KUNENE REGIONAL COUNCIL

Tel: +264-65-273950
Fax:+264-65-273077
M. Muharukua Street
OPUWO, NAMIBIA
Private Bag 502
OPUWO, NAMIBIA

Enq: S. Nakale

Our ref: 9/2/2/3

PROCUREMENT MANAGEMENT UNIT

NOTICE TO ALL BIDDERS

SUBJECT: MODIFICATION OF BIDDING DOCUMENT: CONSTRUCTION OF BULK WATER STORAGE INFRASTRUCTURE AT SESFONTEIN SETTLEMENT – W/ONB/KRC-04/2025

1. All prospective bidders are hereby notified of the modification outlined below for the bidding document of bid reference number: **W/ONB/KRC-04/2025**. The modifications are done in accordance with section 34 of the Regulations of the Public Procurement Act, 2025 (Act no. 15 of 2015).

2. In light of the above, the following items are amended;

   - The prospective bidders are hereby notified to ignore the previously attached bid document for the above procurement reference number **W/ONB/KRC-04/2025** and consider the bid document referenced as **W/ONB/KRC-04/2025/26.**
   - The site meeting date remains as previously indicated, **14 October 2025.**
   - The deadline for the above bid is extended to 20 November 2025.

Yours sincerely

KUNENE REGIONAL COUNCIL
PRIVATE BAG 502, OPUWO
27 OCT 2025
TEL: 065-273950
FAX: 065-273077
CHIEF REGIONAL OFFICER

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GEORGE P. KAMSEB
CHIEF REGIONAL OFFICER

KUNENE REGIONAL COUNCIL

Tel: +264-65-273950
Fax:+264-65-273077

M. Muharukua Street
OPUWO, NAMIBIA

Private Bag 502
OPUWO, NAMIBIA

KUNENE REGIONAL COUNCIL BIDDING DOCUMENT

FOR

CONSTRUCTION OF BULK WATER STORAGE INFRASTRUCTURE AT SESFONTEIN

Procurement Reference No: W/ONB/KRC-04/2025/26

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

Closing date: 20 November 2025

Cost: N$ 300.00

Kunene Regional Council
Secretary
Procurement Management Unit
Private Bag 502

Opuwo, Namibia
Tel: + 264 -65 273950
Fax: + 264 -65 273077
E-mail: pmu@kunenerc.gov.na

Standard Bidding Document

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PART 1 – Bidding Procedures

Section 1 - 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 & to application for review

3.1 The public entities related to these bidding documents are the Public Entity, acting as procurement entity (Purchaser), the Procurement Policy Unit, in charge of issuing standard bidding documents and responsible for any amendment these may require, the Central Procurement Board in charge of vetting Bidding document, receiving and evaluation of bids in respect of major contracts and the Review Panel, set up under the Public Procurement Act, 2015 (hereinafter referred to as the Act.)

The Chairperson
Review Panel
Ministry of Finance
Private Bag 13295
Windhoek, Namibia

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

[1] *See Section IV, "General Conditions of Contract," Clause 1. Definitions.*

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; and

(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**; and

(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**.[2]

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 - Evaluation Criteria
Section IV - Bidding Forms
Section V - Employer's Requirements
Section VI - General Conditions of Contract
Section VII - Special Conditions of Contract
Section VIII - Contract Forms

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

[2] *Usually the equivalent of the estimated payments flow over 4-6 months at the average (straight line distribution) construction rate. The actual period of reference shall depend on the speed with which the Government shall pay the Contractor's monthly certificates.*

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 IV);

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

(c) completed Bill of Quantities / Activity Schedule;

(d) the following documentary evidence is required

1. have a valid company Registration Certificate;
2. have an original valid good Standing Tax Certificate;
3. have an original valid good Standing Social Security Certificate;
4. 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;
5. have a certificate indicating SME Status (for Bids reserved for SMEs);
6. 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; and;

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/Bill of Quantities submitted by the Bidder.

16.2 Bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. 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 Bill of Quantities. Corrections, if any, shall be made by crossing out, initialing, 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.[3] days prior to the deadline for submission of bids, shall be included in the rates, prices, and total Bid price submitted by Bidders.[4]

[3] *In lump sum contracts, delete "rates, prices, and."*
[4] *In lump sum contracts, delete "rates, prices, and."*

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; and

(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

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

Errors

(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; and

(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: ***Kunene Regional Council*** The Work are: The project involves the construction of a groundwater storage facility to meet current demand while accommodating future borehole connections, along with the installation of booster pumping systems. Also refer to Section V of the Bid Document for detail project scope and description The name and identification of the Contract is: ***W/ONB/KRC-04/2025*** The Project is: ***Construction of Bulk Water Storage Infrastructure in Sesfontein.***
ITB 1.2	The Intended Completion period is ***305 days from start date***
ITB 2.1	The Funding Agency is: **Kunene Regional Council**
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 (a)	The information required from bidders in ITB Sub-Clause 5.2 is modified as follows: 6.2 (k) Bidders and joint ventures shall have a bank account at a Namibian banking institution. 6.3 (l) Bidders should have a written reference or completion certificate of the previously completed similar projects. **Bidder shall attach documentary evidence as required by Clause ITB 13.1 (d) and all copies of original documentation should be certified by the appropriate authority."** 1. have a valid or certified copy of company Registration Certificate; 2. have an original or certified copy of good Standing Tax Certificate; 3. have an original or certified valid copy of good Standing Social Security Certificate; 4. 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; 5. have a or certified copy of certificate indicating SME Status (for Bids reserved for SMEs); 6. 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.
ITB 6.2 (b)	*Contractors should have at least **Five (5) years** of experience in multidisciplinary construction works.*
ITB 6.3 (a)	The Contractor must have a minimum average annual financial amount of construction of ***N$ 5.0 million*** over the last three (3) years.
ITB 6.3 (b)	The number of works is: ***three (3), 100% completed similar in nature*** The period is: ***Three (3) years***
ITB 6.3 (c)	The essential equipment to be made available for the Contract by the successful Bidder shall be: • Front End Loader • Excavator • Concrete Mixer • Grader • Tipper Truck • Water Truck • Roller Compactor • Hydraulic Jackhammer • Plate Compactor **N.B: In the given table under Clause 1.4 in Section IV, Qualification Information, the Bidder shall state each item of major plant, which he guarantees to provide on the site for the duration of the contract. The Bidder shall attach substantiating documentation to the Bid (proof of ownership or letter of intent from rental companies).**
ITB 6.3 (d)	*Add:* Bidders shall provide a detailed CV of the Contracts Manager and Key Staff to be appointed for this project. The contracts manager shall be fluent in both English writing and communication. The following requirements are required for the contractor's personnel on this project: - *Project/Contract Manager: at least Eight (8) years of experience* - *Site Agent: at least three (6) years of experience* - *General Foreman: at least three (5) years of experience and*

