32 mm wide, with ends turned 50 mm up against stiles of frames and each twice screwed to frame and built 450 mm into wall with end turned up into brickwork joint. Cramps shall be built in approximately 0,3m up from bottom and approximately 0,3m down from head of frames and intermediately at not exceeding

0,85m apart. No frame shall have less than two cramps to each jamb irrespective of height.

Cramps to frames in blockwork walls shall be cranked as necessary and built into inner and outer thickness of walls alternately (Refer dwg. detail PJ.1).

PK.24 WATERPROOFING CODE OF PRACTICE

The Contractor will be required to construct the work measured under the Blockwork trade in accordance with the requirements of SANS 021-1973 "The Waterproofing of Buildings".

PK.25 CLEANING DOWN

Acid shall not be used to clean down concrete masonry walls.

PK.26 REMOVAL OF MORTAR DROPPINGS

Mortar droppings which fall on the wall ties in a cavity wall shall be removed and temporary openings shall be provided to permit the removal of the droppings from the bottom of the cavity.

PK.27 WEEP HOLES

Where required to drain away moisture and where detailed on the drawings, weep-holes shall be located in the first course above any damp proof course or bond beam, or the like, the holes being approximately 50 mm high and located in each end.

PK.28 DAMP-PROOF COURSES

The block course on which a damp-proof course is to be laid shall be flushed up with mortar to form an even bed free from projections liable to puncture or damage the damp-proof course.

Where a damp-proof membrane is extended over the full thickness of a hollow masonry wall not less than 150 mm thick, the membrane may be regularly pierced over the centre of each cavity in blocks forming the wall. The piercing shall not exceed 40 mm in diameter and the surface of the membrane adjacent to the piercing shall be depressed towards the piercing.

PK.29 BLOCKWORK OVER OPENINGS

All masonry built over openings shall be adequately supported for not less than 7 days.

Where hollow blocks are used the cores adjacent to the openings shall be filled with concrete (Class 20).

Sills of windows where there is not a clear overhang shall unless specified or indicated otherwise extend at least 15 mm past the finished wall face.

Lintels over openings shall bear on the full thickness of the wall with a bearing length, at each end, of at least 230 mm.

PK.30 BEARING PLATES ON BLOCKS

Bearing plates on blocks shall be bedded in mortar similar to that used for the masonry and shall be set level.

PK.31 CONTROL JOINTS

Control joints shall be provided at positions indicated on the drawing and shall be constructed as shown.

PK.32 PROTECTION AGAINST DAMAGE

Finished masonry shall be protected where necessary to avoid damage during the building operations.

PK.33 PROTECTION OF NEW WORK

In order that the hardening and strength development of the masonry will not be adversely affected, all new work shall be suitably protected from rain and against the possibility of the work drying out rapidly.

PK.34 BRACING DURING CONSTRUCTION

Masonry walls constructed in locations where they may be exposed to high winds during erection shall not be built higher than ten times their thickness unless adequately braced, or until provision is made for the prompt installation of permanent bracing at the floor or roof level immediately above the storey under construction.

Back-fillings shall not be placed against foundation walls until they have been braced to withstand the horizontal pressure.

PL. BRICKWORK

PL.1 SAND

Sand shall be as obtained from an approved source and shall conform with the requirement of SANS 1090-1976.+

PL.2 LIME

All lime used shall be hydrated bedding mortar lime complying with the requirements of SANS specification for Building Lime 523.

PL.3 CEMENT

Cement is to be as described under "Concrete Work".

PL.4 LIME MORTAR

Unless otherwise described, lime mortar shall be composed of four parts sand to one part lime by volume and allowed to slake for at least ten days before use. The mortar shall be kept moist until required for use by covering with wet sacks or other approved means.

PL.5 CEMENT MORTAR

Unless otherwise described, cement mortar shall be composed of 6 parts sand to 1 part cement by volume mixed in small batches which can be reasonably used up within half an hour of mixing. No mortar is to be retained and subsequently re-used the following day by the mixing in of additional cement.

PL.6 BRICKS

Unless otherwise described, bricks are to be good, hard, sound, well burnt commons and shall comply with SANS

227. All soft or inferior bricks will be rejected and samples of all bricks are to be submitted to the Employers agent and approved by him before the bricks are delivered on the site in bulk. Bricks for foundations to be selected for hardness.

Unless otherwise described, all brickwork is to be in header bond with galvanised wall ties in accordance with SANS 28 built in between skins and evenly spaced at a density of not less than 6 ties per m² of wall area. Bricks are to be well wetted before laying the next course. The brickwork is to have the joints flushed up at every course solid throughout the whole width of each course and to be laid on a solid bed of mortar. The joints of all walls to be plastered are to be raked out as the work proceeds to form key for plaster.

All walls to be raked out as the work proceeds to form key for plaster. All walls to be carried up regularly so that no part is built more than 1.2m higher than the adjoining walls.

Walls are to be true and plumb with all alternate perpendicular joints in the vertical alignment. Mortar joints generally are not to exceed 10 mm thickness.

Unless otherwise described, the skins of hollow walls are to be tied together with and including wall ties in accordance with SANS 28. Wall ties are to be 150 mm longer than the width of the cavity, staggered vertically and spaced not more than 1 m apart in every third course of brickwork. Prices are to include for keeping the cavities free of rubbish, mortar droppings, etc. Openings are to be left as required for this purpose and afterwards built up and made good.

No false headers shall be used and none but whole bricks employed, except where legitimately required to form bond.

Brickwork shall be built level and plumb with mortar as specified.

The bricks shall be laid on a solid bed of mortar and all joints thoroughly grouted up solid throughout the whole width of each course.

Clay bricks shall be well saturated with water, in the stack or dump, approximately 2 hours before being used. The tops of walls left unfinished shall be well wetted before work recommences.

NB; Cement or concrete bricks shall not be wetted. All rough and fair cutting, cutting of splay, skewbacks, chamfers, etc. shall be properly performed. Form or leave all necessary openings for pipes etc. and make good after pipes etc. are fixed in position.

PL.7 BRICKWORK IN CEMENT MORTAR:

- a) All brickwork below damp course level, all isolated piers three bricks wide and under, half brick thick walls and chimney stacks above ceiling level, shall be built in cement mortar as described PJ.5.

Brick arches and brick lintels shall be built in cement mortar as described in PJ.5, but in the proportion of 3:1.

PL.8 MORTAR JOINTS:

Mortar joints to brickwork generally shall be 10 mm in thickness with level bedding joints and vertical perpendics. The joints in brickwork receiving plaster, tiling or similar finishes shall be raked out whilst the mortar is soft to form key for the plaster or mortar backing. The depth of the raking out will depend on the condition of the bricks; the rougher the bricks on face the shallower the raking out and the smoother the bricks the deeper the raking out.

The joints in brickwork shall be flushed off where walls are to be bagged, in readiness for the bagging.

PL.9 GROUT IN JOINTS IN BRICK FOUNDATION WALLS:

All joints in brick foundation walls shall be grouted in solid with 3:1 liquid cement mortar to obviate any crevices for ant (termite) tracks.

PL.10 BRICKWORK REINFORCEMENT

Brick reinforcement shall be of hard drawn mild steel comprising two 2.8 mm diameter main wires spaced 75 mm apart and 2.5 mm diameter cross wires spaced at not exceeding 300 mm apart, welded to main wires.

PL.11 BRICKWORK LINTELS

Brick lintels in 270 mm thick cavity walls shall be built with inner face of outer thickness, for a depth of three courses above soffit, covered with sheeting as for damp-course, the full length of lintels, and space between the two thicknesses for the depth of the sheeting filled in solid with Class 25 concrete. Where cavities continue above lintels, the sheeting shall be taken up and turned on to top of first course of brickwork to inner thickness of wall above the concrete filling in lintels. The sheeting is not required in lintels protected from the weather.

PL.12 BAGGED FINISH TO BRICKWORK:

Bagging to walls (if specified) is to be carried out after the mortar in joints has set. The wall surfaces shall be rubbed over with wet rough sacking until all joints and crevices are filled up and an even surface is obtained. Cement grout shall be added if necessary to fill up the joints and crevices.

PL.13 RAKING OUT FOR AND POINTING FLASHINGS:

Brick joints shall be raked out where required for fixing cover flashings and flashings, which shall be pointed in 3:1 cement mortar.

PL.14 BRICKWORK IN THICKNESSES:

Walls built in two or three half brick thicknesses shall only be built where bonded brickwork proves impractical or where required due to the prescribed bond of faced brickwork, all tied together with metal ties in accordance with SANS Specification 28, of the Butterfly or Modified PWD Types only, of sufficient length to allow not less than 75 mm of each end to be built into brickwork. Ties shall be evenly spaced at not more than 1 m apart to every third course and staggered.

PL.15 BRICKWORK INLININGS:

Brick linings to concrete shall be tied thereto with 4mm diameter galvanised crimped wire ties bent at ends and of necessary length to allow 75 mm to be cast into concrete and 75 mm of the other end to be built into brickwork and evenly spaced at not more than 1 m apart to every third course and staggered.

PL.16 HALF BRICK THICK WALLS:

Half brick thick walls shall be built in cement mortar as described in PJ.5, and built 100mm into main connecting walls. Brickwork shall be built level and plumb.

PL.17 CAVITY WALLS

Cavity walls shall be built with two half brick thicknesses of brickwork in stretcher bond with 50 mm cavity between, and the two thicknesses tied together with 200 mm long metal wall ties evenly spaced at not less than the rate of 9 ties per m² of face area.

The ties shall comply with the requirements of SANS Specification 28 and be of the Butterfly or Modified PWD Type only.

The brickwork shall be built level and plumb with mortar as specified.

The cavities shall be carried up from 1 course of brickwork below damp course level up to two courses below roof plate level. The brickwork above cavities shall be built solid and where 270 mm thick shall be cut and well bonded where possible.

The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar.

The tops of walls shall be covered with planks or sacking during wet weather to prevent rain from entering the cavities.

Form weep-holes in outer skin of external cavity walls by leaving the perpendicular joints open, one every 1 m apart in the second brick course below the damp-proof course.

The cavities shall not be ventilated.

At door, window and other openings the cavities shall be stopped 110 mm back from jambs of openings with the inner thickness of brickwork returned and stopped against the outer thickness and not bonded to same. A 100 mm wide strip of damp-proof sheeting shall be built into the joint formed between the return and the outer thickness.

Each damp-proof strip shall be lapped at least 50 mm on to the damp-proof course between the two wall thicknesses of sills and between the two wall thicknesses of lintels.

Sills of windows shall be divided into external and internal thicknesses with strips of damp-proof sheeting as above, built in line with the damp-proof sheeting in jambs and extending 100 mm beyond the jambs of openings.

Sills of windows where there is not a clear overhang shall unless specified or indicated otherwise extend at least 15 mm past the finished wall face.

The lintels shall be provided with damp-proof sheeting as described under lintels.

Cavities shall be stopped 1 course below and 1 course above and 110 mm from sides of openings for air bricks and the like.

PL.18 BEAM FILLING

Beam filling shall be half brick thick, built up in mortar as used in the walls below, cut in between roof timbers and carried hard up to underside of roof covering and flushed up with mortar.

PL.19 BAGGING

Bagging down brickwork and exposed faces of concrete occurring in brick walls, is to include for filling all joints, crevices and any defects with 3:1 sand and cement mortar and then rubbing over with wet rough sacking or brushes soaked in liquid 5:1 sand and cement grout.

PL.20 BRICK REINFORCING FABRIC

Unless otherwise described, brickwork reinforcement is to be of approved SA manufactured welded high-tensile steel wire reinforcing fabric of the widths stated, cut to lengths and lapped full width at angles and passings. Rates are to include for building into brick walls.

PL.21 HOOP IRON CRAMPS

Cramps to wood frames to be 2mm galvanised hoop iron 30mm wide and 230mm girth with one end twice screwed to frame and other end built into brickwork in cement mortar and turned up into brick joint, or shot-bolted to concrete as necessary.

PL.22 HOOP IRON ROOF TIES

Ties to roof trusses to be 16mm galvanised hoop iron 30 mm wide and 300 mm girth with one end wrapped around and spiked to roof timbers and other end built into head of brick wall in cement mortar or embedded into concrete beam or slab.

PL.23 WATERPROOFING - CODE OF PRACTICE

The Contractor will be required to construct the work measured under the Brickwork trade in accordance with the requirements of SANS 021-1973 "The Water Proofing of Buildings".

PL.24 FACE BRICKWORK

Facing bricks generally to be best quality sound facing bricks, size approximately 222 x 106 x 73 mm thick rising four courses to 340 mm, even in size,

shape and colour and equal to samples to be submitted to and approved by the Employers agent before the signing of the Contract.

Special care must be taken to preserve arises and faces of these bricks during transit and handling. Any facing bricks brought on to the site that are not in accordance with the samples will be rejected by the Employers agent, the delivery and removal of which will be solely at the Contractor's expense.

The face bricks are not to be used by the load, but are to be used from several stockpiles to ensure a uniform and even colour mixture. The joints are to be pointed as described while the work proceeds.

All cutting to facings is to be done with a carborundum or other approved saw. Where cutting in faced work is required, it shall be done over three or more bricks in order to maintain the flow of the brickwork.

All face brickwork is to be protected from damage during the progress of the work to the entire satisfaction of the Employers agent, and cleaned down at completion, care being taken not to damage finished surfaces. No oiling will be allowed on any face brickwork.

PL.25 CLEANING OFF

Great care is to be taken to keep face brickwork, quarry tiles, etc. free from mortar as the work proceeds and at completion they are to be cleaned down with spirits of salts and water.

PM. WATERPROOFING

PM.1 GENERAL

Where applicable, damp proofing and waterproofing shall comply in all respects with SABS 021 Code of Practice, "The Waterproofing of Buildings".

PM.2 DAMP-PROOFING TO WALLS

Unless otherwise described bituminous sheet damp-proof courses are to comply with SANS Specification 952 Type B sheeting, 0,38mm thick (375 microns), lapped 150mm at angles and passings, including cranking up as necessary and all cutting and waste.

Unless otherwise described u-PVC plastic sheet damp-proof courses are to be of rippled S.A. manufactured approved plastic sheeting complying with SANS 952 Type B, lapped 150 mm at angles and passings including cranking up as necessary and all cutting and waste.

PM.3 DAMP-PROOFING TO FLOORS, ETC

Unless otherwise described damp-proofing to floors, etc. is to consist of S.A. manufactured approved plastic sheeting complying with SANS 952 Type B, in wide widths, laid with minimum 300 mm laps at all edges and laps sealed with pressure sensitive tape, all in strict accordance with the manufacturer's instructions.

Prices for all damp proof membranes are to include for all laps and all cutting and waste.

PM.4 INSTALLATION

Where so required all laps in the damp-proof course shall be sealed over the whole area of laps as recommended by the Manufacturer. Care shall be taken not to tear or otherwise damage the sheeting.

Similar damp-proof course, but in unbroken lengths, shall be laid behind all window sills, sealed with an approved bituminous solution to the back of the sills and taken down within the thickness of the wall and under the first full course of external brickwork.

No damp-proof course shall be laid directly below the mortar or other bedding material under sills.

PM5 DAMP-PROOF MEMBRANE :

The damp-proof membrane under surface beds shall, unless otherwise specified, be of green polyethylene sheeting complying with SANS Specification 952 Type C - plain surface -- 0,25mm thick (250 microns) and manufactured in widths of 1000mm and greater, all laid in the widest practical widths to minimise joints, turned up to the top of the level of the proposed floor slab level and dressed to abut bearing walls and, if applicable, lapped with the damp-proof course in the walls. All joints shall be sealed with pressure sensitive tape applied over the leading edge of the joint.

All cutting of plastic membranes shall be carried out using sharp instruments.

damp proof membrane under a raft foundation shall be pegged in the excavated corners of the concrete thickening before the foundation is cast. Once the entire slab is cast the pegs be removed.

Should the damp proof membrane be punctured, damaged or holes formed, the damaged section must be repaired or replaced before the floor slab is cast.

PN. ROOF COVERINGS

PN.1 GENERAL

The Contractor is referred to the relevant clauses of SANS 021-1973 dealing with the waterproofing of external cladding, roofing materials and flashings

PN.2 UNDERTILE MEMBRANE

Prior to the laying of tiles or sheeting, the roof structure shall be covered with an approved waterproofing undertile membrane as described in SASS Specification 1381.

Undertile membranes shall be draped across the rafters or trusses and fixed under the battens by means of clout nails with a sag sufficient to facilitate

drainage but not more than 40mm, keeping the number of perforations to a minimum. The underlay should allow any water reaching the underlay to freely drain to the eaves.

Special care shall be taken to avoid tearing or puncturing of the membrane during its installation.

The membrane shall be cut neatly to permit penetrations by vents, pipes, cables and other services. The membrane shall be turned up to facilitate drainage around such penetrations.

The membrane shall be installed in such a manner that it can drain into eaves gutters or run down the fascia and does not pond. At open eaves, the membrane shall extend approximately 20mm over the beam filling on the exterior wall. At closed eaves, the membrane shall overlap the fascia by at least 20mm (see detail PN.2).

Successive courses of membranes shall overlap the next successive courses by an amount of at least 150mm. Joining of lengths of membranes at their ends shall be effected by overlapping the end one after space and fastening the membrane to the rafter.

Roofs shall be left perfect, clean and watertight on completion and all eaves and valley gutters shall be cleaned out.

PN.3 VALLEYS

Valleys shall be of open or closed construction as follows:

- (a) Open valleys: a strip of underlay approximately 1m wide shall be laid along the whole length of the valley and nailed into position with cut nails close to the edges of the valley boards farthest from the centre line of the valley. Provide metal valley lining as described in Clause 7.15, ensuring that it extends at least 50mm beyond the edges of the tiling, all securely fixed along both edges. Matching roof tiles/slates shall be neatly cut to the line of the valley and laid to project over the edges of the valley lining by at least 50mm. A gap of at least 50mm shall be provided down the centre line of the valley between the edges of the tiles.
- (c) Closed valleys: all constructed as for open valleys except that the tiles are to be cut in such a manner that when laid they form a butt joint closing valley.

PN.4 ROOFING TILES (CLAY)

Clay roofing shall comply to the requirements of SANS 632 and shall be of pattern specified.

Plain tiles shall be laid "straight bond" and vertical joints between the tiles and the bottom edge of each course of tiles shall range perfectly straight.

Half tiles in the case of interlocking tiles and tile-and-a-half tiles in the case of plain tiles shall be provided as required at abutments and at verges of roofs.

Plain tile roofs shall be provided with a double course at eaves.

Unless specified otherwise, tiles shall be secured as follows:

All tiles in ridge courses, all cut end tiles along each side of hips & valleys, all tiles to open eaves & verges, shall be secured using 1,6mm diameter galvanised steel wire passed through the holes in nibs and wound around battens for inland use whilst copper, aluminium or Grade 304 stainless steel wire shall be used in coastal areas.

PN.5 ROOFING TILES (CONCRETE)

Concrete roofing tiles shall comply with the requirements of SANS Specification 542 and shall be of pattern and colour specified.

Tiles shall be laid to a lap of at least 100mm in the case of roof pitches between 17 1/2° and 25° and in the case of roof pitches 26° and upwards to a minimum lap of 75 mm.

Vertical joints between tiles and the bottom edges of each course of tiles shall range perfectly straight. Unless otherwise specified tiles shall be securely fixed as follows (see detail PK.2):

- (a) Every third tile in each course; all tiles in ridge courses; all cut end tiles along each side of hips and valleys; all tiles to open eaves and verges shall be fixed to the battens with copper, aluminium or Grade 304 stainless steel clout nails for all areas. All nails shall be of such length as will penetrate the battens to a depth of at least 25mm.
- (b) For coastal areas all tiles are to be clipped using approved nylon storm clips nailed to the tile battens.
- (c) all tiles at the roof overhang shall be fixed with "Hurricane" or approved clips at the first row. Ridges and Hips:
Ridges and hips shall be covered with collared or butt jointed, half-round or angular ridge tiles all of colour to match the general tiling. A strip of DPC sheeting of such width as will give a lap of at least 75 mm on to the roof tiling at each side and lapped not less than 100mm at end joints, shall be laid under the mortar bedding.
Pointing shall not be performed with separate materials and no lime shall be added. Butt ended ridge tiles shall be bedded solid with the 3:1 mortar squeezed up to fill the joint and struck off cleanly.
Hip and ridge tiles shall be neatly cut and fitted together at junctions and shall be bedded solid in 3:1 mortar.

PN.6 FIBRE CEMENT ROOFING

Roofing slates shall be manufactured from fibre cement of grey or other approved colour and shall be free from cracks and other defects, holed as required for fixing and fixed in strict accordance with the Manufacturer's instructions.

Slates shall be laid in a staggered pattern with vertical joints between slates approximately 6mm wide and the vertical line shall range perfectly straight from eaves to ridge. Slates shall be laid to a lap of 110mm and shall be double-nailed with approved 40mm long Grade 304 stainless steel or copper clout

nails. The lower end of each slate to be fixed with a copper disc rivet.

Half slates shall be provided as required at abutments and at verges of roofs with a double course of slates provided at eaves.

Slates shall be carefully cut close to the ridges and, where necessary, at abutments etc. and cut and close mitred at hips and valleys.

Hips and ridges shall be made watertight with approved soakers fixed under the slates in an approved manner. Where "Boston" hips are employed a 380 mm wide continuous soaker of bitumen impregnated felt or 375 micron plastic damp-proof course shall be placed centrally over the full length of hips.

Standard slates halved longitudinally, are to be fixed in accordance with the Manufacturer's specification.

PN.7 ROOFING SHEETS (METAL) GENERAL

Profiled metal sheet roof coverings shall comply with the following minimum requirements:

(a) Galvanised metal roof sheets shall have a minimum thickness of 0.8mm for roofs of 4° - 14° pitch inclusive and 0.6mm for roof pitches of 15° and upwards, alternatively "zinc-alum" or similar approved zinc-aluminium alloy type of thickness not less than 0.6mm (see Section PK.8)

Purlins shall be spaced at not exceeding 1.0m centres for roof pitches 4° - 30° inclusive and at 1.2m maximum for roofs having pitches of 31° or higher.

