PROCUREMENT MANAGEMENT UNIT

BIDDING DOCUMENT

ISSUED ON

20 AUGUST 2021

FOR

NHE OKAHAO HOUSING DEVELOPMENT

FUNDING AND CONSTRUCTION OF SEVENTY (70) HOUSES IN OKAHAO

(TURNKEY)75 191/2

PROCUREMENT REFERENCE NO:

W/ONB/NHE-02/21/22

Cost: Free

NB!! Bids clearly marked with description and reference number must be delivered at Reception, Tender Box, NHE Head Office, 7 Gen. Murtala Muhammed Ave, Windhoek by closing date and time **(Monday, 20 September 2021 @ 10h00 am** Electronic bidding will not be accepted. Late bids will be rejected.

Name of Bidder:	…… ……
Total Bid Price:	**N$**…… ……**(excl. VAT)**
Amount in Words:	…… …… …… ……**(excl. VAT)**

Standard Bidding Document

Table of Contents

PART 1 – Bidding Procedures

Section I - Instructions to Bidders

Table of Clauses

Section I - Instructions to Bidders

A. General

1. Scope of Bid

1.1 The Public Entity as defined[1] in Section II "Bidding Data Sheet" **(BDS)** also referred to herein as Employer invites bids for the construction of Works, as **described in the BDS** and Section VII, "Special Conditions of Contract" (SCC).

The name and identification number of the Contract are **provided in the BDS and the SCC**.

1.2 The successful Bidder shall be expected to complete the Works by the Intended Completion Period **specified in the BDS.**

1.3 Throughout these bidding documents, the terms:

(a) the term "in writing" means communicated in written form (e.g. by mail, e-mail, fax,) with proof of receipt;

(b) if the context so requires, "singular" means "plural" and vice versa;

(c) "day" means calendar day unless otherwise stated; and

2. Source of Fund

2.1 The Works shall be financed by the Public Entity's own budgetary allocation, **unless otherwise stated in the BDS.**

3. Public Entities Related to Bidding Documents

3.1 The public entities related to these bidding documents are the Public Entity, acting as procurement entity (Purchaser).

4. Fraud and Corruption

4.1 The Government of the Republic of Namibia requires that bidders/suppliers/contractors, participating in procurement in Namibia, observe the highest standard of ethics during the procurement process and execution of contracts.

4.2 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;

For the purposes of this Sub-Clause:

(i) "corrupt practice" is the offering, giving, receiving or

soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) "obstructive practice" is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

4.3. Bidders, suppliers and public officials shall also be aware of the provisions stated in section 67 and 68 of the Public Procurement Act, 2015 which can be consulted on the website of the Procurement Policy Unit (PPU) : www.mof.gov.na/procurement-policy-unit

5. Eligible Bidders

5.1 A Bidder may be a natural person, private entity, or government-owned entity or any combination of them in the form of a joint venture, under an existing agreement, or with the intent to constitute a legally-enforceable joint venture. All partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms.

5.2 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

(a) they have a controlling partner in common; or

(b) they receive or have received any direct or indirect subsidy from any of them; or

(c) they have the same legal representative for purposes of this bid; or

(d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence

on the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or

(e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the party is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or

(f) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or

(g) a Bidder, or any of its affiliates has been hired (or is proposed to be hired) by the Employer as Engineer for the contract.

5.3(a) A bidder that is under a declaration of ineligibility by the Government of Namibia in accordance with applicable laws at the date of the deadline for bid submission and thereafter shall be disqualified.

(b) Bids from contractors appearing on the ineligibility lists of African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank Group and World Bank Group shall be rejected.

5.4 Government-owned enterprises in the Republic of Namibia shall be eligible only if they can establish that they are legally and financially autonomous and operate under commercial law, and that they are not a dependent agency of the Government.

6. Qualifications of Bidders

6.1 All bidders shall provide in Section III, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

6.2 Bidders shall include the information and documents listed hereunder with their bids, unless otherwise **stated in the BDS**. The non-submission of the documents by the Bidder within the prescribed period may lead to the rejection of its bid.

(a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business of the Bidder;

(b) total monetary value of construction works performed for each of the last five years;

(c) experience in works of a similar nature and size for each of the last five years or as otherwise **stated in the BDS**; and clients who may be contacted for further information on those contracts;

(d) major items of construction equipment proposed to carry out the Contract;

(e) qualifications and experience of key site personnel and technical personnel proposed for the contract;

(f) report on the financial standing of the Bidder for the last three years, such as certified copies of Financial Statements/Audited Accounts as filed at the Registrar of Companies;

(g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);

(h) authority to seek references from the Bidder's bankers;

(i) information regarding any litigation, current or during the last five years, in which the Bidder was/is involved, the parties concerned, the issues involved, the disputed amounts, and awards;

(j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.

6.3 To qualify for award of the Contract, bidders shall meet the following minimum qualifying criteria:

(a) a minimum average annual financial amount of construction work over the period **specified in the BDS**.

(b) experience as prime contractor in the construction of a minimum number of works of a nature and complexity equivalent to the Works over a period as **specified in the BDS** (To comply with this requirement, works cited should be at least 70 percent complete);

(c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment **listed in the BDS**;

(d) a Contract Manager/Supervisor with five years' experience in works of an equivalent nature and volume, including no less than three years as Manager or as otherwise **specified in the BDS**;

(e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than the amount **specified in the BDS**.

A consistent history of litigation or arbitration awards against the Applicant or any partner of a Joint Venture may result in disqualification.

B. Contents of Bidding Document

7. Sections of Bidding Document

7.1 The Bidding Document consists of all the Sections indicated below and should be read in conjunction with any Addenda issued in accordance with ITB 10.

Section I - Instructions to Bidders (ITB)
Section II - Bidding Data Sheet
Section III - Bidding Forms
Section IV - Evaluation Criteria
Section V - Employer's Requirements
Section VI - General Conditions of Contract (GCC)
Section VII - Special Conditions of Contract (SCC)
Section VIII - Contract Forms

7.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.

8. Clarification of Bidding Document

8.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address **indicated in the BDS.**

The Employer will respond in writing to any request for clarification, provided that such request is received 14 days prior to the deadline for submission of bids.

Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 10.

9. Site visit/Pre-bid meeting

9.1 Bidders, at the Bidders' own responsibility and risk, are encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing their Bids and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidders' own expense.

9.2 The Bidder or its designated representative is invited to attend a pre-bid meeting, as **provided for in the BDS**. The purpose of the pre-bid meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

10. Amendment of Bidding Document

10.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda and extend the deadline for submission of bids, if needed.

C. Preparation of Bids

11. Cost of Bidding

11.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs irrespective of the outcome of the bidding process.

12. Language of Bid

12.1 The Bid, supporting documents as well as all correspondence relating to the bid exchanged by the Bidder and the Employer shall be in English Language.

13. Documents Comprising the Bid

13.1 The Bid shall comprise the following:

(a) Bid submission Form (in the format indicated in Section III);

(b) Qualification information and documentary evidence establishing the Bidder's qualifications to perform the contract;

(c) completed Activity Schedule;

(d) The following documentary evidence is required and compulsory. Failure to submit will result in disqualification.

i. have a Valid Certified Copy of Company Registration Certificate / Founding Statement;

ii. have a Valid Original or Certified Copy of Good Standing Tax Certificate;

iii. have a Valid Original or Certified Copy of Good Standing Social Security Certificate;

iv. have a Valid Certified Copy of Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998;

v. completion of the Written Undertaking as Contemplated in Section 138(2) of the Labour Act, 2007;

vi. an undertaking on the part of the Bidder that the salaries and wages payable to its personnel in respect of this proposal are compliant to the relevant laws, Remuneration Order, and Award, where applicable and that it will abide to sub-clause 4.6 of the General conditions of Contract if it is awarded the contract or part thereof;

vii. other documentation as required in the BDS

14. Bid Submission Form and Schedules

14.1 The Bid Submission Form, Schedules, and all documents listed under ITB 13.1 shall be prepared using the relevant forms, if so provided.

15. Alternative Proposal

15.1 Alternative Technical Proposals and completion dates if allowed shall be indicated in Section V- Specifications. The evaluation methodologies for their consideration shall be given in Section III.

16. Bid Prices and Discounts

16.1 The Contract shall be for the whole Works, as described in ITB Sub-Clause 1.1, based on the priced Activity Schedule submitted by the Bidder.

16.2 Bidders shall fill in rates and prices for all items of the Works described in the priced Activity Schedule. Items for which no rate or price is entered by Bidders, shall not be paid for by the Public Entity when executed and shall be deemed covered by the other rates and prices in the Activity Schedule. Corrections, if any, shall be made by crossing out, initialling, dating and rewriting.

16.3 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 14 days prior to the deadline for submission of bids, shall be included in the rates, prices, and total Bid price submitted by Bidders.

16.4 The price to be quoted in the Bid Submission Form shall be the total price of bid after any discount offered.

The discount if any and the conditions of its application shall be indicated separately.

17. Currencies of Bid and Payment

17.1 The bid price and rates shall be in Namibian Dollars and fixed for the duration of the contract unless otherwise **specified in the BDS.**

17.2 Unless otherwise **specified in BDS** interim payment for Plant and Material on site is applicable as per GCC 39.7.

18. Documents Comprising the Technical Proposal

18.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in the Bidder Qualification Form (section IV), in sufficient details to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.

19. Period of Validity of Bids

19.1 Bids shall remain valid for a period **specified in the BDS.** The Bid Validity period should not exceed 180 days.

19.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing.

20. Bid Security/Bid Securing Declaration

20.1 The Bidder shall furnish either a subscription to a Bid Securing Declaration or a Bid Security in its original form with its bid as part of its bid, if so **required in the BDS**.

20.2 Bid Security shall be in the form of a Bank Guarantee from a local commercial bank as per the format contained in section IV and shall be valid for a period of 30 days beyond the validity period of the bid or beyond any period of extension.

20.3 Any bid not accompanied by an enforceable and substantially compliant Bid Security or a subscription to a Bid Securing Declaration in the Bid Submission Form*,* if required in accordance with ITB 20.1, shall be rejected by the Employer as non-responsive.

20.4 Bid Security shall be forfeited, or the Bid Securing declaration exercised for non-compliance on the part of the Bidder for reasons mentioned in the Bid Security format contained in Section III or the Bid Suring Declaration contained as Appendix to the Bid Submission Form.

21. Format and Signing of Bid

21.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 13.1 and clearly mark it "ORIGINAL". In addition, the Bidder shall submit the number of copies **as specified in the BDS,** clearly mark with the label "COPY." In the event of any discrepancy between the original

and the copies, the original shall prevail.

21.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder.

D. Submission and Opening of Bids

22. Sealing and Marking of Bids

22.1 Bidders may always submit their bids by mail or by hand. Procedures for submission, sealing and marking are as follows:

(a) Bidders submitting bids by mail or by hand shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 15, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB sub-Clauses 22.2.

22.2 The inner and outer envelopes shall:

(a) bear the name and address of the Bidder;

(b) be addressed to the Employer as indicated in ITB 22.1;

(c) bear the specific identification of this bidding process indicated in accordance with ITB 1.1;

(d) bear a warning not to open before the time and date for bid opening.

23. Deadline for Submission of Bids

23.1 Bids shall be delivered to the Employer at the address and no later than the time and date **specified in the BDS**.

The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 10.

24. Late Bids

24.1 Late bids shall not be considered. They will be returned unopened

25. Withdrawal, Substitution, and Modification of Bids

25.1 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid submission Form or any extension thereof.

26. Bid Opening

26.1 The Employer shall open the bids at the time place and address **specified in the BDS** in the presence of Bidders` designated representatives who choose to attend.

26.2 The bidders' names, the Bid Prices, the total amount of each bid, any discounts, any alternative bid, bid modifications and withdrawals, the presence or absence of bid security, and

such other details as the Employer may consider appropriate, will be announced and recorded by the Employer at the opening.

E. Evaluation and Comparison of Bids

27. Confidentiality

27.1 Information relating to the examination, evaluation, comparison, and post-qualification of bids and recommendation of contract award, shall not be disclosed to Bidders or any other person not officially concerned with such process.

27.2 Any attempt by a Bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid.

28. Clarification of Bids

28.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetical errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 31.

29. Determination of Responsiveness

29.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB13.

29.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission.

29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 18, Technical Proposal, in particular, to confirm that all requirements of Section V (Employer's Requirements) have been met without any material deviation, reservation or omission.

29.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonconformities, Errors, and Omissions

30.1 Provided that a bid is substantially responsive, the Employer may waive any non-material non-conformity in the bid, request that the Bidder submit the necessary information or documentation, to rectify nonmaterial nonconformities in the bid related to documentation requirements but not related to any aspect of the price of the bid; and shall rectify quantifiable nonmaterial nonconformities related to the Bid Price.

31. Correction of Arithmetical Errors

31.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

(a) only for unit price contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail, and the total shall be corrected;

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

32. Margin of Preference

32.1 **Unless otherwise specified in the BDS**, Margin of preference shall not apply.

33. Evaluation of Bids

33.1 The Employer shall use the criteria and methodology defined in this clause and no other evaluation criteria or methodologies shall be permitted.

33.2 To evaluate a bid, the Employer shall consider the following:

(a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities for admeasurement contracts or Schedule of Prices for lump sum contracts, but including Daywork items, where priced competitively; and

(b) price adjustment for correction of arithmetic errors, discounts, non-conformities, due to the supplementary criteria as defined in Section III, and Margin of Preference, if applicable.

33.3 If this Bidding Document allows Bidders to quote separate prices for different contracts, and to award multiple contracts to a single Bidder, the methodology to determine the lowest evaluated price of the contract combinations, including any discount offered in the Bid Submission Form, is specified in Section III (Evaluation and Qualification Criteria).

33.4 If the bid for an admeasurement contract, which results in the lowest Evaluated Bid Price, is seriously unbalanced, front loaded or substantially below updated estimates or if any item in the Priced Activity Schedule is front loaded or contains an erroneous amount in the opinion of the Employer, the Employer may after clarification require the Bidder to produce detailed price analysis for any or all items that the amount of the performance security be increased at the expense of the Bidder.

34. Comparison of Bids

34.1 The Employer shall compare all substantially responsive bids in accordance with ITB 33 to determine the lowest evaluated bid.

35. Qualification of the Bidder

35.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated substantially responsive bid meets the qualifying criteria.

36. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

36.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders.

F. Award of Contract

37. Award Criteria

37.1 Subject to ITB 36.1, the Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

38. Notification of Award

38.1 Prior to the expiration of the period of bid validity, the Employer shall, for contract amount above the prescribed threshold of N$ 2 M, notify the selected bidder of the proposed award and accordingly notify unsuccessful bidders. Subject to Challenge, the Employer shall notify the selected Bidder, in writing, by a Notification of award for award of contract. The Notification of award shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price") and the requirement for the Contractor to remedy any defects therein as prescribed by the Contract. Within seven days from the issue of notification of award, the Purchaser shall publish on the Public Procurement Portal (**www.mof.gov.na/procurement-policy-unit**) and the Purchaser's website, the results of the Bidding Process identifying the bid and lot numbers and the following information:

(i) name of the successful Bidder, and the Price it offered, as well as the duration and summary scope of the contract awarded; and

(ii) an executive summary of the Bid Evaluation Report.

38.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

39. Signing of

39.1 Promptly upon issue of notification of award, the Employer

Contract shall send to the successful Bidder the Contract Agreement.

39.2 Within thirty (30) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

40. Performance Security

40.1 Within thirty (30) days of the receipt of the notification of award from the Employer, the successful Bidder shall furnish the Performance Security in accordance with the conditions of contract, using for that purpose the Performance Security Form included in Section VIII (Contract Forms).

40.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement within the prescribed delay shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.

41. Advance Payment and Security

41.1 The Public Entity shall provide an Advance Payment on the Contract Price as stipulated in the GCC, subject to a maximum amount, **as stated in the BDS**. The Advance Payment shall be guaranteed by a security as per the format contained in Section VIII.

42. Plant and Materials on site

42.1 Unless otherwise **specified in BDS** interim payment for Plant and Material on site is applicable as per GCC 39.7.

43. Debriefing

43.1 The Purchaser shall promptly attend to all debriefing for the contract made in writing and within 30 days from the date of the publication of the award or date the unsuccessful bidders are informed about the award.

Section II. Bidding Data Sheet (BDS)

The following specific data for the works to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

A. General	
ITB 1.1	The Public Entity is: **National Housing Enterprise** The Works are: **NHE Okahao Housing Development – Funding and Construction of Seventy (70) Houses in Okahao (Turnkey)** The name and identification number of Contract is*:* **W/ONB/NHE-02/21/22**
ITB 1.2	The Intended Completion period is: **For the full works: 7 (months) calendar months *(excluding builders' holidays)* from start date to completion** **Sectional Completion of the first 20 units is 5 months from start date with balance of 50 units after the full period of 7 months.** **Construction programme must be submitted with the Bid.**
ITB 2.1	The Funding Agency is: **Through Turnkey**
ITB 5.3	A list of firms debarred from participating in Public Procurement in Namibia is available at **http://www.mof.gov.na/procurment -policy-unit** A list of firms debarred by World Bank is available at **http://www.worldbank.org/debarr**
ITB 6.2 (f)	Provide financial statements for the last **five (5)** years
ITB 6.2 (h)	**Submission of an acceptable bank rating from a registered Namibian Bank**. Only ratings of A, B, or C are considered acceptable.
ITB 6.2 (j)	Proposals for subcontracting components of the Works greater than 10 percent of the Contract Price is **Cumulative**
ITB 6.3	(a) A minimum average annual financial **turnover** amount of construction work **equivalent to the bid price calculated as total certified payments received for contracts in progress or completed within the last five (5) years.** Submission must be substantiated by Audited financial statements. (b) Experience as **prime contractor** in the construction of works of a nature and complexity equivalent to the Works **within the last five (5) years**. (c) Proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment required for performance of the contract such as: • Company vehicles • Trucks, trailers, transport of materials

	• Transport of workers • Site offices • Site storage • Mortar mixers batching plants, concrete mixers and/or concrete supply plans • Dumper trucks • Excavators • Compressor/hard rock/soft rock breakers • Small tools (wheel barrows, spades, etc.) • Any other equipment not listed (d) Contract Manager/Supervisor with five years' experience in works of an equivalent nature and volume, including no less than three years as Manager. Detailed CV of qualifications, job history and experience is required. (e) Bidder must demonstrate access, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, financing partners, financial term sheets and other financial means, to meet a cash-flow requirement of at least the maximum amount indicated in the Bidders cash-flow program but **to a minimum of the bid price less construction contingencies.** (f) Submission of an intended Construction Program as well as a related Costed Construction Cash-flow Program. (g) Bidder must demonstrate proof of building material suppliers accounts and/or cash accounts, together with good standing reference to demonstrate favourable trading history. Past and current litigation – Bidder shall complete and submit a comprehensive list of all past and current litigation, arbitration, mediation or any other dispute resolution solutions involved in the past 5 years.
B. Bidding Documents	
ITB 8.1	The Public Entity's address for clarification is: **7 General Murtala Mohammed Avenue, Eros in Windhoek** **procurement@nhe.com.na** Deadline to seek clarification is: **Friday, 10 September 2021**
ITB 9.2	A pre-bid meeting has been scheduled for: **Tuesday, 07 September 2021 @ 10:00 am** **On site in Okahao**
C. Preparation of Bids	
ITB 13.1	The Bid shall comprise the following: (a) Bid Submission Form, (in accordance with the format indicated in Section III), duly completed and stating full names of Contractor's representative. Attach certified copy of identity document (ID) or

	certified copy of a valid passport of representative. (b) Qualification information and documentary evidence establishing the Bidder's qualifications to perform the contract; (c) Duly completed and signed construction cost schedules; and (d) **The following documentary evidence is required and compulsory: (Failure to submit will result in disqualification)** i. valid certified copy of Company Registration Certificate/Founding statement; ii. valid original or certified copy of Good Standing Tax Certificate from the Receiver of Revenue; iii. original or certified copy of valid Good Standing certificate from Social Security Commission; iv. valid certified copy of Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998; v. completion of the Written Undertaking as Contemplated in Section 138(2) of the Labour Act,2007; vi. an undertaking on the part of the Bidder that the salaries and wages payable to its personnel in respect of this proposal are compliant to the relevant laws, Remuneration Order, and Award, where applicable and that it will abide to sub-clause 4.6 of the General conditions of Contract if it is awarded the contract or part thereof; vii. in the case of a Joint Venture, have a fully signed joint venture agreement and all parties must provide full mandatory documents stated above in (i), (ii), (iii) and (iv); or viii. in the case were a legally enforceable Joint Venture has been constituted for the purpose of executing this contract, the bid must be completed in the name of the Joint Venture and it must comply with all the requirements in the document. (e) Bidders are advised to observe the following, of which failure will result in disqualification of bids: i. Bidding document must be submitted in original with one extra copy; ii. Bidding document must be fully signed and initialled on every page; iii. Authorisation to sign bids on behalf of the Bidder as stated in ITB 21.2. iv. Bid Securing Declaration must be fully completed and signed (in accordance with the format indicated in Section III);
ITB 13.1 (d) v.	**N/A** – Bids are not reserved for SMEs
ITB 15.1	**N/A** – Alternative proposals will not be considered. Alternative materials and/or methods proposals should be submitted after award of the contract in accordance with in terms of GCC/SCC 37

ITB 17.1	The price and rates shall be in **Namibian Dollars**
ITB 17.2	Interim Payment for Plant and Material on site **is not** applicable.
ITB 19.1	The Bid shall be valid for **90 days** after the deadline set for the submission of bid, the deadline being counted as the first day of the validity period.
ITB 20.1	The Bidder shall **subscribe to a Bid Securing Declaration** (on the form provided or in the format indicated in Section III) **(Any Bid not accompanied by a subscription shall be rejected as non-responsive)**
D. Submission and Opening of Bids	
ITB 21.1	The number of copies of the Bid to be completed and returned shall be: **One (1) original and one (1) copy. They should be clearly marked "ORIGINAL" & "COPY"** **Relevant pages shall be signed, and all other pages shall be initialled.** **Failure to sign in accordance to this requirement will result in bid being rejected as non-responsive**
ITB 21.2	a) This authorization shall consist of written confirmation and shall be attached to the bid. It may include – (i) a delegation of power by resolution of the Board of a company; or (ii) from the CEO, himself holding power from the Board; or (iii) from a Director being a shareholder of a company; or (iv) through a Power of Attorney. The name and position held by each person signing the authorization must be typed or printed below the signature. b) In the case of Bids submitted by an existing or intended JV an undertaking signed by all parties – (i) stating that all parties shall be jointly and severally liable, if so required in accordance with ITB 5.1; and (ii) nominating a representative who shall have the authority to conduct all business for and on behalf of all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution." The name and capacity of each person signing the authorisation must be typed or printed below signature. **Note: The power of Attorney or other written authorization to sign may be for a determined period or limited to a specific purpose.**
ITB 23.1	The Employer's address for the purpose of bid submission is: **7 General Murtala Mohammed Avenue, Eros in Windhoek** Attention: **Noreen Siyanga** (Head: Procurement Management Unit) The deadline for submission of bids shall be: **Monday, 20 September 2021 @ 10:00 am**

ITB 26.1	The bid opening shall take place at: **7 General Murtala Mohammed Avenue, Eros in Windhoek** **NHE Head Office (Lecture Hall)** Date and time: **Monday, 20 September 2021 @ 10:15 am**
E. Evaluation and Comparison of Bids	
ITB 32	Margin of preference **shall not apply**
ITB 33	**The bid will be evaluated in terms of the criteria and procedures outlined in the ITB, the Bidding Data Sheet and Section IV – Evaluation Criteria**
F. Award of Contract	
ITB 37.1	The award of contract shall be considered to be based upon information and documentary proof provided together with the bidding document. Deviation or material changes to such without the prior approval of the employer will be considered a fundamental breach of contract and may result in termination in terms of GCC 57
ITB 40.1	The Standard Form of Performance Security acceptable to the Public Entity shall be "**a Bank Guarantee**". The Bank guarantee shall be ***10%*** of the contract price inclusive of provisional sums and contingencies sum and VAT.
ITB 41.1	This clause shall be deleted. **There shall be no advance payment.**
ITB 42.1	Interim Payment for Plant and Material on site **is not** applicable.

Section III – Bidding Forms

Table of Forms

Bid Submission Form

The Bidder must prepare the Bid Submission Form on stationery with its letterhead clearly showing the Bidder's complete name and address.

Date: _____
Bidder's Reference No.: _____
Procurement Reference No: _____

To:

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB);

(b) We offer to execute in conformity with the Bidding Documents the following Works:
_____;

(c) The total price of our Bid, offered is (expressed in words and figures):
_____

_____;

(d) Prompt payment discounts are as offered in the Bidding Forms;

(e) Our bid shall be valid for a period of _____ *[insert validity period as specified in ITB 19.1.]* days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) We hereby confirm that we have read and understood the content of the Bid Securing Declaration attached hereto and subscribe fully to the terms and conditions contained therein, if required. We understand that non-compliance to the conditions mentioned may lead to disqualification.

(g) If our bid is accepted, we commit to obtain a Performance Security and a Preference Security (if applicable) in accordance with the Bidding Document;

(h) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 5.2;

(i) We are not participating, as a Bidder in more than one bid in this bidding process other than alternative offers submitted in accordance with ITB 15;

(j) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible under the laws of Namibia;

(k) We are not a government owned entity / We are a government owned entity but meet the requirements of ITB 5.4;

(l) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(m) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and

(n) If awarded the contract, the person named below shall act as Contractor's Representative: ***(Provide certified copy of identity document (ID) or certified copy of a valid passport of representative, including Evidence of signatory authorized to sign the bid)***

Name of Representative: .....

In the capacity of: .....

Signed: .....

Duly authorized to Sign the Bid for and on behalf of:

Name of Bidder: .....

Physical Address: .....

.....

Postal Address: .....

.....

Tel no. (Office): .....

Cell: .....

email: .....

Date: .....

Seal of Company .....

FORM - BID SECURING DECLARATION
(Section 45 of Act)
(Regulation 37(1)(b) an 37(5))

Date: .....*[Day|month|year]*

Procurement Ref No.: .....

To: .....*[insert complete name of Public Entity and address]*

I/We* understand that in terms of section 45 of the Act a public entity must include in the bidding document the requirement for a declaration as an alternative form of bid security.

I/We* accept that under section 45 of the Act, I/we* may be suspended or disqualified in the event of

(a) a modification or withdrawal of a bid after the deadline for submission of bids during the period of validity;

(b) refusal by a bidder to accept a correction of an error appearing on the face of a bid;

(c) failure to sign a procurement contract in accordance with the terms and conditions set forth in the bidding document, should I/We* be successful bidder; or

(d) failure to provide security for the performance of the procurement contract if required to do so by the bidding document.

I/We* understand this bid securing declaration ceases to be valid if I am/We are* not the successful Bidder

Signed:
.....
[*insert signature of person whose name and capacity are shown*]

Capacity of:
[indicate legal capacity of person(s) signing the Bid Securing Declaration]

Name:
.....
[insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____
[*insert date of signing]*

Corporate Seal (where appropriate)
[Note*: In case of a joint venture, the bid securing declaration must be in the name of all partners to the joint venture that submits the bid.]
delete if not applicable / appropriate

FORM - PROMPT PAYMENT DISCOUNT FORM
(Invoice discounts for receiving fast payments)

Date: _____
Bidder's Reference No.: _____
Procurement Reference No: _____

To:

I/We* understand and offer the following Prompt Payment Discounts:

<u>Prompt Payment Discounts (PPD)</u>. Contractors/vendors doing business with the NHE are advised to provide a Prompt Payment Discount (PPD) for receiving early payments unless providing a prompt pay discount would be unduly burdensome. Contractors benefit from PPD by increased, usable cash flow as a result of fast and efficient payments for commodities or services rendered.

NHE and as a result it's end user home owners benefit because contractors reduce the cost of products and services through the applied discount. While Bidders/Contractors have flexibility in determining the actual % discount(s) offered to NHE, the discount(s) must be identified for 0-30, 31-60 and 61-75 days for payment issuance in the column entitled "% Discount Off Proposed Payment Certificate" below.

*Payment days will be measured **<u>from</u>** the date of Certification **<u>to</u>** the date the payment is issued as an EFT (preferred method). The date of payment "issue" is the date a payment is considered "paid" not the date a payment is "received" by a Contractor.*

Enter the Prompt Payment Discount percentage (%) off the invoice payment, for each of the payment issue dates listed, if the payment is issued within the specified Payment Issue days. For example:

5% - 0-30 Days
2.5% - 31-60 Days
1% - 60-75 Days
N/A - 76-90 Days (Payment as per GCC)

If no discount is offered enter 0%

Prompt Payment Discount %	Payment Issue Date w/in
%	0-30 Days
%	31-60 Days
%	61-75 Days

Contractor/Bidder Authorized Signature _____

Date: _____

Contractor/ Bidder Authorized Signatory Print Name and Title:

_____

Corporate Seal (where appropriate)

Republic of Namibia

Ministry of Labour, Industrial Relations and Employment Creation

Witten undertaking in terms of section 138 of the Labour Act, 2007 and section 50(2)(D) of the Public Procurement Act, 2015

1. EMPLOYERS DETAILS

Company Trade Name:……..…

Registration Number :...……...

Vat Number: ……..……

Industry/Sector: ……..……

Place of Business:……..…..

Physical Address:……..

Tel No.:……..……

Fax No.:……

Email Address:……..

Postal Address:……..

Full name of Owner/Accounting Officer:……..……..……...

…….....

Email Address:……..

2. PROCUREMENT DETAILS

Procurement Reference No.:……..

Procurement Description:
……..

……..……

……..……

Anticipated Contract Duration: ……

Location where work will be done, good/services will be delivered: ……..

……..……

3. UNDERTAKING

I ……*[insert full name]*, owner/representative

of ……*[insert full name of company]*

hereby undertake in writing that my company will at all relevant times comply fully with the relevant provisions of the Labour Act and the Terms and Conditions of Collective Agreements as applicable.

I am fully aware that failure to abide to such shall lead to the action as stipulated in section 138 of the labour Act, 2007, which include but not limited to the cancellation of the contract/licence/grant/permit or concession.

Signature: ……..

Date: ……..

Seal:…….

Please take note:

1. *A labour inspector may conduct unannounced inspections to assess the level of compliance*
2. *This undertaking must be displayed at the workplace where it will be readily accessible and visible by the employees rendering service(s) in relations to the goods and services being procured under this contract.*

Qualification Information

*The information to be filled in by **bidders** in the following pages and Forms thereafter shall be used for purposes of post-qualification or for verification of prequalification as provided for in ITB Clause 6. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into English.*

1. **Individual Bidders or Individual Members of Joint Ventures**

(a) Constitution or legal status of Bidder:…… [attach copy]

Place of registration:……..

Principal place of business:……..

Evidence of signatory authorized to sign the bid (if applicable): [attach]

(b) Average annual financial turnover amount of construction work performed during the last *5* years. Submission must be substantiated by audited financial statements.

Each Bidder or member of a JV must fill in this form.

Annual Turnover Data for the Last 5 Years (Construction only)			
Year	Amount Currency	Exchange Rate	N$ Equivalent
Average Annual Construction Turnover			

The information supplied should be the Annual Construction Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed.

(c) Experience as prime contractor in the construction of works of a nature and complexity equivalent to the Works within the last five (5) years. Complete Forms on Current Contract Commitments, General Construction Experience & Contracts of Similar Size and Nature hereafter.

(d) Proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment required for performance of the contract such as:

- Company vehicles
- Trucks, trailers, transport of materials
- Transport of workers
- Site offices
- Site storage
- Mortar mixers batching plants, concrete mixers and/or concrete supply plans
- Dumper trucks
- Excavators
- Compressor/hard rock/soft rock breakers
- Small tools (wheel barrows, spades, etc.)
- Any other equipment not listed

Complete proposals on timely acquisitions including Form on Construction Equipment

(e) Contract Manager/Supervisor with five years' experience in works of an equivalent nature and volume, including no less than three years as Manager. Detailed CV of qualifications, job history and experience is required.

Proposed contract organogram and names, qualifications and experience of proposed key site personnel and technical personnel proposed for the contract

Complete Forms and provide CV of qualifications, job history and experience.

(f) Financial standing of the Bidder for the last five (5) years.