	- *Surveyor: at Least three (4) years of experience* In the given table under Clause 1.5 in Section IV, Qualification Information, the Bidder shall state the number of each category of personnel to be provided on site for the execution of the work and in the case of professional and technical staff the number of years of suitable experience after qualification.
ITB 6.3 (e)	The minimum amount of liquid assets and/or credit facilities net of other contractual commitments of the successful Bidder shall be ***15 % of the contract amount.***
B. Bidding Documents	
ITB 8.1	The Public Entity's address for clarification is: ***Kunene Regional Council*** ***Procurement Management Unit*** ***Private Bag 502, Opuwo*** ***Tel: + 264 -65 273 950*** ***Email: pmu@kunenerc.gov.na*** ***Opuwo, Kunene Region*** ***Attention: Ms. S Nakale***
ITB 9.2	A pre-bid meeting (not compulsory) has been scheduled for ***14 October 2025 at 11H00, at Sesfontein Settlement office.***
C. Preparation of Bids	
ITB 13.1(e)	Any additional materials required to be completed and submitted by the Bidders are: 1. The bidder shall attach evidence of the signatory authorized to sign the bid (if applicable). This authorization shall consist of written confirmation and may include a delegation of power by resolution of the Board of a company or from the CEO, himself holding power from the Board or from a Director being a shareholder of a company or through a Power of Attorney. The name and position held by each person signing the authorization must be typed or printed below the signature. 2. The signatory authorized to sign the bid shall **initial all pages** of the Bid Document including all attachments and documents attached by the Bidder. 3. As per Clause ITB 6.2 (k) the Bidder shall attach documentary evidence that the Contractor or joint venture keeps a bank account at a Namibian banking institution. 4. With regards to Clauses ITB 13.1 (d) 1 and 5, the Bidder shall attach a **certified copy** of the valid company registration certificate and of the valid certificate indicating the SME status (if applicable). With regard to ITB 6.2 (l) the bidder shall attached a written reference letter and/or completion certificates indicating the project name, monitory value,

	commencement date and completion date. **All the information provided in the qualification information shall be supported by the original or certified copies.**
ITB 17.1	The Contract is not subject to price adjustment in accordance with GCC Clause 44.
ITB 17.2	Interim Payment for Plant and Material on site *is* applicable for ***80%*** of the value of material delivered to site.
ITB 19.1	The Bid shall be valid for ***180 days*** after the deadline set for the submission of bid, the deadline being counted as day one of the validity period.
ITB 20.1	**No Bid Security is required, the Bid Securing Declaration Form to be completed and signed instead.**
D. Submission and Opening of Bids	
ITB 21.1	In addition to the original of the bid, the required number of copies is: ***One (1)***
ITB 23.1	The deadline for submission of bids shall be ***Thursday, 20 November 2025 @ 11h00.***
ITB 23.1	The Employer's address for the purpose of Bid submission is: *Kunene Regional Council* *Procurement Management Unit* *Private Bag 502, Opuwo* *Tel: + 264 -65 273950* *Fax: + 264 -65 273077* *Mbumbijazo Muharukua Street* *Opuwo, Kunene Region*
ITB 26.1	The bid opening shall take place at **Kunene Regional Council, Procurement Management Unit.** Date: ***Thursday, 20 November 2025 @ 11h00.***
E. Evaluation and Comparison of Bids	
ITB 29.2	A substantially responsive bid is one, which conforms to the terms, conditions, and specifications of the bidding documents without material deviation, reservation, qualification, or omission. A material deviation or qualification is one which, in the opinion of the **Kunene Regional Council**. 1. Could detrimentally affect the scope, quality, or performance of the works. 2. changes the employers or the contractor's risk and responsibilities under the contact; or 3. Would affect the competitive position of other bidder presenting

	responsive bids if it was to be rectified. Hence, only substantially responsive bids will be considered for further technical and financial evaluations as per the set evaluation criteria.
ITB 32.1	A margin of preference ***shall*** apply. Please refer to Section III – evaluation criteria of the bidding document for details.
ITB 33.2	To evaluate a bid, the employer shall apply the evaluation procedure specified in ITB 33.1 for each compliant bidder with respect to methodology specified in section III – evaluation **(a)** Bid prices shall be adjusted for arithmetic errors in terms of clause IB 31. **(b)** Tender rates and bid prices will be evaluated against reasonable standard benchmark rates. **Bidders whose tender amount varies by more than 10% (up or down) from the respective standard benchmark tender amount shall be deemed to be non-compliant and shall be rejected.**
ITB 35	The employer shall determine its satisfaction whether the bidder that is recommended in accordance with ITB 33 meets the qualifying criteria.
F. Award of Contract	
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 and contingencies sum and VAT.
ITB 41.1	***No advance payment will be made for this contract.***
ITB 42.1	Interim Payment for Plant and Material on site *is* applicable. ***Payment shall be 80% of the value of material delivered to site.***

Section III - Evaluation Criteria

This section contains supplementary criteria that the Employer shall use to evaluate bids.

1. General Evaluation Procedure

In addition to the criteria listed in ITB 32.1 and ITB 33.2 of section II "bidding data sheet", (BDS) the following margin of preference and evaluation criteria shall apply:

(a) Bid Validity and Compliance

Recived Bidds will be examined to determine whether or not they substantively comply with the requirments of the Bid Documents. A substantively complying Bid is one which complies with the rules, terms and conditions of the Bid Documents, without any material deviation in the sole opinion of the Employer. A non-complying bid will be rejected and may not subsequently be altered to comply by correction of any non-conformity.

The Employer's determination of a bid's responsiveness will be based on the required contents as defined in ITB 13 of the bid document.

Bids will secondly be examined to determine whether they have been submitted by well-established contractors with the necessary experience and the financial, human and material resources to satisfactorily execute the Contract. For this purpose the various forms and other information required under Section IV (***Qualification Information***) of the bid document will be utilised. Bidders are at liberty to submit with their bid any other information which they consider would be relevant to the bid evaluation.

The Employer reserves the right to check the information provided by the Bidder. If the Bidder supplied wrong information, the Employer reserves the right to reject the Bid.

The Employer reserves the right to disqualify bidders that are not within +/- **20%** of the market benchmark price.

N.B. It's the resposibility of the bidder to make sure that the bid response document is clear, logical and well structured. Otavi Town Council will not take responsibility of any missing information or incomplte document

(b) Completion time

An alternative Completion Time is not permitted under ITB 15.1. Time for Completion will be evaluated as follows:

Evaluation will be based on the programme of works provided and proposed execution methodology.

Furthermore, evaluation will be to the benefit of the project but not compromising on the project specifications and quality.

(c) Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section V (Employer's Requirements).

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

2. Compliance Evaluation

The Employer will evaluate the bidder considering the following evaluation criteria, at the sole discretion of the Employer:

(a) Preliminary evaluation of bids

Description		Yes	No
1.	Bid submission form, duly filled in, signed, stamped, and dated Bid Submission Sheet Form;		
2.	Is the Original Copy of the bid typed or written in inedible ink, no missing pages, and signed by the person duly authorised to sign on behalf of the bidder (ITB Clause 21);		
3.	Did the bidder submit the number appropriate number of Copies of the Original document and an Electronic MS EXCEL Bill of Quantities submitted in a USB);		
4.	Is the bidding document signed, and all pages of the bid are initialized by the person signing the bid (ITB Clause 21);		
5.	Is the Bid written in English language (ITB Clause 12);		
6.	Is the Offered period of validity of the bid in line with the period stipulated (ITB Clause 19).		
7.	Has the Bidder completed, signed, and submitted a Bid Securing Declaration.		
BIDDER STATUS (COMPLIANT/ NON-COMPLIANT)			

Failure to submit all contract documents, the bidder shall be deemed non-compliant, therefore disqualified, and excluded from further evaluation and comparison.

(b) Compliance with mandatory documents

Where applicable, each party of the JV agreement should attach copies of all mandatory documents, and all parties of the JV shall comply.