Unless otherwise specified in this section, profiled metal roofing sheets shall be used and fixed all in accordance with SANS Code of Practice 0237.

Roofing sheets for use inland shall have galvanised coating of Z275 quality.

Galvanised roofing sheets for use in coastal areas shall be finished with an approved factory applied paint coating. All necessary cutting of sheets shall be properly performed. Cut edges at sides of valleys and where otherwise exposed shall be perfectly straight.

Drive screws will not be permitted. The sheeting shall be drilled and not punched for fixing screws. Only special wood screws with proper thread will be permitted in conjunction with neoprene and metal washers.

Hook bolt type fasteners shall each be provided with neoprene and metal washers under nut.

Metal covered roofs having a pitch of 4° or less shall be as later specified for flat metal roofs in Clause 7.8. The provision and use of protective roof boards is compulsory.

The Contractor is to submit a certificate, signed by the Merchant, stating that the galvanised roof covering supplied complies with the required thickness specified.

Roof sheets shall be in single length to each slope of roof to both roof slopes where a ridge is to be formed by bending the sheets over the ridge.

(m) The use of any approved factory applied paint finish shall in all cases be in addition to the galvanised coating as specified.

PROFILES:

Corrugated roofing sheets:

Corrugated galvanised iron roofing sheets shall comply with SANS Specification 934 with corrugations 17.5mm deep at 76mm centres giving an effective width of approximately 610 or 762mm between the crests of the outermost corrugations respectively, all coated with zinc having a mass of not less than that indicated in the following table for the three classes of galvanising specified:

At exposed verges of roofs the iron shall be finished with neatly formed rolls.

The sheets shall have side laps of not less than one and a half corrugations. The minimum end laps for the different roof slopes shall be in accordance with the following table:

PN.8 ALUMINIUM/ZINC ROOFING SHEETS:

Zinc/aluminium roofing sheets shall comply with the requirements of SANS Specification 903, and be of corrugated or rib-trough profile and thickness specified.

All "zinc-alum" or similar approved sheeting shall be supplied with a certificate of such compliance issued by the Manufacturer.

Sheets shall be in single length to each roof slope. Corrugated sheets shall be lapped not less than one and a half corrugations and rib-trough sheets one rib at sides.

Sheets shall be fixed to purlins as previously specified for corrugated mild steel sheets.

Screws and bolt holes in sheets shall be drilled (not punched) and shall be 1.5mm larger than the diameter of the screws and bolts and spaced not exceeding 600mm centres.

Purlins shall be spaced at 1.0m centres maximum for all thicknesses of aluminium. The roof coverings shall, wherever possible, be kept clear of concrete, mortar, plaster and masonry but where this is not possible such surfaces, where in contact with the aluminium, shall be painted as before.

Roof boards shall be used by all workmen to avoid damage to the sheeting.

PN.9 RIDGING (METAL);

For corrugated roofing;

Galvanised iron ridging for ridges and hips of corrugated iron covered roofs shall be 0.60mm thick (after galvanising), coated with zinc of mass as specified for roofing iron in the table in Sub-clause 7.6.2 (a).

The ridging shall be 450 mm girth with roll top and bent down edges, lapped 225 mm at heading joints; cut, properly lapped and fitted at intersections of ridges, hips and valleys; and beaten into corrugations of roofing iron to close openings. Roll shall be closed at feet of hips and at gable ends.

Ridging shall be fixed with screws to wood purlins using washers under heads and nuts, all as described for fixing corrugated iron roofing, but spaced at not exceeding 300mm centres.

For zinc/aluminium roofing:

Ridging or ridges of roofs covered with zinc/aluminium roofing sheets shall be of aluminium complying with the requirements of SANS Specification 903 and of thickness specified. The ridging shall be without roll top and shall be not less than 400 mm girth, bent to suit angle of ridge, provided with notched poly-closers and aluminium closers under each wing of same thickness as the ridging, with end laps of not less than 150 mm and fixed with screws to wood purlins and hook bolts to steel purlins with washers under heads and nuts, all as described for fixing the roof covering and spaced at not exceeding 450 mm centres.

PN.10 ROOFING SHEETS (FIBRE CEMENT)

Corrugated fibre cement roofing sheets shall comply with the requirements of SANS Specification 685. The sheets shall be not less than 6 mm thick with corrugations at 178 mm centres, or shall be not less than 7 mm thick with corrugations at 241 mm centres, or shall be of other approved pattern as specified.

Fibre cement roof sheeting for use in coastal areas shall be purchased with an approved factory applied paint finish or may be painted on site prior to erection with paint approved by and in strict accordance with the instructions of the Manufacturer of the roof covering.

The sheets shall be laid with smooth surface on top, mitre cut at corners as necessary, all secured to wood purlins with 7 mm diameter galvanised drive screws not less than 14 mm long and to steel purlins with 8 mm diameter galvanised hook bolts, each provided with a plastic or felt washer and a galvanised steel cupped washer over the plastic or felt washer. Felt washers shall be of bituminous roofing felt as SANS Specification 92 Type 60.

Holes for fixing screws or bolts shall be drilled (not punched) and shall be 2.0 mm larger than the diameter of screws and/or bolts.

The fixing screws and nuts on fixing bolts shall not be tightened more than is necessary for holding down the sheets and the proper seating of the washer over the corrugations so as to allow for slight movement between the sheets and the supporting structure.

On no account shall sheets be deflected at the intermediate purlins.

The side laps of sheets shall be sheltered in the opposite direction to that of the prevailing wind wherever possible. All necessary cutting to sheets shall be properly performed. Cut edges at sides of valleys and elsewhere where exposed shall be perfectly straight.

The minimum end laps of sheets and the spacing of purlins, unless otherwise specified, shall be in accordance with the following table:

The Manufacturer's instructions regarding laying and fixing of sheets, including side laps, mitre of corners and spacing of screws or bolts shall be followed in all cases.

One month after fixing, the roof covering shall be thoroughly examined, any defects made good and loose screws or bolts tightened.

Roof boards shall be used by all workmen for safety and to avoid damage to the sheeting.

PN.11 RIDGING (FIBRE CEMENT)

Adjustable type corrugated:

Adjustable fibre cement ridging with corrugated wings for ridges of corrugated fibre cement covered roofs shall be of the same manufacture as the roofing sheets, of not less than 6 mm thick material and with collared end joints.

Width of wings shall be not less than 300 mm measured from the centre of roll.

The ridging shall be secured all as described for fixing corrugated fibre cement roofing.

Plain:

Adjustable plain fibre cement ridging for ridges and hips of corrugated fibre cement covered roofs shall be as described above for the corrugated type, but wings shall be plain and thereby suitable for use on ridges and hips. The ridging shall be fixed as described in Sub-clause 7.10.1.

The openings between the wings of ridging and corrugations in roofing sheets shall be filled with 5:1 cement mortar neatly finished.

PN.12 FLASHINGS (FIBRE CEMENT)

Fibre cement sole flashings for horizontal top edges of roofs butting against vertical wall or other surfaces shall be of the same manufacture as the roofing sheets, of not less than 6 mm thick material and with overlapping heading joints. The flashings shall be corrugated and extend not less than 300 mm onto the roof sheeting, have plain up stands against the vertical surfaces and be flashed over with sheet metal as described in Sub-clause 7.19.2.

PO. CARPENTRY AND JOINERY

P0.1 TIMBER

Timber shall be treated in accordance with Government Gazette Notice No. R. 602 of 27 March 1986 and any amendments thereto in all areas defined in the aforementioned notice. Proof of treatment is to be lodged with the Representative / Agent prior to the use of any timber in the service. The specific properties mark shall also be indicated on all treated timber in accordance with SABS Specification 1288.

All timber is to be well seasoned and free from sap, reasonably free from wavy edges, large, loose or dead knots, splits, shakes or other defects and to be sawn to square. The scantlings of all sawn timbers to hold full size when sawn.

P0.2 MOISTURE CONTENT

All timber to be kindried to a moisture content of 12 per cent.

P03 NOMENCLATURE OF TIMBERS

The names used in this Bill for imported timbers are those given in Supplement No. 1, to SANS 02 "Nomenclature of Standard Trade Names of Imported Commercial Timbers used in South Africa" and the Contractor is referred thereto.

P0.4 STORAGE OF TIMBER

All timber delivered to the site is to be properly stacked above the ground, either on rough bearers or platforms under cover and protected from inclement weather.

P0.5 TIMBER DIMENSIONS

For structural timber dimensions shall be of nominal sizes within the tolerances specified in SABS 563 unless net dimensions (actual sizes) are specified.

P0.6 PRE-TREATMENT OF TIMBER

Where all timbers are not required to be treated in accordance with PL 1 in the remaining areas of the country, floor and roof plates, boards and ends of timbers built into walls shall be given two good brush coats of one of the undermentioned wood preservatives, which shall comply with all relevant requirements of the SABS Specification shown in brackets after the name of the preservative, viz:

- (a) Metallic naphthenates (SANS Specification 38).
- (b) Pentachlorophenol (SANS Specification 42).
- (c) Pentachlorophenol zinc naphthenate (SANS Specification 565).
- (d) Tributyltin Oxide-Lindane (SANS Specification 1388).

All timbers shall be coated with the preservative before being fixed in position. After application of the preservative, any freshly cut and/or exposed surfaces shall also receive two coats of preservative. Except where exemption has been obtained from the Division of Plant Control, Timber Control Offices, all permanent timber installed in the Buildings is to be treated before the arrival on site with an approved preservative in terms of Government notice No. R658 of 15 September 1961, in accordance with SANS "Code of Practice for the Preservative Treatment of Timber."

The Contractor is to obtain a certificate from the merchant supplying the treated timber, to the effect that the timber has been treated against wood destroying insects.

The Employer's agent has the right to remove samples of the treated timber for the purpose of having chemical tests carried out by the Division of Entomology or any other authority.

The expense of such tests are to be borne by the Contractor, if the penetrations and absorptions do not comply with the standards laid down above.

P0.7 WROUGHT FACES

Exposed woodwork shall be wrought to a smooth surface and properly sandpapered to remove all machine or other tool marks.

For each wrought face on structural timber an allowance will be made off the "nominal" or rough sawn dimensions specified or stated on the drawings, as follows:

- (a) 2,5 mm for "nominal" dimensions up to and including 75 mm.
- (b) 3,5 mm for "nominal" dimensions over 75 mm.

For each wrought face on softwood joinery timber an allowance will be made off the "nominal" dimensions specified or stated on the drawings as follows:

- (a) 3 mm for "nominal" dimensions up to and including 75 mm.
- (b) 5 mm for "nominal" dimensions over 75 mm.

The above will be the nett allowances permitted off the "nominal" dimensions specified or stated on the drawings and will not be additional to the tolerances specified for rough sawn timbers.

NB: No allowance shall be made off the dimensions given for hardwood joinery. The dimensions given shall reflect the exact, finished sizes required. Only brass screws may be used for hardwood Joiners' work

P0.8 ANGLES OF WROUGHT WOODWORK:

Unless specified to be angle rounded, all exposed angles of wrought woodwork shall be arris rounded. The term "arris rounded" denotes that the angles shall be rounded off to approximately 3mm radius and sandpapered to a smooth surface.

Angles of wrought woodwork specified to be angle rounded shall be rounded off to 6mm radius, unless otherwise shown on the drawings, and shall include, in framed joinery, for scribed and mitred joints.

P09 STRUCTURAL SOFTWOOD

All South African soft wood (pine) timber shall be structurally graded and be stamped (in red) with the appropriate mark i.e. Grade 5, 7 etc. Grading methods used may be either Visual (V), Mechanical (M) or marked "S" as structural grade. In addition, the product certification mark of an accredited, competent standards authority such as the South African Bureau of Standards (SABS) shall also be visible. South African standards covering timber for structural purposes are:

SANS 1460:1988-Laminated timber (glulam)

SANS 1707:1997 - Eucalyptus bracing and battens (Hardwood)

SANS 1783:1997-Sawn softwood timber

Part 2-Stress-graded structural timber and timber frame wall construction Part 4 -Bracing & battens

All marks shall be clearly visible to the Agent Representative after the timber is built into its final position.

"Black cross" (ungraded) timber must not be used for any member in a roof structure assembly, including the ceiling bracing, under any circumstances.

Black cross timber is designated by being marked with a series of black crosses, thus (xxx) at the ends.

Timber for structural purposes and which does not carry the appropriate grade mark and certification mark will be deemed non-structural members and therefore unacceptable.

All timber must be assessed for suitability of purposes.

Structural timber exhibiting excessive warp will be rejected and replaced at the contractor's expense.

P0.10 GRADED TIMBER

Graded timber for structural use shall be the following nominal sizes:

- 38x38 50x50
- 38x50 50x76
- 38x76 50x152
- 38x114 50x228
- 38x152 76x228
- 38x228

The above sizes are unplanned. The planing process may reduce the thicknesses of member by 2mm or depth of timber by maximum 3mm.

The size and grade of timber shall be as tabulated in Part 2, Section 4 of the NHBRC (Home Building Manual unless stated otherwise).

Softwood battens to support tiles and purlins to support sheeting material shall be of the following minimum sizes: Battens -38x38mm

Purlins -50x76mm

All timber shall be ordered in the dimensions in which they will be used and not sawn into smaller cross sectional sizes. Timber sections of incorrect dimensions will be rejected and replaced at the Contractor's expense.

P0.11 FINGER JOINTING ETC.

Timber for finger-jointing must be free from knots in, and for 100 mm from the finger joint which should be in accordance with SANS 096 and marked accordingly

Contractors wishing to use finger-jointed timber should supply a guarantee that the finger jointing complies with the above specification and that the glue is suitable for the particular member.

P0.12 LENGTHS OF TIMBERS AND METHODS OF JOINTING:

Plates, sleeper bearers, joists, purlins, battens, laths, slats, etc. shall be in single lengths, but where this is not possible the end joints will be formed as described below. The joining of plates, battens, etc. at junctions and angles shall also be formed as stated hereunder, viz:

(a) Plates:

Wall shall be halved at joints, junctions and angles, all well spiked together.

(b) Purlins:

Purlins shall be splay cut and spliced at joints using timber side plates of the same dimensions as purlins, not less than 600mm long and six times nailed with 100mm long 3,5mm diameter wire nails. Adjacent purlins shall not be jointed between or on the same rafters.

P0.13 PRE-FABRICATED ROOF TRUSSES

Pre-fabricated timber roof trusses shall comply with the requirements of SASS Specification 0163 and be constructed of South African softwood as described in Clause PL.9 to the designs shown on the Employer's agent's or Manufacturer's detail drawings.

The timbers shall be of cross-sectional dimensions shown, cut to correct lengths with ends square or at the required angle. Trusses shall be assembled in truss fabricating jigs with the truss having the proper camber, all tightly clamped together with joints secured using approved connector plates of galvanised steel sheet. Connector plates shall be pressed into the timber simultaneously from both sides of the truss with a hydraulic press capable of exerting such pressure as will ensure complete penetration of the teeth into the timber.

The connector plates shall be of such size as will ensure that the joints so made will adequately withstand the forces exerted on the joints.

All pre-fabricated roof trusses shall be treated with two (2) coats of carbolinum or a similar approved sealing compound at the truss ends (from the last

two battens outwards) before installation commence.

Approval of pre-fabricated roofing systems, whether measured as an alternative or not, shall be subject to the following requirements:

- 1) The manufacturer of the pre-fabricated trusses shall hold a certificate of competence issued by the institute of Timber Construction ,
- 2) Independent loading certificate by an individual professional structural

Employers agent.

Once a pre-fabricated truss is installed, the Contractor shall submit to the Representative/Agent a load-bearing certificate from the truss manufacturer for the specific truss system. Should there be more than one structure, separate load bearing certificates are to be provided.

P0.14 VALLEYS IN ROOFS:

Valleys in roofs generally shall be formed with two 228 x 25 mm sawn boards, treated in accordance with Clause PL.6, well spiked down to roof timbers with purlins or tiling battens, depending upon the roof covering to be used, fixed along outer edges.

P0.15 FIXING OF WOOD (GENERAL)

Woodwork shall be fixed to walls with hardened steel nails driven into the brickwork plastic/wood plugs driven into joints where necessary with wire nails. In no case shall fixing be spaced at more than 700 mm centres. All nail heads shall be punched and filled in with an approved matching filler.

Jamb linings and the like shall be fixed with steel nails as above or with wire nails to 75 mm wide wood fixing slips. Each slip to be of thickness equal to width of mortar joints and of length equal to the thickness of wall or width of lining, all built into brick joints as the work proceeds and in such a manner as to permit nailing into cross grain only. Nailing into end grain is unacceptable.

On completion of the work no hammer marks shall be visible on the finished surface of any timber. Where hardwood is to be fixed to walls all screw heads shall be sunk and pelleted.

Wall plates shall be 50 x 38 mm for single skin blockwork and 100 x 38 mm for double skin brickwork.

P0.16 FLOOR AND WALL PLATES:

Wall plates shall be 50 x 38 mm for single skin blockwork and 100 x 38 mm for double skin brickwork.

P0.17 BATTENS AND PURLINS:

Battens and purlins shall be in accordance with SASS Specification 653, securely nailed to roof timbers with 4mm diameter wire nails, having a length of at least twice the thickness of battens and 120mm for purlins, one nail for each intersection, at centres specified ranging perfectly straight and square to roof with butt joints at heading joints and angles and in the case of wrought battens splayed joints at heading joints and mitred joints at angles.

P0.18 PURLIN TIES:

purlins shall in addition be secured to rafters at each intersection with a single 3,2mm diameter galvanised wire tie with end twisted.

P0.19 CEILING JOISTS (WHERE REQUIRED):

The tie beams of roof trusses will serve as ceiling joists but 38 x 100mm sawn ceiling joists shall be provided at right angles to tie beams at walls and elsewhere where support for bracing is required.

The supporting timbers for bracing shall in no case be spaced further than 1m centres.

Ceiling joists shall rest on and be spiked to roof plates wherever possible. Where fixed parallel to tie beams the joists shall be hung, at not exceeding 3m centres, with 50 x 38mm sawn hangers spiked to joists and to 38 x 75mm sawn runners fixed on top of tie beams, and where fixed at right angles to tie beams shall be cut in between and well spiked to the tie beams.

All necessary trimming at chimney stacks and elsewhere as required shall be properly performed.

P0.20 FRAMED JOINERY:

Where the word "framed" is used, it is to include for all mortice and tenon joints, dovetail joints, grooves, stop grooves, rebates, stop rebates, housings, notching's, etc. including housed ends of shelves, divisions, etc.

P0.21 PRESSED FIBRE CEMENT ROOF TRIM

Fascia's and barge boards, where prescribed, shall be of pressed fibre cement boards, of section described and in long lengths, butt jointed with 75mm wide galvanised steel plates four times bolted with galvanised bolts over joints or with standard aluminium jointing strips and bolts.

P0.22 STORAGE OF TIMBER

Timber which is not used immediately and is required to be stored on site, shall upon delivery be properly stacked horizontally on timber bearers a minimum of 100mm above ground level in such a manner that distortions are prevented.

Should such timber be stored for a period in excess of three (3) weeks, each stack of timber shall be completely covered with waterproofing materials, provided with adequate ventilation and generally protected from the elements.

P0.23 FIR

Unless otherwise described, "fir" is to be understood to mean Baltic Red Deal of "Unsorted" quality or "Douglas Fir of Merchantable" quality.

P0.24 OREGAN PINE (DOUGLAS FIR)

Oregon Pine (Douglas Fir) for constructional purposes is to be "merchantable" quality.

Oregon Pine (Douglas Fir) for joinery is to be "No 2 Clear and Better" quality specially selected and kiln dried.

P0.25 HARDWOODS

All hardwood to comply with SABS 737, Grade 2 and Better. Red Meranti and Iroko to be best quality, specially selected, well-seasoned and free from sapwood. Red meranti to be even in grain and colour, selected from "Standard and Better" quality from Malaya.

All hardwood to be oiled, waxed or varnished, etc. is to be selected to match in colour, grain and texture.

P0.26 LAMINATED TIMBER

Structural glued laminated timber shall be in accordance with SANS 1460 (Grade 5 or better) and bear the standardisation mark of an approved standards authority (SANS or similar approved).

P0.27 PLYWOOD

Plywood to be best quality of South African manufacture free from all blistering, cracking, twisting and other defects and glued with best waterproof glue under pressure.

P0.28 HARDBOARD

Hardboard to be in accordance with SABS 540 and of Tempered Quality unless otherwise described and in sheets over 0.75 m² in area not sealed to a solid permanent backing internally, and all hardboard permanently fixed externally to be pre-stretched before fixing by thoroughly wetting the boards by scrubbing the surface with water and a stiff brush or broom until a dark chocolate colour is obtained and then stacking the boards surface side to surface side for 12 to 24 hours and then air dried for 1 to 2 hours.

P0.29 BLOCKBOARD

Blockboard to be 21 mm thick 5 ply or 19 mm 3 ply, manufactured from kiln dried South African Pine timber core in 22 mm wide laminations 16,4 mm thick, two 1,5 mm cross grain veneer underlays and 1 mm long grain veneers face and back. All Commercial Hardwood veneers used in the manufacture of boards and shelving to be treated against insect infestation during manufacture of boards and shelving to be treated against insect infestation during manufacture with Boric Acid/Boron in accordance with the recommendations of the Department of Entomology. Bonding throughout is to be by means of heat and hydraulic pressure. All products to be sanded to a smooth finish. Blockboard with decorative veneers on face and back to be as above and faced with 0,6 mm decorative long grain veneers. Decorative veneer one side only blockboard is to be balanced with 1 mm veneer on reverse side. Edge strips to blockboard to be formed with 9,5 mm thick strips to match the face veneer and to be the full thickness of the board.