Complete Form herewith including provision of certified copies of Financial Statements

(g) Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, financing partners, financial term sheets and other financial means, to meet a cash-flow requirement of at least the maximum amount indicated in the Bidders cash-flow program but to a minimum of 50% of the bid price.

Source of Funding	Type of Funding	Amount

To be substantiated by proof, term sheets, financing agreements, etc.

(h) Submission of an acceptable bank rating from a registered Namibian Bank. Only ratings of A, B, or C are considered acceptable.

(i) Submission of an intended Construction Program as well as a related Costed Construction Cash-flow Program.

(j) Submission of at Works method statement.

(k) Submission of proposals for sub-contracting components of the works.

Works Component	Proposed Sub-contractor (Name, Address, contact details, etc.)	Amount

Provide CV of qualifications, job history and experience of sub-contractors

(l) Bidder must demonstrate proof of building material suppliers accounts and/or cash accounts, together with good standing reference.

(m) Bidder shall complete and submit a comprehensive list of all past and current litigation, arbitration, mediation or any other dispute resolution solutions involved in the past 5 years

Each Bidder or member of a JV must fill in this form.

Past and Current Litigation, Arbitration, Mediation, etc.			
❑ No pending litigation ❑ Pending litigation			
Year	Matter in Dispute	Value of Claim in N$ Equivalent	Value of Pending Claim as a Percentage of Net Worth

2. **Additional Requirements**

Bidders should provide any additional information requested in the Bidding Document.

Form - Current Contract Commitments / Works in Progress

Each Bidder and each member of a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Name of Contract	Employer, contact name/ address/tel/fax/e-Mail	Value of outstanding work (current N$ equivalent)	Estimated completion date	Average monthly invoicing over last six months (N$/month)
1.				
2.				
3.				
4.				
5.				
etc.				

Form - General Construction Experience

Each Bidder or member of a JV must fill in this form.

General Construction Experience				
Starting Month Year	Ending Month Year	Years	Contract Identification and Name Name and Address of Employer Brief Description of the Works Executed by the Bidder	Role of Bidder

Form - Similar Construction Experience

Fill in one (1) form each contract.

Contract of Similar Size and Nature			
Contract No . . . . . of	Contract Identification		
Award Date		Completion Date	
Role in Contract	Contractor	Management Contractor	Subcontractor
Total Contract Amount	N$		
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount	
Employer's Name Address Telephone/Fax Number E-mail			
Description of the similarity			
a) similarity based on the physical size, complexity, methods, technology or other characteristics as described in Section IX, Technical Specifications.			
b) similarity based on the location within a environmentally sensitive area.			

Form - Construction Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Form - Project Management Organization

I (We) set out below details of the Project Management Organization, together with identification and Curriculum Vitae ("CV") for each key member for each of the construction phases for all the Lots that we are bidding for.

[At a minimum, CVs must be provided for the personnel/subcontractors that would be responsible for the following key positions and tasks, using the forms provided for that purpose:

Project/Contract Management

Site/Construction Management

Equipment/Plant Management

Environmental and Social Compliance

Health and Safety Compliance

Where one of the Bidder's staff members or subcontractors would be responsible for more than one of these positions or tasks, his/her CV must clearly demonstrate the ability to perform each of the allocated positions or tasks.

In addition, the Bidder shall provide information on all supervisory and skilled staff as well as on subcontracted components of the Works.

The names of operators, semi-skilled and unskilled staff are not required, but the numbers planned for each position must be inserted.

For all positions the nationalities of proposed staff members must be indicated. For operators, semi skilled and unskilled staff the numbers of proposed staff members per nationality must be shown.

For staff members and sub-contractors to be recruited, bidders must supply information on their recruitment strategy. Bidders are encouraged to, as far as possible, recruit labor and sub-contractors from the region where the Works will be executed.

Form - CVs of Key Personnel

Name of Bidder

Position		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present employer

Summarize professional experience over the last 20 years, in reverse chronological order.
Indicate particular technical and managerial experience relevant to the project.

From	To	Company / Project / Position / Relevant technical and management experience

Form - Financial Situation

Each Bidder or member of a JV must fill in this form.

	Financial Data for Previous 5 Years [N$]				
	Year 1:	Year 2:	Year 3:	Year 4:	Year 5:
Information from Balance Sheet					
Total Assets					
Total Liabilities					
Net Worth					
Current Assets					
Current Liabilities					
Information from Income Statement					
Total Revenues					
Profits Before Taxes					
Profits After Taxes					

❑ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last 5 years, as indicated above, complying with the following conditions.

- All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies.
- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form - Method Statement

I (We) set out below details of the Construction Method Statement for each of the construction phases. My (our) description identifies the special measures the construction project management and the site project management will put in place to ensure that the activities of each construction phase receive supervision at an appropriate level.

The method statement should contain information listed, but not necessarily limited to the proposed outline below:

The first section of your method statement document is the header information and should be used to provide information to your staff etc., this section might include;

A Title e.g. Work Method Statement, or Standard Operating Procedure

A brief description of the work to be carried out

Your company details, logo, name, address etc.

Start date, completion date

Site address

Site contact details including emergency numbers etc.

Document author, H&S contact

Document number, issue date, revision date, revision number etc.

Section 2 is a summary of the main hazards that are present and the control measures that must be implemented as a result.

List the Personal Protective Equipment that must be worn from your risk assessment and includes it here along with any Environmental or Quality procedures that must be taken during the task.

Section 3 is used to describe the task in more detail:

Staff & training

Permits to work

Machinery shutdown and lock off procedures

Site Access and Egress

Material Handling

Scaffold & Access to height

Background and preparation (site establishment)

Welfare and first aid (health & safety)

Finally, section 4 is the step by step guide and used to explain in detail the steps that must be taken if the task is to be carried out safely. It's important to include all relevant details in the order that you expect them to be carried out.

Form - JV Information Sheet

Each member of a JV or an association must fill in this form.

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Subcontractor's legal name	
JV Partner's or Subcontractor's country of constitution	
JV Partner's or Subcontractor's year of constitution	
JV Partner's or Subcontractor's legal address in country of constitution	
JV Partner's or Subcontractor's authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents: ❑ 1. Articles of incorporation or constitution of the legal entity named above ❑ 2. Authorization to represent the firm named above.	

Section IV - Evaluation Criteria

Evaluation Criteria

This Section complements the Instructions to Bidders. It contains the criteria that NHE will use to evaluate a bid and determine whether a Bidder has the required qualifications. The Criteria hereunder are derived from the ITB and BDS. No other criteria but those indicated here shall be used during evaluation.

Evaluation Methodology

Evaluation will be conducted by a Bid Evaluation Committee (BEC) appointed in accordance with the Procurement Act and Regulations and evaluated in accordance with the criteria stated here below and in tables 1, 2, and 3 in four phases.

Phase 1: Evaluation of Administrative and Legal Compliance

The eligibility criteria will be assessed based on a Yes or No basis. Only the bidders who score a **Yes** for all the required (mandatory) documents and satisfy the formal documentary evidence as indicated in ITB 13.1 and ITB 20.1 as stated in **TABLE 1,** will proceed to the next phase of Financial evaluation.

Phase 2: Evaluation of Technical Compliance

Bidders will be assessed against the Technical Evaluation criteria as stated in **TABLE 2.**

The eligibility criteria will be assessed based on the scoring matrix. Only the bidders who obtain **80%** for all criteria and satisfy the formal documentary evidence**,** will proceed to the next phase of Financial Evaluation.

Phase 3: Evaluation of Financial Compliance

Bidders will be assessed against the Financial Evaluation criteria as stated in **TABLE 3.**

The eligibility criteria will be assessed based on the scoring matrix. Only the bidders who score **80%** for all criteria and satisfy the formal documentary evidence as**,** will proceed to the next phase of Price evaluation.

Phase 4: Price Evaluation (In terms of the Tender/Bid Amount)

The Final Bid Amount of qualifying bidders in terms of Phases 1 to 3 will be subjected to a reasonableness analysis.

NHE will only consider award of the Bid if the Final Amount of the Bidder falls within the 10% bracket (up or down) of the Project/Market Estimate prepared by NHE. The estimated cost for this project is N$ 21,544,769.03 (VAT exclusive). This is necessary for NHE to make sure the Bidder submits a reasonable Bid Amount.

The procurement contract will be awarded to the **lowest, reasonably quoted substantially responsive (administratively, financially & technically compliant)** bid.

RESERVATION TO LOCAL SUPPLIERS / LOCAL BIDDERS

The proposed procurement will be carried out in terms of a directive issued on reservation to local suppliers for the procurement of works.

For the procurement of works (including labour for works), bidders shall have to ensure 100% ratio of local content and declare that their works are in compliances with the local contents by signing the Local Sourcing Declaration form in the bidding document.

Reservation shall be given to works providers based and operating from the 14 regions of Namibia where the construction works are required.

The procurement of works will however be extended to suppliers from other regions in Namibia in the event that there are no bids submitted by local suppliers in the region or bids from local suppliers do not meet the qualification criteria.

Proof that the bidder is operating from the respective region should be provided to substantiate local supplier status. This proof can be in a form of a fitness certificate from the local authority or any other proof such as deed of sale, lease agreement or confirmation letter from the constituency councillor.

Table 1: Evaluation of Administrative and Legal Compliance

Please note the following: NB!!

- **All Documents must be certified copies or original where indicated. Non-certified documents or copies of certified copies are not accepted and might result in disqualification)**
- **Bid documents must be properly prepared (binding is recommended) and indexed accordingly. Submission of loose documents may lead to disqualification. NHE will not be held responsible for lost documents.**

	Factor/Requirement	Yes/ No
1	Bid submission Form ITB 13.1 (a), certified copy of identity document (ID) or certified copy of a valid passport of representative & evidence of signatory authorized to sign the bid	
2	Bidding Document submitted in original & copy and fully signed & initialed ITB 21.1	
3	Authorisation to sign bids on behalf of the Bidder ITB 21.2 **(Please note that this is a separate evaluation from criteria 1 above on completed bid submission form. A separate written authorisation must be submitted as stated in ITB 21.2)**	
4	A duly completed and signed Bid Securing Declaration form ITB 20.1	
5	A certified copy by the Namibian Police / Commissioner of Oath of the Company Registration /founding statement, ITB 13.1 (d) i	
6	A valid original or certified copy by the Namibian Police/ Commissioner of Oath of a Good Standing Tax Certificate from the Receiver of Revenue; ITB 13.1 (d) ii	
7	A valid original or certified copy by the Namibian Police/ Commissioner of Oath of a Good Standing Certificate from Social Security Commission ITB 13.1 (d) iii	
8	A valid certified copy by the Namibian Police/ Commissioner of Oath of an Affirmative Action Compliance Certificate or in its absence, proof from the Employment Equity Commissioner that the Bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998, ITB 13.1 (d) iv	
9	Completion of the Written Undertaking as Contemplated in Section 138(2) of the Labour Act,2007;	
10	Written undertaking on the part of the Bidder that the salaries and wages payable to its personnel in respect of this proposal are compliant to the relevant laws, Remuneration Order, and Award, where applicable and that it will abide to sub-clause 4.6 of the General conditions of Contract if it is awarded the contract or part thereof as included in Bidding Forms ITB 13.1 (d) vi **(Please note that a separate undertaking should be made on the bidder's letterhead and this is a separate evaluation from criteria 9 above on the written undertaking form on page 28, which should also be completed by the bidder)**	
11	in the case of a Joint Venture, have a fully signed joint venture agreement and all parties must provide full mandatory documents stated above in (5), (6), (7), and (8); or	
12	in the case were a legally enforceable Joint Venture has been constituted for the purpose of executing this contract, the bid must be completed in the name of the Joint Venture and it must comply with all the requirements in the document	
	OVERALL ADMINISTRATIVE & STATUTORY REQUIREMENT COMPLIANCE	

Table 2: Evaluation of Technical Compliance

Evaluation of MandatoryTechnical Compliance (Bidder must score 80% or more to proceed to the next stage of evaluation).

	Description	Source of Verification	Scoring Notes		Weight
1	Experience as Prime/Main Contractor in the Construction(any form of construction works) of Works and complexity equivalent(value of project must be at least 50% of the bid amount) to the Works within the last five (5) years. Projects will be looked at individually and not combined. At least one of the Projects mentioned must meet the required criteria. ITB 6.3(a) Note – Bidder must be older/operating for more than 5 years. Project chosen by Bidder to meet the required criteria must have a completion certificate and a reference letter attached. One of these documents must indicate the value of the Project.	• Bidder must be the main contractor for previous work done. • Bidder must be older/operating for more than 5 years. • Complexity of work shall be determined by the value of previous projects/work done 50% of the current bid price.	5 Years or more in existence, prime contractor + needed project to prove the works. Note-(completion cert and reference letter must be attached, of which one must indicate the value of the Project).	10%	**10%**
			Less than 5 years in existence , prime contractor + needed project to prove the works. Note-(completion cert and reference letter must be attached, of which one must indicate the value of the Project).	5%	
			Five years or more in existence – no Project proof	2.5%	
			If contractor cannot provide proof of the needed project + the fact that he/she was the main contractor.	0%	
2	Experience in House Construction or Building Works and size(value of project must be equivalent to the bid amount) for each of the Projects completed in the last five years. Projects will be looked at individually and not combined. At least one of the Projects mentioned must meet the required criteria. ITB 6.2(c)(i) Project chosen by Bidder to meet the required criteria must have a	• Nature of work must relate to building or residential/house construction.	Project chosen to prove – House/Residential Construction(value of project must be equal or more than the bid amount). Note-(completion cert and reference letter must be attached, of which one must indicate the value of the Project).	30%	**30%**
			Project chosen to prove – Building Construction(value of project must be equal or	20%	

	completion certificate and a reference letter attached. One of these documents must indicate the value of the Project.		more than the bid amount). Note-(completion cert and reference letter must be attached, of which one must indicate the value of the Project).		
			Project chosen to prove – House or Building Construction(value of project 50% or more of the bid amount). Note-(completion cert and reference letter must be attached, of which one must indicate the value of the Project).	10%	
			If any of the required information mentioned above is missing – contractor will not score any points. Contractor to make sure all info is attached or more than required.	0%	
3	Construction equipment/plant proposed to carry out the Contract/Project. List must be provided + proof of ownership. Lease or renting is also allowed – Proof of this must be provided. ITB 6.2(d) & ITB 6.3(b)	• Company vehicles • Trucks, trailers, transport of materials • Transport of workers • Site offices • Site storage • Mortar mixers batching plants, concrete mixers and/or concrete supply plans • Dumper trucks • Excavators • Compressor/hard rock/soft rock breakers • Small tools (wheel barrows, spades, etc.) • Any other equipment not listed	List of plant attached + proof of ownership of at least 2 or more of the plant mentioned.	10%	**10%**
			List of plant attached + proof of ownership of at least 1 of the plant mentioned.	7.5%	
			Proof of lease or renting. Proper proof must be provided – account + good standing of account standing (date should be after the 1st bid advert)	7.5%	
			Proof of lease or renting. Proper proof must be provided – account (not older than 3 months from date of 1st bid advert).	5%	
			Only list provided – must be a proper detailed list.	2.5%	

			None of the above	0%	
4	Contract Manager/Supervisor with five years' experience in works of an equivalent nature and volume, including no less than three years as Manager. Detailed CV of qualifications, job history and experience is required. Proposed personnel must work for the Bidder or there must be an intend(proof must be attached) to do so once Bidder is successful 6.3(c)	• Position of Manager/Supervisor (Project Manager, Construction Manager or Site Agent) must be indicated either in bidding document or on the CV. • CV of Manager/Supervisor must be provided. • Experience of Manager/Supervisor must be of relevance to the current nature of bid. • Manager/Supervisor must indicate 3 or more years' experience in Managerial/Supervisory position. • Must work for bidder or there must be proof on intend to do so.	Proper CV, relevant experience(works + management) & qualifications(must be attached) + must work for bidder or intend must be there.	20%	**20%**
			Proper CV, relevant experience (works + management) & maybe no qualifications or little + must work for bidder or intend must be there.	15%	
			Proper CV, with little or no experience(works + management) & qualifications(must be attached) + must work for bidder or intend must be there.	10%	
			None of the above	0%	
5	Qualifications and experience of key site personnel and technical personnel proposed for the contract. At least 2 must be mentioned with detailed CV's attached. Proposed personnel must work for the Bidder or there must be an intend(proof must be attached) to do so once Bidder is successful. ITB 6.2(e)	• Detailed Organogram/ similar layout must be provided by bidders – names & positions. • Key site personnel must have relevant experience and qualifications relating to the nature of the tender. • At least two other CV's other than that of the Manager/Supervisor must be provided. • Must work for bidder or there must be proof on intend to do so. • Examples of such key personnel are: Foreman, Plumber, Electrician, • Engineer, QS, Bricklayer, Safety Officer, Carpenter etc.	Detailed organogram + 2 proper CV's attached with the needed experience & qualifications + must work for bidder or intend must be there.	15%	**15%**
			Detailed organogram + 1 proper CV attached with the needed experience & qualifications + must work for bidder or intend must be there.	10%	
			Detailed organogram + 2 proper CV's attached with the needed experience & little or no qualifications + must work for bidder or intend must be there.	10%	
			Detailed organogram + 2 proper CV's attached with the little or no experience & qualifications + must work for bidder or intend must be there.	7.5%	

			No organogram + 2 proper CV's attached with the needed experience & qualifications + must work for bidder or intend must be there.	7.5%	
			Detailed organogram only.	5%	
			None of the above.	0%	
6	Submission of a Detailed Construction Program. ITB 6.3€	• Detailed programme must be attached. • Timelines, activities etc.	Submitted – Proper & detailed.	10%	**10%**
			Not submitted/lack of detail.	0%	
7	Works method statement	• Layout must be similar/ have the same/relevant content as indicated on page 41	Submitted.	5%	**5%**
			Not submitted.	0%	
	Total				**100%**

Table 3: Evaluation of Financial Compliance

Evaluation of Financial Compliance(All Documents must be certified copies or oginal where indicated)(Bidder must score 80% or more to proceed to the next stage of evaluation).

#	Factor	Requirement	Bidder				Source of Verification	Scoring Guidance	Weight	Actual Score
			Single Entity	Joint Venture or Association						
				All partners combined	Each Partner	At least one partner				
1	Bank Rating	Submission of an acceptable bank rating from a registered Namibian Bank. Only ratings of A, B, or C are considered acceptable. ITB 6.2 (h)	Must meet requirements		Must meet requirements		Letter from Namibian registered bank not older than six months on original letterhead.	Rating A = 20% Rating B = 20% Rating C = 15% Raring D and Below = 0%	**20%**	
2	Historical Financial Performance	Submission of Audited or Unaudited financials for the past five (5) years to demonstrate the current soundness of the bidder's financial position and its long-term profitability. ITB 6.2 (f)	Must meet requirements		Must meet requirements		Form: Financial Situation, with attachments Submission of audited financial statements of the last 5 years	5 years = 20% 4 years = 15% 3 years = 10% Not submitted or 2 & less than 2 = 0%	**20%**	
3	Financial Resources	Bidder must demonstrate access, or availability of, financial resources such as cash, liquid assets, unencumbered real assets, lines of credit, financing	Must meet requirements	Must meet requirements			Form: Financial Resources; (liquid assets) Current Contract Commitments equivalent to the value of bid	Proof of financial resource equivalent to 100% of bid amount – 40% Proof of financial resources between 80% and 100% of	**40%**	

		partners, and other financial means, to meet financial obligations of at least 100% of the bid amount.					amount Bidder must demonstrate access to financial resources equivalent to bid price	bid amount = 25% Proof of financial resources below 80% of bid amount = 10% No proof = 0%		
4	Building Material Suppliers	Bidder must demonstrate proof of building material suppliers accounts and/or cash accounts, together with good standing reference. BDS	Must meet requirements		Must meet requirements		Proof of accounts as well as letters of good standing not older than 12 months Credit / cash accounts or access to building materials equivalent to bid price	Proof of building material accounts (2 accounts or more) + good standing (date should be after the 1st bid advert)(One of the accounts should be a supplier who supplies most of the building materials – credit limit should be N$ 1 000 000.00 or more) = 20% Proof of building material account (1 account) + good standing (date should be after the 1st bid advert))(The	**20%**	

								account should be a supplier who supplies most of the building materials – credit limit should be N$ 500 000.00 or more) = 15%		
								Proof of building material accounts(2 accounts or more) - no good standing(account not less than 3 months old from date of 1st bid advert) = 10%		
								Cash Account/s with proper proof of money(cash) – 10%		
								Cash Account/s only– 5%		
								No proof = 0%		
	OVERALL FINANCIAL COMPLIANCE SCORE								**100%**	

Important Notes on No.3 – Financial Resources(Bidder must demonstrate access, or availability of, financial resources such as cash, liquid assets, unencumbered real assets, lines of credit, financing partners, and other financial means, to meet financial obligations of 100% of the bid amount)

- **No Letters of Intent will be accepted.**
- **All Letters from Financial Institutions - must be original and properly stamped (all pages).**
- **All Letters from Financial Institutions - date must be after the date of the 1st Bid Advert (after 20 August 2021).**

- **All Letters from Financial Institutions - must clearly indicate the Project Name of the Bid.**
- **Letters from Financial Institutions indicating that they will provide performance guarantee is not relevant at this stage. It only becomes relevant once the Bidder is successful.**
- **Bank Statements must be properly stamped (all pages), original and date must be after the date of the 1st Bid Advert.**
- **Indications of Bank Overdraft Facilities: Letters must be properly stamped (all pages), original and date must be after the date of the 1st Bid Advert. This must also clearly indicate how much of the funds are still available to use for this Project (Bid).**
- **Once a Financial Institution provides a letter to Bidder indicating funds, it must be approved already. Funds should be available at any time.**
- **Assets: Proof of ownership (Bidder or owner) and proof that there are no bonds, or any other debts allocated to the assets. All assets stated must be unencumbered. Valuations must also be attached, and date must be after the date of the 1st Bid Advert. Bidders must also demonstrate that they fully own the asset or not. Bidders must indicate if the particular asset serve as security/collateral for any other debt and the exact amount of the debt should be stated.**
- **Bidders must note that the credit limits on Building Accounts will not be evaluated under financial resources, but it will be scored separately under criteria 4.**
- **Should Investment be presented as financial resources, kindly state the value of the investment at hand. If funds are going to be used for the Project, kindly demonstrate when funds will be available. If it is going to be used as a guarantee to access funds, kindly indicate. All the supporting documents must be attached.**
- **If the Bidder is going to get financing from another Institution (other than a Bank/Financial Institution), please provide clear and proper proof of resources/funds available from this Institution. If there are any agreements or obligations from this Institution, such proof must be attached.**
- **Should the Bidder provide numerous sources from which funding will be obtained, this will be allowed, and all of this will be added together or combined. This will apply for any Joint Venture.**
- **Any other ways of Funding can be provided. Bidder must make sure that the documents that are supplied is sufficient, clear, proper and contains all the relevant information.**

PART 2 – Employer’s Requirements

Section V - Employer's Requirements

Table of Contents

SCHEDULE OF RATES

(FOR ITEMS SUBJECT TO POSSIBLE REMEASUREMENT)

_____

CONTRACTOR

_____

DATE

(v) SCHEDULE OF RATES

SR1 GENERAL NOTES

1.1 The rates in this section form part of the contract documents and will be used for possible adjustments to variable quantities as executed within the contract and the remeasurement of these variable items shall be executed by a representative of NHE and will be subjected to the approval of the contractor.

1.2 NHE shall verify these rates before the signing of the contract.

1.3 An extra over item implies that the rate tendered shall be additional to the rate given in the stated item.

SR2 BULK EARTH WORKS

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
2.1 Remove trees exceeding 100mm thick, grub up all roots, and remove from site.	Each			
2.2 Excavate in soft material to open face to reduce levels over site for a depth not exceeding 750mm deep including cutting into corners and forming to slopes, embankments, etc. and deposit on site in stockpiles.	m^3			
2.3 Extra over item 2.2 for excavations being in intermediate excavation material in lieu of in soft material.	m^3			
2.4 Ditto but being in hard rock in lieu of in soft material (blasting).	m^3			
2.5 Excavate and remove anthill and fill back and compact.	m^3			
2.6 Spread and level material from excavations over site where directed and compact to 93% of maximum density in layers not exceeding 150mm including forming to slopes, embankments, etc. on site.	m^3			
2.7 Ditto but extra over for approved filling carted on by contractor.	m^3			
2.8 Spread and level surplus material from excavations over site where directed.	m^3			
2.9 Cart away surplus or unsuitable excavated material to a suitable dumping site to be located by the contractor.	m^3			

SR3 EARTHWORKS

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
3.1 Excavate in soft material below natural ground level for surface trenches not exceeding 1m deep.	m^3			
3.2 Ditto as 3.1 but deeper than 1m but not exceeding 2m deep.				
3.3 Ditto as 3.1 but deeper than 2m.				
3.4 Extra over item 3.1 for excavations to surface trenches for excavation in intermediate excavation material in lieu of in soft material.	m^3			
3.5 Ditto hard rock in lieu of in soft material (blasting).	m^3			
3.6 Approved filling resulting from the excavations for back-filling in surface trenches compacted in layers not exceeding 150mm thick to 93% of maximum density.	m^3			
3.7 Ditto in making up levels under solid floors.	m^3			
3.8 Ditto but extra over for approved filling carted on by contractor.	m^3			
3.9 Treat foundation trenches with ant proofing solution Complete - PREMISE 200 SC as manufactured by BAYER	m^2			
3.10 Carefully level the top surface ground or filling under solid floors and treat with ant proofing solution.	m^2			
3.11 Form 75mm deep V-shaped channel in ground or filling under solid floors against walls and fill with ant proofing solution and afterwards backfill and ram.	lin m			

SR4 CONCRETE AND FORMWORK

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
4.1 Mass concrete class 15 Mpa in backfilling in sub foundations work.	m^3			
4.2 Mass concrete class 15 MPa in blinding under footings.	m^3			
4.3 Concrete 25 Mpa in footings.	m^3			
4.4 Ditto in floor slabs.	m^3			
4.5 Steppings in foundations including formwork not exceeding 150mm high.	each			
4.6 Ditto exceeding 150mm and not exceeding 300mm high	each			
4.7 Mass concrete class 10 MPa as filling to cavities in block work.	m^3			
4.8 Concrete lintels: (1) 110mm wide (2) 150mm wide	 lin m lin m			

4.9 Form solid 15 MPa concrete step with granolithic finish from 150mm below ground level, 1000mm wide, stepped as required to form 175mm high risers and 300mm wide tread. Tread to be reeded for width of 100mm near front edge.	/step			
4.10 Expansion joint in floors.	Lin m			
4.11 R-395 Mesh Reinforcement	m^2			

SR5 BRICKWORK

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
5.1 Half brick wall in foundation (rock face 40 MPa).	m^2			
5.2 Ditto as 5.1 cement bricks.	m^2			
5.3 Ditto as 5.1 but clay bricks.	m^2			
5.4 One brick wall in foundations (cement bricks) brick force included.	m^2			
5.5 Ditto (clay bricks).	m^2			
5.6 Ditto (external 40 MPa rock face, internal cement bricks).				
5.7 Cement blocks in foundation (class B dimensions) brick force included.	m^2			
5.8 Ditto (Type A)	m^2			
5.9 Half brick wall in superstructures (cement bricks).	m^2			
5.10 Ditto (clay bricks).	m^2			
5.11 One brick wall in superstructures (cement bricks).	m^2			
5.12 Cement blocks in superstructure (class B).	m^2			
5.13 Ditto (class A).	m^2			
5.14 High tensile steel welded mesh reinforcement 80mm wide and building horizontally into joints of brickwork in foundations.				
5.15 Ditto but 150mm wide.	lin m			
5.16 Construction joints in brickwork.	lin m			

SR6 WATERPROOFING

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
6.1 250 Micron black polyethylene sheeting as DPC 110mm wide.	lin m			
6.2 Ditto 220mm wide.	lin m			
6.3 250 Micron polyethylene sheeting 6000mm wide.	m^2			

SR7 CARPENTRY & JOINERY

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
7.1 Supply and fit laminated roof timbers planned all round bearing SABS mark for structural timber - Sizes 114 x 45mm Sizes 165 x 45mm Sizes 231 x 45mm	 lin m lin m lin m			
7.2 Supply and fix SA Pine roof timbers (WROT) bearing SABS mark for structural timber: Sizes 114 x 38mm Sizes 152 x 38mm Sizes 152 x 50mm Sizes 228 x 50mm	 lin m lin m lin m lin m			
7.3 Supply and fit **813 x 2032** Swartland 6-panel door D03169. Semi-exterior, hardwood finish or similar and approved.	item			
7.4 Supply 2032 x 813 x 40 hollow core flush panel hard board door faced with 2 vertical edging strips.	Item			
7.5 Supply and fit galvanised corrugated iron roof sheeting 0,5mm econo IBR nominal thickness.	lin m			
7.6 Supply and fit galvanized ribbed trough roof sheeting (IBR profile) 0,5mm econo.	lin m			
7.7 Ditto but extra over for cranking at ridge (per sheet).	unit			
7.8 Supply and fit galvanized ridge capping for corrugated sheeting.	lin m			
7.9 Ditto but for ribbed trough sheeting (IBR profile) - inclusive of serrated, ridge closer.	lin m			
7.10 Supply and fit 13mm fibre board ceilings to 38 x 50mm SA Pine brandering with fibre board cornices and brandering included.	m^2			
7.11 Supply and fit 2mm peg board ceilings to 38 x 3mm SA Pine brandering with Meranti beads and brandering all included.	m^2			
7.12 Supply and fit 1,8 long with 50x50mm Meranti framed bedroom cupboard with high density particle board faced both sides with white melamine including concealed steel hinges and Union Trimline NY5590 pull handles.	item			
7.13 Ditto, but under sink cupboard	item			

SR8 IRONMONGERY

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
8.2 Supply and fit 2-lever mortice lock as specified. Type Blesbok ART 460/311 or similar and approved.	item			
8.3 Supply and fit 76mm Solid Narrow Style Double Cylinder lock with draw back latch with G191 brushed stainless steel with galvanized steel case including standard solid door handle.	item			

SR9 METAL WORK

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
9.1 Door frames - 1,2mm steel red oxide primed with double rebate 2032 x 813mm fitted 110 mm wall	item			
9.2 Ditto but for 220 mm wall	item			
9.3 Supply and fix galvanized lightweight steel Trusses: As per projects specification.	Item			

SR10 WALL FINISH

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
10.1 (a) Render in plaster composed of five parts sand to one part cement under internal finish 10mm thick finished with a steel trowel.	m^2			
(b) Wood float finish	m^2			
10.2 Ditto (a) but in small panels and polished smooth.	m^2			
10.3 Extra for forming slightly rounded angle.	lin m			
10.4 Ditto V-groove.	lin m			
10.5 Ditto fair edge and arris.	lin m			
10.6 Cement slurry complete as described in specification (Clause 10.8).	m^2			
10.7 Plaster of slurry consistency, mix 1:5 wallcrete/sand, steel trowel applied with brush finish.	m^2			