Description	Yes	No
1. Valid certified copy of the company Registration Certificate;		
2. Original valid or certified copy good Standing Tax Certificate;		
3. Original valid or certified copy good Standing Social Security Certificate;		
4. 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;		
5. 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;		
6. Have a Letter of intent from banking illustrating its intension to issue a Performance Security as per the GCC in favor of the employer.		
7. Does the bidder have a written confirmation authorizing the signatory of the Bid to commit the Bidder (to be authorized by all parties in case of JV).		
8. In case of JV, has the bidder submitted a duly signed JV agreement, to outline the requirements as per ITB Clause 13.		
9. Bidder submitted valid financial statements of the company of the last 5-years.		
BIDDER STATUS (COMPLIANT/ NON-COMPLIANT)		

Failure to submit all contract documents, the bidder shall be deemed non-compliant, therefore disqualified, and excluded from further evaluation and comparison.

(c) Technical Evaluation Compliance

Description		Yes	No
1.	Bidder has submitted descriptive proof of technical expertise for employees dedicated to this project, i.e., Project / Contracts Manager, Agent Site, Foreman, and any other key personnel as per **ITB 6.3 (d)**.		
2.	all equipment and plant owned by the company and/or other equipment and plant to be hired to complete the proposed works (including valid proof of registration) as per **ITB 6.3 (c)**.		
3.	Bidder has executed works for the value and over the period as per **ITB 6.3 (a)**.		
4.	Submission of a list of work carried (both general and similar) out by the bidder over the period as per **ITB 6.2 (c).** Does the contractor have at least experience as per **ITB 6.2 (c).**		
5.	A list of of projects of similar nature completed as stipulated in **ITB 6.3 (b)** over the period stipulated in **ITB 6.3 (b).** The projects must be accompanied with signed letters from the Principal Agent / Project Manager / Architect / Engineer / Employer and/or Completion Certificates, indicating as a minimum the following: ***contract name, period, and contract amount (incl. VAT).***		
6.	Contractor submitted proof of liquid assets/ lines of credit and other financial means to the value as per **ITB 6.3 (e).**		
7.	Contractor submitted a preliminary construction programme, stipulating the activities and durations. Maximum duration as per **ITB 1.2**.		

Failure to submit all contract documents, the bidder shall be deemed non-compliant, therefore disqualified, and excluded from further evaluation and comparison.

3. Evaluation Criterias and Scores

(a) Technical Score

The typical evaluation scorecard presented in a table below will be used for the technical evaluation of bids and the selected evaluation criteria are intended to assess the competency of the bidder to achieve the required project outcome and are used to rate each of the bidders.

Technical scores will be calculated in accordance with the following formula and only bidders with a total technical score of ***at least 60%*** will be considered for financial evaluation:

$$TS = (T_b + T_F + T_x + T_C + T_M + T_N + T_D + T_P)$$

Item	Non-Price Attributes Technical/Capacity/ Attributes	Points allotted	Maximum Points	Clause in ITB
TG	**General Experience in Construction**			
	General experience in Construction (Buildings, Civil and Structural works) with a cumulative value over the period stipulated in **ITB 6.3 (a)** of: *(>= N$ 40 mil/5Yrs = 15;* *N$ 31 mil – N$ 39 mil/5Yrs = 10;* *N$ 25 mil – N$ 30 mil/5Yrs = 7.5;* *< N$24 mil/5Yrs = Disqualify)* *(Note: Proof thereof should be stated in the provided letters and/ or reflected in the financial statements).*	See scoring in brackets	**15**	**ITB 6.3 (a)**
TX	**Relevant Experience**			
	Relevant experience: Construction works on similar projects as per **ITB 6.3 (b)** stipulations: • **Construction of water storage structures.** (>=5 *projects = 10; 4 projects = 7.5; 3 projects = 5; <3 projects = Disqualify)* • **Bulk earthworks.** (>=3 *projects = 5; 2 projects = 2.5; <2 projects = Disqualify)* • **Water reticulation** (>=4 *projects = 5; 3 projects = 7.5; 2 projects = 5; <2 projects = Disqualify)*	See scoring in brackets	**20**	**ITB 6.3 (b):**
TC	**Experience in similar size and nature**			
	Bidder has successfully completed a project of similar nature (Water & Sewer services) with construction value of at	10	**10**	

<table>
<tr><td></td><td>least N$ 5 million (single project) over the past 8 years.
(>=4 projects = 10; 3 projects = 7.5; 2 projects = 5; <2 projects = Disqualify)</td><td></td><td></td><td></td></tr>
<tr><td>TM</td><td>Relevant Staff Competency (qualifications)</td><td></td><td></td><td></td></tr>
<tr><td></td><td>• Contract Manager
(>= Master's degree = 5; BTech/ BEng = 4; Diploma = 3)
• Site Agent
(>= BTech= 5; Nat Diploma = 3)
• General Foremen
(>= Nat Diploma (building, civil and related) = 3)
• Surveyor
(>= BTech = 2; Nat Diploma = 1)</td><td>See scoring in brackets</td><td>15</td><td>ITB 6.3 (d)</td></tr>
<tr><td>TN</td><td>Relevant Staff Competency (years' experience)</td><td></td><td></td><td></td></tr>
<tr><td></td><td>• Contract Manager
(>= 8 years = 5; 5-8 years = 2.5; <5 years = Disqualify)
• Site Agent
(>= 6 years = 5; 3-5 years = 2.5; <3 years = Disqualify)
• General Foreman
(>= 5 years = 5, 3-4 years = 2.5, <2 years = Disqualify)
• Surveyor
(>= 4 years = 5, < 2- 3 years =2.5; <2 years = Disqualify)</td><td>See scoring in brackets</td><td>20</td><td>ITB 6.3 (d)</td></tr>
<tr><td>TD</td><td>Specific Mechanical Plant Capacity</td><td></td><td></td><td></td></tr>
<tr><td></td><td>• All plant as listed in ITB 6.3 (c) (owned or leased)
<table>
<tr><td>1x Front End Loader = (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
<tr><td>1 x Excavator = (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
<tr><td>1x Grader = (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
<tr><td>1x Tipper Trucks = (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
<tr><td>1x Water Truck= (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
<tr><td>1x Roller Compactor= (2 marks)</td><td>Owned</td><td>2</td></tr>
<tr><td></td><td>Leased</td><td>1</td></tr>
</table></td><td>15</td><td>15</td><td>ITB 6.3 (c)</td></tr>
</table>

	1x Concrete Mixer = (2 marks)	*Owned*	*2*		
		Leased	*1*		
	Hydraulic Jackhammer	*Owned*	*1*		
		Leased	*0.5*		
	*(Note: For each of the equipment not owned by the contractor, **half marks** will be deducted from the total)*				
TP	**General Company Information**				
	• Contractor's legal place of registration – proof of registration and operating in Kunene Region provided (valid fitness certificate to be attached).			5	**5**
Total Score				**100**	

(b) Financial Proposal

The price is the sum that the client would be required to pay to the tenderer for the work or service provided. This must include all costs over the duration of the contract. Depending on the contract, this could include:

- fixed capital cost;
- time related costs during the contract period;
- special adjustments during the contract period;
- maintenance costs; and
- Operating costs.

After arithmetic corrections in accordance with ITB 31.1, the first step will be to confirm if the bidder's price is within the acceptable range, as per ITB 33.2.

The **Price Score** will be calculated for each Bidder in accordance with the following formula:

PS = (PL/PN) x 100

Where:

P_L = Bid Price of the lowest acceptable Bidder, adjusted in terms of ITB 31.1.

P_N = Bid Price under consideration, adjusted in terms of ITB 31.1.

The value of fixed P&G's may not be more than 15% of the total contract value (excluding contingencies and VAT) and the total P&G's (fixed + time related) may not be more than 20% of the total contract value (including contingencies and VAT).

Should the bidder exceed this limit in his financial offer, the Employer reserves the right to consider these bid amounts to be unbalanced and request justification.