P0.30 PARTICLE BOARD PRODUCTS

Particle board to be of approved South African manufacture, comprising wood chips of uniform size, impregnated with either urea, poly-phenolic or other approved resin adhesive and bonded under heat and hydraulic pressure. Any work that is warped, twisted, chipped or in any other way defective, will be rejected.

P0.31 DECORATIVE PLASTIC LAMINATES

Decorative plastic laminates are to be of approved South African manufactured decorative melamine faced mica based laminate covering of approved colour, free from all defects and glued to wood or boarding with approved adhesive recommended by manufacturer.

P0.32 GYPSUM PLASTER BOARD AND CORNICES

Gypsum plaster board is to be in accordance with SANS 266. Gypsum cove cornices are to be in accordance with SANS 622.

P0.33 ASBESTOS CEMENT CELLULOSE SHEETS

Asbestos cement cellulose sheets are to be in accordance with SANS 685.

P0.34 JOINERY

All joinery, except that described as "stock", is to be purpose made to detail constructed in accordance with the best approved practice, morticed and tenoned, dowelled, dovetailed, tongued, grooved, housed, glued, pinned, screwed or otherwise fabricated as is best suited for the particular part. All morticed and tenoned joints are to be pinned in addition to wedging and gluing.

Stock joinery is to be the best of its quality and kind and to approval.

No joinery is to be primed until it has been inspected and approved. Before installation in the proposed works, all joinery shall be varnished as specified with at least one coat of the specified varnish thinned with turpentine (60%/40%), where after two final coats varnish must be applied, unless specified otherwise.

The Contractor is to allow for sinking and pelleting heads of all nails and screws where exposed in hardwood joinery and for cross tonguing all solid wood

sections unobtainable in single widths.

Unless otherwise described all joinery is to be put in hand as soon as possible after the signing of the contract but all final cramping, wedging and gluing up is to be done just before the finished article is required for fixing.

Wherever possible, joinery shall not be placed or fabricated in position until the plaster has dried out.

Should the joints of any joiner's work, open or give before payment of the Final Certificate, such defective work shall be taken down, refitted and redecorated, or new joinery put in its place at the Contractor's expense.

Floor boards, skirting's, cornices and rails of all kinds are to be in long lengths where possible, and are to have splayed heading joints where necessary. Where these occur they shall be made virtually invisible.

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

P0.35 MITRES, ETC

Except where mitres, etc. are separately measured, prices for all quadrants, architraves, cornices, skirting's, etc. are to include for all mitred and scribed angles, splays, stops, etc.

P0.36 PLUGS, NAILS ETC.

The prices for woodwork are to include for all plugs, nails, spikes, screws, etc. that may be necessary. Where described as plugged, rates for joinery work are to include for plugging with hardwood or approved proprietary plugs to brickwork or concrete as the case may be.

P0.37 SHOT FIXING

Where timbers are described as shot fixed to concrete, rates for this work are to include for securely fixing timbers to concrete with an approved cartridge assisted tool; rates are to include for all nails, spikes, blanks etc.

P0.38 PROTECTION

All joinery liable to injury must be covered with temporary casing to the entire satisfaction of the Employers agent. All exposed faces of joinery, which are eventually to be stained, oiled or varnished, must be oiled to preserve them during building operations.

Great care must be taken to protect these surfaces from damage or discolouration.

P0.39 WOODEN DOORS

All stock wooden doors shall be hardwood type & comply with the requirements of SANS Specification 545 and bear the SANS "MARK".

In addition all framed and edged or finger jointed batten doors, where battens are utilised, for exposed, external use shall only be of construction acceptable to the Employers agent, i.e. mortice and tenon where the tenon is exposed on the outside edges of styles and where the tenon is wedged to form a dovetailed shape with a minimum thickness of 9mm. External doors shall all be fitted with weatherboards on the outside.

Framed and edged or finger jointed batten doors for use as yard doors or where both faces of doors will be exposed to the elements and are specified to have paint finish shall be of hardwood as described in Clause P0.9, and 44 mm thick hung on hardwood or pressed steel door frames. The frame width unless specified otherwise shall be minimum 76mm.

Flush doors may be of the following constructions: solid laminated, chipcore, semi-solid or hollow core. Flush doors shall not be used as external doors.

All flush doors shall, unless otherwise specified, be minimum 40mm thick and hung to pressed steel door frames internally.

The contractor shall provide the Employers agent with full construction details of all flush doors that he proposed to use for approval.

External door locks to be 3 lever "Union Gower" lockset and 2 x 100mm heavy duty brass hinges requiring 8 brass screws per hinge. Hinges will be fitted with a maximum spacing of 150mm between the edges of door to the start of the hinge (both ends) with the third in the centre.

External doors with exposed cross bracing on the inside shall be installed in such a way that the bracing extends from the inside centre of the door to the top outside of the door.

P0.40 INTERNAL DOORS

Internal doors are to be Masonite face "PD1" (hollow core or solid door) or similar with slots of minimum dimensions of 9mm and outside frame thickness of 40mm. Slots are to be tongue and groove (to be recessed).

Door locks to be 2 lever "union" lockset and 2 x 100mm heavy duty steel hinges requiring 8 steel screws per hinge. Factory sealed door frames must be 3 coats of factory finished water based sealant sprayed on doors and frames with maxicare.

P0.41 HANGING OF DOORS:

These requirements are all in addition to paragraph 3.4.4 of SANS Specification 545.

All doors are to be hung in such a way that the completed door functions smoothly and perfectly.

The clearance gap between door and frame after hanging shall not exceed 2 mm (+0 mm -1 mm) at sides and head of door. The gap between meeting stiles of doors hung folding shall also comply with the foregoing.

The clearance gap between foot of door and floor may be increased to 6 mm (+0 mm -3 mm) to accommodate any minor unevenness in the floor surface. The foregoing is not applicable where floor springs are specified to be used. Any door frame found to be distorted or out of plumb shall be reported to the Representative/Agent before any door is hung to such frame. Failure in this regard will result in the Contractor being held liable for all rectification work at his own expense. The foregoing shall be rigorously enforced where the door as hung will not close and latch properly.

When hung, no strain upon the hinges shall be detectable due to hinge binding.

External doors shall be hung on brass hinges from which the hinge pin is not removable. When holes or drilled (for hinges etc.) these shall be sealed with silicone.

Any door that is too wide or tall to fit the door frame shall be reduced in size by removing material equally from each edge - removing material from one edge only to obtain a fit is unacceptable.

Mortice locks where specified are to be snugly fitted into the mortice with face plate flush with edge of door. In flush doors the mortice is to be deep enough to accept the lock, but must not penetrate through to the core of the door. Lever handle door furniture is to be fixed with the backplate parallel to the edge of the door. Ensure that the handles of whatever type function smoothly and do not bind.

Screws used for fixing of hinges shall be screwed into holes of suitable sizes.

In addition, prior to the final hanging of any unprotected external door, where such door opens to the outside of the building, both the top and bottom concealed edges shall be sealed with not less than two coats of the finish specified for the exposed surfaces of the door. Where the door opens to the inside of the building only the bottom edge of the door shall be so finished.

P0.42 SET UP IN POSITION FOR BUILDING IN OF TIMBER FRAMES

Timber frames to doors, windows, etc. shall be set up in position for building in as described in Specification P0.41. The jambs of timber door frames and similar frames, where a sill is not required, shall be dowelled to the threshold with 10 mm diameter mild steel dowels, 75 mm long, one to each jamb.

P0.43 FLUSH DOOR

P0.43.1 General Requirements

Flush doors shall be solid laminated, semi-solid, chip core or hollow core and shall be capable of withstanding the racking, deflection, puncture and moisture resistance test laid down in SABS Specification 545. All glue used in the manufacture of doors shall comply with the requirements of the above specification.

Unless otherwise specified, face veneers shall be rotary cut, and shall be of timbers specified, or where doors are to be painted shall be of timber suitable for painting.

Edge-strips to conceal the vertical edges of doors shall be not less than 10 mm thick and of same timber as face

veneers; edge strips to meeting edges of doors in two leaves where edges are to be rebated, shall be not less than 20 mm thick.

Face veneer and edge strips to doors not being painted shall be free from all defects, but small defects in the veneer and edge strips will be permitted in doors that are to be painted, provided they are filled in such a way that the paint finish will not be impaired.

Faces of doors shall be machine sanded to a smooth and even surface.

All gluing together of core strips and gluing on of veneers, edge strips etc. shall be done under hydraulic pressure. Bow, cup and twist in doors shall not exceed the following:

Bow: 5 mm in the full height of doors, Cup: 3 mm in the full width of doors, and Twist: 6 mm

The top and bottom edges of doors showing end grain shall be sealed with lacquer, or other suitable material, before leaving the manufacturer's works and similarly sealed after doors are fitted into frames if the edges of doors are disturbed during fitting.

All timber in doors in services having all timbers treated against infestation by insect pests shall be treated against such pests as laid down in the specification referred to above.

P0.43.2 Construction

The four types of doors shall be constructed as follows:

Solid Laminated

Solid laminated flush doors shall have cores built up of vertical strips of well-seasoned saligna gum, South African pine or other suitable and approved timber, not exceeding 25 mm in width, glued together into one solid unit without voids of any kind, and cross banded on both sides with veneer not less than 3 mm thick (before sanding), and faced on both sides with veneer not less than 0,8 mm thick (before sanding). The cross banding shall be glued to core and face veneer to the cross-banding.

Edge strips shall be provided to both edges of doors, and cross-banding shall stop against the edge strips (face veneer applied after the edge strips).

Semi Solid Core

Semi solid laminated flush doors shall have cores built up of vertical strips of well-seasoned saligna gum, South African pine or other suitable and approved timber, not exceeding 25 mm in width spaced apart evenly with similar vertical spacing strips to have a solid face area of not less than 40-50%, and with suitable top, lock, bottom and style rails and all glued together into one unit, and cross-banded on both sides with veneer not less than 3 mm thick (before sanding), and faced on both sides with veneer not less than 0,8 mm thick (before sanding). The cross-banding shall be glued to core and face veneer to the cross-banding.

Edge strips shall be provided to both edges of doors, and cross-banding shall stop against the edge strips (face veneer applied after the edge-strips).

Chip Core

Chip core doors shall be constructed with cores of wood chips of uniform size, bonded together under hydraulic pressure with glue, fitted all round with

framing of suitable and approved timber, securely glued to cores, and covered on both sides with plywood and face veneer, of a thickness not less than 3mm (before sanding) and with both vertical edges of doors provided with edge-strips and with both vertical edges of doors provided with edge-strips and with face veneer taken over the edge of the strips, or two thicknesses of chip board, not less than 12mm thick, glued to chipwood battens, spaced at not exceeding 100mm apart and to rebated framing all round, and provided with suitable size lock and hinge blocks as required and with additional framing and/or blocks where doors are to have glazed openings or are to be hung on spring hinges and the like, and covered on both sides with face veneer not less than 0,8mm thick (before sanding).

The framing to vertical edges of doors shall be of the same timber as face veneer and veneer shall cover the edge of the framing.

Hollow Core

Hollow core doors shall have framework of well-seasoned South African pine or other suitable and approved timber, comprising stiles and top and bottom rails, not less than 38mm in width, and intermediate supporting members as required, all of laminated timber glued together for the full length, and provided at one edge with suitable size lock block of similar laminated timber, and filled in with cores of moulded pulp units giving not less than 50% area contact with the plywood covering, or with cores made up of strips and bars arranged horizontally and vertically to form a grid, with the strips or bars at such spacing's as will ensure a flat even surface entirely free from undulations to the plywood covering.

Additional framing shall be provided to doors having glazed openings.

Doors shall be covered on both sides with plywood and face veneer, of a total thickness of not less than 4mm (before sanding), and edge-strips shall be provided to both edges of doors; plywood shall stop against edge-strips and face veneer shall stop against or be taken over the edge-strips.

P0.44 CLEANING OUT ETC

All shavings, cuttings and rubbish shall be cleaned out as it accumulates during the progress of the work. Care shall be taken that no debris is left under suspended timber floors.

Before giving up possession, the Contractor must ensure that all doors, fanlights, casements, etc. work easily, make any necessary adjustments and leave the whole of the work complete and perfect to the satisfaction of the Representative/Agent.

P0.45 WINDOWS

Timber windows to be "Swartland" hardwood factory finished windows (or similar approved) with three layers of maxicare sprayed on so to ensure sealant covers the entire window on all sides, glass and the lugs with dpc at the bottom according to SANS 613.

Factory glazed as follows - silicone, glass, silicone then glazing bead. A 5-10mm gap to be left all around the window between block work and lintel. DPC must extend at least 20mm. Secure the window to the wall using the galvanized lugs as supplied.

PP. CEILINGS, PARTITIONS AND ACCESS FLOORING

PP.1 TREATMENT OF TIMBER

Treatment of timber shall be as described in Specification PL.

PP.2 DIMENSIONS OF SAWN SOUTH AFRICAN SOFTWOOD:

Dimensions of sawn South African softwood shall be as described in Specification PL.

PP.3 FIXING OF WOOD (GENERAL):

Fixing of wood shall be as described in Specification PL.

PP.4 BRANDERING TO CEILINGS:

Branding not exceeding 65 mm in width shall be of South African softwood complying with the requirements of SANS Specification 1783 Part 4 or alternating steel branding and suspension kits.

The branding shall be securely spiked up to the supporting timbers with 90mm wire nails. Cross branding shall be cut in between the longitudinal branding, all securely skew nailed to same with 90mm wire nails. The sizes and spacing of branding for the various types of ceilings shall be as follows:

PP.4.1 Gypsum plaster board:

Size 38 x 38mm, fixed perpendicular to the ceiling boards at centres not exceeding 400mm. Branding shall also be fixed around edges of ceilings where required for fixing cornices.

PP.4.2 Gypsum plaster board with plaster finish:

Size 38 x 38mm, at not exceeding 400mm centres in one direction at right angles to the supporting timbers, and around edges of ceiling where required for fixing cornices.

PP.5 COVERING TO CEILINGS:

PP.5.1 Gypsum plaster board:

Gypsum plaster board shall be 6,4mm thick gypsum board complying with the requirements of SASS Specification 266.

The boards shall be nailed to the branderling with 32mm galvanised clout nails for timber or 25mm streaker screws for steel branderling, all at max 400mm centres.

Joints between boards are to be fitted with plastic M-strip joiners with the broader side on the bottom.

Where branderling has been installed at right angles to ceiling boards, H-section jointing strips shall be the acceptable means of distinguishing joints between boards.

The ceiling boards shall be in 900 or 1200mm widths laid out and with fixing commencing at the centre line of the ceiling. Ceiling boards shall only be cut down the length to form infill panels against walls, where such panels shall not be less than 300mm wide and shall be in single lengths to the width of ceilings wherever possible.

PP.5.2 Gypsum plaster board with plaster finish:

Gypsum plaster board ceilings with flush plaster finish shall be of gypsum plaster board, but nails shall be spaced at not more than 100mm centres along the lines of the branderling.

Joints between boards shall be covered with wire or self-adhesive strips of brown paper scrim tape, all in accordance with the Manufacturer's instructions.

PP.6 COVE CORNICES TO CEILINGS:

PP.6.1 Gypsum plaster board:

Gypsum plaster board cove cornices to ceilings shall comply with the requirements of SASS Specification 622 and shall be of 76mm girth as specified, all nailed through the ceiling boards to the branderling and to walls at not exceeding 300mm centres with 2mm diameter galvanised or cadmium plated clout headed nails, 40mm long, or fixed to walls with hardened steel nails driven into the brickwork with heads flush with surface at 450mm centres. Cornices shall be scribed at internal angles, mitred at external angles and shall be in long lengths with splayed heading joints where necessary.

PP.7 TRAP DOORS IN CEILINGS

Openings for trap doors in ceilings shall be trimmed with 50 x 100mm timbers, all securely spiked to the supporting timbers. The framework for the trap door shall be formed out of 19 x 50mm softwood, properly spiked to supporting timbers and trimmers.

The size of the opening shall be 650 x 650mm with a 20mm overlap on the supporting timber.

Closed trap doors shall rest on 50 x 19mm softwood fillets all around opening, mitred at angles and securely fixed to soffit of ceiling.

Any trap door larger than 650 x 650mm shall be provided with branderling along the centre, securely spiked to the skeleton frame.

PP.8 CEILING INSULATION:

All ceiling insulation materials shall comply with SANS Specification 1381 Part 1.

Ceilings shall be insulated with 75mm thick glasswool insulation bonded with inert thermosetting resin (Aerolite or similar approved). The insulation shall be cut to size to closely fit between walls & trusses & laid over branderling.

PQ. FLOOR COVERINGS, PLASTIC LININGS, ETC

PQ.1 RESILIENT FLOOR FINISHINGS AND SKIRTINGS

PQ.1.1 Semi-flexible Vinyl Flooring

Semi-flexible vinyl (vinyl asbestos) flooring is to comply with SANS 581 of the sizes stated and of approved colour and equal to samples to be submitted to and approved by the Employers agent.

PQ.1.2 Flexible Vinyl (UPVC) Flooring

Flexible vinyl flooring is to comply with SANS 786, of the sizes stated and of approved colour and equal to samples to be submitted to and approved by the Employers agent.

PQ.1.3 Marble Linoleum

Cork backed linoleum is to comply with Specifications DIN-51955, 51953, 0100, 51960 and 53389 and VOE 0100. The linoleum is to be of approved colour and equal to samples to be submitted to and approved by the Employers agent.

PQ.1.4 Laying and Fixing

The flooring is to be laid under guarantee by a firm of specialists on and including a cementing coat applied with a notched trowel, all in accordance with the material supplied and methods recommended by the manufacturer.

RATES: are to include for all straight cutting and waste, preparatory work to screeded floor surfaces (screeds elsewhere), fitting around door frames, joinery fittings and other obstacles and for protection and cleaning off at completion with soap and water.

PR. IRONMONGERY

PR.1.1 General

All ironmongery is to be to the Employer's agent's approval, and unless otherwise described, prices are to include for fixing to softwood or hardwood. Articles are to be fixed with screws of similar metal finish. All screws, bolts, spiles, nails, etc., required for the proper completion of the work are to be supplied by the Contractor.

Rates for ironmongery are also to include for fixing, oiling and easing at completion.

PR.1.2 Dimensioning

All dimensions are to be checked & verified on site before commencing the manufacture of joinery fittings. Fixing fittings to masonry and/or concrete with suitable plugs & screws or expanding bolts. Cupboards are to include all necessary blocking pieces and subframes which are deemed to be included in the rates.

Cupboard units are to be as dimensioned.

Rates for ironmongery fixed to steel linings are to include for perforations, and tappings in linings as required. Non-standard lock striking plates and mortar guards when required are separately measured.

PR.1.3 Carcass, shelving & cupboard doors

Materials are to be 16mm thick high density class 3 particle board to SANS 50312 with 0.55mm thick high pressure light duty quality decorative laminate (SANS 1405) in standard colour & finish (unless specified otherwise). All exposed edges to have matching edging.

Doors are to be fitted with one pair quality self-closing metal hinges & nylon handles unless specified otherwise.

PR.1.4 Keys

No two locks are to have inter-changeable keys, and all locks are to have duplicate keys.

Keys to all locks, including duplicates, sub-master and grand-master keys where applicable, are to be suitably labelled and delivered to the Employer's agent upon completion or when requested.

Where ironmongery is referred to as proprietary types, such ironmongery is to be exactly of such proprietary types unless otherwise approved.

PS. METALWORK

PS.1 WROUGHT IRON

Wrought iron is to be of the best quality and to be approved before fixing. It is to be forged clean from the anvil and to be sound and to have full threads to all screw work.

PS.2 NON-STRUCTURAL STEELWORK

All non-structural mild steel sections shall comply with BS 4360; 1972 Grade 43A and the requirements of SABS 221 and 222.

All steelwork must be true to drawing, free from warps and twists, and generally constructed to any of the standards specified in Chapter 6 of Standard Building Regulations, as published in Government Gazette No. 2894 of 23rd October 1970, or amendments thereto.

All steel must be cleaned in accordance with SABS 064 to remove scale, rust, oil or grease and unless otherwise described, painted with an approved red lead based Type II Grade I priming coat in accordance with SABS 312 prior to dispatch from the works.

Upon delivery to the site and again after erection all bared surfaces shall be made good.

Rates for steelwork are to include for all necessary cutting to lengths, shaping, holding, tapping, threading, forging, turning, fitting, assembling, riveting, welding and filing smooth and also for screws unless otherwise described.

All rails, etc., described as continuous are to be in long lengths with flush welded joints.

All screwed work to have full threads. All welding is to be continuous unless otherwise described. All bends to flat sections of metalwork are across flat unless otherwise described.

The mass of all steel has been calculated according to the theoretical mass list issued by Iscor and Steel Sales Company of Africa (Pty) Limited, and no allowance has been made for rolling margins, binding wire and waste. Any variations in the masses of the steel actually used from the above-mentioned mass list is to be for the Contractor's account and the listed masses will be adhered to in all calculations affecting the mass of steel.

PS.3 HOT DIP GALVANISING TO METALWORK

Metalwork specified to be galvanised shall, after fabrication and before leaving the manufacturer's works, be galvanised by the hot dip process in accordance with SASS 763.

Before being galvanised all surfaces of the metalwork shall be thoroughly cleaned in accordance with SANS 064 of all scale, rust, grease, oil and foreign matter by shot blasting or by pickling, and then fluxed ready for galvanising. The spelter shall have a zinc content of not less than 98 percent and the mass of coating per $0,1\text{m}^2$ of surface area of the metal shall not be less than 53,4g (0,082mm).

The zinc coating shall be even and continuous over all surfaces including site welds, entirely free of bare spots, dull rough patches, blisters and other imperfections, shall show no signs of peeling and shall be uniform in thickness.

PS.4 PRIMING MANUFACTURED METALWORKS

Steel windows, doors, door frames and other manufactured articles where so described are to be dip or spray primed with zinc chromate primer in accordance with SASS 909 before leaving the manufacturer's works.