SR11 PLUMBING AND DRAINAGE

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
11.1 Break through side of existing inspection chamber and build in end of 110mm PVC pipe in 2:1 cement mortar including making good to side of inspection chamber and any necessary altering to channelling and benching.	item			
11.2 Break into existing municipal main sewer and connect to satisfaction of local authority.	item			
11.3 110m rigid grey UPVC pipe vertically above ground.	lin m			
11.4 110mm white PVC sewer pipe in soft material, including excavation, back filling, not exceeding 0,75m deep.	lin m			
11.5 Ditto exceeding 0,75m and not exceeding 1,5m deep.	lin m			
11.6 Extra over sewer line on for excavation in intermediate material in lieu of in soft material. Excavation only.	m^3			
11.7 Ditto but being in hard rock in lieu of in soft material (blasting).	m^3			
11.8 Mass concrete class 10 MPa as encasing around 110mm sewer pipe.	m^3			
11.9 100mm x 45° Cast iron ABC rodding eye cover and frame including joint to PVC pipe encased in mass concrete class 10 MPa and set in earth including necessary framework, excavation, filling and compaction.	item			
11.10 15mm Copper pipe fixed to wall including all fittings and holder bat.	lin m			
11.11 Ditto but 15mm galvanized pipe.	lin m			
11.12 Ditto but fusio-pipe PN 16 20mm	lin m			
11.13 15mm Copper pipe chased into wall including all fittings.	lin m			
11.14 Ditto but 15mm galvanized pipe.	lin m			
11.15 Ditto but fusio-pipe PN 16 20mm	lin m			
11.16 15mm Galvanized pipe laid in trench not exceeding 300mm deep including all fittings.	lin m			
11.17 Ditto but 20mm galvanized pipe.	lin m			
11.18 Ditto but fusio-pipe PN 16 20mm	lin m			
11.19 Ditto but 25mm HDPE pipe and including all fittings and adaptors.	lin m			
11.20 15mm "Cobra" No 121 rough brass stop tap including joints or similar and approved.	item			
11.21 Ditto but 20mm "Cobra" No 121 or similar and approved.	item			
11.22 Supply and fit 50mm diameter UPVC two-way vent valve, economic type, on top of stub stack.	item			
11.23 Supply and fit standard precast concrete gulley as specified	item			

complete.				
11.24 Supply and fit low-level wash down "Vitreous China" WC pan "Cobra Classic 100" or similar and approved.	item			
11.25 Supply and fix white composite plastic 9 litre cistern "new world" or similar and approved.	item			
11.26 Supply and fit single flap black "Penta" toilet seat or similar and approved.	item			
11.27 Supply and fit "Cobra Classic" size 560 x 405 "Vitreous China" wash hand basin with 2x tapholes complete with wall brackets. Tap hole cover for one hole or similar and approved.	item			
11.28 Supply and fit 1800mm x 510mm single drainer end bowl reversible stainless-steel sink completes with CP outlet, plug and chain fixed as per detail.	item			
11.29 Supply and fit 150 litre low pressure (LP) Glass tube Solar Hot water system with a back-up electric unit, set on automatic ready to kick-in at low temperature including booster pump and all accessories fixed as per manufactural's detail.	item			
11.30 Supply and fit Kwikot 100 Litre Slimline 600i Dual electric water heater (Code: ESG-100-D2-I) complying with SABS 151- 2002, overall size 990x480mm high fitted with isolator switch, operating at 400kPa with temperature and pressure safety relief valve including 20mm female draincock with inlet compression				
11.31 Ditto but 1200 x 510 complete with stand as detailed.	item			
11.32 Supply and fit PVC trap.	item			
11.33 Supply and fit 40mm UPVC grey waste pipes including all connections, bends and holder bats as per detail.	lin m			
11.34 Supply and fit 15mm taps to sanitary fittings. (1) One hole basin mixer Carina 294CA with cast fixed outlet ½" BSP female inlets. SANS 226 TYPE	item			
(2) Carina 266/041/10CA wall type sink mixer with aerated swivel spout outlet, ½" BSP female inlet SANS 226 TYPE 2	item			
(3) Carina 228CA-15 SANS 226 TYPE 2 Undertile Stop taps	item			
(4) Carina 1x Wall type Bath mixer with diverter, ½ " BSP male inlet SANS 226 TYPE 2	item			
(5) Flexible 300mm CP connector pipe.	item			
11.35 Supply and fit 15mm x 85mm CP shower rose type "Cobra" 070, including 15mm female inlet on a 45° CP elbow.	unit			
11.36 Supply and fit 600mm chromium plated towel rail.	item			
11.37 Supply and fit toilet roll holder as described.	item			
11.38 Supply and fit bath mixer as described.	item			

SR12 ELECTRICAL WORK

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
12.1 16mm^2 x 4 Core PVC/SWA/PVC copper conductor in soft material including excavation not exceeding 0,75m deep.	lin m			
12.2 10mm^2 Bare copper earth conductor ditto.	item			
12.3 Extra over excavations to cable trench for excavation being in intermediate excavation material in lieu of in soft material.	m^3			
12.4 Ditto in hard rock in lieu of in soft material (blasting).	m^3			
12.5 50mm rigid UPVC sleeve pipe surface mounted to wall complete with holder bats.	m			
12.6 Ditto but alternative sleeve as required by local authority description.	m			
12.7 30A Single pole current limiter type Heinemann CF1-G3.	no			
12.8 Supply and fix standard 15/16A 250V3-pin switched socket outlet.	item			
12.9 Ditto but surface mounted box.	item			
12.10 Electrical conduits chased in wall, including all fittings.	lin m			
12.11 Electrical conduits surface mounted to wall including all fittings and holder bats.	lin m			
12.12 Supply and fit standard brass bayonet type batten holder.	unit			
12.13 Supply and fit standard 5A surface mounted rocker type wall switch complete with ivory cover plate.	unit			

SR13 PAINTING

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
13.1 Prepare, paint one coat exterior quality acrylic PVA emulsion paint on external walls in foundations.	m^2			
13.2 Supply and paint to the following surfaces according colour schedule.	m^2			
a. Hardwood doors – sanded down, primed with approved universal undercoat and finished with one covering coat "Velvaglo".	m^2			
b. Ditto, but with 2 finishing coats.	m^2			
c. Steel windows and door frames – patch primed with red oxide metal primer and finished with one covering coat of high gloss enamel paint.	m^2			
d. Ditto, but with 2 finishing coats.	m^2			
e. Roof rafters in small areas 1 coat carbolineum/creosote	m^2			
f. Walls, internal and external 2 coats exterior quality acrylic PVA.	m^2			

SR14 GLAZING

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
14.1 Supply and fit with approved putty 4mm clear float glass in pane not bigger than 0,5m^2.	m^2			
14.2 Supply and fit with approved putty 4mm obscure glass in panes not bigger than 0,5m^2 (arctic or similar).	m^2			
14.3 Supply and fit 3mm silvered float glass copper backed mirror, size450x650mm.	No			

SR15 FENCING

	UNIT	MATERIAL RATE	LABOUR RATE	TOTAL RATE
15.1 Supply and fit 75mm diameter mild steel tubing, 1,8m long set in a 400x400x600mm concrete footing.	each			
15.2 Supply and fit galvanized diamond mesh 1,2m high with 3 strands of 25mm straining wire fixed to the standards and posts, as described in the PROJECT SPECIFICATIONS	each			
15.3 Supply and fit wire fencing 1,2m high of five strands of 2,5mm straining wire and Y-section mild steel standards at 6m centres with 3 T-type droppers per bay.	lin m			

Day Works Schedule

The Contractor shall state hereunder the percentage he will require in addition to the nett wages paid to cover his overhead charges, profit, supervision, maintenance, liabilities, obligations and risks as set out in the Documents, for all work to be executed at the written request of the Engineer by Day Work. The percentage stated for labour shall include for all use of hand tools. The rates for labour shall be for time spent on the works only.

Unless otherwise specified all work executed by Day work shall conform to the requirements of the Specification.

MATERIALS

Nett cost delivered on site (15% maximum)
plus …… %

LABOUR

Nett wages (25% maximum)
plus …… %

NETT WAGES SHALL BE DEEMED TO COMPRISE THE FOLLOWING:

Basic Wage
Workmen's Compensation
Pension Fund
Holiday Bonus
Service Bonus
Medical Aid

LABOUR (NETT WAGES)

ITEM	TRADE	UNIT	RATES
1	CHARGE HAND	HOUR	.....
2	CONCRETER	HOUR	.....
3	BRICKLAYER	HOUR	.....
4	CARPENTER	HOUR	.....
5	ELECTRICIAN	HOUR	.....
6	PLUMBER	HOUR	.....
7	PLASTERER	HOUR	.....
8	PAINTER	HOUR	.....
9	LABOURER	HOUR	.....
10	STEEL FIXER	HOUR	.....
11	WELDER	HOUR	.....
12	OTHER (STATE)	……..……..……	

PLANT

ITEM	SPECIALISED PLANT	UNIT	RATES
1	CONCRETE MIXER	DAY	.....
2	TRACTOR	HOUR	.....
3	TRAILER	HOUR	.....
4	WATER BOWSER	HOUR	.....
5	LOADER	HOUR	.....
6	DUMPER	HOUR	.....
7	BAKKIE	KM	.....
8	TRUCK	KM	.....
9	OTHER (STATE)		……..……

2. COSTING OF HOUSES

NOTE – Please use the table below to help you with the Costing of the Different Houses. All details are mentioned below.

House Type	No of Houses	House Size(m2)
Core 5	**20**	**35,84**
Core 7	**15**	**44,00**
Core 8	**5**	**50,37**
Core 9	**9**	**53,50**
Gull (shower)	**11**	**63,95**
Naute (shower)	**6**	**64,54**
Onduli	**2**	**74,80**
Pelican-T (Shower)	**1**	**77,50**
Spitzkoppe	**1**	**104,10**
	70	

NOTE – Should you have any trouble finding the site, PLS do not hesitate to contact the following persons.

1.Herman Bock @ 061 292 7223

2. Sara Ekondo @ 065 229 150

NATIONAL HOUSING ENTERPRISE

PROJECT CODE: 775 191/2

CONSTRUCTION OF SEVENTY (70) HOUSES IN OKAHAO

SCHEDULE OF CONSTRUCTION COST AND SUMMARY

HOUSE TYPE	HOUSE SIZE (m^2)	NO. OF HOUSES	BASIC CONSTRUCTION COST / HOUSE	EXTERNAL PAINT	INTERNAL PAINT	CERAMICTILES WALLS	CERAMIC TILES FLOOR	CUPBOARDS	HOT WATER (GEYSER)	APRON	RAIN WATER GOODS	FENCING	CEILINGS	TOTAL CONSTR. COST / HOUSE	TOTAL CONSTR. COST
Core 5	35.84	20													
Core 7	44.00	15													
Core 8	50.37	5													
Core 9	53.5	9													
Gull (Show er)	63.95	11													
Naute (Show er)	64.54	6													
Onduli	74.80	2													
Pelican-T	77.50	1													
Spitzkoppe	104.10	1													
		70												TOTAL CONSTRUCTION COST FOR CONVENTIONAL HOUSES	
														C/F TO FORM OF TENDER:	

***THE VAT ACT, 10 OF 2000, AS AMENDED ALLOWS THE FOLLOWING**

VAT REGISTERED CONTRACTORS SUPPLYING SERVICES IN THE FORM OF ERECTION OR EXTENSION TO BUILDINGS USED SOLELY FOR RESIDENTIAL PURPOSES TO A DEVELOPER, (EG. NHE), MAY ZERO RATE SUCH SERVICES. THEREFORE THE CONTRACTOR IF VAT REGISTERED, WILL BE IN A POSITION TO CLAIM THE INPUT TAX ON THEIR ACQUISITIONS, i.g. BUILDING MATERIALS, ETC.

NATIONAL HOUSING ENTERPRISE

PROJECT CODE: 775 191/2

CONSTRUCTION OF FIFTY (70) HOUSES IN OKAHAO

SUMMARY OF CONSTRUCTION COST

TOTAL CONSTRUCTION COST FOR HOUSES Excluding VAT):	
SUB TOTAL CONSTRUCTION COST:	
*ADD VAT	
TOTAL CONSTRUCTION COST CARRIED FORWARD TO FORM OF TENDER	

***THE VAT ACT, 10 OF 2000, AS AMENDED ALLOWS THE FOLLOWING**
VAT REGISTERED CONTRACTORS SUPPLYING SERVICES IN THE FORM OF ERECTION OR EXTENSION TO BUILDINGS USED SOLELY FOR RESIDENTIAL PURPOSES TO A DEVELOPER, (EG. NHE), MAY ZERO RATE SUCH SERVICES. THEREFORE THE CONTRACTOR IF VAT REGISTERED, WILL BE IN A POSITION TO CLAIM THE INPUT TAX ON THEIR ACQUISITIONS, i.g. BUILDING MATERIALS, ETC.

SPECIFICATIONS

PROJECT CODES 775 191 / 2

NHE Okahao Housing Development - W/ONB/NHE-02/20/21

SCOPE

This Project Specification is set out in four portions.

Portion 1 covers a general description of the project, the facilities available and the requirements to be met.

Portion 2 covers variations and additions to standardized/particular specifications that are applicable to the contract.

Portion 3 covers project specifications.

Portion 4 covers general specifications in relations to the workmanship and type of materials if not specified in the project specifications.

STATUS

The Project Specification forms an integral part of the Contract Documents and supplements the General Conditions of Contract, the Special Conditions of Contract and the General Specifications. In case of any discrepancy or conflict with any parts of the General Conditions, Special Conditions, Drawings & General Specifications, the Project Specifications shall prevail and take precedence.

PORTION 1
THE WORKS

1.1 GENERAL DESCRIPTION

This contract covers the construction of seventy (70) houses of different shapes and sizes as shown on the drawings in Okahao.

The work comprises the supply of all materials, plant, equipment, tools, labour and all incidentals necessary to erect the housing units as shown on the drawings and described in the Form of Tender and Schedule of Construction Costs.

1.2 DESCRIPTION OF SITES AND ACCESS

The site for the erection of the housing units is situated in Okahao as shown and clearly indicated on the locality plan. The site is accessible from the surrounding streets.

1.3 CHARACTER OF MATERIAL

Generally, the soil in situ material consists of sandy clay with a possible occurrence of intermediate material in the form of calcrete outcrops.

1.4 DETAILS OF CONTRACT

1.4.1 The construction of seventy (70) houses of the following types and sizes:

House Type	No of Houses	House Size(m2)
Core 5	**20**	**35,84**
Core 7	**15**	**44,00**
Core 8	**5**	**50,37**
Core 9	**9**	**53,50**
Gull (shower)	**11**	**63,95**
Naute (shower)	**6**	**64,54**
Onduli	**2**	**74,80**
Pelican-T (Shower)	**1**	**77,50**
Spitzkoppe	**1**	**104,10**
	70	

1.4.2 Sewer and Water connections

1.4.3 Electrical installations

1.4.4 Fencing

1.5 CONSTRUCTION PROGRAMME

1.5.1 It is expected that the site will be handed over as per BDS & SCC and the work must be completed within the time stated in the Bidding Data Sheet (BDS) & Special Conditions of Contract (SCC).

1.5.2 PENALTY FOR DELAY

Tenderers must NOTE that the construction programme to be submitted in terms of GCC & SCC and must clearly show the dates of handover and the number of houses to be handed over to NHE.

The Contractor shall be liable to pay to the NHE the sum stated in the Special Conditions of Contract as loss of income and additional expenses incurred for every day which shall elapse between the due handing over date as shown on the programme and the actual handing over date.

1.6 SITE FACILITIES AVAILABLE

(a) The approximate position of the existing sewer and water reticulation is shown on the site plans.

(b) Tenderers must also approach the Local Authority in regard to electrical supply or must provide their own generator set.

(c) The contractor must liaise timeously with the Local Authority in order to obtain electricity supply to the site.

1.7 SITE FACILITIES REQUIRED

The contractor must satisfy Health and Safety and the Local Authority requirements regarding registration of labour force, sanitary requirements for labourers and housing of labourers on site.

The contractor shall erect site offices and sheds adequate to accommodate the use of the contractor and employer.

1.8 FEATURES REQUIRING SPECIAL ATTENTION

(a) The contractor shall carefully protect and preserve all erf pegs (survey beacons) and shall be required to have any disturbed erf pegs replaced at his own expense by a registered land surveyor.

(b) Although as-built services drawings exist, the contractor is required to exercise the utmost care when excavating trenches for any connections to services. The service connection points are not always clearly marked on site.

Any enquiries regarding the services for this project may be directed to the NHE directly, or to the Technical Department of the Okahao Town Council.

(c) The contractor must satisfy all Local Authority requirements regarding any service connections (e.g. isolator switches, etc) and the costs thereof would be borne by the contractor.

1.9 DRAWINGS

The contractor shall receive free of charge three sets of copies of the drawings and two sets of documents. Additional copies may be issued at the cost of reproduction.

1.10 TAKING OVER PROCEDURES

(a) When in the opinion of the Contractor, the building is ready for taking over; the Project Manager shall upon written notice by the Contractor, stating erf numbers carry out an inspection and prepare a list for the rectification of defects.
Numerous and major defects must be rectified first and houses then resubmitted for inspection. Only after the satisfactory completion of the rectification of these defects shall a handover date be mutually agreed upon again not being earlier than seven (7) calendar days after the date of the final inspection.

(b) The buildings must be clean and fit for occupation before taking over.

(c) All services must be connected and running freely.

(d) Early taking over of batches of 10 or more houses may be acceptable for handover at any one time. In this instance, any complete unit will be acceptable for handover.

(e) All erf pegs to be in position and to be shown to the Project Manager at

the taking over of the building.

(f) No houses will be accepted for taking over on a Saturday or Sunday.

(g) The Contractor is responsible for the readiness for taking over. NHE is not the contractors finishing foreman. The contractor must thus ensure that all defects are dealt with by the time of taking over inspection. Should the Project Manager determine the contractor is not ready for taking over, the contractors request for taking over will be denied.

1.11 **ALTERNATIVE CONSTRUCTION METHODS**

1.11.1 GENERAL NOTES

The Contractor may offer alternative construction methods and materials in terms with Value Engineering proposals in accordance with the SCC, provided that -

(a) The accommodation offered is substantially as shown on the drawings (which comply with minimum acceptable standards) and may not be reduced. They may be exceeded to suit a particular system of construction.

(b) The Project Manager reserves the right to subject any design or materials submitted, to such tests as considered necessary, and he may reject any construction or material, which fails to pass the tests. The Contractor must furnish, free of charge to the Project Manager, any samples, which may be required for test purposes.

(e) Acceptance of a design or materials by the Project Manager shall not, in any way relieve the Contractor of his normal obligations under the contract. The Contractor shall be responsible for the design and other costs associated with their Value Engineering proposal and any required engineering certification, including any delays resulting from such proposals.

1.12 **PROVISIONS WITHIN THE TENDER SUM**

1.12.1 GENERAL NOTES

The Contractor shall allow in his tender sum for the following –

(a) All the work as detailed and described in the specifications and on the drawings.

1.12.2 VARIATIONS TO THE TENDERED SUM

(a) The following items will be subject to re measurement on site, and the costs involved will be determined by using the schedule of rates forming part of this contract:

(i) Foundation walls and filling up to DPC level when ordered by

the Project Manager.

(ii) Extra or additional excavations to foundation trenches ordered by the Project Manager.

(iii) Foundation excavations under that shown on the drawings or described in the specification

(iv) Extra over for excavations in "intermediate" and "hard" material.

(v) The length and/or depth of sewer lines over or under that shown on the drawings or detailed in this section of the specification.

(vi)The length of water supply piping over or under that shown on the drawings or detailed in this section of the specification.

1.12.3 SAMPLE WALL PANEL

The Project Manager may require that a sample wall panel shall be constructed to represent the materials and standard of workmanship to be used on the works and may submit such panel to tests for structural stability, impact and rain penetration. The Contractor shall allow in his lump sum for the construction of such a panel but not for any preliminary test to which it is subjected. Should the test prove that the sample is unsatisfactory, the Contractor shall pay for any subsequent tests.

1.12.4 DAY WORK DESCRIPTION

(a) The schedule shall be used to calculate the payment due for work ordered by the Project Manager and for which no rates appear in the Schedule of Rates.

(b) The description of work, quality of materials and standard of workmanship shall be as described in the specification.

(c) The prices quoted in the schedule shall cover all the necessary insurances, use and maintenance of ordinary plant (e.g. barrows, running planks, hand pumps, hand tools and appliances generally), superintendence, overhead charges and profit, and, in the case of mechanically operated plant, the wages of the operator and assistant, consumable stores, fuel and maintenance, and all other incidentals necessary for the execution of the work.

(d) The time of gangers, overseers, or charge hands working with their gangs is to be paid for under appropriate items, but the time of foremen is not to be included but is to be provided for in supervision.

(e) The prices quoted for labour shall be for straight time only and no overtime rates shall be payable.

(f) The rates for heavy plant shall only apply to plant, which the Contractor has available on the site.

(g) The rates for materials shall cover delivery at the usual points at which materials are received on the site and no distribution to the individual sites where day work is in progress, the cost of such distribution being chargeable in addition.

(h) The cost of additional watching and lighting specially necessitated by day work shall not be paid for separately but shall be included in overhead charges.

PORTION 2
ADDITIONAL CLAUSES AND VARIATIONS

2.1 MATERIALS

All materials supplied by the Contractor must be as specified and/or shall bear the SABS/SANS mark. The Project Manager must first approve materials not bearing this mark before being brought on to site.

2.2 SAMPLES

Samples of materials to be used in the execution of the contract must be submitted to the Project Manager as required for approval before placing of any orders.

2.3 BRICK TESTS

Brick compressive strength tests shall be made at random during the period of construction and shall be carried out at instruction by a laboratory approved by the Project Manager.

Bricks failing to comply with the minimum required compressive strength may not be used in the construction of houses. The batches from which the failing bricks shall be broken down, all at the Contractor's own cost, unless otherwise directed by the Project Manager.

The Contractor shall also be liable for the costs of tests that failed.

If required by the Project Manager, the Contractor shall submit samples of the bricks he intends to use for testing prior to the initial placing of orders.

2.4 CONCRETE TEST CUBES

The Project Manager will expect of the Contractor to prepare concrete test cubes of the concrete for the foundations and surface beds and as instructed.

Strength tests shall be carried out at instruction by a laboratory approved by the Project Manager.

The works from which the failing tests shall be broken down, all at the Contractor's own cost, unless otherwise directed by the Project Manager.

The Contractor shall also be liable for the costs of tests that failed.

2.5 PROTECTION AGAINST TERMITES

Ant/termite poison shall be applied under surface beds, to foundation trenches and under the aprons in accordance with Clause 2.12 of the General Specification and of the project Specification. This shall be carried out by an independent ant/termite poison supplier approved by the Project Manager and a certificate shall be provided for each house.

2.6 TABLING (EARTHWORKS)

If the average slope of the ground is more than 1:60 extra excavations up to a maximum of 500mm will be required to conform to the minimum requirements of depth of foundations. It is left to the Contractor to decide whether to table or build out plinth walls.

If the contractor opts not to do tabling no extra payment for plinth walls, backfilling and compaction will be made up to a height of 980mm from the bottom of the foundation.

An area, 1500mm wide, around the perimeter of the house shall be formed according to the tabling detail, compacted to at least 93% MMOD AASHTO density and finished to a slope of 1:30 away from the house on all sides.

Contractors shall allow in the tender for the forming of tables, extra excavations, compaction, imported fill, removal or spreading of spoil material and the sloping of the side slopes of the excavated tables to a slope of 1:1,5. Setting out will be the full responsibility of the contractor.

All excavations must be assumed to be in soft material. The contractor will be paid extra over for intermediate/hard material as per Schedule of Rates where rock occurs. Should the Contractor discover that the material is not soft – he/she should get permission first from the Project Manager before excavations can continue. Failure to do so will result in the Contractor not being paid for this extra work. This applies to all excavations.

No deviations from the above will be allowed without the proper instructions from the Project Manager.

2.7 SERVICES AND CONNECTIONS

2.7.1 WATER CONNECTIONS

(a) Bidders must allow for connection lengths as indicated on the site plans. This item is a re measurable item for the length and the classification of the excavated material.

All excavations must be assumed to be in soft material. The contractor will be paid extra over for hard material as per Schedule of Rates where rock occurs.

(b) The Local Authority provides a water connection to each erf with a water meter, stop cock and stand pipe inside the erf boundary on positions as indicated on the site plans. The contractor must allow for a tap and installation of gum poles as braces for stand pipes.

(c) The houses shall be provided with an electrical geyser point as well as all the necessary hot water pipes chased into the walls at the correct places and plugged at both open ends, ready for future hot water distribution. Contractors must also install in all cases two CP under wall stop cocks in the shower.

(d) Contractors must note that they shall be liable for damages to or physical loss of the water connections and meters after the installation thereof.

2.7.2 SEWER CONNECTIONS

(a) The existing main sewer lines generally consists of 110m UPVC pipes. Larger diameter can occur as shown on the relevant drawings. The Contractor must allow for connection to the existing municipal sewer pipes as follows:

(1) to existing 100mm connection points
(2) break into existing manholes
(3) break into the existing main municipal sewer lines

(b) Bidders must allow for connection lengths as indicated on the site plans. The cost for the total length of pipes, including trench excavations, inspection chambers and the connection to existing as well as new connection points, as indicated on the site plans, must be included in the tender document.

The contractor must base the cost calculation on a trench depth of 450mm at the head of the house drain and a connection depth of 1500mm with a steady slope.

(c) The drainage system to be used is the closed type as per NBRI-Information Sheet X-Bou 2.65 of 1984 (copy available).

Any proposed alteration to the above system must be clarified with the Project Manager before implementation. The laying and installation of the drainage system must be done according to the pipe manufacturer's Code of Practice.

(d) No manholes will be required within an erf for connection purposes other than those shown on the drawing.

All pipes must be bedded on sand.

The minimum cover of the head of the house drain must be 300mm and the average cover across the erven should be 600mm. The minimum grade of house connections must be 1:60.

(e) The laying of sewer pipes is a remeasurable item in respect of length and depth as set out above and indicated on the site plans.

(f) All excavations must be assumed to be in soft material.

(g) Ramps to main sewer lines will be allowed if done according to SABS Code of Practice, SABS 1200.

(h) The Contractor must check the levels of the existing sewer lines on site before any construction commences to prevent any house connection gradient problems.

2.7.3 ELECTRICAL CONNECTIONS

(a) The Electrical Contractor must be in possession of a valid Municipal's wireman's licence and must be registered as an electrical contractor.

(b) The contractor must supply and fit a 150x150mm galvanized box, 250mm before the distribution board on the same height as the distribution board, at positions as indicated on the drawings.

(c) Nored will supply pre-payment meters to the 150x150mm galvanized box at the Contractor's cost. The Contractor shall connect underground supply cable from the kiosk to the pre-payment meters and distribution board.

(d) The electrical contractor must approach Nored regarding the earthing requirements and the costs of adherence thereto shall be borne by the contractor.

(e) Two (2) spare are conduits to the underside of the roof or to above ceiling height must be installed to make provision for future extensions.

2.7.4 CONNECTION FEES

(a) All connection fees (water, sewer & electricity), including temporary connections, due to the Local Authority shall be paid by the Contractor. Contractor will be liable for the Electrical Supply Cable (from available kiosk or erf connection) + Prepaid Box (supply & install). This also applies to the water & sewer connections (pipes + fittings & water meter).

(b) The Contractor shall give notices (including inspections) required in terms of regulations and by-laws of the Local Authority relating to the work and the cost of adherence thereto shall be borne by the Contractor.

2.8 SUB-CONTRACTORS

All Sub-Contractors must first be approved in writing by the Project Manager before they can work on site. Failure to do so in advance will result in the Sub-Contractor being removed from site and his/her work will be broken down/removed at the Contractors own cost. Request for approval should be done in writing. Project Manager will have 7 working days to approve/disapprove the request.

Plumbing & Electrical Sub-Contractors must be fully qualified – Qualifications to be submitted to Project Manager in writing.

2.9 TESTING OF FILLING

All filling under floors must tested & also foundation trenches. This testing will be paid for by the Contractor.

3.0 WATER PRESURE TESTING & LEAKS

When brickwork is done just before plastering takes place, water pressure must be tested, and house must be put under pressure for at least 24 hours to check for water leakages.

3.1 WALL MOISTURE TESTS

Moisture must be tested in walls before they are primed. Moisture must not exceed 15% at all.

3.2 BRICKFORCE

Brick force to be done as follows –
(a)Foundation Walls – Every Course
(b)Structure Walls – Every 3rd Course
(c)Above Lintel (incl Beam Filling & Gables) – Every Course

3.3 CONCRETE & BRICK STRENGHTS

Concrete Strengths as follows;

(a)Foundation – 25 MPA

(b)Surface Bed – 25 MPA

(c)Apron – 25 MPA

Brick Strengths as follows;

(a)Foundation (In Land) – (7MPA)

(b)Structure (In Land) – (7MPA)

(c)Foundation (Coast) – Rock Face(40MPA)

(d)Structure (Coast) – (7MPA)

(e)Clay Bricks – 14MPA (must be approved first before being used)

3.4 JOINTS

All Construction Joints must be straight. All internal doors to have construction joints.

3.5 LINTOLS

All doors & windows to have PC lintols.

3.6 COMPLETION & COMPLIANCE CERTIFICATES

Contractor will be responsible to supply NHE with both a Completion Certificate and a Compliance Certificate (Electrical) once the house is done and ready for handover. Should these Certificates not be present, the house will not be regarded as complete.

3.7 EXTRA WORKS & VARIATIONS

Before any extra work or variation is done by the Contractor is has to be approved by the Project Manager. If not work should not be done. If not approved – no payment will be made.

PORTION 3
PROJECT SPECIFICATIONS

1. FOUNDATION AND FOUNDATION WALLS

1.1 TREATMENT AGAINST TERMITE ATTACK

Following excavation and prior to casting of concrete for strip foundation, site shall be treated using PREMISE 200 SC as manufactured by BAYER in strict accordance with manufacturer's instruction and specification, without any deviation and/or omission. Contractors must adhere to the careful handling of harmful substances and chemicals as laid down in the manufacturer's safety data sheet.

Compacted filling must be treated in similar fashion well before surface bed is cast. Same to be done on the aprons.

1.2 FOUNDATION FOOTINGS

Foundation Footings shall be 650mm wide and 250mm thick concrete strips with concrete cured to attain a nominal compressive strength of 25MPA and reinforced with R-395 Mesh Reinforcement.

1.3 FOUNDATION WALLS

All foundation walls shall be constructed with 220mm wide standard clay bricks as the type manufactured by Kombat Bricks with bricks force at every course.

2. FLOORING

2.1 DAMP PROOFING

2.1.1 DAMP PROOF MEMBRANE (DPM)

A 250 micron "GUNPLAS' black Damp proofing Membrane shall be laid above a well compacted surface prior to pouring concrete for the floor slab,

2.1.2 DAMP PROOFING COURSE

A 250 micron "GUNPLAS" Black damp proofing membrane shall be laid, as a damp proofing course, on top of foundation walls before laying the first course of bricks for super structure.

2.2 FLOOR SURFACE BED

The Floor surface bed shall be 100mm thick concrete poured on top of well laid DPM and levelled with steel float.

2.3 APRONS

The aprons shall be 75mm at 2 degrees fall away from the house. As per detail drawings.

3. WALLS AND OPENINGS

3.1 EXTERNAL WALLS

All external walls shall be erected using 220mm thick clay bricks with a compressive strength of 14MPA and shall be plastered and painted according to paraphernalia, except where indicated on drawing external walls shall be NFX Namclay facebrick sealed with a clay brick sealant as the type by “Cemcrete” silicon preventative sealer with no colour or sheen effect on surface.

3.2 INTERNAL WALLS

All internal walls shall be 110mm thick clay bricks wall with a nominal compressive strength of 14MPA and shall be plastered and painted as per specification.

3.3 WINDOW SCHEDULE

No	Area	Window Type	Description	
1	Where indicated on plan layout	**ND4** Side Hung Window FX7	**1511x1245**mm side hung open out window, dipped in one coat of red oxide priming before leaving manufacturers. Handles shall be brass two-point handle engaging with brass striking plate and brass sliding stay.	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint
2	Where indicated on plan layout	**NC7** Side Hung Window FX7	**1022x949**mm side hung open out window, dipped in one coat of red oxide priming before leaving Manufacturers. Handles shall be brass two-point handle engaging with brass striking plate and brass sliding stay.	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint
3	Where indicated on plan layout	**NC4** Side Hung Window FX7	**1511x949**mm side hung open out window, dipped in one coat of red oxide priming before leaving manufacturers. Handles shall be brass two-point handle engaging with brass striking plate and brass sliding stay.	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint
4	Where indicated on plan layout	**NE2** Top Hung Window FX7	**1022x654**mm top hung open out windows dipped in one coat of red oxide priming before leaving manufacturers; shall have brass peg stay, steel peg and locking bracket.	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint

5	Where indicated on plan layout	**NE1** Top Hung Window FX7	**533x654**mm top hung open out windows dipped in one coat of red oxide priming before leaving manufacturers. shall have brass peg stay, steel peg and locking bracket	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint
6	Where indicated on plan layout	**ND7** Side Hung Window FX7	**1022x1245**mm side hung open out window, dipped in one coat of red oxide priming before leaving Manufacturers. Handles shall be brass two-point handle engaging with brass striking plate and brass sliding stay.	Burglar proofing to all window sections shall be the wispeco pattern NPB2 made using 10mm diameter bars and painted with Gloss enamel metal paint

Note – This should be read in conjunction with the drawings. Drawings will indicate if it is Aluminium or Steel windows. All windows must get burglar bars – aluminium and steel.