(c) Bid Index (IB)

The Bid Index (IB) is the final evaluated result of each Bidder as per the specified and approved weight of financial and technical evaluations.

IB = a x PS + b x TS,

Where:

P_S = Price score

T_S = Technical score

"a" is allocated weight for price score (PS) and 'b" is the allocated weight for Technical Score (TS).

For this project the selected bid index weighting will be 60% for the technical score and 40 % for financial score:

$$IT = 0.4x\ P_S + 0.6\ x\ T_S$$

(d) Margin of Preference

National Preferences: 100% Namibian owned companies only

4. Written acknowledgement and acceptance

The Bidder must complete the below form in full to acknowledge and accept the employer's specific requirements and evaluation criteria for this project.

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

Procurement Ref No.: .....

We, the undersigned, declare that we acknowledge and accept

a) That according to ITB 29, the responsiveness of the bid will be determined based on the contents and requirements of the SBD as defined in ITB13.

b) That all the required technical information and requirements must be met for our bid to be responsive.

c) For our Bid to be determined responsive, our Bid must score at least 60% on technical evaluation as per the set criteria.

d) That the bid will be deemed to be non-responsive if;

- The Bid Price is 10 % above or below the estimated project cost
- The value of the fixed P&G's exceeds 15% of the total contract value (excluding contingencies and VAT)
- The total P&G's (fixed + time related) exceeds 20% of the total contract value (including contingencies and VAT).

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date: .....

Seal of Company .....

Section IV - Bidding Forms

Table of Forms

Bid Submission Form

Date: _____
Bidder's Reference No.: _____

Procurement Reference No: **W/ONB/KRC-01/2025/26**

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) Clause 10;

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

(c) The total price of our Bid after discounts, if any, offered in item (d) below is:
_____
_____;

(d) The discounts offered and the methodology for their application are:
_____
_____;

(e) Our bid shall be valid for a period of _____ from the date fixed for the bid submission deadline in accordance with the Bidding Documents (*ITB 19.1)*, 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;[5]

(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:

_____

Name: .....

In the capacity of: .....

Signed: .....

Duly authorized to sign the Bid for and on behalf of: .....

Date: .....

Seal of Company .....

[5] ***Use one of the two options as appropriate.***

Appendix to Bid Submission Form

Bid Securing Declaration

(Section 45 of Act)
(Regulation 37(1)(b) an 37(5))

Date: .....

Procurement Ref No.: .....

To: .....

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

Appendix to Bid Submission Form

Bid Security (Bank Guarantee)

Bank's Name and Address of issuing Branch or Office.....

Date: .....

To: Kunene Regional Council

BID GUARANTEE No.: .....

We have been informed that ..... (hereinafter called "the Bidder") has submitted to you its bid dated .....(hereinafter called "the Bid") for the execution of ***"Construction of Bulk Water Storage Infrastructure in Sesfontein "*** under Invitation for Bids No **W/ONB/KRC-04/2025.**

Furthermore, we understand that, according to your conditions, bids must be supported by a Bid Security.

At the request of the Bidder, we ..... hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of .....*(.....)* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(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 the bidder be the successful bidder; or

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

This guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the contract signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful bidder; or (ii) thirty days after the expiration of the Bid Validity.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before .....

.....[*Bank's seal and authorized signature(s)*].....

Republic Of Namibia

Ministry of Labour, Industrial Relations and Employment Creation

Witten undertaking in terms of section 138 of the Labour Act, 2015 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:.....

Tell No.:.....

Fax No.:.....

Email Address:.....

Postal Address:.....

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

.....

Email Address:.....

2. Procurement Details

Procurement Reference No.: **W/ONB/KRC-04/2025**

Procurement Description: .....

.....

.....

Anticipated Contract Duration: .....

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

.....

3. Undertaking

I ....., owner/representative

of .....

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 shall be used for purposes of post-qualification or for verification of prequalification as provided for in ITB Clause 6. This information shall not be incorporated in the Contract. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into English. If used for prequalification verification, the Bidder should fill in updated information only.]*

1. Individual Bidders or Individual Members of Joint Ventures

1.1 Constitution or legal status of Bidder: *[attach copy]*

Place of registration:.....

Principal place of business:.....

Evidence of signatory authorized to sign the bid: *[attach]*

1.2 Annual amounts of construction work performed during the last *Five (5)* years: *N$*.....

1.3 Number at least *three (3) of* works of a nature and amount similar to the Works performed as prime Contractor over the last *Five (5)* years. *Also list details of work under way or committed, including expected completion date(s).*

Project/Contract name and country	Name of client and contact person	Type of work performed and year of completion	Value of contract in NAD
(a)			
(b)			
(c)			
(d)			
(e)			

In substantiation to Clauses 1.2 and 1.3 above, the Bidder shall submit with his bid Letters of Satisfaction and/or Completion Certificates from Principal Agents/client for projects successfully completed previously.

1.4 Major items of Contractor's Equipment proposed for carrying out the Works. *Refer also to ITB Sub-Clause 6.3 (c).*

As per ITB Sub-Clause 6.3 (c), the Bidder shall complete the below table. When owned by the Bidder, proof of ownership shall be attached to the Bid Documentation. When not owned by the Bidder, valid lease and/or hire purchase agreements for the relevant plant shall be attached to the Bid Documentation, which provides the Procurement Reference Number, the type of plant considered, the period of validity of the agreement, the period of availability of the plant and the shortest period of time within which the plant can be delivered to Site.

Item of equipment	Description, make, and age (years)	Condition (new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			
(g)			

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. *(Attach biographical data. Refer also to ITB Sub-Clause 6.3 (d).)*

Position	Name	Years of experience (general)	Years of experience in proposed position
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			

1.6 Proposed subcontracts and firms involved. Refer to General Conditions of Contract Clause 7.

Sections of the Works	Value of subcontract	Subcontractor (name and address)	Experience in similar work
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			

1.7 Financial reports for the last *three (3)* years: Financial Statements, Audited Accounts, etc. *(List below and attach copies.)*

1.8 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of support documents.

1.9 Name, address, and telephone, telex, and facsimile numbers of banks that may provide references if contacted by the Public Entity.

1.10 Information on current litigation(s) in which the Bidder is involved.

Other party(ies)	Cause of dispute	Amount involved
(a)		
(b)		
(c)		

1.11 Proposed Program (work method and schedule). Descriptions, drawings, and charts, as necessary, to comply with the requirements of the Bidding Documents.

Bidder shall submit, together with this Bid, a **chronological works program in form of a Gantt chart** as described in Section V.

1.12 **Methodology Statement**: The Bidder shall submit, together with this Bid, a separate document, describing how he intends to execute, manage and control the various activities of the works within the specified completion period, according to the required specifications, should he be the successful Contractor.

In chronological order, the bidder is to describe in detail the proposed plant, equipment and labour to be used for each construction activity. The Bidder is to indicate which plant is intended to serve on more than one activity and provide a

contingency plan in case of a breakdown of plant. The mode of transport of the various materials to site shall be stated taking into consideration the quality and state of the roads during the construction period.

The project program and Methodology Statement will form the bid technical evaluation and Failure to submit may result in disqualification of the Bid.

2. Additional Requirements	2.1	Bidders should provide any additional information requested in the Bidding Document.

Bill of Quantities

Preamble to Schedule of Quantities

1.1. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Bill, the requirements of the Standardised or Scope of Work, as applicable, shall prevail.

1.2. The clauses in a specification in which further information regarding the Bill item can be obtained appear under "Reference clause" in the Bills of Quantities. The reference clauses indicated are not necessarily the only sources of information in respect of schedule items. Further information and set specifications may be found elsewhere in the contract documents. Standardised Specifications are identified by the letter or letters which follow SABS in the SABS 1200 series of specifications, e.g. G for SABS 1200 G.