PS.5 STEEL WINDOWS

Steel windows and steel doors shall be in accordance with SANS 727 and in addition shall comply with the following requirements:

Side hung and vertically pivot hung sashes shall open to at least 90 degrees, horizontally pivot hung sashes to at least 80 degrees and bottom hung sashes to 30 degrees.

Sashes hung at side to open out in windows above ground floors and not accessible externally shall be hung on cleaning hinges with brass pins and washers.

Industrial type windows shall be glazed from the inside and all other windows from the outside, unless otherwise described.

Suitable weather bars shall be provided where necessary to render the windows and doors perfectly watertight. Frames of windows and doors where fixed to concrete shall be provided with suitable lugs or screw holes for screwing to plugs at the same intervals as the standard fixing lugs.

Windows, doors and components shall, before leaving the manufacturer's works, be primed unless described as hot dip galvanised.

Windows and doors, unless otherwise specified, shall be of "one piece" construction; those which are to be in more than one unit shall be joined with standard mullion/sand/or transom.

After windows and doors have been built in and before glazing they are to be overhauled, adjusted and left in good working order.

PS.6 PRESSED STEEL DOOR FRAMES

Pressed steel door frames shall be of approved South African manufacture, constituted of mild steel cold-rolled sheet 1,63mm thick for single, rebated frames and 122mm thick for double rebated frames. Rebate sizes to be suitable for standard timber doors 44mm thick.

Head and jamb members to be accurately bent to form the profile. Corners to be mitred and welded and also reinforced with 1,63mm steel angles.

Transoms for fanlights to be left into the jambs and all joints welded solid. Welds to be cleaned off flush, leaving a perfect outside finish. Each frame to be provided with a pair of sturdy channel section tie bars, welded below the frame. Where required for additional strength, cross struts of the same section are to be welded between and at right angles to the main ties 1,63mm thick adjustable 228mm long corrugated lugs with ends split and bent for building in are to be supplied with every frame, three to each side.

Before leaving the factory the linings are to be thoroughly cleaned free from scale, rust, grease, etc. and painted with one coat zinc-chromate primer, unless described as being hot dip galvanised. Linings are to be carefully

protected in transit and during erection from twisting and dents.

PS.7 FITTINGS

Each frame for single side-hung doors to be provided with the following:

- a) One pair 102mm 5 knuckle loose pin steel hinges, with a 3-knuckle leaf welded securely onto the frame.
- b) One pair 76mm 5 knuckle loose pin steel hinges, welded onto transoms, and suitable for a timber bottom hung fanlight.
- c) One adjustable chromium-plated strike plate with mortar guard, suitable for mortice locks of South African or British manufacture.
- d) Three rubber shock absorbers in rebate of lock jamb.

Each frame for double doors to be provided with the following:

Two pairs 102mm 5-knuckle loose pin steel hinges, with 3-knuckle leaf welded securely onto the frame. All hinges to have back plates welded on as reinforcement.

All perforations for bolts, etc. are to be provided with mortar caps welded to linings and all tappings for screws shall be provided with back plates welded on behind screws and fitted with steel countersunk set screws.

PS.8 SIZES ETC

The sizes given are approximate; the widths stated are to suit normal brick and concrete walls plastered on one or both sides and the first dimension stated

is the total thickness of the wall and plaster to be lined. Careful references must be made to drawings and buildings for exact sizes and details for ironmongery before ordering. Any errors in this respect will be at the Contractor's expense.

PS.9 FIXING

The fixing and building in of linings is elsewhere allowed for.

PS.10 ALUMINIUM AND ANODISED ALUMINIUM

PS.10.1 Aluminium

Extruded sections are to be of 50 STE or 50 STF alloy in accordance with BS 1474/HE 9 or of KE 45 alloy. Aluminium sheets and strips are to be of 2SH4, or P057S-H6 in accordance with BS 1470/SIC or 1470/POS4 respectively.

All alloys are to be anodising quality

PS.10.2 Anodising

Where aluminium shall, unless otherwise described, be anodised for exterior exposure to a minimum thickness of 25 microns in strict accordance with grade AA 25 of BS 1615.

Anodising is to be of the colours as specified hereafter and equal to samples submitted to and approved by the Employers agent. Where described as "natural" colour, anodising is to have a soft textured natural satin finish.

PS.10.3 Chrome-Plating

Where described, chrome-plating is to be in accordance with BS 1224.

PS.10.4 Anodised Aluminium Louvre Units

Adjustable glass buvered windows must comply with the Central Standardisation Committee Specification CKS 414/1974 and all suppliers of adjustable glass louvered windows must furnish proof of this compliance before acceptance of their product can be approved.

The sizes given are approximate and are not to be used for ordering purposes, but reference must be made to detail drawings for exact sizes.

Rates must include for all necessary holes, screws, packing pieces, threads and assembling and fixing in accordance with the methods employed and the materials supplied by the manufacturers of the buvre units

PS.10.5 Vitreous enameled chalk boards

Vitreous enamelled chalkboards are to be formed with approved vitreous enamelled steel panels with flanged edges and non-glaring permanent olive green finish, complete with fixing lugs and vitreous enamelled or extruded aluminium chalk rail all as approved.

Tenderers to submit a detailed specification.

Prices are to include for hanging panels to fixing lugs spaced at approximately 457mm centres and for securing lugs and chalk rails to brickwork with special screws and plastic plugging compound as supplied by the manufacturers of the panels, drilling mortices or wall plugs, rounding off front corner of each end of chalk rail to a 25mm radius protecting from injury and cleaning down at completion, all in strict accordance with the manufacturer's instructions.

PT. PLASTERING & SCREEDING

PT.1 CEMENT, LIME AND SAND

Cement to be described under "Concrete Work" & comply with SANS 50197-1/EN 197-1 or SANS 50413-1/EN 413-

1.

Lime (if specified) to be as described under "Brickwork" and to be slaked and run at least four weeks before being used.

Sand to be described under "Brickwork" & comply with SANS 1090

PT.2 PREPARATION OF PLASTER

Cement plaster shall comprise a mixture of cement and sand with or without the additional of lime and shall:

- 1) in its fresh state be workable and cohesive and have water retention properties, and
- 2) in its hardened state be durable, have sufficient strength to hold paint, withstand local impact and abrasions, be free of unsightly cracking and adhere to substrates.

Cement plaster shall be mixed on a surface free of contaminants and of batch sizes such that it is used within 2 hours of mixing. Plaster not used within 2 hours must be discarded.

Surface preparation (blockwork):

Ensure surface is free from oil, dirt or any substance which may affect the bond. Roughen surfaces where necessary by hacking and clean with a wire brush. Check surface for water suction prior to plastering and where necessary apply a properly bonding agent or a splatter dash layer of 1 part cement to 1 % parts sand. If the surface is excessively absorbent, wet the surface before applying plaster.

Ensure the surface to be plastered does not deviate from the required plane. By more than 10mm. remove high areas by hacking or cutting and fill low areas with an undercoat plaster layer, scored to ensure a bond with the top layer.

Plastering:

Plaster shall be applied in one operation. Joints in plasterwork may only occur at changes in direction. Plaster to be firmly trowelled onto walls, allowed to stiffen and struck off with a strike board and wood floated to an even surface. Plaster shall be returned into reveals and soffits of openings with all angles true and straight. Form a V-joint in the plaster across the line of the damp-proof course. Protect surface against drying out and dampen with a spray for 3 days.

PT.3 PROPORTIONS OF CONSTITUENT PARTS OF PLASTER, RENDERING, ETC

The mixes stated are proportions by volume. Water is to be accurately measured for each mix to the Employer's agent's approval.

PT.4 LIME PLASTER FOR WALLS

Unless otherwise described, lime plaster for one coat work is to be in the proportion of 4 parts sand to 1 part lime (4:1). For two coat work the rendering coat is to be in the same proportion and the setting coat is to be white lime putty. The plaster of paris is not to be added to the mixture until immediately before the setting coat is to be applied and then to be thoroughly incorporated in the mixture.

PT.5 CEMENT PLASTER

Unless otherwise described, cement plaster to walls is to be in the proportion of 6 parts sand to 1 part cement for (5:1) internal work and 4 parts sand to 1 part cement for external work (4:1). Cement plaster to concrete ceilings, beams, etc. is to be in the proportions of 4 parts sand to 1 part cement (4:1).

Cement plaster mixed in the following mix proportions shall be deemed to satisfy the above mentioned requirements. Common cements (CEM 132, 5 & 42, 4):

External Plaster:

50kg common cement (1 Bag) - 150 l (maximum) loose sand (2 std (65 l) wheelbarrows).

Internal Plaster:

50kg common cement (1 Bag) - 200 l (maximum) loose sand (3 std (65 l) wheelbarrows).

PT.6 PREPARATION FOR PLASTERING GENERALLY

Joints in brickwork are to be raked out and the surface cleaned and wetted to receive plaster or tiling. Prices for plastering or tiling on concrete are to include for hacking if necessary to form key, brushing with a wire brush thoroughly wetting and flushing up with 3:1 cement grout.

PT.7 PREPARATION FOR PLASTER TO RECEIVE MOSAIC TILING

Joints in brickwork are to be raked out and all concrete surfaces are to be roughened by chipping at approximately 150mm centres in both directions. All surfaces are to be thoroughly cleaned of all foreign and loose material, including grease, etc. and slushed with a wet mixture of Portland cement and a well graded clean sharp river sand in the proportion of one part cement to two parts sand (2:1), thrown on vigorously, left rough and allowed to harden before receiving the plaster coat. The section of brick and concrete surfaces are to be adequately adjusted by properly wetting the surfaces of a minimum of two days before application of the slush.

PT.8 PLASTERING GENERALLY

Brickwork walls shall be well wetted before plastering is commenced.

The surfaces of plastered walls internally shall be steel trowelled to a smooth even and true finish. All external plaster shall be finished to a true and even surface with a wood float. All plaster surfaces shall be free from any blemishes.

All cracks, blisters and other defects shall be cut out, made good and the whole perfect at completion. Plastering is to be avoided in hot and/or windy weather.

Plaster on walls shall be not less than 10mm nor more than 16mm thick unless otherwise described.

Unless otherwise described, all external plaster to be finished with a wooden float and internal plaster to be finished with a steel trowel, to a smooth, straight and even surface, free from tool marks and other blemishes, and any cracks, blisters and other defects are to be cut out and made good and the whole left perfect at completion.

Rates are to include for forming plain internal angles and internal angles of ceilings covered to not more than 25mm radius, working around nibs, rafter feet

etc. and into corrugations of iron or asbestos-cement sheeting where applicable.

All mouldings, weathering's, etc. are to run to detail and prices are to include for dubbing out, forming templates, runners, etc. plastering on faces of flush concrete columns and beams in brick walls has been measured as "on vertical surfaces".

PT.9 CONCRETE FLOORS

PT.9.1 Code of practice

The Contractor will be required to execute the work described under this heading in accordance with the requirements of SABS 0109-1969 "Floor Finishes on Concrete".

PT.9.2 Preparation of surfaces

Concrete surfaces to receive floor renderings are to be chipped if required, thoroughly cleaned with a wire brush, well soaked with water and to have a coating of neat cement grout applied immediately before the rendering coat is applied.

PT.9.3 Cement screeds (Floor coverings only)

Concrete sub-floors finished with wood mosaic, semi-flexible tiles and fully flexible vinyl sheeting and tiles and similar finishes shall be screeded with 3:1 cement plaster of thickness required, but in no case less than 12 mm, all steel trowelled to true and smooth surfaces. The sand used in the plaster shall be of such fineness as will allow for the screed being trowelled to a surface suitable to receive the finishes.

The screeding shall be laid before the concrete sub-floors have matured, otherwise the exposed surfaces of the concrete shall be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the screeding is laid.

The screeding shall be laid in good time, but no finishes are to be laid if the screed exceeds 70% moisture content when measured with a hygrometer.

No traffic shall pass over nor shall any building operations take place on the screeding unless a proper protective covering is first provided.

PT.9.4 Cement rendering

Rendering unless otherwise described is to be composed of 3 parts coarse river sand to 1 part cement (3:1) brought up to a smooth hard steel trowelled surface by repeated trowellings as required.

PT.9.5 Granolithic

Granolithic finish to floors, treads of steps, thresholds and similar horizontal surfaces (if required) shall be not less than 25mm thick, composed of 2 parts granite, or other approved hard stone chippings, or approved hard coarse sharp washed granitic or quartzitic river sand, graded up to a maximum size of 5 mm, 1/3 part clean pit sand screened through a 2.4mm mesh sieve and 1 part of cement, and hand or mechanically steel trowelled to a true and smooth surface. The material must test between 30 and 35 MPa. No dry cement powder or grout shall be applied to the surface. The granolithic shall be laid before the concrete subfloor has matured otherwise the exposed surface of the concrete shall be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the granolithic is laid.

The granolithic shall be laid in panels not exceeding 20m² in area and joined to lines of panels with V-joints as directed. The length of any panel shall not exceed 4.5m and wherever possible the joints between the panels shall coincide with any joints in the concrete sub-floor.

Exposed salient angles of granolithic shall be neatly rounded to approximately 20mm radius.

All granolithic work shall be carried out by experienced workmen and shall be protected from injury caused by rain or other extremes of weather for 12 hours after being laid, and against drying out too rapidly whilst hardening by covering with wet sacks or other suitable material and shall be protected from other injury and discoloration during the progress of the remaining work.

Edges of granolithic floors adjoining other floor finishes, edges of margins, etc. shall be true and sharp, all protected by fixing temporary wood strips which shall remain in position until laying of the adjoining flooring material is commenced.

PT.9.6 Non-slip granolithic

Granolithic where so described, is to be treated with carborundum chips evenly distributed and rubbed into the upper surface before granolithic has set. The carborundum must be saturated with water and applied at the rate of 1.4kg/m², well rolled in or worked in with a steel trowel, all in strict accordance with the manufacturer's instructions and to the approval of the Employer's agent.

PT.9.7 Hardened granolithic

Granolithic where so described, is to be hardened by the addition of an approved hardening compound mixed into granolithic in the proportion of 10.5kg per sack of cement, and in addition, dusted on with equal proportions of cement and well trowelled in (approximately 2kg of compound per square metre of surface), all in strict accordance with the manufacturer's instructions.

PT.9.8 Generally

All granolithic work and rendering shall be done by experienced workmen, and properly protected and cured, final trowelling to be executed after the bleeding of water ceases and the finish has started to stiffen.

The work is to be laid in panels not exceeding 6m² in area and finished with small V-joints or as described in these Bills of Quantities.

In no circumstances will the sprinkling of dry cement, or a dry mixture of cement and sand be permitted.

Where rendering or granolithic is described as tinted, the requisite quantity of approved colouring materials is to be mixed with the cement. No dusting on of

colouring material will be allowed. In no case should over 10 per cent of pigment be added to the cement.

Rates are to include for dressing to falls where required, for forming neat sunk V-joints to panels, protecting from injury cleaning down, and where tinted for finished with a coat of approved wax polish or stoep reviver well rubbed in at completion.

NOTE:

Mitres, etc.

Except where mitres, etc. are separately measured the prices for all slightly rounded angles, coves, V-joints, fair edges, skirting's, etc. are to include for all mirrors, stops, etc.

Defects

All cracks, crazes, blows, blisters and other defects in plaster, granolithic etc. are to be made good to the Employers agent's approval.

PU. TILING

PU.1 MATERIAL

PU.1.1 Cement

Cement shall be ordinary Portland cement complying with SASS 471

PU.1.2 Sand

Sand shall comply with SASS 1090 for the relevant types of tiling.

PU.1.3 Glazed ceramic wall tiles

Glazed ceramic wall tiles and fittings shall comply with SANS 22

PU.2 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling commences. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Descriptions of tiling shall be deemed to include for the necessary preparatory work. A portion of the tiling described as "on brick walls" (or Block walls) is on concrete column, beams and lintels flush with the face of the wall

PU.3 TILING

Tiles shall be fixed in accordance with SANS 0107 and pointing shall be with waterproofed white cement. Joints shall be straight, continuous and tightly fitted.

Descriptions of tiling shall be deemed to include for all square cutting.

Descriptions of toilet paper holders, soap dishes, etc. shall be deemed to include for building in and forming recesses where necessary.

PV. PLUMBING AND DRAIN LAYING

PV.1 REGISTERED PLUMBERS AND DRAINLAYERS:

Only qualified plumbers and drainlayers shall be employed on any plumbing and drainage work.

PV.2 DIAMETERS

All dimensions of pipes are internal diameters unless otherwise described.

PV.3 REGULATIONS

All drainage, sanitary and general plumbing work is to be executed in accordance with the

Drainage and Plumbing Regulations of the appropriate Local Authorities and to the approval of the Employers agent, and shall be tested throughout in accordance with the requirements of the Regulations and Employers agent's instructions.

PV.4 EARTHWORKS FOR DRAIN LAYING

Excavations generally:

Excavations shall be deemed to be in "earth", unless otherwise described.

Excavations for drainage trenches etc.:

Excavations for drainage trenches, gullies, chambers, trench drains, etc. shall be of depths and gradients shown on drawings or as directed. Trenches

shall be excavated to straight lines and shall be of sufficient width to allow adequate working space. Sight rails, boning rods, etc. shall be employed in excavating the trenches to ensure even gradients.

The minimum cover for drain pipes not termed as vertical shall be 400mm.

Any soft or loose areas in the trenches shall be filled in with well rammed earth, or other approved filling. Uneven bottoms in rock cuttings shall be made good with 19mm stone or other approved bedding material.

Any excavations taken out too deep shall be made up with well compacted earth approved bedding material at the Contractor's expense.

Properly perform all planking and strutting to sides of trenches and excavations as may be required.

The excavations and trenches shall be kept free from water and other liquids, by pumping or other approved methods.

PV.5 MEASUREMENT OF ROCK EXCAVATIONS IN DRAIN TRENCHES:

Where trenches for drainage pipes are included in the descriptions of the pipe or group of pipes and are excavated in hard rock, in measuring the volume of "extra over" based on excavations in earth, the following shall apply: Trenches not exceeding 1 m deep shall be taken of such width as to provide a clearance of 300 mm on each side of the pipe or group of pipes.

PV.6 BEDDING MATERIAL

Bedding material shall be clean sand complying to SANS 1200 LB & free from any stones or vegetation.

PV.7 BACKFILLING TO DRAIN TRENCHES:

Approved bedding material shall be carefully placed around the pipes to a height of 300mm above top of pipes, watered and lightly compacted on either side and filled in above this level with similar filling, watered and well rammed in layers not exceeding 300mm in depth and thoroughly consolidated to finished ground level.

Backfilling to sides of gullies, chambers, etc. as required shall be as above.

If the material from the excavations is found to be unsuitable as backfilling for drainage trenches and inspection chambers, etc. written approval must first be obtained from the Representative/Agent to use imported fill.

PV.8 SURPLUS EXCAVATED MATERIAL:

All surplus earth and other materials arising from the drainage work shall be deposited and levelled on the site or carted away as directed by the Representative/Agent.

PV.9 PIPELAYING

Drain pipes shall be laid at line and level as indicated on the drawings. Where levels are not provided, drain pipes are to be laid at a maximum slope of 1:10 and minimum slope of 1:40 to the municipal connection point (unless specified otherwise). Should this not be possible, the Contractor shall notify the Employer's agent immediately.

PV.10 DRAIN PIPES

Drain pipes & fittings are to be u-PVC Class 400 kPa complying to SANS 791 and installed in accordance With SASS0112-1971 Code of Practice for "The Installation of Polyethylene and Unplasticised UPVC Pipes.

u-PVC waste and vent pipes and fittings are to be u-PVC in accordance with SANS 967 and are to be jointed with solvent welded joints.

PV.11 RODDING (CLEANING) EYES

Rodding eyes shall be provided to drains in the positions indicated on the drawings each formed by inserting a junction in the drain, or bend at end of drain, and bringing a branch up to ground level with bends where required, the vertical pipe being of same diameter as the drain, and fitting on top of pipe to be 50mm above ground level with approved u-PVC access branch and cover. The cover shall be set in tallow and secured with non-ferrous metal screws and the branch shall be jointed to socket of u-PVC pipe with jointing as described for drain pipes.

The vertical bends and pipes shall be bedded in approved bedding material from bottom of trench up to ground level. A 300 x 300 x 150mm thick concrete surround reinforced with brick force in the centre shall be cast around the rodding eye (see detail PV.11).

PV.12 GULLIES

Gullies shall be provided to drains where indicated on drawings, each formed with 110mm diameter u-PVC gully trap with gully head carried up to not less than 40mm above finished ground level and provided with 50mm diameter vertical and/or side inlets as required (& complying to SANS 791). Fit head with 150mm diameter u-PVC gully grating, laid loose in the socket.

The trap, vertical pipe and head shall be bedded on and encased in Class 15/19 MPa concrete, not less than 100mm thick at any part, and finished where exposed with cement mortar, trowelled smooth, flush with top of gully head and splayed on edges. The top of Gullies must be placed below the floor level.

PV.13 DISHED GULLIES

Dished gullies shall be provided to drains where indicated on drawings, each formed with trap and head, with or without inlets as required and fitted with u-PVC grating, all as described in Clause PR. 10 but with head carried up to the height required.

The trap, vertical pipe and head shall be encased in concrete as described in Clause PR. 10, but with a dished hopper, size 750 x 525mm overall,

formed around gully head with Class 15/19 concrete having 50mm wide rounded kerb to front and sides and 25mm wide kerb at back, all 40mm high above top of dishing, and finished on exposed surfaces with cement mortar. Top of kerb shall be not less than 40 mm above finished ground level.

PV.14 UNIVERSAL TRAPS

Universal traps shall comply to SANS 1321 part 1 & shall be provided to drains where indicated on drawings, each formed with u-PVC trap with the same diameter as drain pipes, jointed together and to drain pipes as described for drains.