3.4 DOOR SCHEDULE

No	Area	Door Type	Description	Lockset Furniture
1	Entrance/ External	D1	**813 x 2032** Swartland 6-panel door D03169. Semi-exterior, hardwood finish or similar and approved fixed to Wispeco Namibia double rebate hot dip galvanised pressed steel door frames 1mm thick to suit door size as indicated above and a wall thickness of 220mm and shall be painted according to paraphernalia.	QS Sets Cylinder; Satin Nickel SN (60mm – QS 1103SN). Lock; Silent latching/Heavy duty/Stainless steel forehand – QS 6055/1(Latch bolt and dead bolt,55mm backset and 60mm centre). Handles; Core Houses – Coupe Oslo Conventional Houses – Coupe Umea
2	Rooms/ Internal	D2	**813 x 2032** Hollow core Hardboard face Door with edging strips and fixed to Wispeco Namibia double rebate hot dip galvanized pressed steel door frame 1mm thick to suit door size 813x2032mm high, for 110mm wall Complete with Hinges and painted according to paraphernalia.	QS Sets Lock; QS 5757(Stainless steel forehand – three lever,57mm backset and 57mm centre). Handles; Core Houses – Coupe Oslo Conventional Houses – Coupe Umea

3	Door stops		Rubber doorstops for all internal doors must be fixed to either side walls at door handle level or to floor as determined by site agent on site.	
4	Weather board		Aluminium weather board fixed to all entrance doors.	

3.5 BURGLAR-PROOFING TO EXTERNAL DOORS

Mild steel square hollow section frame (25mm x 25mm x 2mm), with solid square mild steel verticals (12mm x 12mm) at 120mm centres, and with MS plate seam lock rail(1,6mm) at 1m AFFL welded between mild steel square hollow section frames (25 x 25 x 2mm) as indicated on detail drawing. The gate shall be primed with red oxide and painted with high gloss enamel paint. Colour: off white.

LOCK FURNITURE FOR SECURITY OR BURGLAR-PROOFING DOORS

QS Satin Nickel SN (60mm – QS 1103SN) Cylinder lock silent latching/Heavy duty/Stainless steel forehand – QS 6055/1(Latch bolt and dead bolt,55mm back-set and 60mm centre) with QS UMEA door handle.

HINGES

70mm/weld 20 Bullet/Butterfly hinges welded in position as shown on detail drawing.

3.6 FENCING

WIRE MESH FENCING

Wire mesh fencing shall be galvanized diamond mesh 1200 x 50 x 2 fencing as specified or shown on drawing. It shall be 1,2m high, formed with three strands of 2,5mm diameter straining wire. One strand at the top, one strand at the bottom and one in the centre of the fence and attached to the posts and standards with 2.0mm diameter galvanized wire.

Fencing shall be provided with Y-section Iscor or approved mild steel standards, 1.8m long, driven 0.6m into the ground at distances of not more than 5m apart, and with 2 H-section or T-type droppers to each bay.

At corners, ends and intersections of fencing, posts of not less than 75mm diameter mild steel tubing and metal of not less than 2.0mm thick, shall be provided.

The posts shall be 1.8m long, fitted at the top with pressed steel caps, welded to posts and at the bottom with 150 x 150 x 3mm thick mild steel base plates firmly bedded 0,6m deep in the ground and each encased, below ground level, by a 400 x 400mm, 15 Mpa Concrete block 500mm deep. Posts shall have holes for the straining eye bolts or permanent wire strainers and wires as necessary, and shall be supported by 2m long stays of not less than 40mm inside diameter mild steel tubing and of metal not less than 2,0mm thick with top ends flattened, holed and bolted to posts with M12 bolts and bottom ends fitted with 150 x 150 x 3mm thick mild steel base plates and bedded 0,6m deep in

the ground and each surrounded by 15 Mpa concrete block 300 x 300x300mm. Each intermediate post shall be supported by one stay and corner posts and posts at intersections of fencing each by two stays.

All wire shall comply with the requirements of SABS specification 675.
Posts and stays shall be painted one coat approved aluminium paint.

Each Erf shall be fenced accordingly on all sides as shown on drawing.

3.7 GATES

Gates shall be formed of 25 mm internal diameter mild steel piping with all joints welded, strongly braced as and where necessary, and filled in with netting as described above, properly strained and securely bound to the piping with 2mm diameter galvanized wire.

The gates shall be 1,2m high and, unless otherwise specified; single gates shall be 1m wide and double gates 3 m wide.

Gates shall be hung on adjustable hinges. Single gates shall be provided with steel spring catches and double gates with U-shaped catches and drop bolts engaging in wrought iron stop.

Gateposts shall be 1,8m long, each fitted with cap and base plate, and with one stay complete with base plate, and embedded in concrete footings, all as specified for fencing posts.

The gates and gate posts shall be painted one coat of aluminium paint.

All wire shall comply with the requirements of SABS specification 675.
Both a small & big gate must be installed.

4. ROOFING

ITEM	ROOF MATRIAL	FINISH
Roof Covers	0.5mm galvanised IBR roof sheets with serrated metal closers at ridging and where flashing is required and fixed to purlins using top speed screws with bigger washers drilled in not nailed.	Natural
Roof Trusses	Roof trusses shall be light steel, hot dip galvanised, trusses as manufactured and supplied by "Clotan Steel" and custom designed to NHE House types and accompanied by Engineer's Certification. .	
Sisalation	**405 Multi-purpose Grade** Drawn tautly across the rafters allowing 150mm overlap and secured with 40x3.2x1100 counter batten strips, the 150mm overlap should be either glued (any contact adhesive) or taped	Natural

4.2 RAIN WATER GOODS

ITEM	MATERIAL	COLOUR
Gutters	Standard 125mm square galvanized gutters fixed to purlins.	As per Paraphernalia
Down pipes	75mm diameter downpipe complete with shoe installed as indicated on drawings extending from bottom end of offsets to 300mm above ground level or where applicable above apron. Downpipes shall be fixed to wall using 75mm diameter holder bats and spikes. Position of downpipes as shown on drawings.	As per Paraphernalia
Offsets, elbows and shoes	75mm diameter offsets must be used to connect gutters with down pipes.	As per Paraphernalia

Note – All houses to get rainwater goods even if it is not indicated on the drawings. Allow for such in the Bidding Amount.

4.3 FASCIA AND BARGE BOARDS

Fibre-cement Fascia and Bargeboards painted 1 coat bondseal primer or GP1 primer depending on colour and 2 coats of Very durable, pure acrylic, UV resistant, sheen finish, fully washable and scrubable, stain resistant and hard wearing Promac Dimension Silk paint as per schedule for paraphernalia. Must be painted on both sides. Conventional House - 225 x 12mm and Core House – 150 x 12mm.

5. EXTERNAL FINISHES

All external walls shall be 220mm thick clay bricks wall with a nominal compressive strength of 14MPA and shall be plastered and painted and shall receive one coat of alkali resistant, water resistant Promac GP1/GP2 plaster and wall primer and two coats of very durable, pure acrylic, UV resistant, sheen finish, fully washable and scrubable, stain resistant, hard wearing Promac Dimension Silk paint. (as per colour schedule), except where indicated on drawing external walls shall be NFX Namclay facebrick sealed with a clay brick sealant as the type by “Cemcrete” silicon preventative sealer with no colour or sheen effect on surface.

6. INTERNAL FINISHES

6.1 INTERNAL WALL FINISHES

Internal walls shall be 110mm thick concrete brick walls with a minimum compressive strength of 7Mpa.All internal wall surfaces shall be steel float plaster and receive 1 coat of alkali resistant, water resistant Promac GP1/GP2 primer and 2 coats of durable pure acrylic, UV resistant, stain resistant fully washable paint with matt finish Promac Dimension Matt.

6.2 BATHROOMS

Bathroom walls shall receive 1 coat of alkali resistant primer and 2 coats of superior acrylic medium sheen as the type by promac paints except where walls are tiled with glazed wall tiles for splash back:

Wall Tiles – White Ceramic (200mm x 200mm).

Two (2) rows of white glazed wall tiles above wash hand basin, PVC edging strips at corners and ends.

Bathtub walls shall be tiled with white glazed wall tiles all around and two (2) rows above bathtub where indicated on drawing, PVC edging strips at corners and ends.

Shower walls shall be tiled to the height of 2050mm above finished floor level (AFFL) including the 150mm splash back curb which will be tiled on all sides with PVC edging strips at corners and ends.

6.3 KITCHEN

Two (2) rows of glazed wall tiles above sink, PVC edging strips at corners and ends.

6.4 CEILING

6,4mm Rhinoboard Ceiling, brandered at 400mm centres in one direction only, fixed using 38mm Galvanized screws spaced at 150mm centres. Installation shall be in strict adherence to manufacturers' specification at angle between wall and ceiling use 75mm Rhino Cove Cornice installed according to manufacturers' specification. Trap door to be also installed with a meranti frame.

6.5 FLOOR FINISHES

LIVING / DINNING KITCHEN AND PASSAGE	100mm thick concrete slab surface.	**Surface**: Steel float concrete **Finish**: Ceramic tiles ranging in size from 300x300mm to 500x500mm with a maximum price tag of N$150.00/sqm and as indicated on schedule with 76mm ceramic skirting and matching PVC edging strips. **Colour**: as per schedule
BEDROOMS **and** **SHOWER FLOORS (white mosaic – non-slip)**	75mm thick concrete slab surface.	**Surface**: Steel float concrete **Finish**: Ceramic tiles ranging in size from 300x300mm to 500x500mm with a maximum price tag of N$150.00/sqm and as indicated on schedule with 76mm ceramic skirting and matching PVC edging strips. **Colour**: as per schedule

7 SANITARY FITTINGS

7.1 WASH HAND BASIN

Afsan 520 x 415mm white vitreous china basin (product code 5702003) with a centred tap hole including integrated overflow and chain stay hole, bolted to wall with two 10mm bolts at

900mm above finished floor level (AFFL) complete with Cp outlet and trap angle valve, plug and chain or equal and approved system.

7.2 TOILET PAN AND CISTERN

Vaal Sanitaryware Hibiscus White vitreous china close coupled wash down suite comprising 90º outlet open rim pan (product code 772610) and matching 9 litre cistern (product code 710531) including lid and fitments with double flap white seat or Astina range by "Betta Sanitaryware" complete with white double flap seat, lid, fittings, flush pipe and angle valve all to match Bathtub and WHB colours.

7.3 BATHTUB

Where applicable a 700x1700mm white standard "Libra" bathtub with flared inside edge and heavy squared handles by Libra Sanitaryware or similar and approved complete with accessories.

7.4 SHOWER

½" x 50mm adjustable shower rose with ball joint connector, Code: 068BJ by Cobra Watertech, chrome plated with ½" angle shower connector arm code: 026CP, with code: 025 chromium plated fascia plate, male iron inlet connection, or similar and approved. (CP shall be glossy finish)

7.5 TAPS

7.5.1 WASH HAND BASINS

One hole basin mixer Carina 294CA with cast fixed outlet ½" BSP female inlets. SANS 226 TYPE 2 complete with 2 x ½" female iron 400mm long flexible inlets restricted to 6l/min maximum flow restrictor, head part code:P-71-2CA, connection tubes C-M10X1/2,aerator C-M24X1 and ½" light pattern washer C-098-15 as manufactured by Cobra Watertech and installed according to manufacturer's specification. A similar and approved product may be considered as an alternative.

Neoperl CASCADE faucet Aerator STD Insert only 4 L/min (1 GPM) by Pearl Waterfree Technologies. With built in pressure compensating technology, widespread, splash proof and non-clogging device.

7.5.2 KITCHEN SINK MIXER

1 x Carina 266/041/10CA wall type sink mixer with aerated swivel spout outlet, ½" BSP female inlet SANS 226 TYPE 2 complete with concealed connections S-050L-20x15, headpart complete P-71-2CA, swivel outlet S-041/10, aerator C-M22X1 and ½" heavy pattern tap washer C-98-15 as manufactured by Cobra Watertech and installed in strict accordance to manufacturer's specification. A similar and approved product may be considered as an alternative.

Neoperl CASCADE faucet Aerator STD Insert only 4 L/min (1 GPM) by Pearl Waterfree Technologies. With built in pressure compensating technology, widespread, splash proof and non-clogging device.

7.5.3 SHOWER STOP TAPS

Carina 228CA-15 SANS 226 TYPE 2 Undertile Stop taps complete with sliding wall flanges C-FL30X1, Headpart complete P-73-2CA, ½" light pattern tap washers C-098-15 with sleeves and wall flanges; one stop tap each for cold and hot water as manufactured by Cobra Watertech and installed strictly to manufacturer's specification. A similar and approved product may be considered as an alternative.

7.5.4 BATH MIXER

1x Wall type Bath mixer with diverter, ½ ″ BSP male inlet SANS 226 TYPE 2 complete concealed connections S-050L-20x15, headpart complete P-71-2CA, ½ ″ light pattern tap washer C-098-15, alpine adjustable spray pattern hand shower 012-W-ALPINE with flow straightener, ½″ BSP male inlet complete with cradle as manufactured by Cobra Watertech and installed in strict adherence to Manufacturer's specifications. A similar and approved product may be considered as an alternative.

7.6 TOILET ROLL HOLDER AND SOAP DISH

Ceramic toilet roll holder and Soap dish to match WC, WHB, Cistern and Bathtub in colour, fixed to positions shown on drawing. Soap Dish to be installed at all baths and showers. All must be white

7.7 TOWEL RAIL, SHOWER CURTAIN RAIL

Chromium-plated, 600mm long towel rail and a curtain rail hang at 1900mm A.F.F.L fixed to sides of shower walls and a soap dish shall be installed in shower and bath as indicated on drawing.

7.8 KITCHEN SINK

A 300DEB, 1500x535mm stainless steel Double end bowl **drop in** sink, manufactured in grade 304 (18/10) 0.8mm thick stainless steel by Franke Kitchen Systems (Pty) Limited or similar and approved – Conventional Houses.

A 300DEB, 1200x535mm stainless steel Double end bowl **sit on** sink, manufactured in grade 304 (18/10) 0.8mm thick stainless steel by Franke Kitchen Systems (Pty) Limited or similar and approved – Core Houses.

7.9 CURTAIN RAILS

Curtain rails shall be of the type Yokota, double Kanda or similar and approved. Curtain rails with nylon runners shall be fixed 100mm above windows and shall extend at least 150mm beyond both ends of windows, installed according to manufacturer's specification. All windows will get curtain rails.

7.10 MIRRORS

Mirrors to be 450 x 650 X 3mm PG Smartglass Images silvered float glass copper backed mirrors with 10mm bevelled and polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber

buffers to plugs in brickwork or concrete installed in position above Wash Hand Basin (above 2 courses of wall tiles). All bathrooms to have mirrors.

8. LIGHT FITTING SCHEDULE

	Rooms	Light fittings in all rooms shall be standard 150mm bowl fitting with porcelain base, glass bowl suitable to take 100W max. Incandescent or Fluorescent bulbs, ceiling mounted as shown on drawing. 20W energy saving fluorescent bulbs as the type by Eurolux must be provided.
	Kitchen	Where indicated, 1200mm single tube fluorescent light fitting as the type by Beka, ceiling mounted as shown on drawing.
	Passage	Standard 150mm bowl fitting with porcelain base, glass bowl suitable to take 100W max. Incandescent or Fluorescent bulbs, ceiling mounted as shown on drawing. 20W energy saving fluorescent bulbs as the type by Eurolux must be provided.
	Toilet	Standard 150mm bowl fitting with porcelain base, glass bowl suitable to take 100W max. Incandescent or Fluorescent bulbs, ceiling mounted as shown on drawing. 20W energy saving fluorescent bulbs as the type by Eurolux must be provided.
	External	150mm bowl fitting with porcelain base, glass bowl wall mounted at 2100mm AFFL as indicated on drawings, suitable to take 100W max. Incandescent or Fluorescent bulbs. 15W energy saving fluorescent bulbs as the type by Eurolux must be provided.
	Living room	52" (130cm) Ceiling Light Fitting with Fans as the type by "Bright Star Lighting" Models FCF001 Beige, FCF002 Brown, 5 Blade 3 speed reversible ready to take 2 x 60W ES with Pole mount not exceeding a maximum height of 400mm; complete with pull switch for fan and pull switch for Motor. 20W energy saving fluorescent bulbs as the type by Eurolux must be provided.

9. JOINERY / CUPBOARDS

ITEM	CUPBOARD CONSTRUCTION
Kitchen Joinery as per detail Drawings	Kitchen cupboards and tops shall be constructed with high density particle Melamine faced boards on both sides and as shown on detail drawings. Doors and shelves shall have PVC edging matching melamine facing. The frame shall be constructed from 50 x 50mm Meranti section properly prepared and varnished. Concealed steel hinges, 3 per cupboard door evenly spaced, and "Union Trimline NY5590" pull handles must be fitted to all doors and drawers. Doors shall be recessed from edging by 50mm for waterproofing. It should be noted, however, that Joiners shall visit rooms after plaster work is completed and adjust measurements accordingly and should not assemble units in workshops and install on site without making the necessary adjustments.
Bedrooms	Cupboards in Bedrooms shall be 1.8m long and built as shown on detail drawings. It should be noted, however, that Joiners shall visit rooms after plaster work is completed and adjust measurements accordingly and should not assemble units in workshops and install on site without making the necessary adjustments.

Note – This should be read in conjunction with the drawings. Drawings will indicate sizes & location.

10. **HOT WATER SYSTEM**

Kwikot 100 Litre Slimline 600i Dual electric water heater (Code: ESG-100-D2-I) complying with SABS 151- 2002, overall size 990x480mm high fitted with isolator switch, operating at 400kPa with temperature and pressure safety relief valve including 20mm female draincock with inlet compression. Geyser to be installed horizontally in rood space with 1160x560mm wide polyethylene drip tray with union and back but connected to 20mm PVC overflow pipe out at eaves (Code: GSTP-1200) and 15mm pipe work including two 15mm vacuum breakers (Code:KHN4-150CX)installed on hot and cold water supply. Installation to include a 15MM 400kPa Kwikot Multi Control and expansion relief valve (Code: KHN3-204), all in accordance with SANS 10254, connected to single phase electrical supply.

PORTION 4
GENERAL SPECIFICATIONS

INDEX

3.3 Stone (coarse aggregate)

3.4 Water

3.5 Concrete strength

3.6 Concrete test cubes

3.7 Concreting

3.8 Foundations

3.9 Steps in foundations

3.10 Floor slabs

3.11 Prices

3.12 Concrete lintels (in situ)

3.13 Concrete lintels (pre-cast)

SECTION 4 BRICKWORK

4.1 Lime

4.2 Cement

4.3 Wall Crete and mortacem

4.4 Sand

4.5 Water

4.6 Works mortar tests

4.7 Cement mortar

4.8 Comp mortar

4.9 Cement bricks

4.10 Clay bricks

4.11 Hollow concrete blocks

4.12 Testing

4.13 Brickwork

4.14 Foundation plinth

4.15 Mortar joints

4.16 Curing

4.17 Beam filling

4.18 Bagged finish to brickwork

4.19 Building in

4.20 Securing of roofs

SECTION 5 WATERPROOFING

5.1 Damp-proofing course

5.2 Damp-proof membrane

SECTION 6 CARPENTRY AND JOINERY

6.1 Structural timber

6.2 Lengths of timbers and methods of jointing

6.3 Bolted roof trusses

6.4 Roof battens

6.5 Purlin ties

6.6 Ceiling joists

6.7 Brandering to ceilings

6.8 Covering to ceilings

6.9 Cove cornices to ceilings

6.10 Trap doors in ceilings

6.11 Joinery

6.12 Frames and ledged batten doors

6.13 Internal doors

6.14 Set in position for building in of wood frame

6.15 Hanging of doors

6.16 Hardwood window frames

6.17 Roofing sheets (metal)

6.18 Ridging (metal)

6.19 Roofing sheets (fibre cement)

6.20 Ridging (fibre cement) corrugated adjustable type

6.21 Pressed fibre cement roof trim

6.22 Bitumen saturated organic fibre roof sheeting

6.23 Ridging (bitumen-saturated organic fibre sheeting)

6.24 Eaves gutters

6.25 Rainwater pipes

SECTION 7 FLOOR COVERINGS, PLASTIC LININGS, ETC

7.1 Generally

7.2 Prices

7.3 Vinyl floor finishing and skirtings

7.4 Textile floor coverings

SECTION 8 IRONMONGERY

8.1 General

8.2 Door locks

8.3 Curtain rails and pelmets 8.4 Erf number plates

8.5 Dowels and mortices

SECTION 9 METALWORK

9.1 Pressed steel door frames

9.2 Steel doors, sidelights and fanlights

93 Steel windows (“Clisco” type as per Wispeco Catalogue)

9.4 Metal curtain pelmets

95 Burglar bars to steel windows

SECTION 10 PLASTERING, PAVING AND TERRAZZO WORK

10.1 Lime

10.2 Cement

10.3 Sand

10.4 Compo plaster

10.5 Cement plaster

10.6 Thickness of plaster

10.7 Application of plaster

10.8 Cement slurry finish

10.9 Floor finish

SECTION 11 TILING

11.1 Prices

11.2 Glazed wall tiling

SECTION 12, PLUMBING

12.1 Registered plumbers

12.2 Galvanized sheet iron

12.3 Flashings

12.4 Eaves gutters

12.5 Rainwater pipes

12.6 Protection against lightning

12.7 Mild steel pipes

12.8 Copper pipes

12.9 Jointing of copper pipes”

12.10 HDPE (High Density Polyethylene) pipes

12.11 UP VC pipes

12.12 Regulations

12.13 Sanitary fittings

12.14 Water pipes and valves

12.15 Shower

12.16 Fixed water storage heaters

12.17 Holes for pipes etc.

12.18 Testing

12.19 Making good

SECTION 13 DRAINLAYING

13.1 Registered drain layers and plumbers –

13.2 Excavations

13.3 Width of excavations

13.4 Bedding and fill blanket

13.5 Backfilling

13.6 Surplus earth

13.7 Drain laying

13.8 Gullies, cleaning and inspection eyes

13.9 Ramps and back drops

13.10 Inspection chambers

13.11 Gulley

SECTION 14. GLAZING AND PAIN TING

14.1 Glass

14.2 General notes

14.3 Putty

14.4 Mirrors

14.5 Preparatory work

14.6 Surfaces to be dry

14.7 Paints, etc.

14.8 Priming

14.9 Leave perfect

SECTION 15° ELECTRICAL INSTALLATION

5.1 Conduit installation

15.2 Supply cable

15.3 Distribution board

15.4 Wiring

15.5 Lighting

15.6 Socket outlets

15.7 Stove connection

15.8 Earthing

15.9 Wiring regulations

15.10 General

SECTION 16 FENCING AND GATES

16.1 Fencing

16.2 Gates

SECTION I

STANDARD CONDITIONS

1.1 USE OF LOCALLY MANUFACTURED MATERIALS AND PRODUCTS

Materials and products manufactured in Namibia shall receive preference in carrying out the work to which this specification refers unless an imported product is specifically prescribed. All material must be SABS approved,

1.2 APLICATION OF CLAUSES.

All clauses in this specification which describes 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 detailed drawings, orders or instructions issued to the Contractor during the progress of the work, shall be considered as applying to the performance of the contract.

1.3 SAMPLES

The contractor shall furnish without delay, such samples as called for or may be called for by the Engineer. Materials or workmanship not corresponding with approved samples may be rejected.

1.4 WATER

Clean, fresh water shall be used throughout, free from vegetable or organic matter, earth, clay, acid or alkaline substances either in suspension or in solution.

Where there is reason to suspect the presence of impurities, the Engineer may require the Contractor to obtain a chemical analysis of the water by a competent analyst. Should the water prove unsuitable, the Contractor must procure water of a suitable character.

1.5 STANDARD DETAILED DRAWINGS

All standard detailed drawings applying to a particular service and referred to in this document, in the specification or in the bills of quantities, may be seen by Bidders at the NHE’s Head Office in Windhoek and will be issued to the Contractor upon request for the carrying out of the work.

1.6 SCALE

The scale of drawings is generally shown on the title block. All dimensions given on the drawings must be checked before any work is put in hand. Unclear no circumstances may dimensions not shown be scaled.

1.7 UNITS OF MEASUREMENT

Units. of measurement have been standardized in accordance with “Systems International d “Unites” (SI).

1.8 INTERPRETATION OF DRAWINGS, ETC

Should it occur that any part or parts of the Drawings, Specification or Bills of Quantities should not be clearly. understandable to the Contractor, or that the materials or articles to be used in the execution of the works be considered insufficiently described, the same shall be explained and adjusted by the Engineer upon notification by the contractor in writing.

1.9 DETAILS

Upon receipt of detailed drawings for any work, the Contractor shall, before putting that work in hand, ascertain that the dimensions given on the detailed drawings correspond with the dimensions of any work already built which governs the sizes of the work for which the detail is given. In the event of the detailed drawings not agreeing with the work already built, the drawings shall at once be returned for alterations, as no claim for extra work will be entertained in this respect.

1.10 SOUTH AFRICAN STANDARD SPECIFICATIONS AND CODES OF PRACTICE

Reference is made in this Specification to the latest issues of the following South African Standard Specifications and Codes of Practice:

SABS 22 Glazed Ceramic Wall Tiles and Fittings

SABS 28 Metal ties for Cavity Walls

SABS 38 Metallic Naphthenates for Timber Preservation °

SABS 42 Pentachlorophenol for Timber Preservation

SABS 62 Steel Pipes and Pipe Fittings up to 150 mm nominal bore

SABS 82 Bending dimensions of Bars for Concrete Reinforcement

SABS 92 Bituminous Roofing Felt

SABS 151 Fixed water storage heaters

SABS 226 Water Taps

SABS 227 Burnt Clay Masonry Units

SABS 242 Stainless Steel Sinks with Draining Boards (for Domestic Use)

SABS 248 Bituminous Damp Proof Courses

SABS 266 Gypsum Plasterboard

SABS 281 Hardwood Block and Strip Floorings

SABS 297 Mastic Asphalt for Roofing

SABS 307 Bitumen Emulsion

SABS 312 Red Lead Base Primers for Structural Steel

SABS 322 Cold Water Distemper for Interior Use

SABS 460 Copper Tubes for domestic plumbing services

SABS 471 Portland Cement and Rapid Hardening Portland Cement

SABS 497 Glazed Ceramic Sanitary Ware

SABS 509 Malleable Cast Iron Pipe Fittings

SABS 515 Decorative Paint with a Non-Aqueous Solvent Base for Interior Use

SABS 523 Limes for Use in Building

SABS 540 Wood – Fibre Building Board

SABS 542 Concrete Roofing Tiles

SABS 543 Fire Hose Reels

SABS 544 Fire Hose Couplings. Connectors Branch Pipe and Nozzle Connections

SABS 545 Wooden Flush Doors

SABS 546 Cast Iron Fittings for Fibre Cement Pressure Pipes

SABS 558 Cast Iron Surface Boxes and Manhole Inspection Covers with Frames

SABS 559 Vitrified Clay Sewer Pipes and Fittings

SABS 563 Stress- graded Softwood General Structural Timber

SABS 565 Pentachlorophenol – Zinc Naphthenate Timber Preservative

SABS 581 Semi – Flexible Vinyl Floor Tiles

SABS 622 Gypsum Cove Cornice

SABS 626 Portland Blast furnace cement

SABS 629 Softwood Flooring Boards

SABS 630 Decorative High Gloss Enamel Paints with a Non-Aqueous Solvent Base for Interior and Exterior Use

SABS 631Decorative Oily Gloss Paints with a Non – Aqueous Solvent Base for Interior and Exterior Use

SABS 632 Clay Roofing Tiles

SABS 633 Emulsion Paints for Interior Decorative Purposes

SABS 634 Emulsion Paints for Exterior Use

SABS 653 Softwood Brandering and Batten

SABS 675 Zinc – coated Fencing wire

SABS 677 Concrete on – Pressure Pipes

SABS 678 Primers for wood for Interior and Exterior Use

SABS 679 Zinc – Chromate Primers for Steel

SABS 680 Glazing Putty for Wood

SABS 681 Undercoats for Paints

SABS 682 Aluminum Paints, Finishing Type

SABS 683 Roof Paints

SABS 684 Structural Steel Paints

SABS 685 Fibre Cement Sheets (Corrugated and Flat)

SABS 723 Wash Primer (Metal Etch Primer)

SABS 727 Windows and Doors made from rolled mild steel sections

SABS 746 Cast Iron Soil pipes and pipe fittings for use above ground in drainage installations

SABS 752 Float Valves (Part I and Part ID)

SABS 763 Hot-dip (Galvanized) Zinc Coatings

SABS 786 Flexible Vinyl Flooring

SABS 801 Epoxy tar

SABS 802 Bituminous aluminum paint

SABS 803 Fibre Cement Cellulose Sheets

SABS 821 High- and Low-Level WC Flushing Cisterns

SABS 831 Portland Cement 15 and Rapid hardening Portland Cement 15

SABS 876 Glued Laminated Timber Structural Members

SABS 887 Varnish for Interior Use

SABS 903 Aluminum Alloy Corrugated and Troughed Sheets

SABS 906 Stainless steel wash hand basin

SABS 907 Stainless Steel Sinks for Institutional Use

SABS 909 Red Oxide Zinc Chromate Primate for use on Steel Windows and Doors

SABS 912 Calcium plumbate

SABS 920 Steel Bars for Concrete Reinforcement

SABS 924 Stainless steel stall urinals

SABS 926 Two pack zinc-rich epoxy primer

SABS 929 Plywood and Composite Board

SABS 934 Hot-dip (Galvanized) Zinc Coatings on Steel Sheet and Strip

SABS 949 Strong room Doors

SABS 952 Polyolefin firm for damp-proofing and water-proofing in buildings

SABS 978 Wood Mosaic Flooring

SABS 1024 Welded Steel Fabric for Concrete Reinforcement

SABS 1039 Wooden Ceilings and Paneling Boards

SABS 1083 Aggregate from Natural Sources

SABS 1089 Stock Glued Laminated timber of S A Pine

SABS 1090 Sand for Plaster and Mortar

SABS 1099 Hardwood Furniture Timber

SABS 1200 Standardized specifications for Civil Engineering Construction

SABS 1223 Fibre-cement pressure pipes and couplings

SABS 1227 Textured wall coatings, emulsion base for interior and exterior use

SABS 1236 Silvered Glass Mirrors for General Use

SABS 1245 Stress-graded Softwood Engineering Timber °

SABS 1263 Safety glazing materials for buildings

SABS 1300 Particle Board (Exterior and Flooring Type)

SABS 1301 Particle Board (Interior Type)

SABS 1357 Softwood for joinery

SABS 1381 Reflective foil laminates

CODES OF PRACTICE

SABS 03 Protection of Buildings against Lighting

SABS 05 Preservative Treatment of Timber

SABS 021 Waterproofing of Buildings

SABS 043 Laying for Wood Block, Board and Strip Floors

SABS 058 Installation of sewerage and drainage non-pressure pipelines

SABS 064 Preparation of Steel Surfaces for Painting

SABS 070 The laying of thermoplastic and similar types of flooring

SABS 096 Manufacture of Finger-Jointed Structural Timbers

SABS 0107 Fixing of Glazed Wall Tiles

SABS 0137 Glazing and Fixing of Glass in Buildings

SABS 0155 Accuracy in building

CKS SPECIFICATIONS

CKS 153 Batten Doors, Framed and Ledged

CKS 208 Concrete Flooring Tiles

CKS 229 Chain Link Wire Fencing (Diamond Mesh)

CKS 460 Tributyltin Oxide-lindane Timber Preservative

CKS 520 Wall Coating, Emulsion Base. for Interior and Exterior Use

STANDARD METHODS

SABS 863 Compressive Strength of Concrete

SECTION 2

EARTHWORKS

2.1 CLEANING SITE

Cleaning site shall include for the digging up and removal of all rubbish and vegetable soil and substance from the whole area of operation,

2.2 CLEAR SITE AND REMOVE VEGETABLE MATTER

All dead roots and other vegetable matter likely to provide food for termites, shall be removed from the ground under and against the building and from all filling, in addition to clearing the site.

After the completion of a house the entire erf must be cleared from all building rubble and vegetation excluding larger bush and trees as directed by the Engineer.

Any excess earth from excavations shall be either removed or spread over the erf as directed by the Engineer. The erf shall have a neat and tidy appearance.