1.3. The prices and rates to be inserted in the Bills of Quantities are to be the full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. The prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

1.4. It will be assumed that prices included in these Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org or www.iso.org for information on standards).

1.5. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items

1.6. Except where rates only are required, the Tenderer shall insert all amounts to be included in his total tendered price in the "Amount" column and show the corresponding total tendered price.

1.7. The units of measurement described in the Bills of Quantities are metric units. Abbreviations used in the Bills of Quantities are as follows:

ha	=	hectare	h	=	hour
kℓ	=	kilolitre	kg	=	kilogram
km	=	kilometre	kW	=	kiloWatt
km-pass	=	kilometre pass	MN	=	MegaNewton
kPa	=	kiloPascal	MN.m	=	MegaNewton-m

ℓ	=	litre	%	=	per cent
m	=	metre	PC sum	=	Prime Cost sum
mm	=	millimetre	Prov sum	=	Provisional sum
m^2	=	square metre	No.	=	number
m^2.pass	=	square metre-pass	R/only	=	Rate only
m^3	=	cubic metre	sum	=	lump sum
m^3.km	=	cubic metre-kilometre	t	=	ton (1 000 kg)
MPa	=	MegaPascal	W/day	=	Work day

1.8. The Tenderer must price each item in the Bills of Quantities in **BLACK INK**.

1.9. All prices and rates shall exclude value added tax (VAT). The Tenderer shall calculate value added tax and enter it at the end of the summary of the Bills of Quantities.

1.10. While the Employer has every intent to complete the full scope of works, the Employer reserves the right to reduce of increase the scope of works according to the dictates of the budget, or to terminate this contract, with adjustment to the agreed rates, sums or fees and without payment of any penalty in this regard. The Service Provider shall however be entitled to pro-rata payment for all services carried out in terms of any adjustment to the Scope of Work or, in the case of termination, remuneration and/or reimbursement.

1.11. The General Conditions of Contract, the Particular Conditions of Contract (if any), the Specifications (including the Project Specification), and the Drawings are to be read in conjunction with the Schedule of Quantities.

1.12. The Schedule comprises items covering the Contractor's profit and costs of general liabilities and of the construction of temporary and permanent works.

1.13. The Tenderer is at liberty to insert a rate of his own choosing for each item in the schedule and his attention is drawn to the fact that the Contractor has the right, under various circumstances, to payment for additional works carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates inserted in the schedule by the Contractor.

1.14. Clause 8 of each Standardized Specification and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specification, set out what ancillary or associated activities are included in the rates for the operations specified. Measurement and payment shall be in accordance with Clause 8 of the SABS 1200 Standardised Specifications for Civil Engineering Construction referred to in the Scope of Works, subject to the variations and amendments contained in the section "Applicable SABS 1200 standardised specifications".

1.15. Descriptions in the Schedule of Quantities are abbreviated and the schedule has been drawn up generally in accordance with the latest issues of Civil Engineering quantities. Should any requirements of the measurement and payment clause of the applicable Standardized Specification, or the Project Specification, or the Particular Specification(s) conflict with the terms of the schedule or, when relevant, Civil engineering quantities, the requirement of the Standardized, Project, or Particular Specification as applicable, shall prevail.

1.16. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made for waste.

1.17. The prices and rates to be inserted in the Schedule of Quantities are to be the full inclusive prices to the Employer for the work described under the several items. Such prices shall cover all costs and expenses that may be required in and for the construction of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based. The Tenderer shall ensure that his rates exclude Value Added Tax, which shall be added in the Summary of the Schedule of Quantities.

1.18. **A price or rate is to be entered against each item in the Schedule/Bills of Quantities, whether the quantities are stated or not**. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.

1.19. The quantities of this Schedule of Quantities shall be regarded as approximate and not necessarily the actual amount of work to be done nor shall these quantities be considered as limiting or extending the amount of work to be done or material to be supplied by the Contractor.

1.20. The Contract Price for the completed contract shall be computed from the actual quantities of work done and valued at the unit rates and prices tendered against the respective items in the Schedule of Quantities. The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.

1.21. The Schedule of Quantities must not be used for the ordering of materials and the Contractor is advised to acquire his own information from the Specifications and Drawings and to consult with the Engineer before materials are ordered.

1.22. The number of quantities set out in the Schedule of Quantities are estimated only, and their accuracy or inaccuracy shall in no way effect the validity of the tender or any contract based thereon. The total amount of each item set out in the Schedule of Quantities at the rate or price inserted by the Tenderer shall be stated, but these figures are required solely for the purpose of assessment and shall not be deemed to be the actual sums which shall be paid to the Contractor for the execution of the Works. The sums to be paid to the Contractor shall (subject to the provisions of the General Conditions of Contract) be determined by re-measuring the work actually done in accordance with the Contract and valuing such work at the rates and prices inserted by the Contractor in the Schedule of Quantities.

1.23. The Bill of Quantities includes provision for Preliminary and General Items in Schedule A. Please note that the value of fixed P&G's may not be more than 15% of the total contract value (excluding contingencies and VAT).

1.24. Also, the total P&G's (fixed + time related) may not be more than 20% of the total contract value (including contingencies and VAT).

Schedule of Quantities

The detailed schedule of quantities is presented in the next sub-section. The outline below summarizes the main components of the required work to be priced.

Section	Description
1	Preliminary & General
2	Bulk Water Supply Pipeline
3	Earthworks
4	Structural Concrete
5	Structural Steelwork
6	Steel Pipework, Fittings and Specials
7	Site and Building Works
8	Pumpset Mechanical & Electrical Work

Bid Cost Summary

The contractor should complete the cost summary table below and the detailed bill of quantities in pages to follow next.

Section	Description	Project Cost (N$)
1	Preliminary and General	
2	Bulk Water Supply Pipeline	
3	Earthworks	
4	Structural Concrete	
5	Structural Steelwork	
6	Steel Pipework, Fittings & Specials	
7	Site and Building Works	
8	Pumpset Mechanical & Electrical Work	
	Total (BoQ)	
	10% Contingencies	
	Sub-Total	
	Add 15% VAT	
	Total Bid Amount	