The trap shall be bedded on and encased in Class 15/19 MPa concrete, not less than 100 mm thick at any part, and finished where exposed with cement mortar, trowelled smooth, flush with top of vertical shaft and splayed on edges.

PV.15 RAINWATER GOODS

u-PVC gutters and down pipes shall comply with SANS 11 "Unplasticised polyvinyl chloride components for external rainwater systems".

PV.16 CONCRETE PIPES FOR STORMWATER

Concrete pipes for stormwater drainage are to be reinforced spun non-pressure S.C. type and Class B unless otherwise described in accordance with SANS 677. The piping may have self-centering spigot and socket joints or be in plain lengths with hose collars, and jointed all in accordance with SABS 058, Code of Practice for Sewer and Drain Jointing.

All joints are to be wiped clean inside.

PV.17 JUNCTION BOXES

At intersections of concrete stormwater drains, junction boxes are to be formed with chamber of sufficient size to take ends of pipes described and formed of cement concrete (Class 15/19) bottom and sides not less than 150mm thick worked around ends of pipes and having a 75mm thick loose precast concrete cover with at least 75mm bearing all round.

PV.18 STAINLESS STEEL PIPES

Stainless steel water piping up to 50mm diameter is to be of 304 grade stainless steel to B.S.4127. Compression pipe fittings are to be of stainless steel in accordance with BSS 864.

PV.19 GALVANISED MILD STEEL PIPES

Mild steel piping to be in accordance with BSS 1387 galvanised inside and outside of medium class, unless otherwise described, with screwed and socketed joints. The joints made with red lead and hemp to cold water piping and with graphite and hemp to hot water piping and all cut ends properly reamed out to remove burrs.

Fittings to pipes to be galvanised malleable cast iron fittings in accordance with SABS Specification 509.

PV.20 COPPER PIPES

Copper piping to be in accordance with SANS 460 Class 2 for fixing to walls, soffits, etc. and SABS 460 Class 3 for piping buried under ground. Pipes are to be bent in a proper tube bending machine. Compression pipe fittings are to be brass and of the expanded tube and cone type and coupling nuts and rotary sleeve pieces and of approved manufacture. Tenderers to submit specification.

PV.21 UPVC WASTE AND VENT PIPES

u-PVC waste and vent pipes and fittings are to be of unplasticised u-PVC in accordance with SABS 967 and are to be jointed with solvent welded joints.

PV.22 FIXING OF PIPES

Galvanised pipes to be fixed to brickwork or concrete are to be done with approved galvanised malleable iron or u-PVC holder bats fastened with set screws and with spike cut and pinned or built in (3:1) cement mortar, and to roof and other timbers with stout galvanised iron saddle pipe clips screwed on.

Copper or polycop pipes are to be fixed to brickwork or concrete with bronze holder bats fastened with brass set screws and with spike cut and pinned or built in (3:1) cement mortar, and to roof and other timbers with stout copper clips, brass screwed on.

u-PVC Pipes are to be fixed with approved u-PVC pipe clips spaced at not exceeding 1,25m centres to vertical piping and not exceeding 0.75 m centres to horizontal piping.

PV.23 STOP COCKS, BIB COCKS ETC

Unless otherwise described, stop cocks, bib cocks, pillar cocks, etc. are to be brass screw down type of approved manufacture in accordance with SANS 226 and are to be jointed to polycop pipe with either Maksal welded type or "Cobra Conex" or similar approved fittings.

PV.24 TAPS

Unless otherwise described, taps are to be de-zincification resistant (DZR) brass to comply with SANS 226.

PV.25 WATER CLOSETS

Water closets shall be ceramic coated to SANS 497. Cisterns are to have a minimum 9 litre capacity and must be Duranite or hard white u-PVC to comply with SANS 821.

Cisterns must have a 15mm dia inlet float valve complying to SANS 752 with a stilling pipe. The cistern must have a 20mm overflow draining to the outside of the structure with.

The water flow to the cistern shall be controlled by an inline stopcock to be installed below the cistern on the inside of the building structure.

PV.26 SINKS

Sinks to be stainless steel to comply to SANS 242 and with size as specified. Sinks are to be securely fitted complete with coverstrips and sealed between the wall and sink with an approved sealant (white marine silicone or similar approved).

PV.27 BALL VALVES

Ball Valves shall comply with the requirements of SANS 752.

PV.28 SANITARY FITTINGS

All sanitary fittings to be approved by the Employers agent before fixing. The Employers agent will instruct that all sanitary fittings are to be properly pasted and covered with paper until the building is ready for handing over. The Contractor will under no circumstances whatsoever be allowed the use of various fittings and no fittings are to be finally connected up until the whole of the sanitary system is in position when the jointed up will be authorised.

PV.29 DESCRIPTIONS AND PREAMBLES

The Contractor is referred to the previous trade headings for preambles and full descriptions of materials and items not described in this trade.

Descriptions (prices) of connections of new to existing pipes shall be deemed to include searching for the existing pipe and exposing if necessary.

PW. GLAZING

PW.1 GLASS

All clear glass unless otherwise specified is to be of South African Manufacture, "Ordinary Quality" of the various masses and/or thicknesses mentioned, free from bubbles, scratches and other imperfections, and to be cut in panes to suit all glazed openings as required.

All obscured glass to be of type specified and to be free of devitrification, scratches and other imperfections, and must be left perfectly clean on completion. All glass broken before handing over the premises for occupation is to be replaced and surfaces made good by the Contractor.

Polished plate glass for glazing shall be transparent polished plate glass or approved Float Glass of "GG" quality and of thickness 3mm up to 0.65m² and 4mm up to 1.5m². Glass for mirrors shall be of polished plate glass as described but specially selected.

Obscure glass for glazing shall be an approved figured rolled glass having a nominal thickness of not less than 3mm for glass panes up to a surface area of 0.65m² and not less than 4mm for panes over 0.65m² up to 1.5m². All bathroom or toilet windows to be fitted with obscure glazing.

Glazing sizes and thicknesses for sheet glass and plate/float glass shall be in accordance with Tables and 1 and 2 of SANS 0137 - 1978.

PW.2 GLAZING

Glazing generally shall be executed in accordance with SANS 0137 - 1978 Code of Practice for the Glazing and Fixing of Glass in Buildings" in particular the following aspects.

Putty for glazing shall comply with the requirements of SANS 680, of Type 1 for glazing in wood and of Type 2 for glazing in steel windows, doors, etc. Putty used for glazing in varnished, oiled or other natural colour finished wood shall be tinted to match the colour of the wood.

Glass fixed with glazing beads in unpainted hardwood doors shall be bedded on silicone, strips of rubber, expanded neoprene, expanded polyethylene or ribbon velvet, turned over on both sides of glass in the rebates to form a soft packing between the glass and the woodwork. In all cases the glass shall be well bedded in silicone or back putty in the rebates. Rebates for glass, other than in unpainted hardwood doors, or nonferrous metals shall be primed before glazing.

The glazing contractor shall where required use an approved mastic type glazing compound, for glazing all aluminium windows. The glazing compound shall have a composition particularly adapted for use with aluminium windows and the methacrylate lacquer with which the windows are coated shall not require painting to protect it from drying out or deterioration.

Glass panes exceeding 0,4m² in surface area and fixed with putty only in wood doors, sashes and the like shall be secured in addition with glazing sprigs, and in steel windows and doors with glazing pegs or clips inserted in holes in the steel framing.

PW.3 SAFETY GLAZING

Where any pane of glass is to be installed-

- (i) between the finished floor level and a level of 800mm above such floor; or
- (ii) anywhere in a door below a height of 1,8m above the floor level; or
- (iii) within 1m of either side of a doorway; or

- (iv) in any wall or balustrade forming part of a stairway or ramp below a height of 1,8m above the treads or surface of such stairway or ramp, including the surface of any landing forming part of such stairway or ramp;
- (v) in any shop window having an area greater than 1,0m² such pane shall be made of safety glass.

The work in connection with safety and security glazing shall in addition be performed in accordance with the instructions of the Manufacturer of the safety glass.

PW.4 PREAMBLES

Prices for glazing of laminated safety glasses are to include for glazing strictly in accordance with the manufacturer's instructions with non-hardening glazing compounds of approved tints and suitable for use with the fabric of the sashes, together with all necessary neoprene setting, spacing and location blocks. The glazing compound must carry the manufacturer's warranty that it is compatible with laminated glass and that it contains no deleterious ingredient which may chemically affect or physically dissolve the vinyl butyryl interlayer of the laminated glass.

Glass panes shall have adequate glazing clearance between the edges of the glass and the rebates. Putty shall be carefully trimmed and cleaned off with front putty worked to within 2mm of the sightlines.

All soft or oily putty is to be replaced and all putty is to form a surface crust and have a smooth finish before any paints are applied.

PX. PAINTING

All paints, oil stains, varnish, linseed oil, knotting driers, distempers, etc. are to be in accordance with the latest SANS Specification where applicable or of the quality, type and brand and manufacture specified and/or approved by the Employers agent. All materials for paintwork must be brought on to the site in unopened tins or drums. Unless specifically instructed by the directions or sanctioned by the Employers agent, no paints are to be thinned or otherwise adulterated, but are to be used as supplied by manufacturers and direct from tins. Mixing of different coloured paints to obtain special tints may only be done with the sanction of the Employers agent.

Where special brands of paints are to be used, the manufacturer's "priming" and all subsequent coats of paint suitable for that particular brand are to be employed, all in accordance with manufacturer's instructions. Wherever possible all paints used in this contract are to be manufactured by a member of the SA Paint Manufacturers Association.

Test Standards are to be set up under the supervision of the Manufacturer's Representative and such standard of finish maintained throughout the relative work to the full satisfaction of the Employers agent. Where for any reason the Test Standard required cannot be achieved, information concerning this should be sought from the Manufacturer's Representative for requisite action.

All colours and tints used throughout the work are to be selected and/or approved by the Employers agent before painting of any description is commenced. Each coat of paint is to be a distinctive colour.

PX.1 PREPARATORY WORK

PX.1.1 General

All plaster, metal, wood or other surfaces which are to receive finishes of paint, lacquer, stain, oil distemper, lime wash or paintwork of any other description are to be carefully cleaned, dusted off and inspected by the Contractor, or his principal painter, who must satisfy himself that such surfaces are in a fit state to take the paintwork specified, before he allows any of his painters to commence the work. The Contractor, will be held solely responsible for all defective work condemned as a result of the Painter's failure to insist on receiving from the other trades, surfaces in the proper condition to allow first class finishes of the various kinds specified being applied to them.

Areas not being painted (face brick, floors etc.) shall be covered and protected against spotting before any painting is carried out.

Prior to commencing paintwork of any description and before each coat is applied, surfaces are to be thoroughly dry and are to be rubbed down.

PX.1.2 On plaster, bagging, etc.

All plaster work, etc. to be painted must be thoroughly brushed down to remove all traces of efflorescence, filled where necessary with suitable stopping or patching plaster and left perfectly dry and smooth

PX.1.3 On metal

All metal to be painted shall be scraped and cleaned of all dust, rust and other surface incrustations shall be removed and surfaces left smooth. Also all oil and grease shall be removed and perfectly clean surface obtained.

PX.1.4 Exterior timber (New Timber)

Woodwork being painted shall be well brushed down and shaded in the direction of the grain.

Woodwork being oiled or stained shall have all plaster stains, pencil marks and other surface discolorations/blemishes carefully removed, bestopped with tinted stopping and well rubbed down.

PX2 MATERIALS AND APPLICATION

PX.2.1 Paints

All materials for paintwork brought on site shall comply with the relevant SANS specifications.

Materials for paintwork for which no SANS Specification have been published must first be approved by the Representative/Agent.

All materials for paintwork must be brought on to the site in unopened containers and no adulteration will be allowed. Primers and undercoats for paintwork shall be as supplied by the Manufacturer of the paint being used for the finishing coat.

Paint etc. shall be suitable for application on the surfaces on which they are to be applied and those used externally shall be of exterior quality.

If necessary, paint etc. shall be strained free from skins and similar impurities immediately before application.

The various primers, undercoats and paints shall comply with the requirements of the specifications quoted hereunder and shall be of the type or grade stated, viz:

(a) Primers;

(i) For wood:

SANS Specification 678. Type I shall be used on exterior woodwork and Type II on interior woodwork.

(ii) For metal:

DIP OR SPRAY APPLICATION (RED OXIDE ZINC CHROMATE):

For steel windows, doors, door frames and other articles normally dip or spray primed in the Manufacturer's works: SABS Specification 909.

BRUSH APPLICATION (ZINC PHOSPHATE):

For all metal surfaces primed on site and then painted: SABS Specification 1319.

(iii) For plaster:

Alkali resistant primer shall be as described in SANS Specification 681 [see (b) "Undercoats" hereunder].

(b) Undercoats:

For all surfaces under HIGH GLOSS, OIL GLOSS, FLAT and EGGSHELL finishing paints; SANS Specification 681, Type II.

(c) Finishing paints:

(i) High gloss enamel paint: SANS Specification 630. (ii) Oil gloss: SABS Specification 631.

(ii) Flat and eggshell: SANS Specification 515.

(iii) Emulsion paint (interior): SABS Specification 633, Grade I.

(iv) Emulsion paint (exterior): SANS Specification 1586 Grade 2 (Plascon Micatex or Dulux Weatherguard or similar approved (see "e" below).

(v) Aluminium paint: SANS Specification 682, Grade II.

(vi) Roof paint: Alkaline type SANS Specification 683, Type B.

(d) Emulsion base wall coating:

Finish on walls shall be an Emulsion Base Coating complying with SANS Specification 1586 grade 2 and of colour and texture to the approval of the Representative/Agent.

The finish shall be applied in three coats and the texture of the base and second coats shall be compatible with the texture of the finishing coat.

The material (all three coats) shall be applied by an applicator approved by the Manufacturer of the coating being used (or his agent) and shall be mixed and applied in strict accordance with the Manufacturer's instructions.

Before proceeding with the application of the coating the Contractor shall furnish the Representative Agent with a certificate from the South African Bureau of Standards stating that the material being used complies with SANS Specification 1586 and he shall also furnish proof that the applicator has been approved by the Manufacturer of the coating being used.

The Contractor is to arrange for a trial panel of not less than 1 m² to be done and approved by the Representative/Agent before proceeding with the application.

Varnish/sealer (To doors/door frames/windows):

(i) SANS 887, Type I (not for use externally).

(ii) Exterior varnish/clear sealer:

Exterior quality varnish/sealer shall be suede finish and clear when dry.

The material shall be a water based acrylic product, non-toxic, non-inflammable and offer protection against ultra-violet rays. In addition, it shall also contain algicides, fungicides and bactericides and be resistant to damage by termites and wood boring insects whilst retaining great flexibility.

Once cured, the material shall be highly resistant to staining by petrol, diesel fuel, oil, hot fat, wine, carbon black grease, chemicals and other substances; it shall not deteriorate, dissolve or wash out.

(g) Rust neutralising paint:

Rust neutralising paint shall be of water based type containing suitable chemicals for converting rust to iron phosphate .

The paint shall be capable of being used successfully as a finishing coat or as a primer under epoxy paints, vinyl, chlorinated rubbers, laquers and coal tars. It shall be suitable for painting on steelwork prior to welding and shall not cause the failure of such welds due to flaking and migration of the paint into the weld area . In addition, the paint shall be suitable for application on wet surfaces without permitting rust creep and/or under rusting of the metal surface.

Preparation of rusted metal surfaces shall be limited to no more than wire brushing of such surfaces using power tools.

NB: This material shall be covered by a guarantee, underwritten by a recognised insurance company, as Public Liability Insurance to an amount of R500 000 should the product fail due to material or manufacturing defects.

PX.2.2 On plaster, bagging, etc.

Unless otherwise described, paint is to be carried into all recesses, reveals, sills, soffits, Etc. and around all breaks, projections, etc. occurring within the height specified to be painted.

PX.2.3 Line wash

To be a prepared lime wash powder of South African manufacture mixed with water in accordance with the manufacturer's instructions, or a pre-mixed liquid brand approved by the Employers agent.

PX.2.4 Colour Wash

Is to be as last and tinted with yellow ochre to bring to a light cream colour.

PX.2.5 Distemper

Prepare as previously prescribed and twice distemper where specified with powder distemper in accordance with SABS 322 and mixed in accordance with the manufacturer's instructions.

PX.2.6 Emulsion paints, internally

Prepare as previously described and one preparatory coat of an approved filler/sealer mixed with the finishing paint in the proportion recommended by the manufacturer and two coats emulsion paint for interior use in accordance with SANS 633 (Grade 1) applied in strict accordance with the manufacturer's instructions.

PX.2.7 Emulsion paints, externally

Prepare as previously described and three coats emulsion paint for exterior use in accordance with SANS 634 (Grade 1) (synthetic polymer base type) applied in strict accordance with the manufacturer's instructions.

PX.2.8 Gloss, flat or eggshell oil paints and high gloss enamel paints

Prepare as previously described, seal with one coat of alkali resisting primer and two undercoats in accordance with SANS 681 (Type 2) and one finishing coat of approved gloss, flat or eggshell oil paint or high gloss enamel paint in accordance with the relative SABS specification, applied in strict accordance with the manufacturer's instructions.

PX.2.9 On metalwork

Prepare as previously described, prime with zinc chromate primer in accordance with SABS 679 (Type 1) followed by the number of undercoats and finishing coats later described.

Galvanised iron and aluminium surfaces are to be pre-treated with a wash primer (Metal etc. primer) in accordance with SABS 723 followed by a second primer, and the number of undercoats and finishing coats later described.

Decorative high gloss enamel paint for interior and exterior use is to be in accordance with SANS 630 (Type 1).

PX.2.10 On woodwork

Priming to wood surfaces to be executed with primers in accordance with SANS 678 (Type 1) for exterior work and (Type 3) for interior work, alternatively an approved varnish thinned with turpentine (60%/40%).

For external use the wood surface is to be sanded down in the direction of the grain and painted two coats approved exterior preservative or as specified in accordance with the Manufacturer's instructions.

PX.3 GENERALLY

PX.3.1 Making good

All damaged paint work is to be touched up or redone. All painter spots, stains, etc. are to be removed from the floors, walls, doors, windows, etc. and the whole left perfect.

PX.3.2 Mixing paints

The Contractor will not be permitted under any circumstances to prepare or mix paints or similar materials on floors where the finishings are laid complete, and such rooms must not be used as workshops for any trades whatsoever. This clause will be strictly enforced and any damage done in neglect of this precaution will have to be borne by the Contractor to the extent of completely relaying the floor finish where damaged in any rooms or room.

Merely cleaning up will not be acceptable.

PY. LANDSCAPING AND GRASSING

PY.1 FERTILISER

The fertiliser used shall be one or more of the following types as determined by actual tests of the soil in which the grass or plants are to be planted:

- a) Lime
- b) Superphosphate
- c) Limestone Ammonium Nitrate

PY.2 FERTILISER

Grass cuttings (springs) shall be of kikuyu or an approved type of local kweek.

PY.3 FERTILISER

The grass seed shall comply with the requirements of the Government Seed Act No 20 of 1961.

PY.4 FERTILISER

Topsoil shall consist of fertile, friable soil of loamy character and the areas from which it has been removed shall have been covered by natural vegetation normal to the region.

Topsoil shall not be taken from swampy area unless authorised by the Employers agent. Topsoil shall be obtained wherever suitable material exists, either in the road reserve from areas where cuts and fills are to be constructed, or at borrow pits from areas to be cleared.

Suitable topsoil shall be stockpiled when clearing is done for construction of the formation or borrow pits and during construction of the formation.

The Employers agent shall indicate where topsoil is to be removed. If the Contractor fails to stockpile the topsoil indicated, he shall obtain suitable topsoil from other sources when such topsoil is required, in which case no payment for overhaul or stockpiling shall be made.

In the event that not enough suitable topsoil is obtainable from the above mentioned areas, the Contractor shall obtain topsoil from other sources located by the Employers agent.

PZ. GENERAL RECTIFICATION WORK

PZ.1 PREAMBLE

This project specification covers rectification of low cost housing units up to 50m² in size.

For larger units

PZ.2 DEMOLISH AND RE-CONSTRUCT UNIT

In a case where an existing structure must be demolished, contractor must first isolate and protect all services, before demolishing the superstructure (water, electricity, sewer lines, erf beacons and sewer manholes). The Contractor needs to price for the disconnection and relocation of the electrical ready-board from the existing unit to the temporary shelter as an interim and thereafter to reinstate in the new unit once complete (unless specified otherwise).

Reconnection to the existing sewer house connection and the reconnect to the water meter is the responsibility of the main contractor.

PZ.3 WARRANTS FOR DEMOLISHING OF AN EXISTING HOUSE

A housing unit will be demolished when:

- (a) There are serious structural defects that have occurred, or
- (b) a unit is 18sqm or smaller in size, including temporary relocation and furniture movement and storage. The contractor to provide a method statement to the Principle Agent before construction commences.

PZ.4 MAINTENANCE OF EXISTING SERVICES

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

Materials described as "removed" shall be removed from the erf immediately to an approved Municipal waste. No stockpiling will be allowed on site.

PZ.5 SETTING OUT

Setting out of the new units must be completed before the Principal agent is called for verification. At this stage the Contractor has to confirm the position of existing services and the depth thereof to ensure that the new unit is placed on the appropriate position on site to accommodate all existing services. Once approved the Contractor may commence with the excavation of the foundations as per the specifications.

PZ.6 CONSTRUCTION OF NEW HOUSING UNITS

A new housing unit will comply with the size and details as per the drawings & specifications. The construction must include the reconnection of sewer and water connections. An allowance has been made in the Bill of Quantities for this.

Specification PA to PY will apply to all new housing units to be constructed.

PZ.7 RECTIFICATION OF AN EXISTING UNIT

Where a unit is to be rectified and not demolished the Contractor first must confirm with the Principal Agent and the Beneficiary on what work will be done on the unit in question.

This will then be signed off by all parties before work can commence. No more work will be allowed than the allowable quantum as agreed with the Client before commencing.