2.3 EXCAVATIONS

Excavations shall comply to the terms of the factories, machinery and building work act 1941 as amended Regulations A6.

a) Excavations for Basements, Foundations and Floors

Excavations for the formation of basements, vaults and the like. shall be of such area and depth as shown on the drawings, together with such additional 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 the drawings or to such other depths as may be directed by the Engineer to ensure a good foundation.

Bottom of trenches and holes shall be level, and sides shall] be trimmed the full the stepping is not shown on drawings or otherwise directed on site, the stepping shall] be the same thickness as specified for the concrete footings and in proportion with the calculated brick courses. Any excavations

taken out too deep shall be made up to correct levels with 10 Mpa concrete, at the Contractor's expense: back filling and ramming will not be accepted.

b) **Slope of Ground**

If the average slope of the ground is more than 1:60 extra

excavations required to conform to the minimum requirements of depth of foundations in accordance with floor levels as indicated on the drawing detail or as directed by the Engineer shall be done.

c) **Excavations to Reduce Levels**

The ground outside the buildings shown to be reduced in level shall be excavated and levelled or graded to falls, as shown on the drawings,

Sloping banks shall be of such angle as will maintain the stability

of the ground above, and shall be neatly trimmed,

d) **Definitions**

Soft excavations shall be understood to mean excavation in pickable material and shall include loose boulders not exceeding 0,20 cubic meters each.

Intermediate excavation shall be understood to mean excavation excluding soft and hard rock excavation and can be efficiently ripped by pneumatic tools or bulldozer before removal is possible.

Hard rock excavation shall be understood to mean excavation in undecomposed boulders exceeding 0.20 cubic meters in volume and solid rock occurring in bulk form, the excavation of which - necessitates the use of explosives for blasting, drilling and splitting.

e) **Blasting**

No guarantee is given or implied that blasting shall be adopted but should this method of removal be necessary and permitted, the Contractor must take all responsibility and observe all conditions set forth in Government and the Local Authority Regulations.

f) **Measurement of Excavations**

The unit of measurement shall be the cubic meter of material excavated and shall be computed from the length, the width and the average depth of excavation as shown on the drawings.

No allowance is made for bulking and existing voids shall be deducted.

g) **Prices**

Prices shall include for forming to falls, slopes, curves etc., trimming sides and stepping, levelling and ramming bottoms and for disposal of excavated materials as described,

2.4 DISPOSAL OF EXCAVATED MATERIAL

a) **Part Return —**

Material from the excavations where suitable and approved by the Engineer is to be returned, filled in and rammed against foundation walls, under floors, steps etc as necessary and compacted to 93% Mod. AASTHO.,

No clay shall be used as filling.

b) **Deposit on Site**

Any excess material shall be spread and levelled over the site. where directed and compacted to 90% Mod. AASTHO in layers
not exceeding 150mm _including the forming of slopes, embankments etc.

c) **Cart Away**

Surplus material is to be carted away to a suitable dumping site to
be found by the Contractor, outside the boundary of the site, as directed.

2.5 MAINTENANCE OF EXCAVATIONS

a) **Planking and Strutting**

Planking, strutting, shoring and temporary sheet piling shall be measured as such only when specifically prescribed.

Otherwise the Contractor shall carry the risk of collapse.

b) **Risk of Collapse**

The Contractor shall maintain all excavated faces exceeding 1.5m deep in accordance with Government Regulations and all excavated faces not exceeding 1,5m deep affecting the safety of the work and the workmen.

The Contractor shall carry the risk of collapse of excavated Faces whether or not he takes any precautions, the nature of which precautions shall be entirely at his own discretion. The Contractor shall accept full responsibility in this connection and shall allow accordingly in his prices.

2.6 WATER IN EXCAVATIONS

No water shall be allowed to accumulate in any portion of the excavations.

The excavations shall be protected against flooding and any water entering them, whether by seepage, rains, storms, floods or any other means, shall immediately be removed by pumping or bailing.

It is the Contractors responsibility to keep foundations and any excavations dry and the Contractor must supply all pumps. etc. that may be necessary for clearing out all water, at his own expense.

2.7 COMPLETION OF EXCAVATIONS

The Contractor shall notify the Engineer when the excavations are ready for inspection. The foundations shall not be cast until the excavations have been approved in writing by the Engineer and they shall not be covered up until any variation that has become necessary has been measured up.

2.8 PAYMENT FOR EXCAVATIONS

Contractor shall] allow in tender for all excavations to be in soft material. Any deviation to this shall be remeasured and the classification of material shall be determined by the NHE and the rates to be used shall be based on the schedule of rates.

2.9 FILLING

Filling shall be of approved clean earth, well moistened and rammed in layers not exceeding 150mm in depth and thoroughly consolidated to a density of 93 per cent.
Modified AASHTO (American Association of State Highway and Transportation Officials), which will be verified by testing by the Engineer.

All filling material shall be approved by the Engineer prior to placing. A sample of this proposed fill, 60 kg in mass, may be required for this purpose and fourteen days must be allowed for the initial sample testing.

a) Defined Levels

The ground around the building shall be made up with filling as above, finished to level or graded to falls, as shown on the drawings, or as directed.
Slopes of banks shall be as shown on the drawings or as directed and shall be neatly trimmed.

b) Foundations etc

Filling to foundations etc shall be of earth filling as above.

The filling under solid floors shall be put in only 4 days after the foundation walls are completed.

c) Payment

Prices shall include for the correction and forming of the ground to levels, falls, slopes, banks etc.

2.10 SURPLUS EARTH

All surplus earth and other materials from the excavations shall be deposited and levelled in the site or carted away as directed.

2.11 HARDCORE

Hardcore under floor beds, etc, shall be composed of broken stone or similar approved hard materials, ranging in size from a minimum of 25mm to a maximum of 75mm, laid with the finer materials on top and well consolidated by ramming.

2.12 PROTECTION AGAINST TERMITES

The ground under foundations and floors shall be poisoned with an approved registered soil poisoning material of the chlordane or aldrin type mixed with water and applied at the rate of not less than 5 liters of solution per square meter, care being taken to apply the solution uniformly over the whole surface. The concentration of the solution shall be in accordance with the manufacturer's instructions and to the approval of the Engineer.

Where the ground to be treated is of earth filling. the upper layer of filling shall be levelled by raking but shall not be rammed until after the solution is applied, and where of natural ground, it shall be dug up and well loosened to a depth or not less than 50mm and similarly levelled. so as to enable the solution to penetrate into the soil. After the solution has been applied and allowed to soak in. the soil shall be well rammed and compacted to 93 per cent Modified AASHTO.

Before applying the solution to the ground under the floors. 75mm deep V-shaped channels shall 'be raked out against all walls enclosing the floors and against walls. sleeper piers, etc... under floors. and the channels flooded with poison solution. After the solution has soaked in. the channels shall be filled and rammed.

The ground at the bottom of all foundation trenches and holes shall be similarly poisoned, but without digging up and loosening the soil.

Where the concrete surface beds are laid above damp course level. the ground at damp course level shall be poisoned and a layer of clean earth filling laid on the poisoned ground. 'The layer shall be compacted to 93 per cent Modified AASHTO.

Where hardcore is to be laid over the poisoned layer a 25mm thick protective layer of clean earth filling shall be laid on the poisoned laver before the hardcore is laid and compacted to 93 per cent Modified AASHTO.

Great care shall be taken whilst laying the concrete floor beds, protective layers, filling and hardcore. to avoid rupturing the poisoned layer of soil under the floors, should the poisoned layer be ruptured at any point, it shall be made good and the areas affected treated again.

2.13 **ANTHILLS**

The Engineer is to be notified and the anthills thereafter removed, active _ colonies poisoned, and backfilling done as specified under backfilling of trenches and filling under floors.

NOTE

(i) The soil poison shall be delivered to the site in sealed drums, clearly labeled or stamped with the name of the product.

(ii) Contractors are advised that special precautions must be taken to protect the workmen whilst using the soil poison.

(iii) The poisoning of the ground under floors shall be done as soon as practicable, so that it may dry out before the floors are laid.

SECTION 3

CONCRETE FORMWORK AND REINFORCEMENT

NB "Standardized specification for concrete ordinary buildings, SABS specification 1200 GB" shall be applicable to this section except where in contradiction with the clauses in this section. These clauses given below shall have preference.

3.1 **CEMENT**

Cement shall be Portland cement or rapid hardening Portland cement. complying with the requirements of SABS Specification 471. Portland cement I5 and rapid hardening Portland cement 15 shall comply with SABS Specification 831.

Samples of cement from any one, or from all consignments may be required by the Engineer 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 the fact that the tests may take 10 days to carry out.

"Cement bags shall be stacked in a waterproof. solidly constructed shed

with a central door and a damp-proof floor covered with tarpaulin. The sacks shall be closely stacked in order to reduce air circulation but not against walls and in such a manner that the cement is used in the order in which it was received.

3.2 **SAND (FINE AGGREGATE)**

The fine aggregate shall comply with the requirements of SABS Specification 1083.

The aggregate must not be used until it has been approved. Samples with a mass of I5kg (1/3 cement bag) of the aggregate may be required by the Engineer, for test purposes.

3.3 STONE (COARSE AGGREGATE) '

The coarse aggregate shall comply with the requirements of SABS Specification 1083.

The aggregate must not be used until it has been approved. Samples with a mass of 25 kg (% cement bag) of the aggregated may be required by the Engineer for test purposes. etc

3.4 WATER

Water shall be as described in Clause

3.5 CONCRETE STRENGTH

Unless otherwise directed by the Engineer, the following strength of concrete mixes shall be used for the following purposes:

Mass concrete	10 Mpa using 37, 5 mm stone
Foundation concrete	15 Mpa using 19 mm stone
Floor concrete	15'Mpa using 19 mm stone
Concrete for	25 Mpa using 19 mm stone

Reinforced members.

3.6 CONCRETE TEST CUBES

The apparatus for making and testing of concrete cubes shall comply with SABS Method 863.

(i) Apparatus

Cubic moulds of steel shall be adequately strengthened to resist distortion. The internal distance between opposite faces of a mould shall be 150 mm.

The mould shall be so constructed as to facilitate the easy removal of the moulded specimen without damage.

Each mould shall have a metal base plate which shall be attached to the mould by springs or screws.

When assembling the mould for use. the joints between the sections of the mould, the contract surfaces between the bottom of the mould and the base plate, and the internal faces of the assembled mould shall be thinly coated with a grease or oil that will prevent leakage of water through the joints and adhesion of the concrete to the mould.

The tamper must be a steel bar of length 400 mm and mass 1.8 kpa and having a 25 mm square ramming face.

(ii) Sampling and making of cubes

6 Concrete test cubes may be required by the Engineer from time to time during the contract for testing.

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 50mm thick. Each layer shall be compacted with the tamping rod specified with 35' blows to give full compaction of the concrete,

After the top layer has been compacted, the surface shall be finished with a trowel and level with the top of the mould.

(iii) **Curing cubes on site**

The test cubes shall be covered with an impervious sheet or wet sacking and stored in a place. free from vibration. excessive draughts and direct sunlight.

After 24 hours the cubes are to be demoulded. marked and placed in water for seven days before transported to a laboratory.

The curing tank shall be placed inside a building out of the sunlight and excessive temperature changes.

(iv) **Testing of Cubes**

Testing shall be carried out by an approved laboratory in Windhoek. If not possible, the onus would be on the contractor to prepare the test cubes according to the SABS procedures. Should the cubes fail, the cost of the test will be borne by the contractor and the batch of concrete from which the cubes have been cast will be removed from the site at the contractor's expense.

3.7 **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 supervise personally the whole construction process and pay special regard to:

(a) The construction and removal of formwork

(b) The sizes and position of the reinforcement.

(c) The quality, testing and mixing of the materials.

(b) The placing of the concrete, and the thorough compaction of the concrete to ensure density and freedom from voids prior approval from the Engineer must be obtained for the use of ready mixed concrete or for concrete to be pumped.

No admixtures to concrete will be allowed unless special circumstances warrant this and then only with the approval of the Engineer.

The Contractor shall give the Engineer 48 hours' notice of his intention to start with the placing of concrete.

(i) **Formwork**

Falsework shall be built on foundations of sufficient strength to carry full load without appreciable settlement.

Forms complete with centering cores and moulds. shall be constructed to conform to shape. form, line. dimensions and grade as shown on the drawings.

Forms and falsework shall be of a substantial nature and maintained sufficiently rigid to prevent excessive deformation under load during and after the placing of concrete. ‘The maximum deflection of any falsework or form work component shall in no case exceed 1/360" of the length of its span. In the case of spans in excess of 3 meters (where no intermediate supports are possible) the forms shall be built to a camber corresponding to their probable deflection under load so that the finished concrete shall conform accurately with the lines and dimensions shown on the drawings.

The Contractor shall, at his own expense. design all false work and formwork for any structure and submit such design with detailed drawings for the approval of the Engineer. Such approval of the Engineer shall, in no way, relieve the Contractor of any of his responsibilities under the Contract.

Unless otherwise specified in the project Specification or Contract. formwork shall be classified as follows:

Class I formwork shall be all formwork to concrete surfaces which will be visible in the completed structure, only even and good quality plywood, hard pressed fibre board or sized and dressed tongue and groove timber shall be used in Class I formwork in order to ensure that a plane and smooth surface of the desired contour is obtained. Metal forms shall not be used unless authorized by the Engineer in writing. Metal forms if authorized shall have all bolt and rivet holes countersunk.

Class I formwork shall be formwork to all concrete surfaces which will not be visible in the completed structure, Rough timber may be used for Class Il formwork, but it shall be of good quality and shall conform to specified requirement.

All formwork shall be mortar tight, accurately erected and securely braced

and anchored, so as to ensure that the finished work will be true to shape, line and level.

Triangular fillets, to the specified sizes. shall be fitted to formwork where chamfering of corners and angles in concrete is shown on the Drawings or ordered by the Engineer.

Forms shall be so constructed that they may readily be stripped without jarring or damaging the fresh concrete. Wedges and clamps shall be used in preference to nails for securing the form components, and tie-bolts or tie-rods shall be used in preference to wire ties.

Temporary openings shall be provided at the base of column and wall forms and at other points where necessary, to facilitate cleaning and inspection. All. dirt, chips, sawdust and other foreign matter shall be removed from the interior of forms before concreting is commenced,

Formwork which will be in contact with the concrete shall be cleaned and coated with an approved non-staining form-oil, soft soap or other suitable materials before reinforcement is placed. especially if the concrete is to be plastered.

All floors and faces of excavation which will be in contact with the concrete shall also be thoroughly wetted immediately prior to placing the concrete.

(ii) **Fixing of Reinforcement**

Reinforcement and insert, (such as anchors and dowels) fabricated to the required dimensions, shall be placed where indicated on the Drawings or as directed by the Engineer. All reinforcement bars shall be bent cold to the dimensions indicated on the Drawings in accordance with SABS 82 (iii).

“Bending dimensions of bars for concrete reinforcement”. Reinforcement and inserts shall be accurately placed, firmly tied at all intersections and spliced with No. 14 gauge binding wire and thereafter. securely held in position before and during the placing of concrete by means of metal chairs, wire hangers or concrete supports properly shaped so as not to fall out of position.

Wooden supports shall not be used. Wire-tie ends shall point away from formwork.

Reinforcement shall not be lapped or spliced unless such laps or splices are shown on the drawings or authorized by the engineer. The minimum cover of concrete over reinforcement shall be as shown on the Drawings. Where no thickness of cover is indicated, the minimum thickness provided shall be as directed by the engineer,

No concrete shall be replaced until all bars have been firmly and finally fixed in position and until the engineer has inspected and approved the placing and fixing of the steel reinforcement and given permission to place the concrete. Such approval shall not relieve the contractor of his obligations under the contract to ensure that steel is correctly placed, and all work is carried out according to the specified requirements.

(iii) **Mixing**

Concrete shall be mixed in a batch mixer of approved type and capacity for a period of not less than one-and-a half (1%) minutes after all component materials, including water, are in the drum and no hand mixing will be permitted, except in a case of emergency and subject to written permission of the Engineer.

Mixers shall be maintained in good order and condition, and any worn or bent’ blades or paddles shall be kept clean and free from any hardened

concrete in the drum loader and around blades or paddles. Mixers shall be equipped with an approved timing device to ensure mixing, for the minimum time specified. The mixer shall discharge in such a way that there is no segregation of the ingredients of the mix.

The entire batch shall be discharged before recharging the mixer. Mixers shall not be charged in excess of rated capacity nor be operated in excess of rated speed. Excessive mixing of concrete, requiring addition of water to preserve required consistency, will not be permitted.

(iv) **Transporting**

The Contractor shall, at all times during the progress of the work, give the engineer at least 24 hours' notice of his intention to commence concreting.

All concrete 'shall be placed before it has taken its initial set, and in any Case. within fifteen (15) minutes after mixing. | Concrete which has partially hardened, shall under no circumstances. be deposited in the work nor shall concrete be tempered by the addition of water or other materials.

Concrete shall be discharged from the mixer into watertight vehicles. barrows or buckets and shall be conveyed to forms as rapidly as practicable without segregation or loss of ingredients.

Concrete shall be carefully and uniformly placed in a manner to prevent segregation of mix ingredients. Concrete shall be placed in horizontal layers whenever practicable. Dumping concrete at an angle or the working of concrete, whether by means of vibrators or otherwise, in such a manner as to cause it to flow laterally, shall not-be permitted. When in the opinion of the engineer, such equipment is necessary, bins, drop chutes, downpipes or baffles shall be provided to prevent segregation of the mix ingredients. Dropping concrete, a vertical distance of more than one-and-half (14) meters or depositing a large quantity at any point and running or working it along the forms will not be permitted.

The concrete shall be well rammed and spaded with properly constructed hand tools so as to obtain a clear face, free from air pockets void or honey-combing. Concrete shall be worked into intimate contact with all reinforcement and inserts.

All concrete shall be thoroughly compacted by means of suitable

vibrators. Such vibration shall be done at no extra cost to the employer

and the contractor shall allow for this work in his prices tendered for concrete work. The apparatus and method of vibration proposed by 'the contractor shall be subject to the approval of the engineer.

Once commenced. concreting shall be continued without interruption and may only be stopped at construction joints shown on the drawings. If. due to sudden inclement weather, or other reason acceptable to the engineer. it is found necessary to interrupt concreting, a construction joint of approved design, and at approved location, shall be made by forming a groove of suitable size in the face of the joint, all as will be directed by the

engineer. Before depositing fresh concrete against concrete that has already set, all existing surfaces the joint shall be thoroughly roughened and cleaned of all laitance, scum, loose particles and foreign matter to expose the coarse aggregate. Thereafter, the cleaned surfaces shall be washed with clean water and kept continuously damp and free from (vi)

foreign materials. Immediately before the placing of new concrete. a neat cement slurry of the consistency of cream shall be brushed into the surface. This shall be followed immediately by a thin coat of plastic mortar applied to the surface of the old concrete. The mortar shall consist of cement and sand mixed in the proportion contained in the concrete mix. i.e., omitting the coarse aggregate. The fresh concrete shall then be placed against the layer of mortar while the latter is still plastic.

Surfaces of joints which provide for expansion shall be finished smooth. with a tolerance not exceeding three (3) millimeters. Expansion joint shall be formed and constructed as shown on the drawings or as specified in the Special Requirements of Contract.

Expansion joint filler and sealers shall be used strictly in accordance with the maker's specifications. -

(v) **Curing and Protection**

All concrete work shall be properly protected from the elements, flowing water. defacement of any. nature. early loading, and excessive loss of moisture through evaporation during the period of curing.

All exposed concrete surfaces shall be protected from drying too rapidly

'by the proper use of an approved liquid membrane forming curing

compound or covered with a suitable cover such as sand. approved plastic sheeting, etc. which are to be kept moist for a minimum period of seven (7) days after casting in the case of rapid hardening cement, unless the concrete is sealed before expiry of such period by the casting of new concrete.

Concrete placed during cold weather shall be protected against frost.

Concrete work shall not be loaded during the period of curing 'and thereafter only when so authorized by the Engineer, °

(vi) **Removal of Forms**

Forms shall be removed only with the approval of the engineer and only after such time and in such a manner as to prevent damage to the concrete. Consent of the engineer, shall. in no way relieve the contractor of his responsibility for the safety of the work. The minimum periods that formwork with supporting staging shall remain in position after concreting, are as follows:

STRUCTURAL MEMBER	USING ORDINARY PORTLAND CEMENT		USING RAPID HARDENING PORTLAND CEMENT	
	TEMPERATURE ABOVE 18°C	TEMPERATURE BETWEEN 4C - 18C	TEMPERATURE ABOVE 18C	TEMPERATURE BETWEEN 4C - 18C
	DAYS			
VERTICAL FACES OF SUB STRUCTURE, BEAMSIDES, WALLS, PIERS & UNLOADED COLUMNS	3	6	2	4
SLABS WITH PROPS IN PLACE	4	9	3	6
BEAM SOFFITS WITH PROPS IN PLACE	7	14	3	9
REMOVAL OF SLAB PROPS	12	21	6	14
REMOVAL OF BEAM PROPS	21	18	10	21

On removal of forms, all wire ties used for the strengthening of the shuttering, and which inside the concrete and the resulting cavity shall be mortar, applied under pressure. No patching or filling up of holes shall be permitted before concrete has been inspected by the Engineer.

(vii) Concrete Finish

Finished concrete surfaces shall be true, smooth free from honey-combing, holes, voids, depressions or projections. Concrete shall be worked until coarse aggregate is forced down into the body of the concrete and a layer six (6) mm thick is flushed to the top.

All dimensions for concrete sizes shown on the drawings shall be considered to be minimum sizes. No dimensions of any concrete member shall exceed the specified dimension by more than five (5) percent or twelve (12) mm, whichever is lesser. except where such larger dimension may be allowed by the engineer.

Unless otherwise directed by the Engineer. all visible permanent joints between concrete surfaces shall be neatly finished off in a workmanlike manner by means of continuous neatly trimmed forty-five (45) degrees V-joints with faces not exceeding ten (10) mm.

All shuttered surfaces shall be either “rough surface finished” or “rubbed surface finished”. All horizontal or gently sloping surfaces which are not shuttered, shall be either “tamped surface finished”, floated surface finished” or “non-slip surface finished”.

(a) Rough Surface Finish

Immediately following the removal of the forms. all ridges and irregular projections shall be carefully and neatly removed from al! surfaces. The engineer may allow minor holes or honeycombing to be filled in and made good with mortar of the same proportions as the mortar used in the concrete. Any minor projection shall be rubbed off with a wooden float or carboned block.

(b) Rubbed Surface Finish

The surface shall first be rough finished as specified above, and after sufficient time has elapsed to allow the mortar to set. it shall be saturated with water for at least one hour. Initial rubbing shall be carried out with a medium coarse carboned stone, using a small amount of mortar on the face. in the proportions specified above.

Rubbing shall be continued until all form marks. projections and irregularities are removed a uniform surface obtained. The paste produced by the rubbing shall be left in place. The final rubbing shall be carried out with a fine carboned stone and water. This rubbing shall be continued until the entire surface is of a smooth, even texture and uniform colour, After the final rubbing, the surface shall be washed with a brush to remove surplus paste and powder.

(c) Tamped Surface Finish

On completion of placing and compacting the concrete as specified before, the top surface shall be struck off with a template cut to the required cross section and tamped with a tamping board to compact the concrete thoroughly and to bring mortar to the surface, leaving the surface slightly rough but generally at the correct elevation.

(d) Floated Surface Finish

The surface shall first be given a tamped surface finish as specified above in (c) and shall then be finished with a wooden float to a smooth even surface without any unevenness. Plastering shall not be permitted under any circumstances,

(e) Non-slip Surface Finish

The surface shall first be given a tamped surface finish as specified in clause (c) above and then left for approximately one hour after which it shall be brushed with a soft brush to break up all laitance

(f) Rejection of Concrete

Concrete of insufficient strength or the presence of deficient dimensions. or areas of excessive honey-combing or bulges or unevenness may be considered sufficient cause for rejection of a structure. Upon written notice from the Engineer that-a given structure has been rejected, the Contractor shall, at his own expense, demolish defective work and rebuild the structure, either wholly or in part, so as to meet specified requirements.

In the event of concrete works test cubes failing to meet the strength requirements herein before specified, the Engineer may, at his own discretion. before rejecting the structure require the Contractor to follow any combination of the following courses

(i) Drill and test cores from portions of the structure' as indicated by the Engineer in the manner described in SABS 865 ~ 1982. The corrected equivalent cube strength as laid down shall be recorded for an assessment of the strength of the concrete

(ii) Effect remedial measures to the satisfaction of the Engineer.

NOTE: All costs incurred by reason of any concrete not conforming to specified requirements including: the cost of testing, shall be borne by the Contractor.

3.8 **FOUNDATIONS**

Steel pegs must be placed at sufficient intervals, indicating the levels and required depth of the foundation concrete.

Concrete must be well tamped and finished to the required levels. Brickwork may only be commenced 48 hours after the placing of the concrete.

3.9 **STEPS IN FOUNDATIONS**

Steps in foundations must be approved by the Engineer and must have a minimum overlap of 300mm.

3.10 **FLOOR SLABS**

The concrete shall be placed to the specified thickness and well tamped into position with a heavy board to an even and level surface. A power float machine may be used to compact the surface which, when partially set, shall receive a steel float finish.

The concrete slab shall only be placed and finished after all conduits or other services have been installed as specified.

3.11 **PRICES**

Price and payment shall be full compensation for furnishing and placing all materials including all supervision, labour, transport, equipment, plant, tools and incidentals necessary to complete and maintain the work prescribed in this section.

Unless otherwise provided in the Project Specification of the Contract, no separate payment will be made for staging, finishing of concrete, jointing materials, roofing felt, cores, clips, ties separators material used in positioning and fastening the full provision for these costs shall be included in the prices tendered for the erection of the houses.

3.12 CONCRETE LINTELS

For window openings and flat arches wider than 600mm an approved concrete lintel shall be used appropriate to the full width of the wall.

CLEAR OF DAYLIGHT SPAN	**DEPTH OF LINTEL**	**REINFORCEMENT**
Over 600mm to 1,5	±240mm	One 12mm diameter mild steel bar, 40 mm concrete cover from bottom for each half brick width of soffit.
Over 1,5 to 2mm	±320 mm	One 16mm diameter mild steel rod, 40mm concrete cover from bottom for each half brick width of soffit.
Over 2m	To Detail	To Detail

3.13 CONCRETE LINTELS

Pre-cast lintels shall be of 25 Mpa concrete and shall have the full thickness of the walls and a minimum bearing length of 220 mm.

The lintels over the various size openings shall be of depths specified in the following table, and shall also be reinforced as stated in the table viz:

CLEAR OR DAYLIGHT SPAN	DEPTH OF LINTEL	REINFORCEMENT
Over 600mm to 1,5	±240 mm	One 12 mm diameter mild steel bar, to each half brick thickness of lintel 40 mm concrete cover from bottom
Over 1,5 to 2 m	±320 mm	One 16 mm diameter mild steel bar to each half brick thickness of lintel, 40 mm concrete cover from bottom

Reinforced lintels must be suitably marked to ensure that the reinforcing is in the bottom of the lintels when placed in position.

Precast lintels must be at least 28 days old before being placed in position.

The lintels shall be hoisted into position and bedded in mortar.

SECTION 4

BRICKWORK

4.1 LIME

Lime shall be hydrated bedding mortar lime complying with the requirements of SABS specification 523. Lime may only be used with written permission from the Engineer.

4.2 CEMENT

Cement shall be as described in paragraph 3.1 of Section 3 of this specification.

4.3 WALLCRETE AND MORTACEM

Wall Crete and Mortacem may be used with the permission of the Engineer, but not in the foundation walls.

4.4 SAND

Sand shall comply with the requirements of SABS specification 1090,

4.5 WATER

Water shall be as described in paragraph 1.4 of Section | of this Specification.

4.6 WORKS MORTAR TESTS

(i) Sampling

The frequency of sampling will be decided by the Engineer.

(ii) Sufficient mortar shall be taken from various points of application to prepared — a composite sample for the making of a set of three mortar cubes.

(iii) Moulding

Cube moulds of a nominal size 100mm that comply with the requirements of SABS Method 863 must be used.

4.7 CEMENT MORTAR

Cement mortar shall be composed of 5 parts by volume of sand. and | part of volume of cement. The material shall be mixed dry until of uniform colour before water is added. Cement mortar shall be produced in such quantities as can be used before setting commences, 4.8 COMPO MORTAR

4.8 Compo mortar

Compor mortar may be used only with prior approval by the Engineer who shall supply the contractor with written mix proportions to be used.

In all cases the sand/lime, cement mortar should achieve the minimum required Mpa strength for the classes of mortar as set out by the South African Building Regulations.

4.9 CEMENT BRICK

All cement bricks shall be sound, well cured for 28 days and complying with SABS 1215 with a minimum individual crushing strength of 5,5 Mpa and an average strength of 8 Mpa. Bricks shall be submitted for approval to the Engineer.

4.10 CLAY BRICKS

All clay bricks shall be sound, well baked and complying with SABS 227. Bricks shall be masonry units for general purposes with a minimum individual crushing strength of 5 Mpa and an average strength of 7 Mpa and water absorption to be 15% maximum. Bricks shall be submitted for approval to the Engineer before any orders are places.

4.11 HOLLOW CONCRETE BLOCKS

All hollow concrete blocks shall be sound, well cured for 1215 and obtain the following strengths:

	NOMINAL COMPRESSION STRENTH (MPA)	MINIMUM INDIVIDUAL CRUSHING STRENGTH	AVERAGE STRENTH OF 12 BLOCKS
TYPE A	7,0	5,5	8,0
TYPE B	3,5	3,0	4,0

NOTES:

1. Blocks shall be submitted to the Engineer for approval before any orders are placed.

2 12Blocks will be required for testing periodically during the contract and testing to be carried out by an approved laboratory in Windhoek.

4.12 TESTING

15 Bricks/blocks taken from site deliveries may be required by the Engineer from time to time during the contract for testing. Should the bricks/blocks fail, the cost of the test will be borne by the contractor and the stockpile from which the brick/blocks were drawn will be removed immediately from the site at the Contractor’s expense. Brickwork built with bricks from a failed stockpile could be ordered to be demolished by the Engineer at the contractor’s expense.

4.13 BRICKWORK

Generally, brickwork in external walls 220mm thick shall be built in English Bond and internal walls 110 mm thick in Stretcher Bond. 'All brickwork shall be reinforced with approved high tensile steel brick force every fourth course, every third course for super bricks and second course for building blocks, appropriate to the full width of the wall and locked together at all lap joints and corners.

Bricks shall be well saturated with water approximately 2 hours before being sued and the tops of walls well moistened before work recommences.

The thickness of mortar joints in brickwork shall not exceed 10 mm and in blockwork they shall not exceed 12 mm. All joints in brickwork and blockwork are to be flushed up and the wall is to be smoothed before the mortar dries.

All walls are to be carried up regularly so that no part is built up more than 4 courses higher than the adjoining walls and corners may not be built up without the joining walls. No brick work/blockwork to exceed 1200 mm height in any one day.

No <u>toothing</u> in any wall shall be allowed.

All necessary openings for pipes etc. shall either be left or formed and made good after the pipes have been put in position. °

Generally internal walls shall be built up two courses above paneled ceilings.

Walls are to be built evenly on the outside with all inequalities on the inside.

4.14 FOUNDATION PLINTH

The maximum height of | 10mm foundation plinth wall shall be 500mm from top of foundation to DPC level.

If the contractor is instructed to build out foundation walls in lieu of tabling as described under earthworks, the foundation plinth wall when higher than 500 mm to a maximum of 1500 mm from top of foundations to DPC level shall be 220 mm thick. The size of the foundation shall then change accordingly. Foundation plinths shall be reinforced with brick force every course for the full height up to DPC level.

If hollow blocks are used in the foundation plinth, the blocks shall be filled solid with 10 Mpa concrete and the external corner blocks to be locked with 450 mm long 6 mm diameter U-shaped steel crimping straps locked across and into the cavity of the blocks.

All mortars used in plinth walls shall be cement mortar.

4.15 MORTAR JOINTS

The joints in brickwork receiving plaster, tiling or similar finishing's, shall be raked out whilst the mortar is soft to form a 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.

4.16 CURING

All brick walls and brickwork to be well cured for at least 3 days after construction.

4.17 BEAM FILLING

Beam filling to underside of roof sheeting at eaves and gable ends to be neatly finished off (see detailed drawings). Mortar around rafters at gable ends to be cut with a steel trowel inside and outside.