Detail Schedule of Quantities

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
1	SABS 1200A	SCHEDULE 1: PRELIMINARY AND GENERAL				
1.1	8.3	SCHEDULE FIXED-CHARGE AND VALUE-RELATED ITEMS:				
1.1.1	8.3.1	Contractual Requirements	Sum	1		
1.1.2	8.3.2	Provision of Facilities on the Site:				
1.1.2.1	8.3.2.1	(a) Facilities required for the Engineer:				
1.1.2.1.1		(i) Nameboards (1 No. one sided)	Sum	1		
1.1.2.1.2		(ii) Survey instruments	Sum	1		
1.1.2.2	8.3.2.2	(b) Facilities required for Contractor				
1.1.2.2.1		(i) Site Offices and storage area	Sum	1		
1.1.2.2.2		(ii) Workshops	Sum	1		
1.1.2.2.3		(iii) Ablution and latrine facilities	Sum	1		
1.1.2.2.4		(iv) Tools and equipment	Sum	1		
1.1.2.2.5		(v) Water supplies, electrical power and communications	Sum	1		
1.1.2.2.6		(vi) Dealing with Water	Sum	1		
1.1.2.2.7		(vii) Access (Subclause 5.8)	Sum	1		
1.1.2.2.8		(viii) Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employers Health and Safety Specification	Sum	1		
1.1.3	8.3.3	General Responsibilities and Other Fixed Charge Obligations	Sum	1		
1.1.4	8.3.4	Removal of Site Establishment	Sum	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
1.2	8.4	SCHEDULED TIME-RELATED ITEMS:				
1.2.1	8.4.1	Contractual Requirements	Sum	1		
1.2.2	8.4.2	Operation and Maintenance of Facilities on Site				
	8.4.2.2	(b) Facilities required for Contractor for Contractor for duration of construction, except where otherwise stated				
1.2.2.1		(i) Offices and storage sheds	Sum	1		
1.2.2.2		(ii) Workshops	Sum	1		
1.2.2.3		(iii) Ablution facilities	Sum	1		
1.2.2.4		(iv) Tools and equipment	Sum	1		
1.2.2.5		(v) Water supplies, electrical power and communications	Sum	1		
1.2.2.6		(vi) Dealing with Water	Sum	1		
1.2.2.7		(vii) Access (Subclause 5.8)	Sum	1		
1.2.2.8		(viii) Compliance with Occupational Health and Safety Act (Act 85 of 1993) and its regulations and with the Employers Health and Safety Specification	Sum	1		
1.2.3	8.4.3	Supervision for Duration of Construction	Sum	1		
		The rate shall cover the costs of on-site supervision and on-site contract administration as specified in SABS 1200A				
1.2.4	8.4.4	Company and Head Office Overhead Costs	Sum	1		
1.2.5	8.4.5	General Responsibilities and Other Time Related Obligations	Sum	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
1.3	8.5	SUMS STATED PROVISIONALLY BY ENGINEER				
1.3.1	8.5 b (1)	For work done by the client or a nominated subcontractor.				
1.3.1.1		(i) "As Built" Drawings	P C Sum	1	10,000.00	10,000.00
1.3.1.2		(ii) Control tests ordered by the Engineer	P C Sum	1	35,000.00	35,000.00
1.3.2	8.5 b (2)	Overheads, charges and profit on above				
1.3.2.1		(i) "As Built" Drawings	%	10,000.00		
1.3.2.2		(ii) Control tests ordered by the Engineer	%	35,000.00		
1.4	PSA 8.6	PRIME COST SUMS				
1.4.1		(i) Additional material ordered by the Engineer	PC Sum	1	50,000.00	50,000.00
1.4.2		(ii) Charges required by the Contractor on item (i) above	%	50,000.00		
1.4.3		(iiii) Acceptance control testing required by the Engineer	PC Sum	1	20,000.00	20,000.00
1.4.4		(iv) Charge required on item (i) above:	%	20,000.00		
1.4.5		(v) Location, exposure, protection and/or move existing services by the employer or a nominated sub-contractor (or as ordered by the Engineer)	PC Sum	1.00	20,000.00	20,000.00
1.4.6		(vi) Charge required on item (iii) above:	%	20,000.00		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERNCE	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
1.5	**8.7**	**DAY WORKS ITEM**				
1.5.1		**Labour (Provisional)**				
		Supply labour including on cost charges				
1.5.1.1		Site foreman	hr	0		Rate Only
1.5.1.2		Trade foreman	hr	0		Rate Only
1.5.1.3		Artisan	hr	0		Rate Only
1.5.1.4		Skilled Labourer	hr	0		Rate Only
1.5.1.5		Unskilled labourer	hr	0		Rate Only
1.5.1.6		Dealing with ground water during construction	Day	10		
1.5.2		**Plant (Provisional)**				
		Supply plant including operator, fuel, maintenance and pertinent on costs				
1.5.2.1		Front-end loader (Furukana 1 m³)	hrs			Rate Only
1.5.2.2		Excavator (Cat 225 BLC)	hrs			Rate Only
1.5.2.3		Smooth self propelled vibra-ting rollers (7 ton minimum)	hr			Rate Only
1.5.2.5		Mobile Compressor, breakers etc, (I R 250)	hrs			Rate Only
1.5.2.6		Mobile crane (Grove 18 t)	hrs			Rate Only
1.5.2.7		Tip truck (10 m3 minimum)	hr			Rate Only
1.5.2.8		Water truck (9 kl minimum)	hr			Rate Only
1.5.2.9		50 mm centrifugal pump	hr			Rate Only
1.5.2.10		100 mm centrifugal pump	hr			Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
1.6	PSA 8.8	**TEMPORARY WORKS**				
1.6.1	PSA 8.8.2	**Dealing with Traffic (or accommodation of traffic)**	Sum	1		
		The rate shall cover the full cost of providing appropriate road, road signage in accordance with an approved traffic accomodation plan.				
1.6.2	PSA 8.8.4	**Existing Services**				
1.6.2.1	PSA 8.8.4.1	(a) The use of equipment for detecting services	Sum	1		
1.6.2.2	PSA 8.8.4.2	(c) Hand excavation necessary for locating and exposing existing services in all material	m^3	50		
1.6.2.3		d) Temporary protection of existing services	Sum	1		
					TOTAL SECTION-1 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	**SANS 1200 C**	**SCHEDULE 2: MEDIUM PRESSURE PIPELINE**				
2.1		**SECTION 2-1: SITE CLEARANCE**				
2.1.1	**8.2**	**CLEAR AND GRUB SITE (incl. removal of vegetation):**				
2.1.1.1	8.2.1	(a) Clear pipeline routes not falling into road reserves to a width of 1,5m from centre line and remove to spoil	m	600		
2.1.2	**8.2.2**	**REMOVE AND GRUB LARGE TREES AND TREES STUMPS OF GRITH:**				
2.1.2.1	8.2.2.1	*Clear trees of girth up to 2m, in roadways, cut trunks into lengths of 1.5m, remove trunk sections to stockpile and remove remaining material to designated spoil sites.*	No.	2		
2.1.3	**8.2.3**	**REMOVE AND GRUB ALL TREES AND TREES STUMPS REGARDLESS OF GRITH:**	ha	0		Rate Only
		Rate shall cover all operations				
2.1.4	**8.2.9**	**TRANSPORT MATERIALS AND DEBRIES TO UNSPECIFIED SITE AND DUMP (PROVISIONAL)**				
2.1.4.1		(a) Transport all redundant materials to approved municipal dumpsite	t.km	0		Rate Only