PZ.8 PROVISION OF TEMPORARY HOUSING

The contractor is to provide a basic housing structure for the identified beneficiary group, provided with minimum a 30m² waterproof top structure with a water and sewer connection.

PZ.9 SITE PREPARATION

Refer to Specification PE.

PZ.10 MATERIALS

All materials and construction methods used, to be in accordance with NHBRC & SANS standards.

PZ.11 SAMPLES OF ALL MATERIALS

The Contractor is to provide samples & data sheets of the following materials, before commencement of any construction to the Employers agent for approval:

- 1) Door frames,
- 2) Window frames,
- 3) Doors,
- 4) Door locks,
- 5) Hinges,
- 6) bathroom kits,
- 7) Paint & varnishes,
- 8) Cupboards and sink,
- 9) Sealants (silicone, carbolinium, etc.),
- 10) Ceiling,
- 11) Under-tile membrane,
- 12) Ceiling insulation or similar approved, and
- 13) Samples & laboratory results of sand and stone to be used.

PZ.12 FOUNDATIONS

Refer to Specification PL.

PZ.13 REINFORCING

Refer to Specification PG.

PZ.14 BLOCK WORK

Refer to Specification PK.

Any work done inside a house with furniture must be done with the uttermost care.

Internal walls to be fixed securely to external walls with suitable bonding straps every 2 courses. All tie-in of internal blockwork with external block work must be in accordance with the NHBRC manuals/standards.

PZ.15 EXTERNAL BEAM FILLING

Refer to Specification PL.18.

PZ.16 STEPS (IF REQUIRED)

All Steps to be 1.0m wide and constructed with M6 blocks, existing granular fill to be compacted inside the block and each riser to have a 50mm concrete wood floated step constructed to be flush with the top of the block. The concrete footing to be 100 deep x 400mm wide along the perimeter of the steps for all steps up to 3 blocks high. The concrete footing to be 150 deep x 400mm wide along the perimeter of the steps for all steps greater than 3 blocks high.

PZ.17 MORTAR

Refer to Specification PJ.5.

PZ.18 BLOCKFORCE

Refer to Specification PL.10.

PZ.19 NEW EXTERNAL DOOR FRAMES AND DOORS

Refer to Specification PO.

PZ.20 NEW INTERNAL MERANTI DOOR FRAMES AND DOOR

Refer to Specification PO.

Fit frame into existing M4 block work where no frames exists. Block force to be used where required.

PZ.21 NEW MERANTI WINDOWS FRAME

Refer to Specification PO.

PZ.22 PREPARATION OF EXIST. WOODEN WINDOW FRAME

Prepare existing window frame by sanding down, Apply x2 coats of new approved type matt varnish to suite existing colour.

PZ.23 CONCRETE WORKS

Refer to Specification PI.

It is the contractor's responsibility to make sure that test cubes are taken on site for every batch of concrete. Concrete can only be placed once the excavations have been inspected and approved by the Employer's agent's Representative/Agent. No concrete work can be carried out without the Employer's agent's Representative/Agent being present.

No concrete is allowed to be placed after 16h00 on Saturdays or Sundays.

Aprons:

Only 15Mpa ready mixed concrete shall be used for construction of aprons. Casting of concrete shall be carried out in one continuous operation.

Aprons to be cast in panels not exceeding 3.0m (for slab thicknesses up to 75mm) unless specified otherwise. Filling to consist of 100mm compacted selected fill under concrete to 90% Mod AASHTO density.

Finish to concrete to be wood float with broom finish as per detail PK.2. Apron to slope away from building with minimum 1% fall.

PZ.24 REPAIR/REPLACEMENT OF ROOF STRUCTURE

Replacing timber trusses/purlins:

The Employer's Representative shall inspect the timber trusses for defects and establish which timber trusses to be replaced.

The tolerance for repair/replacement for timber trusses from a structural point of view is as follows:

- 1) Where maximum slenderness ratio < 180 for compression members that carry loads due to live and dead loads. For members that resist loads caused by winds the slenderness ratio shall be < 250 ,
- 2) Plumb of trusses shall not exceed 100mm or total span/20 whichever is the least. Other reasons for replacement will include but not be limited to the following:
 - 1) Deflections exceeding acceptable limits,
 - 2) Inadequacy in design e.g. structural strength, instability, bad conditions,
 - 3) Decay of large portions of truss members (defective member),
 - 4) Worn or screw holes in purlins,
 - 5) Inappropriate spacing of purlins,
 - 6) Large portions of truss members having numerous defects (cracked timber, corroded connector nail plates etc. that will be uneconomical to repair.

Repair of timber trusses/purlins:

Repair work shall include the following:

Strengthening of truss members, connections, splices and anchorage at supports,

Strengthening of truss members due to unforeseen loads, rotting and cutting for services.

Repair of truss members where large knots and wanes occur.

Securing of purlins to rafters at each intersection,

Staggering of purlin splices,

Replacing metal plate connectors in cases of corrosion, unsymmetrically fitted connector plates, connector plates with teeth flattened or where a connector

plate has less than 65mm "bite" on a truss member.

Replacement of decayed timber, particularly at rafter ends at roof overhangs and at roofing screws.

Timber subject to insect attack and fungal decay should be treated with an appropriate preservative,

Replacing cracked timber members

All exposed roof timbers, incl. the last two battens, shall be painted with two coats carbolineum, before erecting. Roof tie wires must be placed min 400mm into block work, with one wire visible on the in/outside of the wall for inspections. A continuous 38x50mm SAP to be used for a wall plate, in order to do beam filling with 90mm blocks. The undertile membrane must be fitted as per plan and wrapped around the end battens on gable ends. The first two rows of roof tiles all around the building must be nailed down with alloy type threaded nails or hurricane clips.

PZ.25 CEILING

Refer to Specification PP5

PZ.26 REPAIR TO PLASTERING

PZ.27 REPAIR TO EXISTING PLASTERED WALLS

The procedure for the repair to existing plastered walls is as follows:

PZ.27.1 Slight cracking

Very slight cracking, cracks up to 10mm wide are too repaired as follows:

1) Rake and clean out crack and fill with a suitable flexible filler, prime, plaster and paint exterior walls, or masonry paint over face brick (Beton seal),

PZ.27.2 Moderate cracking

Moderate cracks between 2,0mm and 4,0mm wide are too repaired as follows:

- 1) Remove plaster over an area of some 250mm to 300mm wide either side of crack,
- 2) Rack and clean out crack and inject with suitable epoxy filler,
- 3) Fix galvanised chicken wire to existing brick face over the stripped area,
- 4) Prime, plaster and paint exterior walls, or masonry paint over face brick (beton seal).

PZ.27.3 Severe cracking

- 1) Remove plaster over an area of some 600mm to 600mm wide either side of crack,
- 2) Rake and clean out crack of all friable plaster,
- 3) Use angle grinder and cut slot in the brick course to accept a 3mm galvanised steel wire boped at each end. The slot is to be cut a minimum depth of 40mm into the brickwork, extending a minimum of 500mm beyond the crack either side, repeated at an interval of 150mm along the length of the crack.
- 4) Secure boped ends of the galvanised wire into the sound brickwork by means of wall plugs or Hilti nail over a minimum depth of 50mm into the sound brickwork,
- 5) Inject the crack with suitable epoxy filler and fill cut slot containing a galvanised rod with epoxy,
- 6) Prime, plaster and paint exterior walls or masonry paint over face brick (beton seal).

Construction joints must be created on floor level. Construction joint must be provided on houses, between the front door and window, situated next to the door at soffit level (Oust below the Intel). Continuous lintels must be provided over the front door and window opening, situated next to the door.

All construction joints must be provided internally between internal and external walls while plaster is still workable.

PZ.28 PLUMBING

Taps over sinks and baths

Supply and fit the following to the new system (refer to drawing): PVC Wall mounted basin

Brass bib tap fixed to above sink and connected to water supply with 15mm galvanised stub through the 140mm external wall connected to the 15mm polycop water supply.

External brass tap with standard concrete gulley connected to sewer pipe

White porcelain toilet pan. Plastic cistern connected to water supply and fitted with a cut-off inline valve. Taps over sinks and baths must be placed off-centre, to allow for future hot water taps. All polycop pipes must be connected underground with brass fittings.

Drainage

Refer to Specification PV.11 for rodding eyes. All rodding eyes to be placed in concrete level with the finish ground levels surrounding.

Refer to Specification PV.10 for the installation of drainage pipes. Refer to Specification PV.12 & PV.13 for the installation of gullies.
No underground sewer pipe to be above the apron. Stub stack to be followed by 2x45 degree bends underground. Vent pipe to be fitted to the wall with 2 holder-bat brackets.
Vent pipe not to proceed around the roof tiles.
Drainage Inspectors need to be informed two working days in advance for inspections of drainage prior to backfilling of trenches.

Sewer Erf Connection

The procedure for the connection/re-connection of sewer lines is as follows:

1. Fit sewer connection from house to main sewer reticulation network.
2. Connect to existing 160mm pipe.
3. All junctions, bends and rodding eyes to be provided as per the drawings and specifications provided. Refer to Specification PV.6 for excavation & bedding details of drainage pipes.

House connection points at the existing external toilets must be opened to ensure that sufficient fall can be maintained at all times. The connection point level is to be confirmed with the Employers agent's Representative/Agent before the final floor level is determined during the preparations for the raft foundations.

Water Erf Connection

Fit water connection from house supply to main water reticulation network. Re-connect to existing water meter.

Fill material to trenches to consist of fine material and no stones, rocks or boulders are allowed. To be excavated in all materials.

Water Meter

The water meter is already installed on each erf. If an erf is not fitted with a meter the responsibility is with the Contractor to inform the Principal Agent immediately in writing before commencing with the water connection.

PZ.29 FINISHES

Refer to specification PX for painting.

PZ30 REPAINTING

PZ.30.1 Exterior timber (New Timber)

Existing woodwork shall, if the paint film is firm and sound, be washed down, have all cracks, crevices and holes scraped out, primed, made good with hard stopping, faced up and rubbed down to an even surface ready to receive the new paint. If the old paint film has blistered or broken down, the old paint must be completely removed back to the bare surface by the use of a blow lamp or paint remover and the woodwork prepared as above.

Care must be taken when burning off old paint not to "char" or otherwise damage the woodwork. All paint removers used must be free from soda or other caustic substances.

PZ30.2 On metalwork:

All metal surfaces being painted, except for structural steelwork, shall be cleaned of all rust, scale and dirt, removed by scraping or with steel wire brushes. All oil and grease shall also be removed and a perfectly clean surface obtained. If necessary, the surface shall be degreased, immediately before application of the priming coat, by the use of a suitable solvent. Any salt deposits on the metal surfaces, as may occur in industrial and marine atmospheres, shall be removed by means of a suitable detergent and the surfaces thoroughly rinsed and allowed to dry. New galvanised metal surfaces, which are to be painted, shall be cleaned down as above and given 1 coat of self-etching wash primer complying with the requirements of SANS Specification 1319.

Protective coatings on new galvanised metal surfaces, applied by the Manufacturer to prevent storage stain and white rust, shall be completely removed by the use of a suitable cleaning agent and the surfaces thoroughly rinsed and allowed to dry before the surfaces are primed.

Existing painted metal surfaces being redecorated shall be thoroughly rubbed and cleaned down before repainting, but if the paint film has blistered or broken down, the paint shall be completely removed down to the bare metal.

After removing rust from metalwork those portions so affected shall be treated with an approved rust inhibitor or rust neutralising paint.

PZ30.3 On plaster:

All plastered walls, ceilings and such like surfaces being painted shall be filled, where necessary, with suitable stopping or patching plaster and the whole rubbed down ready to receive the finishing's.

Existing plastered surfaces previously painted and being redecorated shall be washed down, filled as above, where necessary, spot primed and rubbed down ready to receive the new paint. Apply a bonding agent before applying the first coat.

Existing plastered surfaces previously distempered and being redecorated shall have the old distemper completely removed by wetting and scraping the surfaces, filled as above, where necessary, and rubbed down ready to receive the new finish. Apply a bonding agent before applying the first coat. Existing plastered surfaces previously lime washed and being redecorated shall be wire brushed to remove loose, flaking or powdered lime wash, filled as above where necessary, and left ready for new lime wash. If a finish other than lime wash is to be applied, the old lime wash must be completely removed, the surfaces washed down, filled, where necessary, and left in a fit state to receive the new finish. Apply a bonding agent before applying the first coat.

Paint

Paint to all walls shall be one coat approved plaster primer and two top coats. All imperfections, holes, etc. shall be filled and sanded down with approved crack filler and repainted with plaster primer before the application of the final coats.

Plascon Micatex or Dulux Weatherguard or similar approved paint shall be used as two top coats on external walls. The Contractor shall first submit material data sheets for approval by the Employers agent before other paint that that specified above may be used.

PZ.30.4 On ceilings boards

Ceiling boards, including cover strips and cornices, being painted shall be filled where necessary with suitable stopping. All nail heads in ceilings, cover strips and cornices being painted shall be primed with flat paint.

Existing ceilings being redecorated shall be prepared for new finish as described in Clause PU.1.

PZ.31 NUMBERING OF HOUSES

Each unit to be correctly numbered as per the General Plan erf numbers.

Number to be black and constructed with a suitable waterproof product. Constructed with a stencil not larger than 200mm. To be placed either left or right of the front door.

PZ.32 BATH AND KITCHEN CUPBOARD

Baths and kitchen cupboards to be cut into plastering during installation and bedded properly to ensure the stiffness of the bath and kitchen cupboard. On completion, the edges of the bath must be sealed with white marine silicone where it meets plastering. All front faces of the baths, where built in, must be plastered and painted.

SPRINKLER SPECIFICATIONS

1. SCOPE OF WORK

1.1. The work consists of supply, installation, commissioning and testing irrigation systems for the Weston Sports Field

1.2. The Irrigation Designs are based on a Flow Rate of 250l/min at a pressure of 5 Bar. It is the responsibility of the Irrigation Contractor to confirm that the Flow Rate is available on the site, prior to commencement of the installation. Should this not be the case, the Irrigation Contractor is to inform the Project Manager as soon as this is established.

2. PERSONNEL

2.1. All workmanship shall be of the highest standards and shall comply with the specifications of the manufacturer of the equipment used.

2.2. Only the highest grade of materials as specified shall be installed. It is the Irrigation Contractor's responsibility to ensure that materials conform at all times to the specifications and design.

2.3. Any deviation from the Specified material in the Bill of Quantities shall require prior written permission from the Municipal Project Manager. Changes without permission may void the design guarantee.

3. EXCAVATION AND REINSTATEMENT

3.1. The Contractor shall be responsible for the installation of all underground work from the existing water main pipeline to the irrigation main line and from here to the various sprinklers or parts of the irrigation system. This work includes removal of grass, excavation of the pipe trenches to the required lines and levels, installation of pipes fittings and all other accessories required by the installation, reinstatement of the excavations with backfilling material and reinstatement of grass. All reinstatement shall be strictly to the approval of the Project Manager.

3.2. All piping shall be installed such that they have a minimum soil cover of 400mm below finished grade.

3.3. If rock or other adverse conditions preclude the installation at the prescribed depth, the Municipal Project Managers written permission must be obtained for installation at a shallower depth and adequate protection shall be provided to piping at the contractors cost.

3.4. Trenches shall be back-filled and compacted to prevent subsidence and backfill surrounding the pipe shall be free of rock.

4 RUBBLE REMOVAL

4.1. At the site the Contractor shall remove excess material, spoil or unsuitable material (no plastic or wood) from the site to the Hankey Waste Site.

5. PIPING AND PIPE LAYING

5.1. All piping shall be installed according to manufacturer's specification.

5.2. All piping shall not at any time under working conditions be subjected to pressures in excess of the pressure rating.

5.3. Only piping and fittings made from a material suitable to site soil conditions shall be used (PH etc.).

5.4. A pressure-reducing valve shall be installed at each water connection point to reduce the pressure to a maximum pressure to be determined by the Irrigation Designer. The valve shall be a hydrodynamic pressure reducing valve that shall allow a constant setting of downstream pressure between 3Bar and 7Bar, regardless of upstream pressure and under closed valve conditions. The Pressure Reducing Valve shall be capable of operating at upstream pressures of up to 15 Bar. A diaphragm valve with pressure reducing pilot shall ONLY be permitted if a brass pilot is fitted, which can operate at the prescribed pressures.

5.5. The Mainline piping shall be a High Density Polythene Pipe to SABS ISO 4427 and shall bear the SABS mark. The piping shall be coupled together with SAB compression fittings as specified in the bill of quantities. The Compression Fittings shall be true PN16 fittings and shall have both SABS and KIWA Certification and shall bear the KIWA mark on the fittings.

5.6. The Sprayline piping (15mm – 25mm diameter) shall be Low Density Polythene Pipe of a quality approved by the Irrigation Designer. The piping shall be class 6 and shall be specifically manufactured to accommodate the Full Flow Fittings specified in the Bill of Quantities. Sprayline piping (32mm diameter and larger) shall be a High Density Polythene Pipe PE100PN6 to SABS ISO 4427, and shall bear the SABS mark.

5.7. Pipe shall be laid in trenches true to line and level as shown on the drawings.

5.8. Trench width shall be kept as narrow as possible; generally not wider than pipe diameter plus 600mm.

5.9. The bedding and backfilling shall be done in layers not thicker than 150mm each, carefully compacted to the same density as the surrounding ground.

5.10. All pipes shall be laid and jointed strictly in accordance with the pipe manufacturer's instructions. Couplings, connectors, etc. shall be of the same pressure rating as the pipe material and secured against bursting pressures or thrusts. All bends and fittings, which can generate thrust, shall be laid either with couplings, which transfer thrusts to the pipe, or with appropriately sized thrust blocks.

5.11. No substitution of pipes with a lower pressure rating or size shall be accepted. Pipes of a higher pressure rating and/or larger size may be accepted, subject to approval by the Irrigation Designer, and at the rates tendered for the relevant pipe in the tender document.

5.12. All pipelines shall be thoroughly flushed prior to installation of Valves and Sprinklers.

6. SPRINKLERS

6.1. Rainbird Falcon Model 6504 gear driven pop-up spring return sprinkler units shall be installed (or a unit similar in function and quality).

6.2. It shall have Rain Curtain Nozzles with larger water droplets for greater wind resistance, effective close-in watering and even distribution across the entire radius.

6.3. It shall have 12 interchangeable nozzles: 6 Rain Curtain Nozzles for superior close-in watering. 3 Low Angle Nozzles for reduced radius of throw and superior wind resistance, and 3 Radius + Nozzles for extra distance. The angle of trajectory shall be 25 degrees for the Rain Curtain and Radius + Nozzles and 10 degrees for the Low Angle Nozzles. The sprinkler shall come with a Stainless steel adjusting screw capable of reducing the radius by up to 25%.

6.4. It shall have a slip clutch mechanism for quick adjustment on installation.

6.5. It shall have a heavy duty cover with a heavy duty retraction spring to assure positive pop-down.

6.6. It shall have a water lubricated durable gear mechanism

6.7. It shall have a pressure activated, multi-function wiper seal that positively seals against the pop-up stem to keep debris out of the rotor and to clean debris from the pop-up stem as it retracts.

6.8. The sprinklers shall be capable of emitting between 16.8l/min and 70.5l/min through a radius of from 12.7m to 19.8m (unadjusted).

6.9. All pop-up sprinklers shall be installed on a piece 25mm triple swing joint riser pipe, which will be fitted on the sprayline to the pop-up. The pop-up sprinklers shall be installed to grade.

7. COMMISSIONING

7.1. The system shall be pressurized to the design of its components. If required by the Irrigation Designer, the Mainline shall be pressurized to its nominal pressure for a period of 24 hours. Glycerin-filled pressure gauges shall be installed, and the resultant pressure drop shall be monitored over this period.

7.2. All pipes, fittings and sprinklers shall be leak free.

7.3. All sprinklers shall be set to cover the arc and radius as per the design and to the satisfaction of the Municipal Project Manager.

7.4. Upon completion of the installation, the Irrigation Contractor shall arrange for a handover meeting with the Municipal Project Manager. This will involve a walk-through of the site and the compilation of a snag list which must be completed within one week of the walk-through meeting.

7.5. Only upon completion of the Snag List and handover of As-built Drawings and Operation Manuals shall the system be deemed as Handed Over.

8. GUARANTEE

The terms and conditions of the guarantee for the completed systems shall be clearly stated and shall not be for less than 12 months from the date of hand over.