4.18 BAGGED FINISH TO BRICKWORKS

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

If bagging to walls is done after the mortar in joints has set, the wall surface shall be rubbed over with wet rough sacking as above, but cement grout shall be added as necessary to fill up the joints and crevices to obtain an even surface. 4.19

4.19 BUILDING IN

Door and window frames and the like shall be set in positions and securely strutted to prevent distortion whilst the brickwork, lintels, etc. are being. built.

Pressed steel door frames shall be grouted in at the back with cement mortar as the work proceeds, Straps should be removed as soon as the frame is securely built in.

4.20 SECURING THE ROOFS

Roof trusses shall be fixed at each support to walls with ties of 1,6 mm thick galvanized hoop iron, 32 mm wide, built 750 mm deep into brickwork 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 galvanized nails, 40mm long,

Purling rafters if specified on the drawings shall be secured with 4mm diameter galvanized MS wire bent double into brickwork/blockwork, at least 450 mm below top course of bricks/blocks under a layer of brick force where it passes through gable walls and at cross walls.

SECTION 5

WATERPROOFING

5.1 DAMP PROOF COURSE

Damp proof course material shall be 250-micron black polyethylene sheeting complying: with SABS 952 and of the full width of walls above foundations and shall be laid without longitudinal joints. At end joints and where joint is inevitable the sheeting shall be lapped 150mm and jointed according to manufacturer's specification. Care shall be taken not to tear or otherwise damage the sheeting.

5.2 **DAMP PROOF MEMBRANE**

(i) Damp proof membrane under floors when indicated on drawings shall be 250 micro black polyethylene sheeting complying with SABS 952 in the widest possible seamless widths. Where jointing is inevitable, all points shall be joined as per manufacturers specification.

(ii)Damp-proof membrane under floors when shown on drawings shall be lapped at ends and longitudinals 150mm and taped before concrete is placed.

SECTION 6

CARPENTRY AND JOINERY

6.1 STRUCTURAL TIMBER

(i) Structural timber shall be of good sound qualify softwood (pine) complying with the requirements of SABS specification 563 and 1245 and shall be of grade 4, well-seasoned and treated to SABS 563.

(ii) The timber as far as practicable, must be ordered in the dimensions in which it will be used, and must not be sawn into smaller cross-sectional sizes.

(iii) Timber not used immediately and required to be stored on site shall at delivery be properly stacked horizontally on timber bearers.

(iv) Where roof timbers pass through walls internally and externally, timber must be wrapped in 250-micron DPC and painted one coat of creosote/carbolineum and secured with 4mm binding wire bend double at least 450 mm below top course of bricks / blocks and under a layer of brick force.

(v) Where roof timbers are split by incorrect nailing or otherwise, timbers must be glued and clamped (not nailed).

6.2 LENGTHS OF TIMBERS AND METHODS OF JOINTING

Purlin. battens etc. shall be in single lengths but where this is not possible, the end joints will be formed as described below.

(i) Purlins

Purlins shall be splayed and spliced at joints using timber side plates of the same dimensions as purlins, not less than 600 mm long and six times nailed with 75mm long 3.5 mm diameter wire nails. Adjacent purlins shall not be splayed or spliced in the same bay or on the same rafter but alternatively. Joining will only be allowed on walls.

(ii) Battens Sawn battens, etc shall be but jointed at heading joints and angles, over points of support and where adjacent, shall not be jointed on the same rafters.

6.3 BOLTED ROOF TRUSSES

(i) Timber connections

Timber connectors for strengthening the joints between timbers of bolted roof trusses shall be approved shear plates of adequate size. or steel splitting connectors, inserted in grooves cut in the timbers.

Where connectors are used the bolts, unless otherwise specified, shall be M12 and provided with 50 mm diameter x 3,5 mm thick washers under heads and nuts.

Approved bracing shall form part of the roof system.

(ii) Pre-fabricated roof trusses

Pre-fabricated timber roof trusses shall be constructed of approved pine to an approved design or the designs shown on the detailed drawings. The timber shall be assembled in truss fabricating jigs and joints secured with approved connector plates pressed into the umber simultaneously on both sides. of the truss.

In coastal areas connector plates in buildings without ceilings to be coated with two layers Epoxy Tar complying with SABS 801, Type 2.

The supplier and manufacturer of the pre-fabricated trusses shall hold a certificate of competence issued by the Truss Plate Association of Southern Africa.

6.4 ROOF BATTENS

Battens shall be in accordance with SABS specification 563 and 653, securely nailed to roof timbers with 4mm diameter galvanized nails, length at least twice the thickness of the batten.

6.5 PURLIN TIES

Purlins shall be secured to rafters at each intersection with a 125 x 4 mm diameter galvanized nail. driven in vertically and in addition ties to the rafter with a single 3,2 mm diameter galvanized wire tie twisted and tied,

6.6 CEILING JOISTS

The tie beam of roof trusses will serve as ceiling joists but where they are spaced at more than 1,10 m centers 114 x 38 mm thick sawn ceiling joists shall] be provided midway between and

parallel with the tie beams. Ceiling joists shall also be provided at right angles to tie beams at walls and elsewhere where support for brandering is required.,

6.7 BRANDERING TO CEILINGS

Ceiling brandering not exceeding 50 mm in width shall be of South African soft wood complying with the requirements of SABS specification 653. The brandering shall be securely spiked up to the supporting timbers with 90mm wire nails. Cross brandering shall be cut in between the longitudinal brandering and securely skew nailed to same with 80 mm long wire nails. The sizes and spacings of branderings shall be as follow:

(i) Size 50 x 38mm, fixed parallel to the ceiling boards not exceeding 450 mm centers for 900 mm wide boards and at 600 mm centers for | 200mm wide boards. and in: the other direction at 900 mm centers for 900 and | 200 mm wide boards. Brandering shall also be fixed around edges of ceiling where required for fixing cornices.

(ii) Size 50 x 38mm brandering fixed to underside of tie beam where truss spacing exceeds 900 mm.

6.8 COVERING TO CEILINGS

(i) Fibre Board Ceilings

Fibre board for ceilings shall comply with the requirements of SABS specification 540 and shall be of 13 mm thick insulation board.

The boarding shall be nailed up to the brandering with 2 mm diameter galvanized a) oy clout headed nails, 40 mm long. spaced at not more than 100 mm apart at edges of boards and 150 mm apart along the intermediate brandering.

All joints and nail holes shall be filled in and finished off flush and smooth with an approved filler,

(ii) Gypsum Plaster Board Ceilings

Gypsum plaster board for ceilings shall be 6.4 mm thick gypsum ceiling board, complying with the requirements of SABS specification 266.

The boarding shall be nailed to the brandering with IVORY surface to underside, with 2 mm diameter galvanized or cadmium plated clout

headed nails. 40 mm long, spaced at not more than 100 mm apart at edges of boards and 150 mm apart along the intermediate brandering where they occur.

Cover strips to gypsum plaster board ceilings shall be of plaster board as for ceilings, 50 mm wide. with smooth machined edges. neatly jointed and fixed with 2mm diameter galvanized or cadmium plated clout headed nails. 40mm long, spaced at not more than 150 mm centers.

The ceiling boards shall be in 1200 mm widths. with boards at ends of ceilings of widths required to suit length of ceilings, and joints between the board covered with cover strips as above. Ceiling boards shall be in single lengths to the width of* ceilings wherever possible.

6.9 COVE CORNICES TO CEILINGS

(i) Gypsum Plaster Board Cornices

Cove Gypsum plaster board cornices to ceilings shall comply with the requirements of SABS specification 622 and shall be of 82 mm girth and nailed through the ceiling boards to the brandering and to wall plugs. not exceeding 300 mm centers, with 2mm diameter 40 mm galvanized clout headed nails, and fixed to walls with hardened steel nails driven into the brickwork.

Cornices shall be scribed at internal angles and mitered at external angles and shall be in long lengths with splayed heading joints where necessary.

(ii) Fibre Board Cornices

Fibre board cornices to ceiling shall be made up of 73 mm wide and 60 mm wide fibre board strips, nailed to the ceilings and to walls alternatively at not exceeding 300 centers, with 2 mm diameter galvanized or cadmium plated clout headed nails. 40 mm long, and fixed to walls with hardened steel nails driven into the brickwork and with heads punched in.

Cornices shall be scribed at internal angles and mitered at external angles and shall be in long lengths with splayed heading joints where necessary.

All joints and nail holes in cornices shall be filled in and finished off flush and smooth as described for ceilings.

6.10 TRAP DOORS IN CEILINGS

Openings for trap doors in ceilings shall be trimmed with 114 x 38 mm timbers. spiked to the supporting timers. Form framework for trap door out of 50 x 38 mm soft wood, properly spiked to supporting timbers and trimmers. Size of opening shall be 600 x 600 mm,

Trap door shall be formed with skeleton frame of 50 x 38 mm brandering, covered on underside with boarding as for ceiling. Soffit of trap door shall be flush with soffit of ceiling when closed.

When trap door is closed it shall rest on 50 x 19 mm fillets, fixed on soffit of ceiling all around Opening. mitered at angles and securely screwed up to the trimmers. Fillets shall project 12 mm into opening to carry trap door,

6.11 JOINERY

No framed joinery for services situated inland shall be manufactured in the humid coastal belt. and no framed joinery for the services situated in the coastal belt shall be manufactured inland.

All exposed softwood and hardwood timber in joinery which is not to be painted shall be free from large, lose or dead knots. knot holes, checks, splints, wane or other defects, and in Joinery which is to be painted shall be free from all defects other than those which can be filled or otherwise made good in such a way as will not impair the paint finish.

Purpose made Joinery shall be manufactured strictly in accordance with detailed drawings.

Stock joinery shall be of approved quality. Counter tops, table tops. drainers and the like. shall be formed with wide boards.

6.12 EXTERNAL DOORS

(i) Hardwood doors

To be framed and ledged batten doors and to comply with by SABS specification 545 0 1889 and to be of clear grade. The hardwood must be solid without any laminations. Doors to be supplied with infill panels and to be of saligna or equal and approved.

(ii) Hardboard doors

Exterior quality with solid face, 2032 x 813 mm door constructed with Meranti edges and a water-resistant adhesive as “Fischer exterior door” or similar and approved.

(iii) Door Thicknesses

The framed doors where in timber frames shall be 44 mm thick and where in steel frames shall be 40 mm thick.

6.13 INTERNAL DOORS

Internal doors shall be hollow core (interior quality) grade LMC complying with SABS 545. Doors shall be covered on both sides with hardboard and edge strips shall be provided to both edges. Doors to be provided with hinge and lock blocks. Door size to be 813 x 2032 x 40 mm

6.14 SET IN POSITION FOR BUILDING IN OF WOOD FRAMES

Wood frames to doors, windows, etc., shall be set up in position for building in as described in clause 4. 19.

6.15 HANGING OF DOORS

Doors shall be hung true and level and fitted with furniture as specified. A maximum space of 4 mm will be allowed between door leaf and frame or floor. Allow for easing of doors after completion. Doors to be hung on No 2 x 100 mm galvanized hinges with approved screws to the door leaves.

6.16 HARDWOOD WINDOW FRAMES

All hardwood window frames when shown on drawings shall be Meranti hardwood or equal and approved to sizes and openings as shown on drawings. Opening sections to be hung on approved pin type hinges. Provide and fix CP or brass sliding stay. Top hung windows to be similarly fixed but with 150 mm CP or brass peg stay and keep in sill rail, all windows to be outward opening.

All furniture to be removed on arrival on site carefully set aside and refixed before glazing is carried out.

After the windows have been built in and before being glazed, they shall be overhauled, adjusted as necessary and left in a satisfactory state and in good working order.

All hardwood windows to be provided with at least No 2x 16-gauge galvanized hoop iron ties turned up 50 mm and fixed to outer side of each side of frame with brass screws and built 450 mm into wall reveals with ends turned into brick/blockwork joints.

NOTE

(i) Hollow block cavities on both sides of each built in window and door frame to be filled with 10 Mpa concrete. Window frames to be built in center of wall.

(ii) All wood doorframes shall-be built in to allow plaster finish both sides, i.e. 12 mm in front of brickwork/blockwork.;

(iii) Window and door frames to be delivered to side finished one coat sealer consisting of 2 parts boiled linseed and one-part mineral turpentine.

(iv) Doors to be hung on No 2 x 100 mm galvanized hinges with approved screws to the door leaves.

6.17 ROOFING SHEETS (METAL)

(a) Corrugated Roofing Sheets

(i) Galvanized corrugated iron roof covering shall be “Swanrib 686 or similar and approved. It must be of 0.6 mm nominal thickness and coated with zinc of a mass not less than specified for Class Z250 (economy galvanizing).

(ii) Driving screws will not be permitted for wood purlins and the sheeting may only be drilled and not punched for fixing screws. Special wood screws as “safetop” or similar and approved with proper threads and distance piece

sleeves which prevent indentation at top of ribs will be permitted in conjunction with neoprene and metal washer. Screws shall be spaced not more than three corrugations apart.

(iii) Sheets shall be fixed at every rib on the gutter purlin.

(iv) The sheets shall have side laps of not less than one and a half corrugations and end laps of not less than 300 mm.

(b) Rib-Through Roofing Sheets

(i) Galvanized ribber trough roof covering, shall be “Swanrib 686” or similar and approved.

The sheets shall be 0.6 mm thick (after galvanizing), of Class Z 250 quality and in single length to each roof slope and shall be lapped one rib at sides and fixed as specified on drawings or according to manufacturer’s specification. The fixing of side laps between purlins to be executed with seal type plugs as “Safetop” or similar and approved with the necessary washers.

(ii) Driving screws will not be permitted for wood purlins and the sheeting may only be drilled and not punched for fixing screws.

Special wood: screws as “Safetop” or similar and approved, with proper threads and distance piece sleeves which prevent indentation at top of ribs will be permitted in conjunction with neoprene and metal washers. Screws shall be spaced at every second rib.

(iii) Sheets shall be fixed at every rib on the gutter purlin.

(c) General Roofing Sheets

Galvanized iron roof coverings shall be stored and protected from the elements after delivery to site. Sheets showing white rust or any defects, even after fixing, will be rejected. Sheets shall be cleaned properly before fixing.

(ii) At ridges all roofing sheets are to be slightly bent up.

(iii) Where gutters are used, all roofing sheets at overhangs into gutters is to be slightly bent down.

(d) Purlin Spacing for Corrugated, and rib-through-roofing sheets

The spacing of purlins to be for corrugated, and rib-through-roofing sheets, measured center to center, for the different roof slopes and thicknesses of sheet s shall be in accordance with the manufacturers specifications as indicated on the drawings.

6.18 **RIDGING (METAL)**

(a) For Corrugated Roofing

Galvanized iron ridging for ridges and hips of corrugated iron covered roofs shall be 0,60 mm thick and be coated with zinc of Class Z250 (econo galvanizing).

The ridging shall be 450mm girth with roll top and bent down edges, and shall be lapped 225mm at end joints, cut and properly lapped and fitted intersections of ridges, hips and valleys, and close beaten into corrugations of roofing iron.

Ridging shall be fixed with screws as "'Safetop" or similar and approved to wood purlins with washers under heads and nuts. and spaced at centers not exceeding 300 mm. Holes must be drilled and not punched.

(b) For Rib-Trough Roofing

(i) Galvanized iron ridging for ridges of roofs covered with rib-trough roofing sheet shall be as described in (a) previously specified but be provided with serrated closers and fixed with screws as safetop of similar and approved to wood purlins with washers under heads and nuts. Holes must be drilled and not punched.

(ii) At the ridge the sheeting is to be slightly bent up with a special bending tod before fixing on every rib for the full length of the ridge on either side.

6.19 **ROOFING SHEETS (FIBRE CEMENT)**

Corrugated fibre cement roofing sheets shall comply with the requirements of SABS specification 685 and sheets shall be not less than 6 mm thick.

The sheets shall be mitre-cut at corners as necessary and laid with smooth surface on top and shall be secured to wood purlins with 7 mm diameter galvanized screws not less than 114 mm long, each provided with a plastic washer and a galvanized steel cupped washer over the plastic washer. -

Screws and bolt holes in sheet shall be drilled (not punched) and shall be 2,0 mm larger than the diameter of screws and bolts.

The fixing screws, and nuts on fixing bolts, shall not be tightened more than is necessary for the holding down of the sheets and for 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 in an attempt to make the sheets bear on such purlins.

All necessary cutting to sheets shall be property performed. Cut edges a side of valleys. and elsewhere where exposed, shall be perfectly straight.

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 during the period of maintenance, 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,

6.20 RIDGING (FIBRE CEMENT) CORRUGATED ADJUSTABLE TYPE

Adjustable corrugated fibre cement ridging for ridges of corrugated asbestos cement covered roots shall be of same manufacture as the roofing sheets. of not less than 6 mm thick materials and with overlapping and joints.

The ridging shall be secured to wood purlins with screws and to steel purlins with hook bolts, passed through the roofing sheets, and provided with plastic or felt and steel washers: all as described for fixing corrugated asbestos cement roofing.

The Manufacturer's instructions regarding laying and fixing of the ridging, including spacing of screws or bolts, shall be followed in all cases.

6.21 PRESSED FIBRE CEMENT ROOF TRIM

Fascia’s and barge boards, where prescribed, shall be of pressed fibre cement boards of dimensions shown on the drawings in long lengths but jointed with standard galvanized Jointing strips. joined and fixed according to manufacturer’s specifications.

6.22 BITUMEN SATURATED ORGANIC FIBRE ROOF SHEETING

(i) Corrugated bitumen saturated fibre roof sheeting shall be “Onduline PP colour” or similar and approved. All necessary cutting to sheets shall be properly performed. Cut edges shall be perfectly straight. The maximum spacing of purlins shall be in accordance with the manufacturer’s specification. “

(ii) The sheets shall have side laps of not less than 2 corrugations and end laps of not less than 150 mm. (ii) Sheets shall be fixed to purlins by specially shaped PVC encapsuled stainless steel nails. Nails should be hammered through the top corrugations, nailing every corrugation at sheet ends and alternative corrugations at all intermediate purlins. Always start the second row of sheeting with a half sheet to obtain a staggered application.

6.23 RIDGING (BITUMEN-SATURATED ORGANIC FIBRE SHEETING)

Ridge pieces should be laid in the same direction as sheeting with 125 mm minimum overlap of the top course and endlaps corresponding to the sheet sidelaps. Fixing of ridging to be similar as for roof sheet with nails on every corrugation. Eave fillers shall be used to seal ridges.

6.24 EAVES GUTTERS

Eaves gutters shall be of impact modified unplasticized polyvinyl! chloride (UPVC) of square profile and with wall thickness of not less than 2 mm and supplied with necessary angles, stop ends, brackets, gutter outlets etc as “Marley streamline” or similar and approved. The gutters shall be fixed with proper falls to concealed gutter brackets as supplied by the manufacturers. Gutter brackets must be securely screwed to the roof timbers at centers: according to manufacturer’s specifications and not exceeding | meter.

No form of adhesive may be used when jointing gutters.

6.25 RAINWATER PIPES

Rainwater downpipes shall be of impact modified unplasticized polyvinyl chloride (UPVC) of 75 mm square profile and of a wall thickness of not less than 2 mm and supplied with all necessary bend-shoes. Downpipe clips etc. as “Marley Streamline” or similar and approved.

The downpipes shall be fixed to walls with UPVC pipe clips, as supplied by manufacturer, at 2000 mm maximum centers.

SECTION 7

FLOOR COVERINGS, PLASTIC LININGS, ETC

7.1 GENERALLY

The floors and skirtings shall be protected from damage during the progress of the remaining work. and at completion shall be cleaned and handed over in a perfect condition. The work shall be carried out by skilled workmen experienced in laying these types of floor finished,

7.2 PRICES

Prices shall include for straight cutting and waste.

7.3 VINYL FLOOR FINISHES AND SKIRTINGS

(a) Materials

Semi-flexible vinyl floor tiles shall comply with the requirements of SABS Specification 581. The flooring shall be of marble pattern as Marley flex or similar and approved and of approved light colour, and tiles shall be 300 x 300 mm in size and 1.6 mm nominal thickness. Vinyl cove skirtings shall be of approved manufacture and 70 mm in height.

(b) Laying and Fixing

Vinyl sheeting and tiles and such like floor finishings shall be laid in strict accordance with the Manufacturer’s instructions. on a perfectly dry and clean surface. The-adhesive shall be of the emulsion type such as Marley No 60 adhesive or similar and approved and as described in SABS specification 070. The floor finishings to be rolled with a suitable roller to

ensure complete adhesion of the material. The flooring shall be cut where required and neatly fitted against adjoining floors, thresholds etc. Vinyl skirtings shall be close fitted to floors and walls, butted at end joints, neatly mitred at internal angles and dressed round external angles and fixed with adhesive as for flooring.

The newly laid floor should, after 4 days, be scrubbed with a diluted neutral detergent and rinsed thoroughly.

7.4 TEXTILE FLOOR COVERINGS

(a) Materials

Textile floor coverings shall comply with the requirements of SABS Specification 1375 for woven pile or tufted construction, complying to the requirements of the class and grading indicated on the drawings. Carpet underlays shall comply with the requirements of SABS Specification 1419.

SECTION 8
IRONMONGERY

8.1 GENERAL

All ironmongery shall be of best quality and shall be approved before fixing. Articles shall be fixed with screws of similar metal.

Keys shall not fit or open a second lock.

All screws, nails, bolts, etc., required for completion of the work, shall be supplied by the Contractor.

8.2 DOOR LOCKS

1. External doors shall be fitted with “Solid Esco”, type “Blesbock ART 460/313”, 4’ lever lock or similar and approved.

2. Internal doors shall be fitted with “Solid Esco”, type Blesbock ART 460/311”, 2 lever lock or similar and approved.

3. All door locks shall be supplied with two keys.

4. Door locks shall be fitted neatly and square on the door with cover plates neatly finished and working easily and on completion of the contract all keys are to be handed to the Employer, separately marked for each individual room and building.

8.3 CURTAIN RAILS AND PELMETS

Pelmets shall be standard ready-made bent steel pelmets in standard lengths fixed to wall with standard brackets (500 mm centers) at least 150 mm above window openings with at least 150m overlap on either side of window openings. Pelmets to be provided with rails of standard galvanized mild steel “I” curtain rails complete with brackets (500mm centers) that overlap in the center of the pelmet by 200 mm with metal stop ends (2 per

rail) and nylon runners (10 per meter length of rail). Fixing to walls to be according to detail drawings.

8.4 ERF NUMBER PLATES

Provide 2 mm black aluminum plate 225 x 100 mm or similar and approved twice holed for fixing with erf number 75 mm high engraved as per detail drawing and fixed to wall with fisher plugs and screws at position indicated by the Engineer on completion.

8.5 DOWELS AND MORTICES

The stiles of wood door frames, and similar frames not having sills framed in, shall be doweled to concrete, brick, stone and similar thresholds with 10mm diameter mild steel dowels 75 mm long, one to each stile.

SECTION 9

METALWORK

9.1 PRESSED STEEL DOOR FRAMES

Pressed steel door frames shall be of welded one-piece construction or of approved knock- down type for assembly on site and constructed of mild steel sheet. pressed or rolled to the required shapes.

Frames for 220 mm brick walls with a single rebate profile shall be of at least 1,60 mm thick metal.

All other frames shall be of at least 1,20 mm thick metal. Frames shall be of widths required to suit the thickness of walls into which they are built, and shall be fitted with suitable tie-bars and races at the bottom which must only be removed after building in. Building in lugs, three to each jamb of frames without fanlights, and four building in lugs to each jamb of frames with fanlights. Door frames must be provided with one pair 102 mm ~ 5 knuckle loose pin steel hinges with 3 knuckle leaves welded securely into the frame rebate. one adjustable cp striking plate with mortar guard fixed 1200 mm from finished floor level.

All door frames shall be well caulked in with mortar between frame and brickwork. Care must be taken to ensure that the door frame is plumb.

A timber spreader shall be provided for each door whilst building in to keep frame true and plumb.

The straps across the feet of the frame must be removed after frames have been built in.

All welding shall be cleaned off smooth and flush on exposed faces and frames shall be cleaned and primed as described for steel windows, before leaving the manufacturer’s works.

9.2 STEEL DOORS. SIDELIGHTS AND FANLIGHTS

General Requirement

Steel doors, sidelights and fanlights shall, in the case of stock types, comply with the requirements of SABS specification 727, and in the case of purpose made types with the construction and other requirements of the above specification wherever applicable. All doors. sidelights and fanlights shall, in addition, comply with the following additional and/or amended requirements. viz: -

(a) Suitable weather bars shall be provided where required to render doors, etc. perfectly watertight.

(b) Frames of doors, etc. where fixed to concrete columns, beams, etc., shall be provided with suitable lugs for fixing to plugs in the concrete at the same spacing as the standard fixing lugs.

(c) Doors, sidelights, fanlights and components, shall be cleaned and primed as described for steel windows.

Doors, sidelights and fanlights, unless otherwise shown shall be of “one piece’” construction, but where shown to be in two or more “one piece” units, the units shall be coupled together with standard coupling mullion and/or transoms.

After doors. sidelights and fanlights have been built in and before being glazed, they shall be overhauled, touched up with primer, adjusted as necessary, and left in a satisfactory state and in good working order.

9.3 STEEL WINDOWS

General Requirements

Stock residential and industrial type steel windows shall comply with the requirements of SABS specification 727, and all other types both stock and purpose made shall comply with the constructional and other requirements of the above specification wherever applicable. All windows shall in addition, comply with the following additional and/or amended requirements, viz:

(a) Frames of windows where fixed to concrete columns, beams, etc. shall be provided with suitable lugs for fixing to plugs in the concrete and properly embedded in brickwork true and plumb with top of window lining up with door head height.

(b) Windows and components, shall be cleaned by acid pickling, rinsing and drying, as laid down in ‘SABS Code of Practice, 064 or by other approved means. to remove all scale. rust. grease, oil and foreign matter, and then primed with red oxide zinc chromate primer complying with the requirements of SABS Specification 909, applied by dipping or by means of spray gun.

Windows. unless otherwise specified, shall be of one-piece construction, but where shown to be in two or more “one piece” units, the units shall be coupled together with standard coupling mullions and/or transoms.

Windows shall be fitted with brass handles, stays, catches and other fittings. The fittings shall be fixed in such a way as to be removable after windows are glazed.

After the windows have been built in and before being glazed, they shall be overhauled. touched up with primer, adjusted as necessary and left in a satisfactory state and in good working order.

(c) Side hung opening sections shall be hung on steel hinges having brass pins and shall each be fitted with a standard brass sliding stay and brass handle.

Top hung opening sections shall be hung on hinges as above and shall each be fitted with a standard brass peg stay, size 200 mm for one pane high ventilators and size 250 mm for two pane high opening sections.

(d) All furniture to windows shall be removed immediately on arrival on site, carefully set aside and replaced when the windows are checked and serviced prior to glazing.

The contractor shall allow for plaster on the reveals and forming a window sill as detailed.

9.4 METAL CURTAIN PELMETS

Pelmets shall be of stock pattern and of approved manufacture, and not less than 150 mm longer than the width of openings. between reveals wherever possible, or they may be continuous over windows occurring in series.

The fascia's to be of sheet steel of not less than 0,71 mm thick with top and bottom edges beaded and to be twice ribbed to provide additional stiffness. Fascia to be of width required to provide at least 65mm cover from bottom of curtain rail to bottom edges of pelmet, and to be returned on to the face of walls at ends.

The pelmets to project not less than 100 mm from wall face and to be fixed on strap brackets of 19 x 5 mm of 3 x 25 mm mild steel. secured to fascia at ends of pelmets and intermediately not exceeding 750 mm centers and bent and holed for screws and screwed to Fischer plugs in walls.

The fascia's and brackets to be given one coat light colour priming paint before leaving the Manufacturer's works. Curtain rails shall be as described elsewhere.

9.5 BURGLAR BARS TO STEEL WINDOWS

Where windows are fitted with burglar bars, these burglar bars are to be standard pattern 8 mim diameter round bars welded at all intersections. flattened and welded to steel window frame. In cases where wooden frames are used. burglar bars should be screwed to the frames using single directional screws.

SECTION 10

PLASTERING, PAVING AND TERAZZO WORK

Internal angles coved to a radius of not more than 25 mm are to be included in the prices for plastering.

10.1 LIME

Lime shall be hydrated plaster lime complying with the requirements of SABS specification

10.2 CEMENT

Cement shall be as described in clause 3.1, and of slow setting quality.

10.3 SAND

Sand for plaster shall be as described in clause 44.

10.4 COMPO PLASTER

Compo plaster shall be composed of ten parts by volume of sand, depending on the quality of the sand available, one-part lime and one-part cement.

The lime and sand shall be mixed dry, then mixed well, before the cement is added, approximately half an hour before using and the adding of the necessary additional water as required.

Compo plaster shall be produced in such quantities as can be used before commencing to set, as no compo plaster that has once commenced to set shall be used in any way.

10.5 CEMENT PLASTER

Cement plaster for brickwork shall be composed of 5 parts of sand and | part of cement, all by volume. and mixed as described for cement mortar in clause 4.7.

10.6 THICKNESS OF PLASTER

Plaster on walls shall be not less than 8 mm or more than 15 mm in thickness and plaster on concrete and beams shall not be less than 9 mm or more than 16 mm in thickness.

10.7 APPLICATION OF PLASTER

Walls shall be well settled before plastering commences.

The surfaces of plaster shall be steel troweled to a smooth, even and true finish, or finished to a true and even surface with a wood float. or brushed down with a lime brush in vertical strokes. as indicated on the drawings. All plaster surfaces shall be free from blemish.

Plaster shall be returned into reveals and soffits of opening, and all angles shall be true and straight with salient angles slightly rounded.

All cracks, blisters and other defects shall be cut out and made good and the whole left perfect upon completion.

10.8 CEMENT SLURRY FINISH

Unequalities to be covered with cement mixture of | part of cement to 5 parts of sand and left to dry. Wall then to be finished off with | coat cement slurry made up on I part cement to one-part fine building sand per volume mixed with clean water. Total quantity not to exceed 20-litres per mix. Apply mix to specified areas with a lime brush in vertical strokes.

NOTE

The tolerances of the bricks will influence the internal finish of the walls. It is thus required of the contractor to prepare a “model” finished wall to obtain the approval of the engineer which will serve as a standard of the finish required.

Plaster on all external walls shall be done up to the concrete foundation. Foundation to be opened so that plaster can be done properly.

10.9 FLOOR FINISH

(a) No screeding to floors will be required, but the concrete must be consolidated, and wood floated to final levels as quickly as possible before bleeding starts, and then left undisturbed until —

(i) Bleeding has stopped. (in) Surface bleed water has evaporated or been removed.

(ii) The concrete has started to stiffen sufficiently for a footprint to barely show (it must have lost its water sheen).

The surface shall then be finished with a steel trowel or wood float as indicated on the drawings or by the Engineer.

(b) Shower floor to be raised 75 mm above bathroom floor, sloped to fall to outlet, steel troweled natural cement finish with arris rounded plastered kerb according to detail.

(c) Concrete floors are to be continuously wet cured for at least 10 days by fully covering the surface with plastic sheeting or by curbing and flooding the floor,

At no stage should cement or other “dryers” be applied to the surface.

SECTION 11

TILING

11.1 PRICES

Prices shall include for all square cutting and waste.

11.2 GLAZED WALL TILING

Glazed tiles for wall tiling shall comply with the requirements of SABS specification 22 and shall be white, size 152 x 152 mm and 6,5 mm or 5,0 mm thick.

The tiles shall be fixed in accordance with the SABS Code of Practice 0107 with horizontal and vertical joints continuous and shall have all joints rubbed in solid with neat white cement grout. Tiles shall be well soaked in water before fixing with cement mortar and thoroughly cleaned off after fixing.

Wall tiling shall project approximately 4 mm beyond face of adjoining plaster with all exposed edges finished with glazed rounded edge tiles.

Tiling shall be returned into reveals of openings and shall be butted at internal angles and provided with glazed rounded edged tiles to external angles. All necessary cutting to tiles shall be properly performed. Walls shall be well wetted before tiling is commenced.

SECTION 12

PLUMBING

12.1 REGISTERED PLUMBERS

Only registered plumbers shall be employed on any plumbing work.

12.2 GALVANIZED SHEET IRON

Galvanized sheet iron shall be 0,6 mm thick (after galvanizing). The galvanized sheet iron for inland use shall be of Class Z 250 (econogalv.) quality,

Corroded or otherwise defective sheets or sheets showing white rust shall not be used. All nailing and screwing shall be done with galvanized iron nails and screws.