2.1.4.2		(b) Remove redundant pipe material and building material that remain on site from construction activities to a municipal dumpsite of the contractor's choice, approved by the Engineer	t.km	0		Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.2	SABS 1200DB	SECTION 2.2: EARTHWORKS (PIPE TRENCHES)				
2.2.1	8.3.2	EARTHWORKS (PIPE TRENCHES)				
2.2.1.1	8.3.2 (a)	**Excavate in all materials for trenches, backfill,compact and dispose of surplus/unsuitable material to approved dump site as instructed by the Engineer for:**				
2.2.1.1.1		(i) Pipes smaller and equal to 200 mm dia and depth exceeding 1,0m but not exceeding 1,5m	m	600		
2.2.1.1.2		(ii) Pipes smaller and equal to 200 mm dia and depth exceeding 1,5m but not exceeding 2 m	m	0		Rate Only
2.2.1.2	8.3.2(b)	**Extra-over item (2.2.1.1) above for :**				
2.2.1.2.1		(i) Intermediate excavation	m^3	55		
2.2.1.2.2		(ii) Hard rock excavation	m^3	492		
2.2.1.2.3		(iii) Hand excavation in soft material to make connections to existing pipelines	m^3	50		
2.2.1.3	8.3.2 (c)	Excavate and dispose of unsuitable material from trench bottom and replace with sandy material (Provisional)	m^3	6		
2.2.2	PSDB 8.3.3	EXCAVATION ANCILLARIES				
2.2.2.1	PSDB 8.3.3.1	**Make up deficiency in backfill material for main fill in layers of 150mm to 95% Mod AASHTO DENSITY from: (Prov.)**				
2.2.2.1.1		(a) from other necessary excavations on site	m^3	0		Rate Only
2.2.2.1.2		(b) by importation from designated borrow pit	m^3	0		Rate Only
2.2.2.1.3		(c) by importation from commercial or off site sources selected by the Contractor	m^3	55		0.00
2.3.2.1.3	PSDB 3.5	(c) Soilcrete Backfilling (5% cement)	m^3	0		Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.2.3	**8.3.5**	***SERVICES THAT INTERSECT A TRENCH***				
		Services that intersect/run along a trench (provisional)				
2.2.3.2		(a) Water pipes	No	1		
2.2.3.3		(b) Sewer pipes	No	1		
2.2.3.4		(c) Stormwater pipes	No	0		Rate only
2.2.3.5		(d) Electrical cables	No	1		
2.2.3.6		(e) 300 mm dia NamWater Watermain	No	1		
2.2.4	**8.3.6**	**FINISHING**				
	PSDB 8.3.3.3	**Finishing Reinstate road surfaces complete with all courses including temporary accommodation of traffic, incl signs and bypasses**				
2.2.4.1		(a) Gravel wearing course roads	m^3	64		
2.2.4.2		(a) Bitumen standar roads	m^3	64		Rate Only
2.3	**SABS 1200LB**	**SECTION 2.3: BEDDING (PIPE TRENCHES)**				
2.3.1	**8.2.**	**CONSTRUCT CLASS C BEDDING CRADLE AND COMPACT TO 90% Mod AASHTO DENSITY FROM:**				
		Available from other necessary excavations on site within 0,5 km:				
2.3.1.1.1	8.2.1	a) Selected granular material	m^3	9		
2.3.1.1.2		b) Selected fill material from other excavations on site	m^3	28		
		Imported from				
2.3.1.2	8.2.2.3	c) Commercial sources (Provisional) on instruction and includin overhaul				
2.3.1.2.1		1) Selected granular material	m^3	38		
2.3.1.2.2		2) Selected fill material	m^3	114		
2.3.1.3	8.2.3	Concrete bedding (Provisional)	m^3	0		Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.4	SABS 1200 L	**SECTION 2.4: MEDIUM PRESSURE PIPELINES**				
2.4.1	8.2.1	**Supply, lay, joint, and disinfect uPVC class 16 pipes (SABS 966) socketed for O-ring mechanical jointing complete with rubber ring sealers:**				
2.4.1.1		(a) 90mm diameter	m	0		Rate Only
2.4.1.2		(b) 110mm diameter	m	50		
2.4.1.3		(c) 160mm diameter	m	500		
2.4.1.4		(d) 200mm diameter	m	50		
2.4.1.5		(e) 250mm diameter	m	0		Rate Only
2.4.2	8.2.1	**Supply, lay, joint, and disinfect HDPE class 10 pipes (SABS 966) socketed for mechanical jointing complete with couplings and test:**				
2.4.2.1		(a) 32mm diameter	m	0		Rate Only
2.4.2.2		(b) 50mm diameter	m	0		Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.4.3	**SABS 1200 L**	**Specials and Fittings for uPVC Pipes - Class 16 complete with couplings for:**				
	8.2.2	Supply, lay, joint, bed, cut pipes, test and disinfect extra-over item **2.4.1** for pipework				
2.4.3.1		***Bends***				
2.4.3.1.1		200 mm diam. 90 deg.	No	1		
2.4.3.1.2		200 mm diam. 45 deg.	No	1		
2.4.3.1.3		200 mm diam. 22,5 deg.	No	0		Rate only
2.4.3.1.4		200 mm diam. 11,25 deg.	No	0		Rate only
2.4.3.1.5		160 mm diam. 90 deg.	No	5		
2.4.3.1.6		160 mm diam. 45 deg.	No	2		
2.4.3.1.7		160 mm diam. 22,5 deg.	No	2		
2.4.3.1.8		160 mm diam. 11,25 deg.	No	1		
2.4.3.1.9		110 mm diam. 90 deg.	No	2		
2.4.3.1.10		110 mm diam. 45 deg.	No	2		
2.4.3.1.11		110 mm diam. 22,5 deg.	No	1		
2.4.3.1.12		110 mm diam. 11,25 deg.	No	1		
2.4.3.1.13		90 mm diam. 90 deg.	No	0		Rate only
2.4.3.1.14		90 mm diam. 45 deg.	No	0		Rate only
2.4.3.1.15		90 mm diam. 22,5 deg.	No	0		Rate only
2.4.3.1.16		90 mm diam. 11,25 deg.	No	0		Rate only
2.4.3.2		***Equal Tees (Plain-ended);***				
2.4.3.2.1		250 mm dia	No	0		Rate only
2.4.3.2.2		200 mm dia	No	0		Rate only
2.4.3.2.3		160 mm dia	No	2		
2.4.3.2.4		110 mm dia	No	0		Rate only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.4.3.3		***Cross Tees***				
2.4.3.3.1		200 mm dia	No	0		Rate only
2.4.3.3.2		160 mm dia	No	0		Rate only
2.4.3.3.3		110 mm dia	No	0		Rate only
2.4.3.3.4		90 mm dia	No	0		Rate only
2.4.3.4		***SGI Reducing Tee***				
2.4.3.4.1		200 mm x 160 mm dia	No	0		Rate only
2.4.3.4.2		200 mm x 110 mm dia	No	0		Rate only
2.4.3.4.3		160 mm x 110 mm dia	No	0		Rate only
2.4.3.4.4		160 mm x 90 mm dia	No	0		Rate only
2.4.3.4.5		110 mm x 90 mm dia	No	0		Rate only
2.4.3.4.6		110 mm x 75 mm dia	No	0		Rate only
2.4.3.5		***SGI Hydrant Tees***				
2.4.3.5.1		200 mm dia	No	0		Rate only
2.4.3.5.2		160 mm dia	No	0		Rate only
2.4.3.5.3		110 mm dia	No	0		Rate only
2.4.3.5.4		90 mm dia	No	0		Rate only
2.4.3.6		***SGI Reducers: Male/Female reducer (spigot & socket)***				
2.4.3.6.1		200 mm x 160 mm dia	No	0		Rate only
2.4.3.6.2		200 mm x 110 mm dia	No	0		Rate only
2.4.3.6.3		160 mm x 110 mm dia	No	0		Rate only
2.4.3.6.4		160 mm x 90 mm dia	No	0		Rate only
2.4.3.6.5		110 mm x 90 mm dia	No	0		Rate only
2.4.3.7		***SGI End Caps***				
2.4.3.7.1		200 mm dia	No	0		Rate only
2.4.3.7.2		160 mm dia	No	1		
2.4.3.7.3		110 mm dia	No	0		Rate only
2.4.3.7.4		90 mm dia	No	0		Rate only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.4.3.8	**8.2.3**	**Supply & Install PN16 Resilient Seal Gate Valve spigot (AVK or similar approved), non-rising spinde, inclusive of all nuts, bolts & gasket seals in accordance with the drawings including cut pipes where necessary and test;**				