9. AS BUILT DRAWING

9.1. An as-built drawing to scale shall be provided upon handing over the system.

9.2. The drawing must clearly indicate:

9.3. The position of sprinklers and turf valves, their model and make.

9.4. The groups of sprinklers which operate simultaneously.

9.5. The position, sizes and classes of piping.

9.6. The position and class of the mainline clearly distinguishable from the sprayline piping

9.7. The position and size of all ball valve

SPEC COMMITTEE MEETING

[illegible]

GENERAL NOTES

- (1.) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2.) DO NOT SCALE FROM THE DRAWINGS.
- (3.) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

MUNICIPAL NOTES :

ERF NO.	2055
SITE AREA	1142.78 m²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARCATON BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	

CLIENT:



PRINCIPAL AGENT AND ARCHITECTS



RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax:041 365-3611
SACAP REGISTRATION NO. : 4535

APPROVED BY CLIENT:

KOUGA MUNICIPALITY REPRESENTATIVE

DATE _____

PROJECT :

HANKEY - MINI FRESH
PRODUCE MARKET
ERF 2055

REF NO: 2055

DRAWING TITLE: SITE PLAN

DRAWN BY	SM / AM		
CHECKED BY	TRW		
DATE	12 NOVEMBER 2019		
LATEST ISSUE			
SCALE	1:500		
PROJ. NO :	DWG NO.	REV NO.	
HHS	HHS , 01	00	

SITE PLAN

SCALE 1:500

SPEC COMMITTEE MEETING

[illegible]

GENERAL NOTES:

- (1) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2) DO NOT SCALE FROM THE DRAWINGS.
- (3) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

MUNICIPAL NOTES :

ERF NO.	2055
SITE AREA	1142.78 m ²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARCATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	

CLIENT:



PRINCIPAL AGENT AND ARCHITECTS



RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

**RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS**
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax:041 365-3611
SACAP REGISTRATION NO. : 4535

APPROVED BY CLIENT:

KOUGA MUNICIPALITY REPRESENTATIVE

DATE _____

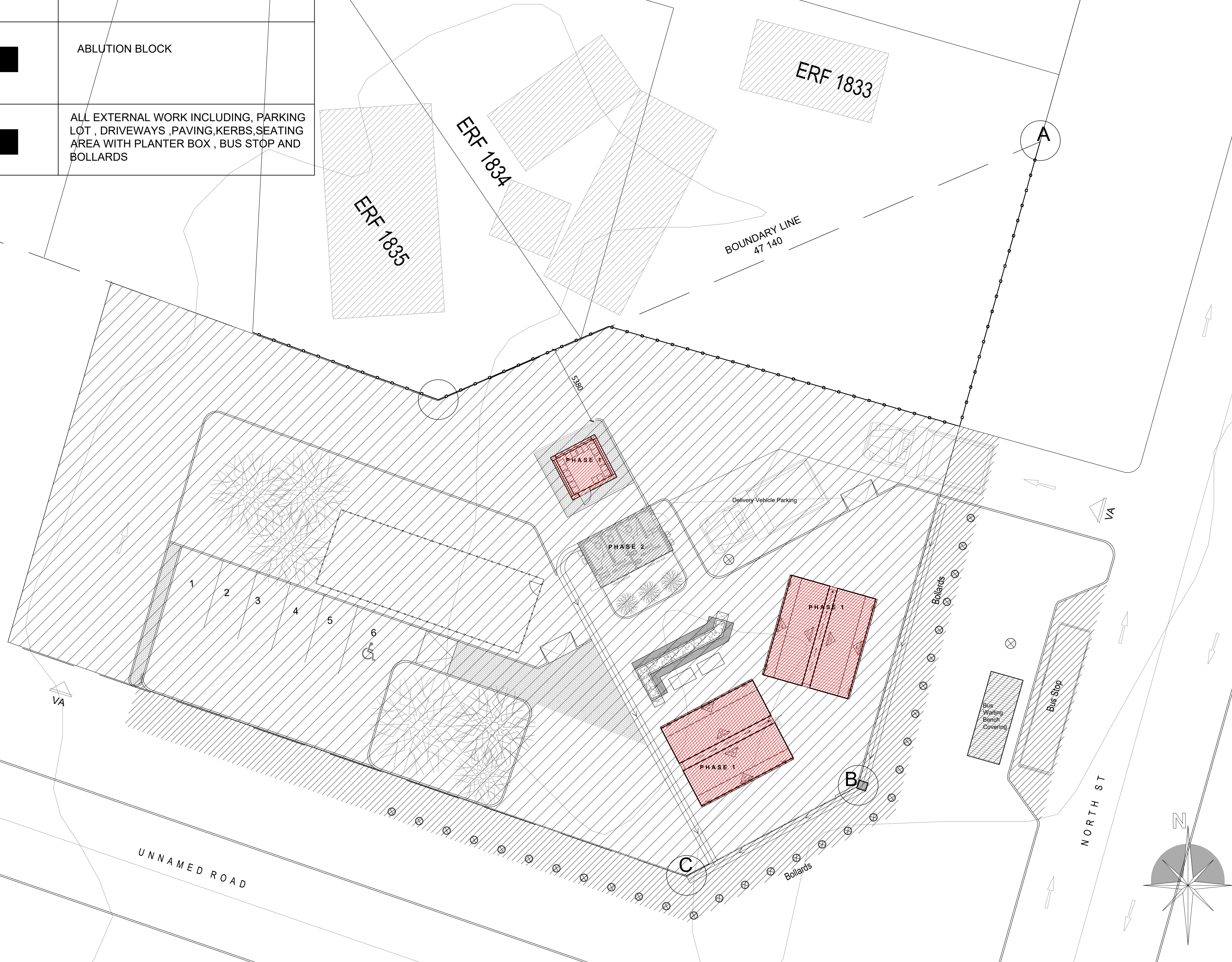
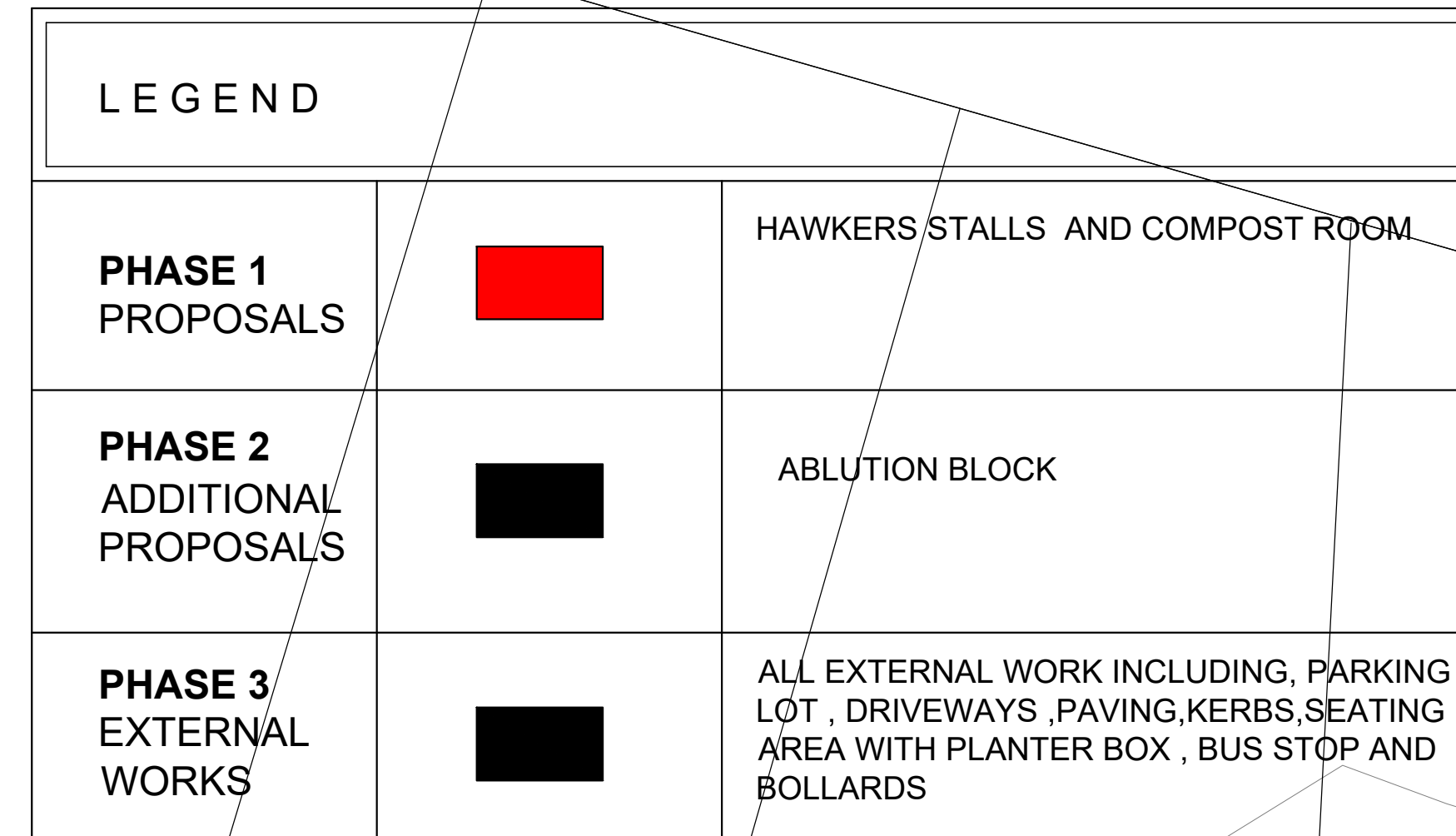
PROJECT :

**HANKEY - MINI FRESH
PRODUCE MARKET
ERF 2055**

ERF NO : 2055

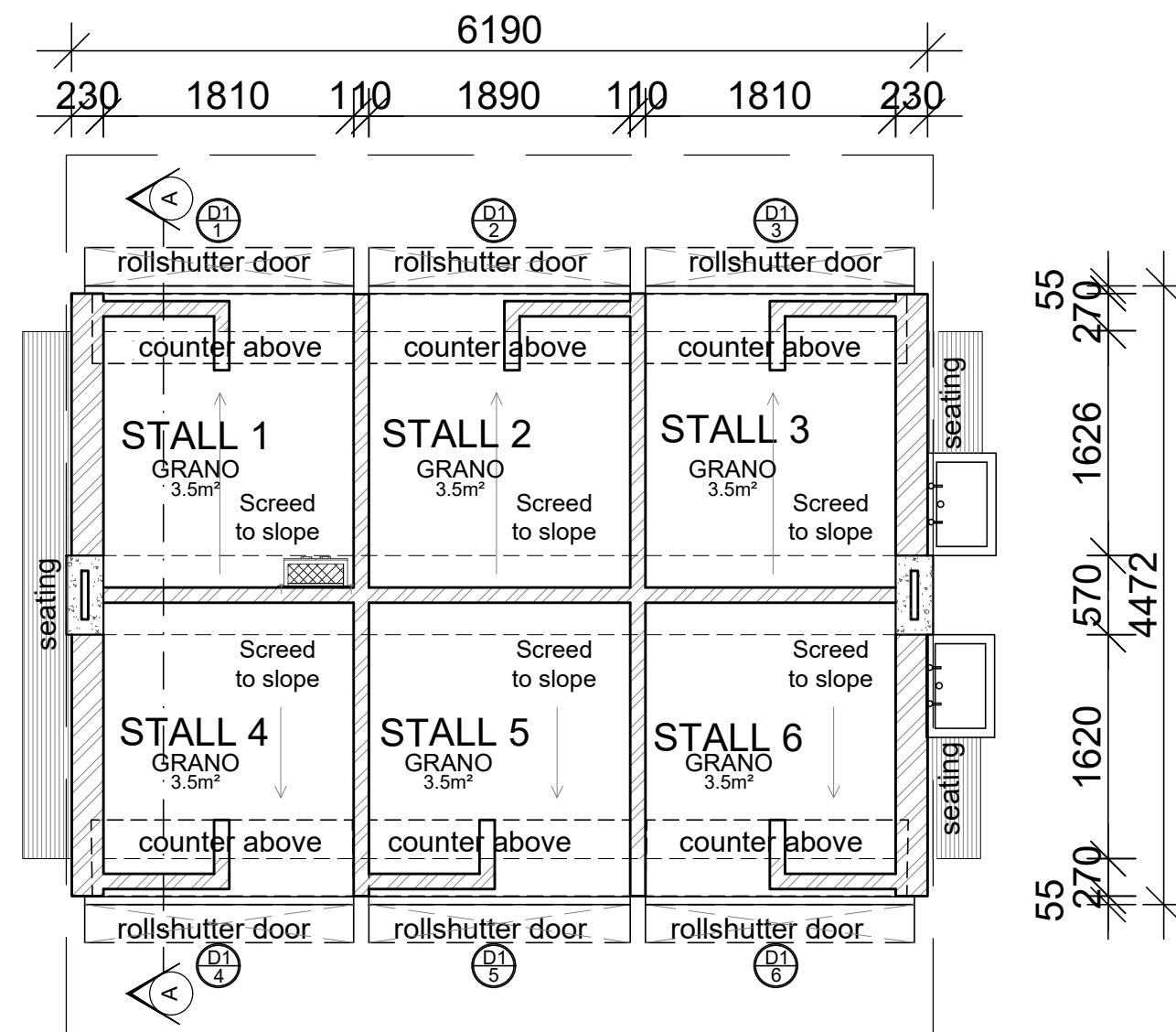
DRAWING TITLE : PHASING OUT PLAN

DRAWN BY	SM / AM		
CHECKED BY	TRW		
DATE	12 NOVEMBER 2019		
LATEST ISSUE			
SCALE	1:150		
PROJ. NO. :	DWG NO.	REV NO.	
HHS	HHS , 02	00	

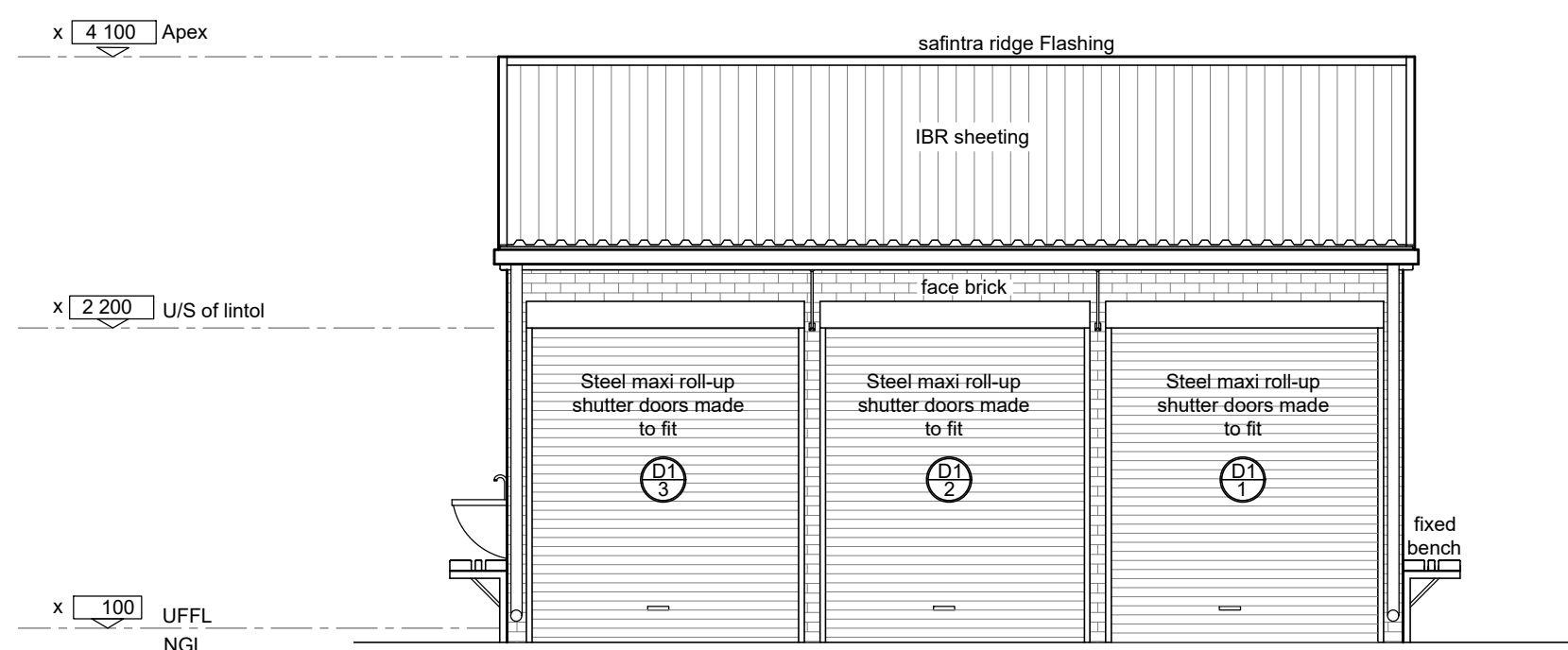
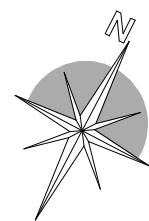


PHASING PLAN

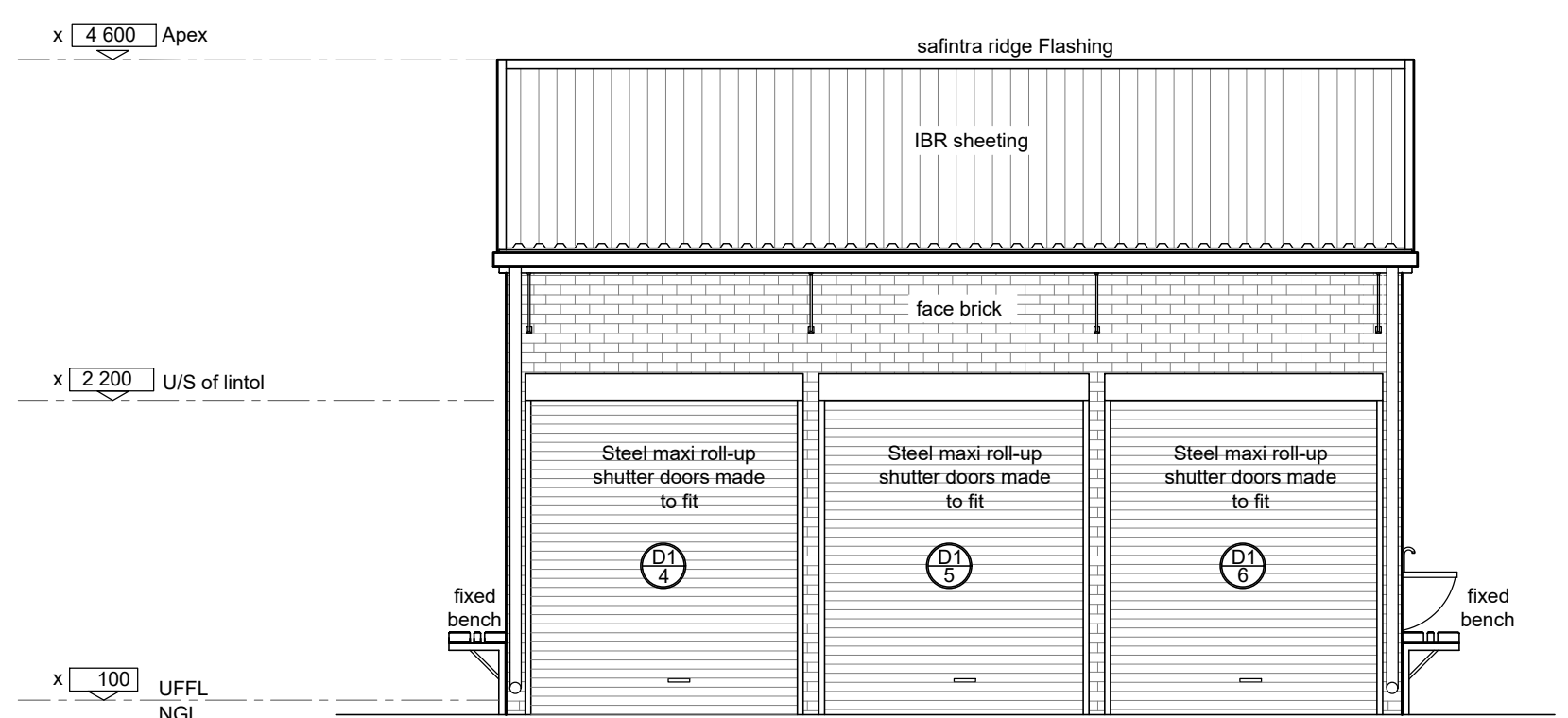
SCALE 1:150



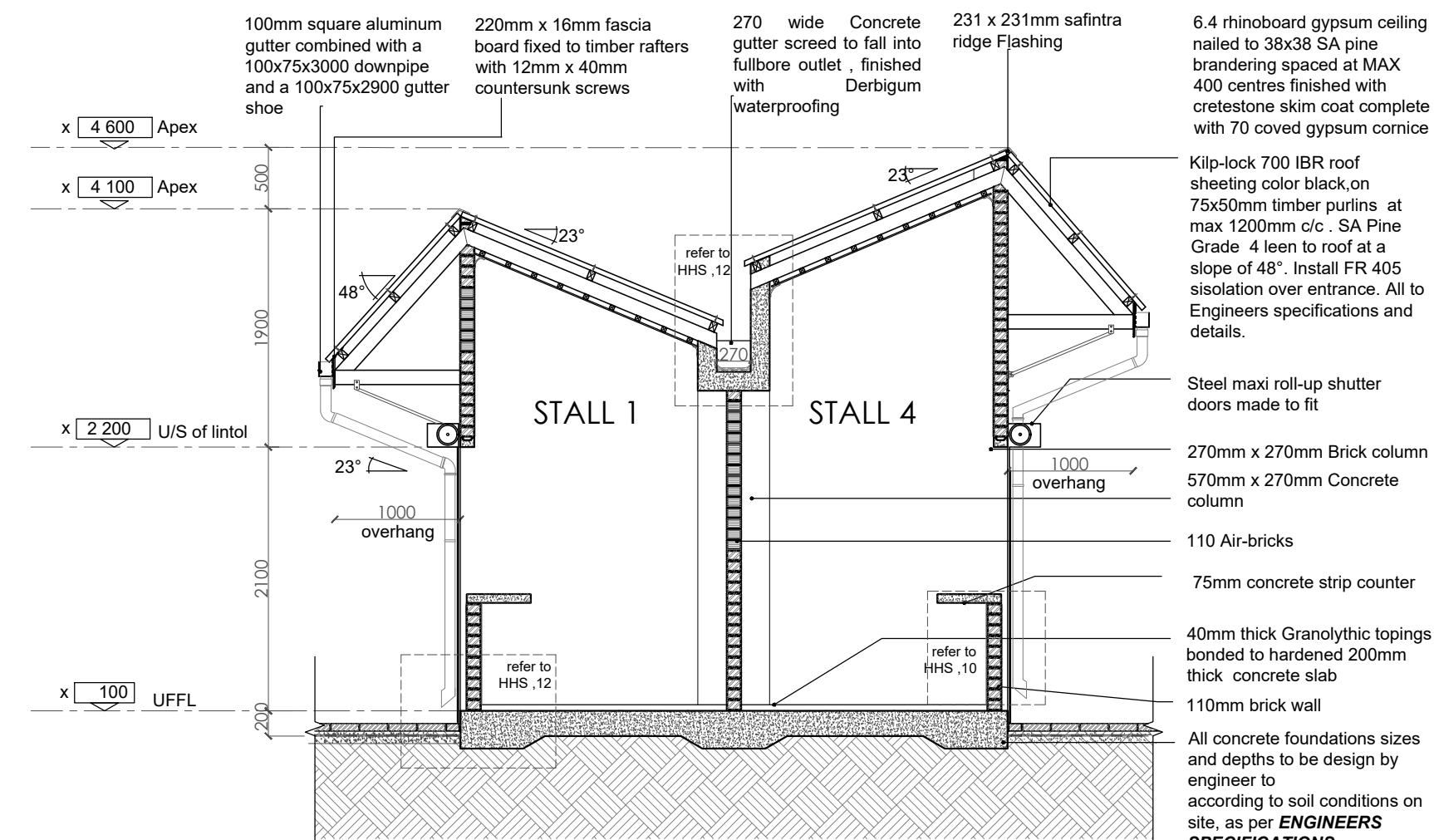
TYPICAL HAWKERS STALL (6 UNITS)
PLAN
scale 1:50