12.3 FLASINGS

Sole flashings to the various types of roofs shall be as follows:

(a) <u>To corrugated Iron Roofs</u>

Sole finishings to corrugated iron roofs where butting against vertical walls or other surfaces shall be of galvanized sheet iron, turned at least 75 mm

up against vertical surfaces and close dressed not less than 200 mm onto the roofing iron.

(b) To Corrugated Fibre Cement Roofs

Sole finishings at raking intersections of corrugated fibre cement roofs with vertical walls or other surfaces shall be of galvanized sheet iron turned at least 75mm up against vertical surfaces and close dressed on to the asbestos and over the nearest full corrugation.

12.4 EAVES GUTTERS

Sheet iron gutters shall be of galvanized sheet iron and shall-have beaded edges and all joints riveted and soldered.

Gutters shall be laid to proper falls and shall be provided with angles, stop ends and outlet nozzles as required. Angles shall be strengthened with 50 mm wide strips of 0.60 mm thick galvanized sheet iron soldered over the internal miters inside the gutters.

Gutters shall be fixed on brackets of galvanized mild steel bent to shape of gutters with front end taken up to underside of beaded edge of ia and each twice screwed to roof Moana

Gutters shall be bolted to brackets at front with 6 mm galvanized gutter bolts, one to each bracket, and positioned close up to underside of beaded edge of gutter.

Brackets. shall be spaced at centers not exceeding 1m. UPVC gutters and down pipes shall be in accordance with Clause 6.24 and 6.25 of this Specification.

12.5 RAINWATER PIPES

Sheet iron rainwater pipes shall be of 0,60 mm thick galvanized sheet iron, seamed at the back and jointed with slip joints neatly soldered. The pipes shall be fixed 25 mm clear of the finished wall face on galvanized mild steel rainwater pipe brackets, spaced at not exceeding 2,4 m apart, and having tails built into walls 3:1 cement mortar.

12.6 PROTECTION AGAINST LIGHTNING

Buildings specified to be provided with lightning protection shall have a system installed which shall be in accordance with the latest revision of the SABS Code of Practice 03 and 03A, and must comply with the performance requirements laid

down therein.

12.7 MILD STEEL PIPES

Mild steel water piping shall be in accordance with SABS specification 62, galvanized inside and outside and with screwed ends and shall be of medium class. and shall be provided with sockets. bends, elbows, tees,

long screws, back nuts, and other fittings as may be required, all complying with the requirements of SABS specification 1109.

Cut ends of pipes shall be reamed out to remove burrs.

Pipes shall be firmly and neatly built in or fixed to walls as directed by the Engineer,

12.8 COPPER PIPES

Copper pipes for domestic water and gas services in all cases shall comply with the requirements of a SABS-460 class 0.2 and 3. For applications below ground class 2 or 3 s hall be used.

Pipe application above ground shall be of class 0 or 2 and jointed with capillary soldered fittings. Provision must however, be made for union couplings in strategic places.

Pipes shall be firmly and neatly built in or fixed to walls, as directed by the Engineer, with brass holderbats, saddles or brackets and built into walls with 3: l cement mortar or to timber work with brass or copper pipe clips screwed on with brass screws,

Hot water piping to be of thin wall hard drawn copper.

12.9 JOINTING OF COPPER PIPES

Unless otherwise specified, all copper pipes shall be jointed with approved capillary solder type fittings strictly in accordance with the Manufacturer's Specifications.

Copper pipes specified to be jointed with compression fittings shall be jointed _ with approved brass metal fittings with coupling nuts and rotary sleeve pieces.

All necessary couplings, connectors, bends, elbows, tees and other fittings as may be required, shall be provided.

Copper pipes specified to be joined with flared type fittings, shall be Joined with approved brass metal fittings with coupling nuts and cone.

NB *Capillary, compression and flared type fittings used in joining copper pipes must be of such bore as will correctly fit the pipes, to ensure satisfactory Joining.*

12.10 HDPE (HIGH DENSITY POLYETHYLENE) PIPES

20 mm Dia. Type 10 Glass 6, to SABS 533 to be used with plasson compression fittings. —

12.11 UPYC PIPES

(1) UPVC sewer and drain pipes for use underground shall comply with the requirements of SABS 791.

UPVC pipes and fittings for use above ground in drainage installations shall comply with the requirements of SABS 967 heavy duty.

12.12 **REGULATIONS**

The whole of the plumbing and drainage installation is to be executed in accordance with municipal and/or local authority regulations and to the satisfaction of the Engineer,

12.13 **SANITARY FITTINGS**

(a) **Towel Rail**

Towel rail shall be a chromium plated brass towel rail with brackets screwed and plugged to wall, as shown on the drawings or specified in the Project Specification.

(b) **Wash Trough**

Stainless steel economy types single bowl wash trough 650 x 445 x 285 external dimensions complete with support brackets, 50mm diameter CP outlet, plug and chain, NO TRAP REQUIRED. Precast concrete trough from Superocla may be offered.

12.14 **WC SUITES**

Low level wash down WC pan shall be vitreous china, type “Cobra Classic 100” with trap as specified or similar and approved. Provided with black “Penta” seat and flap or equal and approved.

Cistern shall be “New World” white composite plastic syphonic cistern with 9-liter capacity complete with 32mm flush pipe connector, “Betta”’ type valve, lever operated, 15mm overflow and high pressure “Portsmouth” ball valve conforming with SABS 752 or similar and approved.

Connection from cistern to water supply shall be done in a C_P. flexible connector or equal and approved. No angle regulating valve shall be supplied.

(a) **Toilet Roll Holder -**

Toilet roll holder shall be a CP theft proof toilet roll holder.

(b) **Wash Hand Basins**

Wash hand basin shall be vitreous china type “Classic 560 x 405 mm complete with wall brackets or equal and approved. CP basin waste with plug and chain with tap hole cover for one hole if only cold water is supplied. PVC P – trap only required if not discharging into gully.

(c) **Baths**

The bath shall be a steel bath tub with porcelain enamel finish as “Vaal Steel Bath Rub, Code 3010” capacity 75 liters, or similar and approved. (g)

The bath tub shall be placed on cradles or onto a mortar bed on brick piers, allowing sufficient clearance between the underside of the bath tub and floor to accommodate the waste trap.

The bath tub must be level across its width and length.

The plumbing connections to taps, waste outlet and overflow must be checked for water tightness, and the tub itself for the complete draining of bath water.

The side(s) of the bath tub shall be bricked up by setting the brickwork sufficiently back to allow for the thickness of plaster, flush with the edge of the tub.

(d) **Stainless Steel Sinks**

Stainless steel sinks with draining board for domestic use shall comply with the requirements of SABS specification 242 and shall be-constructed of Type 304 stainless steel. Sink shall be stainless steel single drainer, single bowl and reversible size 1800mm x 510 mm or 1200 mm x 510mm as specified on drawings overall without integrated overflow. Bowl to be 150m deep complete with 38m diameter CP outlet, plug and chain, set on frame as per detail drawing for specific house types.

Joint between sink and wall must be sealed with a silicon sealant whether tiles are taken as an option or not.

12.15 **WATER TAPS**

(a) Water Taps (Metallic)

All water taps and stop cocks shall comply with the requirements of SABS

Specification 226.

Taps for hot water shall be marked with the letter “H” or with the word “Hot” or shall have red colour plastic insets and taps for cold water when both cold and hot taps are provided to a fitting, shall be marked with the letter “C” or with the word “Cold” or shall have green or blue colour plastic insets.

(i) Tap to sink shall be 15mm CP light pattern “Cobra type 206” CP bibtap or similar and approved. Fixed with nipple as necessary to discharge directly into sink bowl.

(ii) Tap to wash basin shall be 15mm CP pillar tap light pattern as “Cobra 211 star”, or similar and approved. Connected to water ‘supply with CP flexible connector or equal and approved.

(iii) Fitting to shower shall be 15mm CP stop tap under wall pattern as “Cobra 228” or similar and approved.

(iv) Garden tap shall be 15mm rough brass bibtap light pattern with hose union as “Cobra 208” or similar and approved.

(v) Bath mixer shall be 15mm CP wall type light pattern bath mixer as “Cobra 251” or similar and approved.

(b) Water Taps (Polvacetal)

All water taps shall comply with the requirements of SABS Specification 1020 -1974,

Taps for hot water shall be marked with the letter “H” or with the word “Hot” or shall have red plastic insets, and taps for cold water, when both hot and cold taps are provided, shall be marked with the letter “C” or with the word “Cold” or shall have green or blue colour plastic insets.

(i) The tap to the sink where cold water only is supplied shall be 15mm wall mounted bibcock with a swivel flow indicator.

(ii) Mixer to sinks where hot and cold water is provided, shall be 15mm wall mounted sink mixer.

(iii) Taps to wash hand basins shall be 15mm pillar taps.

(iv) Bath mixers shall be 15mm wall mounted bath mixers with handhold shower.

(v) Taps to baths where cold water only is supplied shall be 15mm wall mounted bibcock’s with swivel flow indicators.

12.16 **SHOWER**

Shower rose shall be Cobra type 070 15mm x 85mm dia CP shower rose and |15 mm female inlet on a 45° CP elbow.

12.17 **FIXED WATER STORAGE HEATERS**

The water heaters shall comply with SABS 151 and shall bear the SABS mark.

This specification covers the following types of water heaters:

Type 3 (Low Pressure type "

A water heater designed for a working pressure of 100kPa with or without am open expansion or vent pipe and intended to work from a supply derived from either a pressure control valve or a cold-water cistern that does not form an integral part of the heater. The flow of water is controlled on the outlet side.

Type 4 (High Pressure Type)

A water heater designed for a working pressure of 400 kPa derived from the mains via a combined pressure control / expansion valve. The flow of water is controlled on the outlet side,

The background colour of the nameplate indicating details of the cylinder shall be in accordance with the appropriate working pressure specified in SABS 15 l, namely:

50 kPa or less	Yellow
100 kPa	Blue
200 kPa	Black
300 kPa	Brown
400 kPa	Red
500 kPa	Grey

The minimum working pressure of type 3 shall be 100 kPa. Where a working pressure higher than 100 kPa is required, type 4 shall be used.

The rating of the heating units shall be as follows:

TYPES	**CAPACITY (Liters)**	**220/250v, 50Kz (KW)**
1	15	0,5
1 and 3	25	0,5
3	50	1,0
3 and 4	100	2,0
3 and 4	150	3,0
3 and 4	200	4,0
3 and 4	250	4,0
3	350	
3	450	3x3,0
3	550	

The paint finish shall be at least equal to Class I baked enamel of SABS 757 with a dry film thickness of at least 0,03mm.

The insulation between the cylinder and the outer casing shall consist of a 5Omm high density fiberglass blanket or granulated cork.

The heating element shall be of the immersion type.

The following safety accessories shall be supplied as standard:

On types 1 and 3

(a) Fail safe type thermostat graduated to operate at any temperature between 40° and 75°.:

On type 4:

(a) Fail safe type thermostat graduated to operate at any temperature between 40° and 75°. ~

(b) Emergency over-pressure / temperature relief-valve relieving at. 600/650 kPa or at 94° C - 97°C.

In areas with aggressive water a special heating element such as Incalloy or L404 of Megaflop shall be provided.

12.18 **HOLES FOR PIPES, ETC**

All necessary holes shall be cut in walls. floors, roofs, ceiling etc. for pipes, brackets. etc., and shall be made good in all trades. after pipes etc. have been built in. to the satisfaction of the Engineer.

12.19 **TESTING**

The plumbing work shall be tested in accordance with the instructions of the Engineer and any defective work shall be taken out and redone at the cost of the contractor and tested again.

12.20 **MAKING GOOD**

Roofs, gutters, valleys, flashings, etc., shall be carefully examined upon. completion of the work, any holes or other defects soldered up or otherwise made good, and the whole left perfect and watertight.

SECTION 13

DRAIN LAYING

The Standardized Specifications SBAS 1200 DB (pipe trenches) LB bedding (pipes) and LD (sewers) shall be applicable except where in contradiction with the following clauses:

13.1 **LICENSED DRAIN LAYERS AND PLUMBERS**

Only licensed drain layers shall be employed on any of the drainage work.

13.2 EXCAVATIONS

Excavations for drainage trenches, gullies, chambers, French drains, etc., shall be of such depths and gradients as shown on the drawings, or as directed by the
Engineer. Trenches shall be excavated to straight lines and shall be of sufficient width to allow adequate working space.

Any soft, uneven or loose places in the trenches shall be filled up and well compacted with approved fill material. Any over excavations shall be made up with approved fill and well compacted all at the contractor’s expense,

The excavations and trenches shall be kept free from water by pumping, baling or otherwise,

The classification of excavation shall be as described in paragraph 2.3 (d) of this specification.

13.3 WIDTH OF EXCAVATIONS

In measuring the cubic quantity for extra over on earth excavations, a trench width of 600 mm wide will be taken for 100mm and 150 mm pipes a trench width of 75-mm wide for 200mm and 225 mm pipes and a trench width of 900 m wide for 300 mm pipes. In measuring these items these widths will not be exceeded whatever widths may have been excavated.

13.4 BEDDING AND FILL BLANKET

A bedding cradle shall consist of either a 100mm thick layer of approved fill material free of stones larger than 13 mm diameter, sand or granular material. Granular material shall be broken stone or natural gravel singularly graded between 0,6mm and 19mm. The type of bedding shall be as shown on the drawings or as stated in the project specifications. 13,

The selected fill blanket placed around the pipes up to a height of 300mm above the crown of the pipe shall be material that has a PI not exceeding 6 and that is free from vegetation, lumps and stones of a diameter exceeding 13mm.

The fill blanket shall be carefully placed in layers of 100mm thickness over the full width of the trench and compacted to 90% Mod. AASTHO to be specified height of 300mm above the crown of the pipe.

13.5 BACK FILLING

Material excavated from trenches may be used a back fill in all areas, provided that it contains little or no organic material, that it excludes stones exceeding 150mm in diameter, and that can be placed without significant voids and so compacted that as to avoid significant settlement.

Material containing more than 10% of rock or hard fragments retained on a sieve of nominal aperture size 50mm and large clay lumps that do not break up under compaction, will be regarded ‘as unsuitable back fill.

In areas subject to loads from road traffic and in other areas specified in the - project specification, back fill shall have a PI not exceeding 12 and a minimum CBR of 15% at specified density if the back fill is to be placed in the upper 150mm of the subgrade and a minimum CBR of 7% if the back fill is to be placed lower in the subgrade. Minimum compaction shall be 90% of Mod. AASTHO.

Backfilling shall commence after the pipe has been laid and firmly bedded in the specified cradle and the blanket has been placed and adequately compacted at optimum moisture content.,:

Backfilling' shall be carried out over the full extent of the actual trench excavation and to original ground level, except where otherwise directed. No filling shall be placed in water.

On private property or commonage, the finished surface of backfilling that is left proud of the surrounding ground to allow for initial settlement shall not be more than 150mm above the surrounding ground. Filling to sides of gullies, chambers, manholes etc. as required shall be as above, watered and well compacted.

If the material from the excavations is found to be unsuitable as backfilling for trenches and inspection chambers etc., written approval must first be obtained ° from the Engineer to use imported backfilling.

13.6 SURPLUS EARTH

All surplus earth and other materials arising from the drainage work, shall be deposited and levelled on the site or carted away as directed.

13.7 DRAIN LAYING

Drains shall be accurately laid to the lines and gradients shown on drawings or as directed, with the pipes and diameters shown,

The barrels of the pipes shall bear evenly on the specified bedding for their full length. No socket or coupling shall bear on the bedding.

Where the slope of a pipe is greater than 1 in 10, anchor blocks shall be constructed.

Pipes shall be closely fitting together and jointed as directed in the SABS code of practice 058,

Drain laid with the top of the sockets less than 300mm below finished ground level shall be encased in 15 Mpa concrete.

Pipes shall be built into walls of inspection and other chambers in 1:2 cement mortar,

Open ends of drains shall be plugged to prevent the entry of soil or mud during wet weather.

The pipes shall be suitably protected against damage until they have been checked, tested and approved by the Engineer. Any damage to the pipes shall be made good by the contractor at his own expense.

13.8 GULLIES, CLEANING AND INSPECTION EYES

Gullies, cleaning and/or inspection eyes shall be provided as shown on the details and drawings and as specified in the project specification,

13.9 RAMPS AND BACKDROPS

Ramps (sloping drop house connections) and backdrops (vertical drop house. connections) shall be built in accordance with SABS 1200 LD (Sewers) and as indicated on the details and drawings,

13.10 INSPECTION CHAMBERS

Inspection chambers shall be built to the details shown on the relevant drawing(s). The walls shall be constructed in 220mm English Bond brickwork on a 200mm thick 20Mpa concrete floor, flush with the walls.

Joints in the brickwork shall be flushed up solid at every course throughout the whole width of each course. The joints shall be raked out to form a key as the work proceeds for the extent of the area to be plastered.

The walls of the chambers shall be plastered internally and steel-troweled to smooth and true surface free of Sharp edges and comers. All internal angles shall be finished true; square and smooth.

The building-in of pipes entering each inspection chamber and the benching: of the floor and the bedding and grading of channels and the layout of channels shall be as specified or as shown on the relevant detail or other drawing.

Benching shall be done with 20Mpa concrete. Semi-circular channels and fittings, suitable for the type of pipe laid. shall be placed in position simultaneously with the concrete benching and embedded in it true to grade, line and level. All benching and sloping surfaces of the chamber floor shall be rendered in 1:3 cement mortar and finished smooth and true with a steel trowel and rounded at corners and edges.

Covers and frames shall be granted solidly onto chambers using 1:2 cement mortar.

The size of the chambers shall be-600mm x 450mm for chamber up to 0,6m depth. and 900mm x 600mm for chambers between 0,6 and 1.5m depth.

The type of covers shall be as indicated on the details of other drawings.

13.11 GULLY

The drainage system to be used is the closed type as per NBRI information sheet
X-Bou 2.65 of 1984,

Any proposed alteration to the above system must be clarified with the Engineer before implementation. The laying and installation of the drainage system must be done in accordance with the pipe manufacturers code of practice.

SECTION 14

GLAZING AND PAINTING

14.1 GLASS

All clear glass shall be clear drawn glass of the best quality, 3mm thick. Glass in bathroom shall be 4mm obscure glass as ‘PACIFIC” or similar and approved.

14.2 GENERAL NOTES

a) Before any glazing is done to steel windows, the window frame which is to receive putty, shall be painted one coat universal undercoat.

b) All glass shall have adequate clearance between the edges of the panes and the rebates.

c) Glass is to be held in rebates with glazing pins or clips, and well Puttied - and back putties and carefully trimmed and cleaned off with front putty worked to within 3mm of the sight lines. Putty to be left to harden for a minimum of 7 days before painting.

14.3 PUTTY

All putty shall be of fresh stock complying with SABS 680 for glazing in steel and/or wooden frames to harden after a maximum of 7 days, Putty shall receive no paint unless fully hardened.

14.4 MIRRORS

Mirrors shall comply with the requirements of SABS specification 1236, class A.

14.5 PREPARATORY WORK — PAINTING

(a) General

All floors must be swept clean and walls dusted down, and surfaces not being painted such as face brick work, sills, floors and stained woodwork = covered up and protected against potting, before any painting is commenced, No sweeping or dusting shall be done whilst painting is in progress or whilst paint is still wet,

(b) On Woodwork

Woodwork being painted shall be well brushed down, knots treated, sanded down and primed with an approved universal undercoat on all!

Skirtings shall be as described in 7.3 (a) or hardwood of an approved manufacture and 65 mm in height.

(c) Laying and Fixing

The installation of textile floor coverings shall be done in strict accordance with the Manufacturer’s instructions, on a perfectly dry and clean surface,

and shall comply with the requirements of SABS Specification 0186. Where requirements of SABS Specification 0186. Where an adhesive is used, it shall comply to SABS Specification 070. Hardwood skirtings shall be fixed to walls with hardened steel nails driven into the brickwork and heads punched in and all joints and nail holes shall be covered with an approved wood filler and finished off flush and smooth. 14.6

faces and edges, then lightly sanded down again and finished with two coats high gloss paint to an approved bright colour.

All door leaf's to be first sanded down and primed with an approved universal undercoat on both faces and all-edges, then lightly sanded down again and finished with 2 coats high gloss paint to approved bright colour according to paint schedule.

All exposed wooded gable ends or rafter. purlins. trusses must be Painted One coat carbolineum — creosote, including all timber surfaces Passing through all walls,

(d) **On Metalwork**

All metal surfaces being painted shall be cleaned of all rust. scale, dirt, oil and grease. Metal surfaces must then be patch primed with red oxide metal primer and finished with two coats high gloss enamel paint. No painting of windows to take place until. putty has firmly set, after a minimum period of 7 days. a

Fencing corner posts, gates and stays shall be painted with one Coat of aluminum paint from top of concrete footing.

(e) **On Plaster**

All plaster walls internally and externally, shall be filled where necessary with a suitable stopping or patching plaster, and the whole rubbed down and finished with one (1) undercoat and two (2) coats exterior quality acrylic PVA,

All plinths to receive a single coat of bitumastic emulsion paint on cement 'plaster taken from top of concrete foundation level and finishing at DPC level.

(f) **Ceilings**

Boarded ceilings cover strips and cornices shall be filled where necessary with suitable stopping, all nail heads in ceilings, cover strips and cornices shall be primed with flat paint.

(g) At Fascia's and Barge Boards
As for plastered walls.

14.6 **SURFACES TO BE DRY**

Al plastered wall, ceiling and similar surfaces shall be perfectly dry and in a fit state to receive the finishings, before the work is put in hand.

14.7 PAINTS, ETC

Materials for paintwork for which no SABS specifications have been published shall be of brand and manufacture approved by the Engineer.

All materials for paintwork must be brought on to the site in unopened containers and no adulteration will be allowed.

Undercoats for paintwork shall be as supplied by the manufacturer of the paint being used for the finishing coat.

Paints, etc., shall be suitable for application on the surfaces on which they are to be applied, and those used internally and externally shall be of exterior quality or
suitable for exterior use and must have a high degree of wash ability.

All paints shall be manufactured in accordance with the relevant SABS specification for the type of paint described and shall bear the mark on the tins. Unless otherwise stated, these shall be:

1.	Primers for wood	SABS 678 (Type I external and Type II internal).
2.	Primers for metal	SABS 679 brush application zinc chromate Type I
3.	Undercoats for oil	SABS 681 Type II gloss-based paints
4.	High gloss paint	SABS 630 Type I
5.	Bituminous	SABS 802
6.	Aluminum	SABS 682 grade II
7.	Emulsion paints	SABS 634 "| (PVA)

14.8 PRIMING

Backs of wood door and similar frames and surfaces of other new or refixed Joinery in contact with brickwork etc., and built in as the work proceeds, shall be primed before building in, whether the articles are to be painted or not, to prevent moisture seeping into the wood from the mortar bedding. 14.9

14.9 LEAVE PERFECT

The contractor shall provide all necessary dust sheets. covers, etc... and shall exercise all necessary care to prevent marking surfaces, walls, floors, glass, operations. Any surface disfigured or otherwise damaged shall be renovated or replaced as necessary, to the Engineer’s approval, by the at his own expense,

The premises shall be left clean and fit for occupation at the completion of the work

SECTION 15

ELECTRICAL INSTALLATION

15.1 CONDUIT INSTALLATION

Only PVC conduits and accessories to SABS Specification 950 shall be used. However, metal plug and switch boxes are acceptable when installed and fixed to the approval of the City Electrical] Engineer or his authorized representative.

Conduits to all socket outlets and stove connections shall run in the floor and precautionary steps shall be taken to prevent any water or building material from entering the conduits,

Conduits to light switches and geyser connections should preferably be set in the floor slab. All fully plastered walls shall be chased before the mounting of conduits to heights shown on the drawings or given in the details.

Conduits shall only be surface mounted (no chasing) on walls with bagged or slurry finish.

All conduits shall follow the jointing lines, minimizing the possibility of damage to the walls.

In houses without ceilings the conduits shall ran above ceiling level on walls and roof rafters in a way to allow future ceiling installation without disturbing the conduits. No roof rafters may be cut.

15.2 SUPPLY CABLE

Depending on local authority' s requirements, a 16mm, 2-core stranded copper PVC SWA PVC cable to SABS Specification shall supply the distribution board either direct from the corresponding consumer metering box or via a T-joint at the 16mm? 4-core cable and buried in the main feeder cable trench all as shown on the drawings.

15.3 DISTRIBUTION BOARD

The corrosion resistant distribution/meter board shall be of an approved design and size allowing for future extensions based on the master building plan for the specific type of house.

Distribution boards shall be surface mounted on walls of 110mm and 150mm thickness. The recess for distribution boards in walls of 220mm and more shall not exceed 110mm.

An approved 22v, 50A earth leakage unit with a 20 MPa sensitivity shall protect all circuits which market shall be clearly and permanently.

A 20A single pole current limiter, type Heinemann CF /G3, supplied by the Municipality and installed by the electrical contractor shall serve as the main supply circuit breaker. All circuits to be clearly labeled on the distribution board in a suitable panel.

15.4 WIRING

Only 600/1000V PVC insulated stranded copper conductors shall be used and insulation colours shall be as follows:

Red	All live feeders
Yellow	All conductors between switch and lighting outlets.
Black/Blue	All neutral conductors
Green	All earth continuity conductors

Conductor sizes for phase and neutral shall be as follows:

1.5mm^2	All lighting circuits
2.5mm^2	All socket outlet circuits
6mm^2	Geyser and stove circuits

Size of earth continuity conductors shall be as follows:

1,5mm^2	Bare of PVC insulated stranded for all lighting circuits.
2,5mm^2	PVC insulated only, for all socket outlet circuits.
4mm^2	PVC insulated only, for geyser and stove circuits.

15.5 LIGHTING

Unless otherwise directed in the Project Specification or shown. On the drawings all lights shall be standard brass bayonet type batten holders complete with 225mm dia enamel iron shade light fitting except bathroom and external lights which will have bowl fittings with porcelain base. BC-lamp holder and polycarbonate bowl suitable to take a 60W incandescent lamp controlled by a SA surface mounted rocket type switch.

All other light point outlets to be supplied with 100W clear bulbs which are to be handed over with the keys upon completion.

15.6 SOCKET OUTLETS

The standard 15/16A 250V 3-pin switch socket outlets shall be mounted with their center lines 300mm above floor level, except where otherwise specified on the drawings.

15.7 STOVE CONNECTION

The stove shall be supplied via a standard double pole isolator situated as close as practicable to, but not directly above the stove. An isolator socket outlet combination is not acceptable; the rating of the circuit breaker will be at least 30A.

15.8 EARTHING

Contractor to inform himself of the earthing requirements of the local authority and he is to price accordingly,

15.9 **WIRING REGULATIONS**

The complete installation shall conform to the requirements of the “Code of Practice for the Wiring of Premises” SABS 0142-1981. In the event of any difference or discrepancy arising between the Code mentioned above and these |; specifications, the matter shall be referred to the City Electrical Engineer whose decision shall be final. This must be done prior to tendering and all costs to be included in the tender sum.

15.10 **GENERAL**

(a) Houses built under this contract may consist of only the essential parts of a complete dwelling to be extended by the owner as and when necessary. Thus, all conduit runs shall be planned and installed in such a way that. future extensions can be done at minimum cost.

(b) All MCB’s shall have a fault rating of at least 4 KVA>

ALL TESTS TO BE CARRIED OUT BY THE LOCAL AUTHORITY PRIOR TO HANDOVER.

SECTION 16

FENCING AND GATES

16.1 **FENCING**

Galvanized Wire and Wire Mesh Fencing

Galvanized wire and wire mesh fencing shall be constructed as follows:

(a) **Wire Fencing**

Wire fencing shall be 12m high, formed with five strands of 2,5mm diameter straining wire, passed through the holes in standards and tightly strained and attached to posts.

The fencing shall be provided with Y-section Iscor or approved mild steel standards, 1,8m long, driven 0,6 into the ground at distances of not more than 10m apart, and with 4 H-section or T-type droppers to each bay, and attached to the wire strands with 2mm diameter galvanized wire.

At corners, ends and intersections of fencing, posts of not less than 75mm diameter mild steel tubing and of metal not less than 3,25mm thick, shall be provided. The posts shall be 1,8m long fitted to the top with pressed steel caps, welded to posts, and at the bottom with 150 x 150 x 3mm thick mild steel base plates, and firmly bedded 0,6m deep in the ground and each surrounde3d, just below ground level, with a 400 x 400mm or 15 Mpa concrete block, 500 mm deep. The posts shall be holed for the straining eye bolts or permanent wire strainers and wires as necessary, and shall be fitted with 2m long stays, of not less than 40mm inside diameter mild steel tubing and of metal not less than 2,90mm thick. with top ends

flattened, holed and bolted to posts with M12 bolts and bottom ends fitted with 150 x 150 x 3mm thick mild steel base plates and bedded 0,6m deep in the ground and each surrounded with a 15 Mpa concrete block, size 300 x 300 x 300mm. End and intermediate posts shall each be fitted with one stay and corner posts and posts at inter-section of fencing each with two stay.

All wire shall comply with the requirements of SABS specification 675, and the galvanizing shall be of second-class quality as laid down therein,

Posts and stays shall be painted one coat approved aluminum paint.

(b) **Wire Mesh Fencing**

Wire mesh fencing shall be galvanized diamond mesh 1200 x 50 x 2 or jackal proof fencing as specified or shown on the drawing shall be 1.2m high, formed with three strands of 2.5mm diameter straining wire. One 16.2

strand at the top, one at the bottom and one in the center of the fence and attached to the posts and standards all as described above.

Fencing shall be provided with Y-section Iscor or approved mild steel standards, 1.8m long, driven 0.6m into the ground at distances of not more than 5m apart, and with 2 H-section or T-type droppers to each bay.

Posts and stays shall be painted one coat approved aluminum paint,

16.2 **GATES**

Gates shall be formed of 25mm internal diameter mild steel piping with all points welded strongly braced as and where necessary. and filled in with netting as described in (a) (ii) above, properly strained and securely bound to the piping with 2mm diameter galvanized wire.

Gates shall be hung on adjustable hinges. Single gates shall be provided with steel spring catches and double gates with U-shaped catches and drop bolts engaging in wrought iron stop.

Gate posts shall be 1.8m long, each fitted with cap and base plate, and with one stay complete with base plate, and embedded in concrete footings, all as specified for fencing posts.

The gates and gate posts shall be painted one coat of aluminum paint.

PROJECT CODES 775 191/2

CONSTRUCTION OF SEVENTY (70) HOUSES IN OKAHAO

SCHEDULE OF DRAWINGS

1.	Okahao (70) Locality plan	775 191/2 – 01
2.	Site Plan – Erf 2286	775 191/2 – 02
	Site Plan – Erf 2287	775 191/2 – 03
	Site Plan – Erf 2288	775 191/2 – 04
	Site Plan – Erf 2289	775 191/2 – 05
	Site Plan – Erf 2290	775 191/2 – 06
	Site Plan – Erf 2291	775 191/2 – 07
	Site Plan – Erf 2292	775 191/2 – 08
	Site Plan – Erf 2293	775 191/2 – 09
3.	Site Plan – Erf 2294	775 191/2 – 10
	Site Plan – Erf 2295	775 191/2 – 11
	Site Plan – Erf 2372	775 191/2 – 12
	Site Plan – Erf 2373	775 191/2 – 13
	Site Plan – Erf 2374	775 191/2 – 14
	Site Plan – Erf 2375	775 191/2 – 15
	Site Plan – Erf 2376	775 191/2 – 16
	Site Plan – Erf 2377	775 191/2 – 17
4.	Site Plan – Erf 2378	775 191/2 – 18
	Site Plan – Erf 2379	775 191/2 – 19
	Site Plan – Erf 2381	775 191/2 – 20
	Site Plan – Erf 2382	775 191/2 – 21
	Site Plan – Erf 2383	775 191/2 – 22
	Site Plan – Erf 2384	775 191/2 – 23
	Site Plan – Erf 2385	775 191/2 – 24
	Site Plan – Erf 2386	775 191/2 – 25
5.	Site Plan – Erf 2387	775 191/2 – 26
	Site Plan – Erf 2388	775 191/2 – 27
	Site Plan – Erf 2389	775 191/2 – 28
	Site Plan – Erf 2390	775 191/2 – 29
	Site Plan – Erf 2391	775 191/2 – 30
	Site Plan – Erf 2392	775 191/2 – 31
	Site Plan – Erf 2393	775 191/2 – 32
	Site Plan – Erf 2394	775 191/2 – 33
6.	Site Plan – Erf 2395	775 191/2 – 34
	Site Plan – Erf 2396	775 191/2 – 35
	Site Plan – Erf 2397	775 191/2 – 36
	Site Plan – Erf 2398	775 191/2 – 37
	Site Plan – Erf 2399	775 191/2 – 38
	Site Plan – Erf 2400	775 191/2 – 39
	Site Plan – Erf 2401	775 191/2 – 40
	Site Plan – Erf 2402	775 191/2 – 41
7.	Site Plan – Erf 2403	775 191/2 – 42
	Site Plan – Erf 2404	775 191/2 – 43

	Site Plan – Erf 2405	775 191/2 – 44
	Site Plan – Erf 2406	775 191/2 – 45
	Site Plan – Erf 2407	775 191/2 – 46
	Site Plan – Erf 2408	775 191/2 – 47
	Site Plan – Erf 2409	775 191/2 – 48
	Site Plan – Erf 2410	775 191/2 – 49
8.	Site Plan – Erf 2411	775 191/2 – 50
	Site Plan – Erf 2412	775 191/2 – 51
9.	Site Plan – Erf 2272	775 191/2 – 52
	Site Plan – Erf 2273	775 191/2 – 53
	Site Plan – Erf 2274	775 191/2 – 54
	Site Plan – Erf 2276	775 191/2 – 55
	Site Plan – Erf 2277	775 191/2 – 56
	Site Plan – Erf 2278	775 191/2 – 57
10.	Site Plan – Erf 2427	775 191/2 – 58
	Site Plan – Erf 2428	775 191/2 – 59
	Site Plan – Erf 2429	775 191/2 – 60
	Site Plan – Erf 2430	775 191/2 – 61
	Site Plan – Erf 2431	775 191/2 – 62
	Site Plan – Erf 2432	775 191/2 – 63
	Site Plan – Erf 2433	775 191/2 – 64
	Site Plan – Erf 2434	775 191/2 – 65
11.	Site Plan – Erf 2435	775 191/2 – 66
	Site Plan – Erf 2436	775 191/2 – 67
	Site Plan – Erf 2437	775 191/2 – 68
	Site Plan – Erf 2438	775 191/2 – 69
	Site Plan – Erf 2439	775 191/2 – 70
	Site Plan – Erf 2440	775 191/2 – 71
12.	Core 5 House plan	775 191/2 – 72
13.	Core 7 House plan	775 191/2 – 74
14.	Core 8 House plan	775 191/2 – 75
15.	Core 9(110) House plan	775 191/2 – 76
16.	Gull House plan	775 191/2 – 77
17.	Naute House plan	775 191/2 – 78
18.	Onduli House plan	775 191/2 – 79
19.	Pelican-T House plan	775 191/2 – 80
20.	Spitzkoppe House plan	775 191/2 – 81
21.	DETAILS 1	
	Sewer Details 1	775 191/2 – 82
	Sewer Details 2 & 3	775 191/2 – 83
	Bedroom Cupboard Details 1800mm	775 191/2 – 84
	Bath Details	775 191/2 – 85
22.	DETAILS 2	
	NHE Number Plate	775 191/2 – 86

Kitchen Sink Details		775 191/2 – 87
Apron & Foundation Details		775 191/2 – 88
Fencing Details		775 191/2 – 89
Step Details		775 191/2 – 90
Shower Details		775 191/2 – 91

23. DETAILS 3

Security Door Details		775 191/2 – 92
External Foundation Details	220mm	775 191/2 – 93
Internal Foundation Details	110mm	775 191/2 – 94

24. Kitchen Cupboard Details	1	775 191/2 – 95
25. Kitchen Cupboard Details	2	775 191/2 – 96
26. Site plan 01		775 191/2 – 97
27. Site plan 02		775 191/2 – 98
28. Site plan 03		775 191/2 – 99
29. Site plan 04		775 191/2 – 100
30. Site plan 05		775 191/2 – 101
31. Site plan 06		775 191/2 – 102

PART 3 – Conditions of Contract and Contract Form

Section VI - General Conditions of Contract

Table of Clauses

General Conditions of Contract

A. General

1. Definitions 1.1 Boldface type is used to identify defined terms.

(a) The Accepted Contract Amount means the amount accepted in the Notification of award for the execution and completion of the Works and the remedying of any defects.

(b) The Activity Schedule is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity.

(c) The Adjudicator is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.

(d) Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

(e) Compensation Events are those defined in GCC Clause 41 hereunder.

(f) The Completion Date is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.

(g) The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.

(h) The Contractor is the party whose Bid to carry out the Works has been accepted by the Employer.

(i) The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.

(j) The Contract Price is the Accepted Contract Amount stated in the Notification of award and thereafter as adjusted in accordance with the Contract.

(k) Days are calendar days; months are calendar months unless otherwise stated.

(l) Dayworks are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

(m) A Defect is any part of the Works not completed in accordance with the Contract.

(n) The Defects Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.

(o) The Defects Liability Period is the period **named in the SCC** pursuant to Sub-Clause 33.1 and calculated from the Completion Date.

(p) Adjudicator means the single person appointed under Clause 23.

(q) Drawings means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

(r) The Employer is the party who employs the Contractor to carry out the Works, **as specified in the SCC**.

(s) Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

(t) "In writing" or "written" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;

(u) The Initial Contract Price is the Contract Price listed in the Employer's Notification of award.

(v) The Intended Completion Date for the whole of the work shall be: **for the full works: 7 (seven) calendar months *(excluding builders' holiday)* from start date to completion**.

Sectional Completion of the first 20 Units is 4 months from start date with balance of units after 7 months.

(w) Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

(x) Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

(y) The Project Manager is the person **named in the SCC** (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.

(z) SCC means Special Conditions of Contract

(aa) The Site is the area **defined as such in the SCC**.

(bb) Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

(cc) Specification means the Specification of the Works included in the Contract and any modification or addition

made or approved by the Project Manager.

(dd) The Start Date is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

(ee) A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

(ff) Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

(gg) A Variation is an instruction given by the Project Manager which varies the Works.

(hh) The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, **as defined in the SCC**.

2. Interpretation

2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.

2.2 If sectional completion is **specified in the SCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order of priority:

(a) Agreement,

(b) Notification of award,

(c) Contractor's Bid,

(d) Special Conditions of Contract,

(e) General Conditions of Contract,

(f) Specifications,

(g) Drawings,

(h) Bill of Quantities,[2] and

(i) any other document **listed in the SCC** as forming part of

the Contract.

3. Language and Law

3.1 The language of the Contract must be English and the law governing the Contract is the Law of Namibia.

4. Project Manager's Decisions

4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. Delegation

5.1 Otherwise **specified in the SCC**, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing to the addresses **specified in the SCC.** A notice shall be effective only when it is delivered.

7. Subcontracting

7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

8. Other Contractors

8.1 The contractor will be expected to share the site with:

N/A

9. Personnel and Equipment

9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:

(a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to

(i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result

of the Works or

(ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to

(a) a Defect which existed on the Completion Date,

(b) an event occurring before the Completion Date, which was not itself an Employer's risk, or

(c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** for the following events which are due to the Contractor's risks:

(a) loss of or damage to the Works, Plant, and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and

(d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval within 21 days after issue of notification of award. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the

premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Project Manager.

13.5 Both parties shall comply with any conditions of the insurance policies.

13.6 The policies which are in the joint names of the Contractor and the Employer shall contain a clause to include a waiver of subrogation of the Contractor's rights to the insurance carrier against the Employer.

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

16. The Works to Be Completed by the Intended Completion Date

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

17. Approval by the Project Manager

17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

17.2 The Contractor shall be responsible for design of Temporary Works.

17.3 The Project Manager’s approval shall not alter the Contractor’s responsibility for design of the Temporary Works.

17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.

18. Safety

18.1 The Contractor shall be responsible for the safety of all activities on the Site.

19. Discoveries

19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager’s instructions for dealing with them.

20. Possession

20.1 The Employer shall, after receiving the Performance security,

of the Site

the insurance covers and the Program for the Works all as per requirements, give possession of all parts of the Site to the Contractor within thirty days for execution of works in accordance to the Program for the Works. If possession of a part is not given by the date **stated in the SCC,** the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

22. Instructions

22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

22.2 The Contractor shall permit persons appointed by the Employer to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the Employer if required by the Employer. The Contractor's attention is drawn to Sub-Clause 57.1 which provides, inter alia, that acts intended to materially impede the exercise of the inspection and audit rights provided for under Sub-Clause 22.2 constitute a prohibited practice subject to contract termination.

23. Appointment of the Adjudicator

23.1 The Adjudicator shall be appointed jointly by the Employer and the Contractor, at the time of the Employer's issuance of the Notification of award. If, in the notification of award, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority **designated in the SCC**, to appoint the Adjudicator within 15 days of receipt of such request.

23.2 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract; a new Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the SCC** at the request of either party, within 30 days of receipt of such request.

24. Procedure for Disputes

24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 15 days of the notification of the Project Manager's decision.

24.2 The Adjudicator shall give a decision in writing within 30 days of receipt of a notification of a dispute.

24.3 The Adjudicator shall be paid by the hour at the **rate specified**

in the SCC, together with reimbursable expenses of the types **specified in the SCC**, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within thirty (30) days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above thirty (30) days, the Adjudicator's decision shall be final and binding.

24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and, in the place, specified **in the SCC.**

B. Time Control

25. Program

25.1 Within the time **stated in the SCC**, after the date of the Notification of award, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.

25.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

25.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period **stated in the SCC.** If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 15 days of being instructed to by the Project Manager.

25.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

26. Extension of the Intended Completion Date

26.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event(as defined in GCC 41) occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

26.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the

effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

27. Acceleration

27.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.

27.2 If the Contractor's priced proposals for acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.

28. Delays Ordered by the Project Manager

28.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

29. Management Meetings

29.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

29.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

30. Early Warning

30.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

30.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

31. Identifying Defects

31.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

32. Tests

32.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

33. Correction of Defects

33.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the SCC.** The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

33.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

34. Uncorrected Defects

34.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

35. Contract Price

35.1 In the case of an admeasurement contract, the Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

35.2 In the case of a lump sum contract, the Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to prepare interim valuations of works done.

Any errors or inconsistencies including front loading detected in the Activity Schedule at any time during the execution of the project shall be resolved as directed as by the Project Manager.

36. Changes in the Contract Price

36.1 In the case of an admeasurement contract:

(a) If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.

(b) The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.

(c) If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

36.2 In the case of a lump sum contract, the Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

37. Variations

37.1 All Variations shall be included in updated Programs, and, in the case of a lump sum contract, also in the Activity Schedule, produced by the Contractor.

37.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

37.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

37.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

37.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

37.6 In the case of an admeasurement contract, if the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

38. Cash Flow Forecasts

38.1 When the Program, or, in the case of a lump sum contract, the Activity Schedule, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.

39. Payment Certificates

39.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

39.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

39.3 The value of work executed shall be determined by the Project Manager.

39.4 The value of work executed shall comprise:

(a) In the case of an admeasurement contract, the value of the quantities of work in the Bill of Quantities that have been completed; or

(b) In the case of a lump sum contract, the value of work executed shall comprise the value of completed activities in the Activity Schedule.

39.5 The value of work executed shall include the valuation of Variations and Compensation Events.

39.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

39.7 Unless **otherwise specified in the SCC** Interim Payment may be made for Plant and Material delivered on site ready for incorporation within reasonable period of time in the permanent works, subject to the Contractor transferring ownership to the Employer and providing, where applicable, the right of the transfer of ownership vested upon the Contractor by its supplier.

Notwithstanding the transfer of ownership the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Contractor until taking over of the works or part thereof in which such Plant and Materials are incorporated and shall make good at its own cost any loss or damage that may occur to the works or part thereof from any cause whatsoever during such period prior to the taking over.

40. Payments

40.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 90 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest at the legal rate.

40.2 If an amount certified is increased in a later certificate or as a

result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

40.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions to the Contract Price.

40.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

41. Compensation Events

41.1 The following shall be Compensation Events:

(a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.

(b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.

(c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.

(d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.

(e) The Project Manager unreasonably does not approve a subcontract to be let.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Notification of award from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.

(g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The advance payment is delayed.

(j) The effects on the Contractor of any of the Employer's Risks.

(k) The Project Manager unreasonably delays issuing a

Certificate of Completion.

(l) In situations of Force Majeure which makes the contractor's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances. Such events shall be limited to:

(a) reason of any exceptionally adverse weather conditions (as specified in the BDS) and

(b) reason of civil commotion, strike or lockout affecting any of the trades employed upon the Works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the Works.

41.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

41.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

41.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

42. Tax

42.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

43. Currencies

43.1 Where payments are made in currencies other than the currency of the Employer's country **specified in the SCC,** the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

44. Price Adjustment

44.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified

in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$$P_c = A_c + B_c \ Imc/Ioc$$

where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c."

A_c and B_c are coefficients[3] **specified in the SCC,** representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency "c;" and

Imc is the index prevailing at the end of the month being invoiced and Ioc is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c."

44.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

45. Retention

45.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the SCC** until Completion of the whole of the Works.

45.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

46. Liquidated Damages

46.1 Liquidated damages for the Sectional Completion of Works are N$ 7, 000.00 per day per Section.

The maximum amount of liquidated damages for the whole of the Works is 5% of the Contract Sum.

46.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be

[3] *The sum of the two coefficients A_c and B_c should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sums of the adjustments for each currency are added to the Contract Price. [To be transferred to the User Guide]*

paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 40.1.

47. Bonus

47.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the SCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

48. Advance Payment

48.1 The Employer shall make advance payment to the Contractor of the amounts **stated in the SCC** by the date **stated in the SCC,** against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

48.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

48.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

49. Securities

49.1 The Performance Security shall be provided to the Employer no later than the date specified in the Notification of award and shall be issued in an amount **specified in the SCC,** by a bank and denominated in the Namibian Dollars. The Performance Security shall be valid until a date 30 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee.

49.2 (a)Where the contractor has benefitted from the application of the Margin of Preference for employment of local manpower, it shall:

(i) in the execution of the contract, fulfill its obligation of maintaining local manpower force for 80 % or more of the man-days deployed in the execution of the Works with which it satisfied the criteria of eligibility for being awarded the contract in application of the Margin of Preference; and

(ii) concurrently with the above performance security, provide a preference security to guarantee it will fulfill its

obligation in that respect.

(b) For contracts above N$ 5 M, the preference security shall be in the form of an “on demand” bank guarantee for an amount in a convertible currency equivalent to the difference between its bid price and the bid price of the lowest bid if the Margin of Preference was not applicable. It shall be issued by a commercial bank located in the Republic of [Insert name of country].

(c) For contracts up to N$ 5 M, an amount equal to the value of the preference security shall be retained from progressive payments to the contractor, to constitute the guarantee for the preference security.

(d) The preference security shall be valid until the Contractor has completed the Works and a Completion Certificate has been issued by the Employer’s Representative as per GCC 53.

(e) The cost of providing the security shall be borne by the Contractor.

49.3 Where a Preference Security is applicable:

the Employer’s Representative shall monitor the employment of local manpower throughout the execution of the contract and shall from time to time request a report from the contractor on the percentage of total men-days deployed using local manpower.

the Contractor shall submit the local manpower employment reports as often as it is reasonably requested by the Employer’s Representative.

the Employer’s and Contractor’s representatives shall consult each other to ensure that the Contractor’s obligation towards local manpower employment is met during the Works execution.

At the time of works completion, the Contractor shall submit a certified audited report to the Employer to substantiate the actual percentage of local manpower employed throughout the execution of the works.

The preference security shall be forfeited by the employer in case of failure on the part of the contractor to employ at least 80% of the local manpower in the execution of the Works.

50. Dayworks

50.1 If applicable, the Dayworks rates in the Contractor’s Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

50.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

50.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

51. Cost of Repairs

51.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

52. Labour Clause

52.1 (a) The rates of remuneration and other conditions of work of the employees of the Contractor shall not be less favorable than those established for work of the same character in the trade concerned-

(i) by collective agreement applying to a substantial proportion of the workers and employers in the trade concerned;

(ii) by arbitration awards; or

(iii) by Remuneration Regulations made under the Labour Act, 2007.

(b) Where remuneration and conditions of work are not regulated in a manner referred to at (a) above, the rates of the remuneration and other conditions of work shall be not less favourable than the general level observed in the trade in which the contractor is engaged by employers whose general circumstances are similar.

52.2 No Contractor shall be entitled to any payment in respect of work performed in the execution of the contract unless he has, together with his claim for payment, filed a certificate:

(a) stating the rates of remuneration and hours of work of the various categories of employees employed in the execution of the contracts;

(b) stating whether any remuneration payable in respect of work done is due;

(c) containing such other information as the Chief Executive Officer of the Public Body administering the contract may require to satisfy himself that the provisions under this clause have been complied with.

52.3 Where the Chief Executive Officer of the Public Entity administering the contract is satisfied that remuneration is still due to an employee employed under this contract at the time the claim for payment is filed under subsection ***[Insert number]***, he may, unless the remuneration is sooner paid by the Contractor, arrange for the payment of the remuneration out of the money payable under this contract.

52.4 Every Contractor shall display a copy of this clause of the contract at the place at which the work required by the contract is performed.

E. Finishing the Contract

53. Completion

53.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

54. Taking Over

54.1 The Employer shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.

55. Final Account

55.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 60 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 60 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

56. Operating and Maintenance Manuals

56.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the SCC.**

56.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the SCC** pursuant to GCC Sub-Clause 55.1**,** or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

57. Termination

57.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

57.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

(a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;

(b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

(c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 60 days of the date of the Project Manager's certificate;

(e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and

the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(f) the Contractor does not maintain a Security, which is required;

(g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or

(h) if the Contractor, in the judgment of the Employer, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC Clause 57.1.

57.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

57.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

57.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

58. Fraud and Corruption

58.1 If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 15 days' notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 57 shall apply as if such expulsion had been made under Sub-Clause 57.5 [Termination by Employer].

58.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with Clause 9.

58.3 For the purposes of this Sub-Clause:

(i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of

a party;

(v) "obstructive practice" is

(a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of an inspection and audit rights provided for under Sub-Clause 22.2.

59. Payment upon Termination

59.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **indicated in the SCC.** Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

59.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

60. Property

60.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

61. Release from Performance

61.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

Section VII. Special Conditions of Contract

These clauses should be read in conjunction with the General Conditions of Contract

A. General	
GCC 1.1 (r)	The Employer is: **National Housing Enterprise** **PO Box 20192 Windhoek** **Chief Executive Officer – Gisbertus Mukulu**
GCC 1.1 (v)	The Intended Completion Date for the whole of the Works shall be: **For the full works: 7 (months) calendar months *(excluding builders' holidays)* from start date to completion** **Sectional Completion of the first 20 units is 5 months from start date with balance of 50 units after the full period of 7 months.** **Construction programme must be submitted with the Bid.**
GCC 1.1 (y)	Project Managers: **Lukas Petrus** (Manager: Projects); and **Indileni S. Iipinge** (Contracts Administrator) Authorized representative: **Sara Ekondo** (Site Agent)
GCC 1.1 (aa)	The Site is located in: **Okahao**, Namibia and is defined in drawings (see drawings in Bidding Document).
GCC 1.1 (dd)	The Start Date shall be: **7 days after handing over of site**
GCC 1.1 (hh)	The Works consist of: **Funding and Construction of Seventy (70) houses in Okahao.**
GCC 2.2	Sectional Completion is applicable as per GCC 1.1 (v) SCC
GCC 2.3(i)	The following documents also forms part of the Contract: **None**
GCC 5.1	The Project manager may delegate any of his duties and responsibilities.
GCC 6.1	Delivery address for notices is: (Employer) **National Housing Enterprise** 7 General Murtala Muhammad Avenue, Eros – Windhoek Contractor:_____ _____

	_____
GCC 7	The contractor shall not assign or sub-let the full works. All sub-contracting beyond 10% cumulative of the contract amount shall be approved by the Project Manager prior to the execution thereof.
GCC 8.1	The Contractor will be expected to share the site with: Bulk electrical supply contractor (still to be appointed)
GCC 13.1	Except for the cover mentioned in (d)(i) hereunder, the other insurance covers shall be in the joint names of the Contractor and the Employer and the minimum insurance amounts shall be: (a) for the Works, Plant and Materials: 120% of the Contract sum (b) for loss or damage to Equipment: for the replacement value of the equipment that the contractor intends to use on site until the taking over by the Employer but to a minimum of N$500,000.00 (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract N/A (d) for personal injury or death: (i) of the Contractor's employees: The Contractor shall take an adequate insurance cover for its employees for any claim arising in the execution of the works to a minimum of N$2,000,000.00 (ii) of other people: A minimum of N$2,000,000.00 (e) for loss or damage to materials on-site and for which payment have been included in the Interim Payment Certificate, where applicable: To be covered by insurance for the Works, Plant and Materials. The Contractor shall choose to take the insurance covers indicated above as separate covers or a combination of the Contractor's All Risks coupled with the Employer's liability and First Loss Burglary, after approval of the Employer. All insurance covers shall be of nil or the minimum possible deductibles at sole expense of the contractor.
GCC 14.1	Site Data are: **None**
GCC 20.1	The Site Possession Date shall be: **30 days after of award of contract *(but subject to compliance with contract award conditions*)**
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator: **No Adjudicator shall be appointed for this Contract.**

GCC 24.	In case a dispute of any kind arises between the Employer and the Contractor in connection with, or arising out of, the contract or the execution of works or after completion of works and whether before or after repudiation or other termination of Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Employer's Representative, the matter in dispute shall, in the first place, be referred in writing to the employer's representative, with a copy to the other party. The Employer and the Contractor shall make every effort to resolve the dispute amicably by direct informal negotiation. If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Public Entity or the Contractor may give notice to the other party of its intention to refer the matter to: **Commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.**
GCC 24.4	Any dispute or difference in respect of which a notice of intention to commence arbitration has been given shall be finally settled by arbitration in accordance with Namibian Laws by an Arbitrator to be appointed by both parties to the dispute. The Arbitrator shall be selected by the contractor from two or more nominations experienced in Infrastructure Arbitrations proposed by the President of the Namibia Council of Architects and Quantity Surveyors. In the case of or no agreement by an Arbitrator to be appointed by the President of the Namibia Council of Architects and Quantity Surveyors. The Arbitrator fees will be borne by the losing party. Any decision of the Arbitrator shall be final and binding.
B. Time Control	
GCC 25.1	**Notwithstanding the requirement to submit a Program together with the Bid, the Contractor shall submit for approval a Program for the Works within 21 days from the date of the Notification of award.**
GCC 25.3	The period between Program updates is **30 days**. The program shall indicate progress verses initial approved program, as well as projected progress. The amount to be withheld for late submission of an updated Program is: ***N/A*** Non or late submission of the program will be considered as a contractual breach. Persistent breach after notice by the Project Manager will be considered as substantial breach and dealt with in terms of GCC 57.
C. Quality Control	
GCC 33.1	The Defects Liability Period is 6 calendar months.
GCC 37	**Value Engineering** The Contractor may, at any time, submit to the Project Manager a written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Employer of executing, maintaining or

	operating the Works, (iii) improve the efficiency or value to the Employer of the completed Works, or (iv) otherwise be of benefit to the Employer. The proposal shall be prepared at the cost of the Contractor and shall include the items listed in GCC 37 [Variations]. If a proposal, which is approved by the Project Manager, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties: the Contractor shall design this part to the Project Managers approval/satisfaction, and if this change results in a reduction in the contract value of this part, the Project Manager shall proceed in accordance with Contract to agree or determine a fee, which shall be included in the Contract Price. This fee shall be half (50%) of the difference between the following amounts: (i) such reduction in contract value, resulting from the change, excluding adjustments and (ii) the reduction (if any) in the value to the Employer of the varied works, taking account of any anticipated life or operational efficiencies. However, if amount (i) is less than amount (ii), there shall not be a fee. Any reductions in quality shall however not be regarded as Value Engineering, but shall be dealt with as a variation in terms of GCC 37
GCC 39.7	Interim Payment for Plant and Material on site **is not** applicable.
D. Cost Control	
GCC 40	**No Payment Certificate/s will be produced monthly. Payment Certificate/s will only be done/produced once completion in terms of GCC 1.1 (v) or Final Completion, unless otherwise agreed.** **WAIVER OF CONTRACTOR'S LIEN – The Contractor will be required to sign a waiver of contractor's lien**
GCC 40.1	**The Employer shall pay the Contractor the amounts certified by the Project Manager within 90 days of the date of each certificate.** **Interest on late payment shall be at Prime Lending Rate of Commercial Banks in Namibia**
GCC 41.1 (l)	Records and measurements kept on site in terms of delay, time, duration and effect together with photographic evidence, as well as corroboration from the Namibia Meteorological Service e.g. 100mm of rain in 2hrs from 09:00 to 11:00 delaying all external work for the duration.
GCC 43.1	The currency of the Employer's country is: **Namibian Dollars.**
GCC 44.1	The Contract ***is not*** subject to price adjustment in accordance with GCC Clause 44, and the following information regarding coefficients ***does not*** apply.
GCC 45.1	The proportion of payments retained is: **10% of payments before VAT to a maximum of 5% of the Contract Sum excluding contingency sums**
GCC 46.1	***Liquidated damages for the Sectional Completion of the Works are N$7,000.00 per day per Section*** ***The maximum amount of liquidated damages for the whole of the***

	Works is 5% of the Contract Sum
GCC 47.1	The Bonus for the whole or part of the Works is **N/A**
GCC 48.1	***No Advance Payments are applicable to this contract.***
GCC 49.1	**(a) The Performance Security amount is: Bank Guarantee: 10% of the Contract Sum**
E. Finishing the Contract	
GCC 53.1 & 54.1	**The Contractor shall give the Project Manager a minimum of 14 days notice of readiness for Completion inspection.** **Completion (and Sectional Completion) under this contract will only be considered reached when the following documents are provided by the contractor to NHE:** **(i) Completion Certificate produced by the Okahao Town Council.** **(ii) Compliance Certificate (Electrical) produced by Nored.**
GCC 55.1	Notwithstanding the contents of GCC 55.1: **The Contractor shall supply Project Manager with his Final Account within 28 days of Completion.**
GCC 56.1	Operating and maintenance manuals and "as built" drawing information should be supplied to the employer by the contractor no later than: **Completion Date**
GCC 56.2	Amount to be withheld should the maintenance and operation manuals and "as built" drawing information not be provided is: **the amount of the Retention Fund normally released on Completion.**
GCC 57.2 (g)	**When the maximum amount of liquidated damages of 5% of the Contract Sum is reached**
GCC 59.1	The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is **15%**

Contract Forms

AGREEMENT
PROJECT CODES 783 191 / 2

THIS AGREEMENT made between

GISBERTUS MUKULU (Chief Executive Officer)
herein representing

NATIONAL HOUSING ENTERPRISE
(hereinafter referred to as "the Employer") of the one part and

_____
herein representing

_____
(hereinafter referred to as "the Contractor") of the other part.

WHEREAS the Employer is desirous that certain works should be constructed, viz **NHE Okahao Housing Development - W/ONB/NHE-02/21/22** and has accepted a tender by the Contractor for the construction, completion and defects correction of such works.

NOW THIS AGREEMENT WITNESSES that:

1 In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereinafter referred to.

2 The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

(a) The said Tender and Appendix (Bidding Document)
(b) The General and Special Conditions of Contract (Bidding Document)
(c) The Specifications (Bidding Document)
(d) The Schedule of Rates and Prices (Bidding Document)
(e) The Drawings
(f) The Letter of Award & Acceptance
(g) Other stipulate: WAIVER OF CONTRACTOR'S LIEN

(h) General Conditions of Contract for Construction Works(saice) (2nd Edition 2010) with the Special Conditions of Contract for this Document – Should anything be unclear or not mentioned in the Bidding Document, we will revert to these documents for clarity.

3 In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned the Contractor undertakes to the Employer to construct, complete and remedy any defects in the Works in conformity in all respects with the provisions of the Contract.

4 The Employer hereby undertakes to pay to the Contractor in consideration of the construction, completion and defects correction of the works the contract price at the times and in the manner prescribed by the contract.

5 (a)Project commencement date:……..
(b)Project Construction period:……
(c)Project Completion date:…….

Signed in the presence of the subscribing witnesses:

In Windhoek for and on behalf of the Employer on……. 2021.

AS WITNESSES

1 ……..... Signature…….....

Capacity **GISBERTUS MUKULU** (**Chief Executive Officer)**

2 ……... **NATIONAL HOUSING ENTERPRISE**

In Windhoek for and on behalf of the Contractor on……. 2021.

AS WITNESSES

1 .....…….... Signature…….....

Capacity

2 …….

PROJECT CODES 775 191 / 2

NHE Okahao Housing Development - W/ONB/NHE-02/21/22

WAIVER OF CONTRACTOR'S LIEN

THIS IS TO CERTIFY THAT I,

…….

CONTRACTOR OF

……..

do hereby waive and abandon in favour of the Employer all our rights, titles, and interest in and to any lien or right of retention which we may have in regard to certain buildings and/or structures and/or improvements erected or to be erected or constructed by us in terms of the above-mentioned contract.

_____
SIGNATURE OF CONTRACTOR

_____
DATE

Kindly complete this form and provide proof that the bidder is operating from the respective region to substantiate local supplier/bidder status. This proof can be in a form of a fitness certificate from the local authority or any other proof such as deed of sale, lease agreement or confirmation letter from the constituency councillor.

ANNEXURE 1: LOCAL SOURCING DECLARATION

(Section 73 of Act)
(Regulation 37(5) and 56(2))

Bid No……

Date: ……..

To:……..
[insert complete name of Public Entity]

I/We* understand that in terms of section 45 of the Act a public entity must include in the bidding document the requirement for a local sourcing declaration by the bidders.
I/We* accept that under section 45 of the Act, I/we* may be suspended or disqualified in the event of —

(a) If found that the goods, works and services are found to be not meeting the local content and is not supplied by the suppliers based and operating from the 14 regions of Namibia, and where the goods are required (b)

I/We* understand this local sourcing declaration ceases to be valid if I am/We are* not the successful Bidder Signed:

_____

[insert signature of person whose name and capacity are shown]

Capacity of: [indicate legal capacity of person(s) signing the local sourcing declaration]
Name:

_____

[insert complete name of person signing the local sourcing declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on……..day……..of……. [insert date of signing]

Corporate Seal (where appropriate)
[Note* : In case of a joint venture, the local sourcing declaration must be in the name of all partners to the joint venture that submits the bid,] *delete if not applicable appropriate.

National Housing Enterprise

P.O.BOX 20192
7 Gen. Murtala Muhammed Ave, Eros, Windhoek, NAMIBIA
Tel: 061 2927111, Fax: 061 222 941,
procurement@nhe.com.na
www.nhe.com.na

Invitation for Bids (IFB)

NHE OKAHAO HOUSING DEVELOPMENT - W/ONB/NHE-02/21/22 (TURN-KEY)

PROCUREMENT REFERENCE NO:

W/ONB/NHE-02/21/22

1. Bids are invited through Open National Bidding (ONB) procedures for **NHE Okahao Housing Development - W/ONB/NHE-02/21/22 (Turn-Key)** and the invitation is open to all Namibian bidders.

2. Interested eligible bidders may obtain further information from **NHE, Ms. Noreen Siyanga or Mr. Oscar Kanovengi** at procurement@nhe.com.na and download the Bidding Documents NHE website www.nhe.com.na at any given time.

3. Qualifications requirements include:

    a. Administrative and Legal requirements;

    b. Technical requirements; and

    c. Financial requirements.

4. A complete set of Bidding Documents in **English** may be downloaded from the NHE website, www.nhe.com.na for free.

5. Bids must be delivered to the address stated below at or before **10h00, 20 September 2021.** Electronic bidding **will not** be permitted. Late bids will be rejected.

6. Bids will be opened in the presence of the bidders' representatives who choose to attend in person at

    NHE Head Office (Lecture Hall)
    7 General Murtala Mohammed Avenue
    Eros, Windhoek, NAMIBIA, at **10h15 on 20 September 2021.**

All bids must be accompanied by a **Bid Securing Declaration.**

7. The address referred to above is:

National Housing Enterprise
7 General Murtala Mohammed Avenue
Eros, Windhoek
NAMIBIA

_____