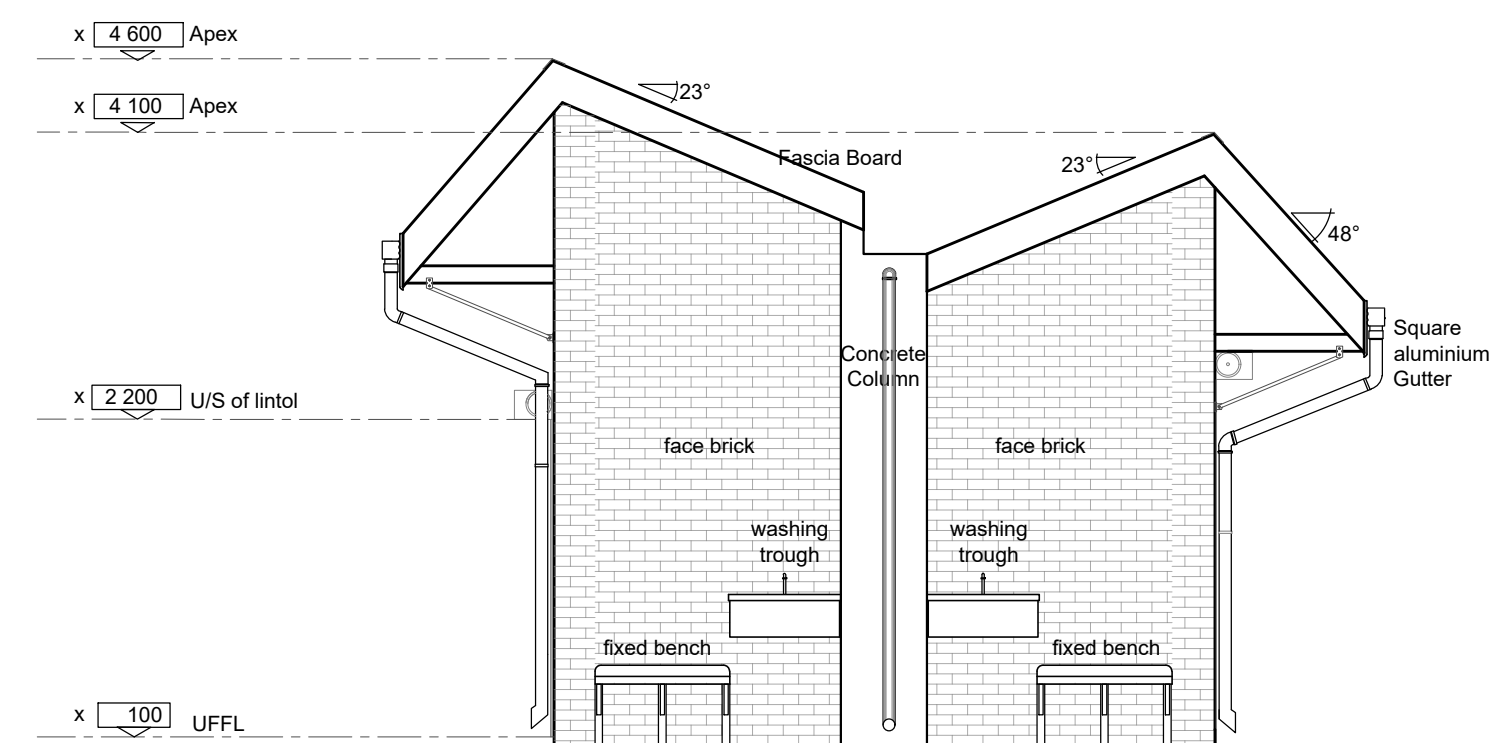
NORTH ELEVATION
scale 1:50



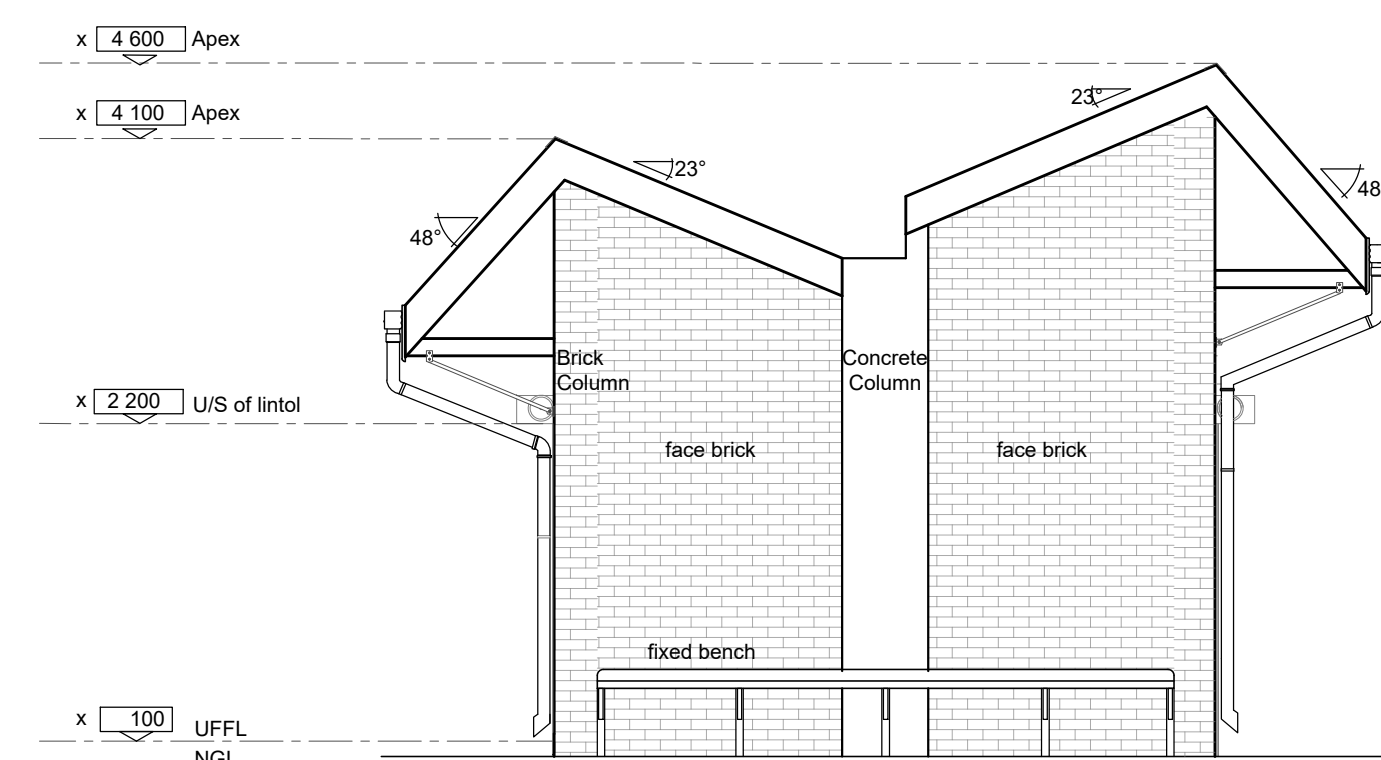
SOUTH ELEVATION
scale 1:50



SECTION A - A
scale 1:50



EAST ELEVATION
scale 1:50



WEST ELEVATION
scale 1:50

[illegible]

- (1.) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2.) DO NOT SCALE FROM THE DRAWINGS.
- (3.) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

ERF NO.	2055
SITE AREA	1142.78 m²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARCATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	

CLIENT:



PRINCIPAL AGENT AND ARCHITECTS



RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax: 041 365-3611
SACAP REGISTRATION NO. : 4535

APPROVED BY CLIENT:

KOUGA MUNICIPALITY REPRESENTATIVE

DATE _____

PROJECT :

HANKEY - MINI FRESH
PRODUCE MARKET
ERF 2055

ERF NO : 2055

DRAWING TITLE : HAWKERS STALLS
FLOOR PLAN , SECTION &
ELEVATIONS

DRAWN BY	SM / AM
CHECKED BY	TRW
DATE	12 NOVEMBER 2019
LATEST ISSUE	
SCALE	1:50

PROJ. NO :	DWG NO.	REV NO.
HHS	HHS , 04	00

[illegible]

GENERAL NOTES:

- (1.) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2.) DO NOT SCALE FROM THE DRAWINGS.
- (3.) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITYING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

MUNICIPAL NOTES :

ERF NO.	2055
SITE AREA	1142.78 m²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARICATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	

FINISHING SCHEDULE			STALL 1	STALL 2	STALL 3	STALL 4	STALL 5	STALL 6	STALL 7	STALL 8	STALL 9	STALL10	STALL 11	STALL 12	FEMALE TOILETS	MALE TOILETS		DESCRIPTION
FLOOR FINISH																		
	01	UNTINTED GRANOLITHIC SCREED & CONCRETE SLABS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	01	40mm thick Granolythic toppings bonded to hardened concrete slabs in accordance
WALLS	02	INTERNAL PLASTER	●	●	●	●	●	●	●	●	●	●	●	●			02	Apply 12 - 15mm cement plaster with 1:3 mortar mix, stop prime and apply 1 x undercoat and 2 x coats Plascon Professional Superior Low Sheen water based paint. Applied strictly as per the manufacturer's instruction.
	03	EXTERNAL PLASTER													●	●	03	Apply 12 - 15mm cement plaster with 1:3 mortar mix from existing beam to apex of roof.
	04	PAINT (INTERNAL)	●	●	●	●	●	●	●	●	●	●	●	●			04	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	05	SIGNAL RED	●						●								05	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	06	IVORY		●						●							06	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	07	KING FISHER BLUE			●						●						07	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	08	BRILLIANT GREEN				●						●					08	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	09	ALMOND WHITE					●						●				09	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	10	ORANGE						●						●			10	Provide 3 coats DULUX gloss enamel, High gloss finish. Apply at 8sq.m per liter spread rate. Undercoat to be 1 coat alkaline resistant 100% pure Acrylic fillercoat. Spread rate @ 6sq.m per litre. Colour Namb BBO312.
	11	FACEBRICK (EXTERNAL)	●	●	●	●	●	●	●	●	●	●	●	●	●		11	222mm x 106mm x 73mm , Corobrick Nevada Travertine FACEBRICK IN STRETCHER BOND: with all joints and perpends to be 6mm square deep recessed.
	CILLS	12	INTERNAL CILLS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	12
13	EXTERNAL CILLS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	13	All external cills to be brick on edge with 110mm X 110mm timber fixed to exterior of lintel as per detail.
CEILINGS	14	6.4mm GYPSUM BOARD	●	●	●	●	●	●	●	●	●	●	●	●	●	●	14	Ceilings to be 6.4mm gypsum board nailed to 38 x 38mm timber brandering at max 400mm centers with crestestone skimplaster fnish and with tape-channel cover strips finished with 1 x undercoat and 2 x coats Plascon Professional Superior Low Sheen waer based paint. Applied strictly as per manufacturer's instructions refer to specifications.
15	COVE CORNICE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	75mm cove cornice as required to specifications.
SANITARY FITTINGS	16	HAND DRYER													●	●	16	White Automatic Sensor Hand Dryer Size: H222,W236,D210 Material: ABS / Polycarb White 1200 Watts
	17	MIRROR													●	●	17	6mm silvered float glass mirror to comply with SANS 1236 class A, size 450x600mm with polished edges. Fasten mirror with chromium plated mirror screws to wall and allow 3mm air spacing at back for ventilation or fix mirror with vertical strips of double sided tap to allow for ventilation
	18	SOAP DISPENSER													●	●	18	1000ml / 1L Refillable White Manual Operated Soap Dispenser Size: H240,W135,D95 Material: ABS
	19	TOILET ROLL HOLDER													●	●	19	205x160x90mm white wall mounted toilet roll holder fixed to wall with all joints sealed with silicon sealant
	20	WC													●	●	20	New Vaal sanitary vitreous china close coupled suite white (Code:772654) comprising 90° outlet open rim pan (Code:772600)with matching 9 litre front single flush cistern (Code:710533) complete with valve fitting,inlet ball valve and side overflow and push pipe,including bedding pan on floor in cement mortar including lid and filments and Jass Thermostet seat
	21	WASH HAND BASIN													●	●	21	New 530 x 410 mm ceramic basin with 32 x 40 mm chrome bottle trap. manufactured in accordance with SANS 226:2004 Type 1 (BS 5412).
ROOF	22	ROOF COVERING IBR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	22	Klip-lock 700 IBR roof sheeting clour black on 75x50mm timber purlins at max 1200mm c/c on 225x75mm timber rafters SA Pine Grade 4 leen to roof at a slope of 2°. Install FR 405 isolation over entrance. Rafters to Engineers specifications and details.
	23	EAVES	●	●	●	●	●	●	●	●	●	●	●	●	●	●	23	Eaves covering to be 6mm cladded fibre cement board with cover strips and brandering fixed to 38 x 38mm brandering fixed to underside of rafter. Cladding to be fixed by 20mm dry wall screws with recess heads to be closed and painted over.
	24	BARGEBOARDS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	24	New fibre cement barge boards size 250 x 80 x 12mm, fixed to 38 x 38mm trimmer batten and purlin twice screwed with 12 x 40mm brass countersunk screws with aluminum h-profile barge board joiners between boards and at roof apex. Apply 3 coats contractors white pva.
	25	GUTTERS AND DOWNPIPES	●	●	●	●	●	●	●	●	●	●	●	●	●	●	25	New 125 x 80 x 85mm extruded aluminum seamless gutters fixed to fascia boards by 2 no. 25mm brass screws into fascia and soffit, including all necessary fittings as per manufacturers recommendation and to comply with SANS 11:2007. Fixed to 12 x 225mm fibre cement fascia boards with a slight slope towards the 80mm Ø aluminium downpipe which is fixed to the walls with aluminum 3 no. downpipe clips with the specified aluminium shoe.

CLIENT:



PRINCIPAL AGENT AND ARCHITECTS



RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax: 041 365-3611
SACAP REGISTRATION NO. : 4535

APPROVED BY CLIENT:

KOUGA MUNICIPALITY REPRESENTATIVE

DATE _____

PROJECT :

HANKEY - MINI FRESH
PRODUCE MARKET
ERF 2055

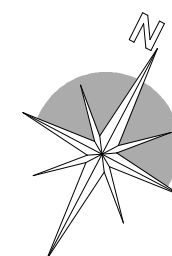
ERF NO : 2055

DRAWING TITLE : FINISHING SCHEDULE

DRAWN BY	SM / AM		
CHECKED BY	TRW		
DATE	12 NOVEMBER 2019		
LATEST ISSUE			
SCALE	NTS		
PROJ. NO. :	DWG NO.	REV NO.	
HHS	HHS 05	00	

- (1.) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2.) DO NOT SCALE FROM THE DRAWINGS.
- (3.) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

ERF NO.	2055
SITE AREA	1142.78 m ²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARCATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	



ELECTRICAL		QTY.
SYMBOL	DESCRIPTION	
	DISTRIBUTION BOARD	2
	FLOOR LIGHT	7
	FLUORESCENT LIGHT	8
PLUG POINTS	DESCRIPTION	
300	DOUBLE PLUG POINT 300 above FFL	6
SWITCHES	DESCRIPTION	
2 WAY	2-WAY SWITCH	2
	SINGLE LIGHT SWITCH	4
	DOUBLE LIGHT SWITCH	2

LINE	DESCRIPTION
	6.4 MM GYPSUM CEILING BOARD

	D1
	LENGTH OF ROLLER DOORS TO BE VERIFIED ON SITE BY CONTRACTOR
DOOR NUMBER	D1
QUANTITY	12
DOOR DESCRIPTION	CHROMADEK ROLL UP DELUXE, ROLLER SHUTTER DOOR WITH POWDER COATED FINISH, SIZE 2500 X 2100MM HIGH, 450MM HEADROOM WITH 130MM CLEARANCE ON FREE SIDE AND 130MM CLEARANCE ON OPERATOR SIDE, 0.6MM THICK SLATS
DOOR FINISH	75MM WIDE SIDE GUIDES WITH STANDARD PRESSED STEEL CANOPY COVER AND WEATHER SEAL TO BOTTOM EDGE, WITH PERIMETER FRAMING PLUGGED AND SCREWED TO REVEAL AT MAXIMUM 300MM CENTRES TO CONCRETE OR BRICKWORK.
FRAME	AS PER MANUFACTURERS SPECIFICATIONS
FRAME FINISH	AS PER MANUFACTURERS SPECIFICATIONS
IRONMONGERY	150MM GALVANISED BARREL BOLT WITH KEEP LET INTO BRICKWORK ISO 50mm PADLOCK (SPIN) WITH STEEL SHACKLE
GLAZING	
FURNITURE	AS PER MANUFACTURERS SPECIFICATIONS

KOUGA
local municipality
Good Governance through Service Excellence

RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

**RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS**
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax: 041 365-3611
SACAP REGISTRATION NO. : 4535

KOUGA MUNICIPALITY REPRESENTATIVE

PROJECT :

HANKEY - MINI FRESH
PRODUCE MARKET
SERF 2055

REF NO : 2055

DRAWING TITLE : ELECTRICAL PLANS

DRAWN BY	SM / AM
----------	---------

CHECKED BY	TRW
------------	-----

DATE	12 November 2019
------	------------------

LATEST ISSUE

SCALE	1:50
-------	------

PROJ. NO :	
------------	--

HHS

REV NO.

24

01



scale 1:5



ERF NO.	2055
SITE AREA	1142.78 m²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING.TITLE DEED	HANKEY
WARD DEMARCATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	



KOUGA
local municipality
Good Governance through Service Excellence

RAJ MAHARAJH
ASSOCIATES
ARCHITECTS

RAJ MAHARAJH ASSOCIATES ARCHITECTS AND
PROJECT MANAGERS
6 SHIRLEY STREET
NEWTON PARK
PORT ELIZABETH : 6045
Tel: 041 365-2896
Fax: 041 365-3611
SACAP REGISTRATION NO. : 4535

DATE _____

HANKEY - MINI FRESH
PRODUCE MARKET
ERF 2055

1115		1115 97		99
------	--	---------	--	----



PROJ. NO. :	DWG NO.	REV NO.
HHS	HHS 08	00

- (1.) CHECK ALL DIMENSIONS AND LEVELS BEFORE COMMENCING ANY WORK.
- (2.) DO NOT SCALE FROM THE DRAWINGS.
- (3.) ANY QUERIES TO BE BROUGHT TO THE ARCHITECT'S ATTENTION.
ALL CONDUITYING, TIMBER, PVC ETC. SHOULD BE SABS APPROVED QUALITY MATERIALS
ALL STRUCTURAL STEEL, CONCRETE STRENGTH AND TIMBER SPECIFICATION ARE TO BE IN ACCORDANCE WITH ENGINEER'S DETAILS.

ERF NO.	2055
SITE AREA	1142.78 m ²
ZONING : RESIDENTIAL 1	LUPO
TOWNSHIP/HOLDING:TITLE DEED	HANKEY
WARD DEMARCATION BOARD	KOUGA 13
ALLOTMENT	KOUGA
EX. ZONE	

Steel maxi roll-up shutter doors made to fit

110mm brick wall

Paving 200mm x 60mm herringbone on 250 micron DPC on top of subgrade and earth-fill layers

40mm thick Granolithic toppings bonded to hardened 200mm thick concrete slab

All concrete foundations sizes and depths to be design by engineer to according to soil conditions on site, as per **ENGINEERS SPECIFICATIONS**

Compact Earth layer

Ground level 0

Finished level 140

Klip-lock 700 IBR roof sheeting color black on 75x50mm timber purlins at max 1200mm c/c. SA Pine Grade 4 lean to roof at a slope of 48°. Install FR 405 isolation over entrance. All to Engineers specifications and details.

6.4 rhinoboard gypsum ceiling nailed to 36x38 SA pine bracing spaced at MAX 400 centres finished with crestone skim coat complete with 70 covered gypsum cornice

270 wide Concrete gutter screed to fall into fullbore outlet, finished with Derbigum waterproofing

Dimensions:

- Roof slope: 48°
- Parapet wall height: 470
- Total height from ground to top of parapet: 870
- Height from ground to top of concrete gutter: 245
- Height of concrete gutter: 150
- Width of concrete gutter: 270
- Width of concrete gutter opening: 110
- Width of concrete gutter base: 570
- Width of concrete gutter base (each side): 230

Materials:

- Klip-lock 700 IBR roof sheeting
- 75x50mm timber purlins
- SA Pine Grade 4
- FR 405 isolation
- 6.4 rhinoboard gypsum ceiling
- 36x38 SA pine bracing
- crestone skim coat
- 70 covered gypsum cornice
- 270 wide Concrete gutter
- fullbore outlet
- Derbigum waterproofing
- 570 x 270mm concrete column
- 110 brick wall
- concrete gutter

DATE _____

00