3.4.3.8.1		200 mm dia for 200 mm dia uPVC	No	0		Rate only
3.4.3.8.2		150 mm dia for 160 mm dia uPVC	No	0		Rate only
3.4.3.8.3		100 mm dia for 110 mm dia uPVC	No	0		Rate only
3.4.3.8.4		80 mm dia for 75 & 90 mm dia uPVC	No	0		Rate only
3.4.3.8.5		Air valves 25mm single orifice type	No	0		Rate only
3.4.3.8.6		Pressure reducing Valve to suit 200mm dia	No	0		Rate only
3.4.3.8.7		110mm Non-return Valve to SANS	No	0		Rate only
3.4.3.8.8		Extension spindles up to 300 mm deep	No	0		Rate only
2.4.3.10	8.2.11	***Anchor/Thrust Blocks & Pedestals***				
		Anchor/thrust blocks and pedestals as per detail drawing (Concrete class 20 Mpa) ,to be cast into open trench and against undisturbed soil, inclusive of formwork as required:				
2.4.3.10.1		200 mm dia fittings	No	2		
2.4.3.10.2		160 mm dia fittings	No	10		
2.4.3.10.3		110 mm dia fittings	No	6		
2.4.3.10.4		90 mm dia fittings	No	0		Rate only
2.4.3.11	8.2.13	***Valve Chambers and Manholes***				
		Construct Valve / Hydrant Chambers complete as per the typical drwaings				
2.4.3.11.1		a) Valve chambers to SANS drawing L-1 (Refer to Typical Drg.)	No	0		Rate only
2.4.3.11.2		b) Hydrant chambers to SANS drawing L-2 (Refer to Typical Drg.)	No	0		Rate only
2.4.3.11.3		c) Air valve chambers to Typical Drawing	No	0		Rate only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
2.4.3.13		***Expose & Connection to Exisitng Mains***				
		Connections to the existing main including excavations, cutting in, local authority liaison, connecting and making good to the satisfaction of the Engineer;				
2.4.3.13.1		a) 200mm dia uPVC pipelines	No.	0		Rate only
2.4.3.13.2		b) 160mm dia uPVC pipelines	No.	2		
2.4.3.13.3		c) 110mm dia uPVC pipelines	No.	0		Rate only
2.4.3.14		***Pipe Markers***				
2.4.3.14.1		Supply and install marker blocks for Water pipeline as indicated on drawing	No	2		
2.4.3.15		***Stand Pipes***				
		Supply and Install complete with fittings	No	0		Rate only
					TOTAL SECTION-2 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	**SANS 1200 D**	**SCHEDULE 3: EARTHWORK**				
		-				
3.1	**8.3.1**	**SITE CLEARANCE:**				
3.1.1	8.3.1.2	Clear and strip bulk water storage infrastracture site, 150mm, and transport material to spoil sites (Rate shall cover removal of vegetation)	m^2	2800		
3.20	**8.3.2**	**BULK EARTHWORKS**				
3.2.1		(a) Excavate in all materials, safeguard excavation, dewater, use for terrace fill (embankmet) or backfill and compact to 98% Mod AASHTO and/or place excess material within freehaul distance as orderd by Engineer:	m^3	588		
3.2.2		(b) Extra-over item (a) above for :				
3.2.2.1		(i) Intermediate excavation	m^3	50.00		
3.2.2.2		(ii) Hard rock excavation	m^3	580.00		
3.3	**8.3.3**	**RESTRICTED EXCAVATION**				
3.1.1		(a) Excavate in all materials, safeguard excavation, dewater, use for embankmet or backfill and compact to 93% Mod AASHTO and/or place excess material within freehaul distance as orderd by Engineer for:				
3.3.1.1		(a) Foundation and footings of varying widths for pump house	m^3	50.00		
3.3.1.2		(b) Foundation and footings of varying widths of boundary wall	m^3	0.00		
3.3.1.3		(c) Metering manhole	m^3	18.00		
3.3.1.4		(d) Electrical and other trenches (provisional)	m^3	10		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
3.4	8.3.4	IMPORTATION OF MATERIAL				
3.4.1		(a) importation of materials from ommercial sources or fom borrow pits for filling of terrace compacted to 95% MOD AASHTO				
3.4.1.1		(a) Selected fill material (G7)	m^3	320.00		
3.4.1.2		(b) Selected fill material stablized with 10% cement where directed by the Engineer	m^3	80		
					TOTAL SECTION 3 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	SABS 1200G	SECTION 4: CONCRETE STRUCTURES				
4.1		FORMWORK				
4.1.1	8.2.1	(a) Rough				
4.1.1.1		(i) vertical below ground for footing edges	m²	23		
4.1.2	8.2.2	(b) Smooth				
4.1.2.1		(i) vertical to dwarf walls	m²	160		
4.1.2.2		(ii) vertical to stub colums	m²	18		
4.1.2.3		(iii) vertical walls of matermeter manhole	m²	41		
4.1.2.4		(iv) horizontal to slab soffits	m²	11		
4.1.3	8.2.5	(c) Narrow width (up to 300mm wide or high)				
		a) Smooth Vertical:				
4.1.3.1		(a) sides of footings and foundation slabs	m	84		
4.1.3.2		(b) Beams	m	22		
4.1.3.3		(c) Stair risers, stair sides, ramp sides	m	6		
		b) Smooth Horizontal				
4.1.3.4		(a) Beams	m	0		Rate Only
4.1.4	8.25	Chamfers exceeding 20mm face width				
4.1.4.1		(a) Chamfer 25mm x 25mm	m	13		
4.1.5	8.2.6	Box out holes/form voids				
4.1.5.1		(a) Small, other shapes, up to 0,5 m² in area	No	0		Rate Only
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
4.2	**8.3**	**REINFORCEMENT**				
		Rate should cover supply and fix as shown in the drawings				
4.2.1	**8.3.1**	(a) High-tensile steel bars	t	18		
4.2.2	**8.3.2**	(b) High-tensile welded mesh ref 395	m^2	14		
4.2.3	**8.3.2**	(c) High-tensile welded mesh ref 617	m^2	21		
4.3	**8.4**	**CONCRETE**				
4.3.1		**(a) In-situ cast Concrete Strength**				
4.3.1.1	**8.4.2**	(i) 50mm Blinding Layer (15Mpa)	m^3	13		
4.3.1.2		(ii) 1:10 cement:sand Soilcrete below footings	m^3	118		
4.3.2	**8.4.3**	**(iii) Strength concrete: 25 MPa/19 mm for:**				
4.3.2.1		(i) Strip Footings	m^3	3.5		
4.3.2.2		(ii) Surfacebeds	m^3	3.1		
4.3.2.3		(iii) Apron & Ramp	m^3	1.7		
4.3.2.4		(iv) Water meter manhole	m^3	11.9		
4.3.3	**8.4.3**	**(iv) Strength concrete: 30 MPa/19 mm for:**				
4.3.3.1		(i) Ringbeam	m^3	1.5		
4.3.3.2		(i) Pump Plinth	m^3	1.4		
4.3.4	**8.4.3**	**(v) Strength concrete: 35 MPa/19 mm for:**				
4.3.4.1		(i) Ground reservior foundation & dwarf walls	m^3	52		
4.3.4.2		(ii) Elevated Reservior foundation & stub colum	m^3	55		
4.4	**8.4.4**	**UNIFORMED CONCRETE SURFACE FINISHES**				
4.4.1		(a) Wood-floated finish	m^2	279		
4.4.2		(b) Steel-floated finish	m^2	0		Rate Only
4.5	**8.7**	**GROUTING**				
4.5.1		(a) ABE Durogrout or similar approved non-shrink grout under bases and plinths	m^3	0.5		
					TOTAL SECTION-4 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	**SABS 1200 H**	**SECTION 5: STRUCTURAL STEELWORK**				
5.1	**8.3.1**	**STEEL WATER STORAGE TANKS**				
5.1.1	**8.3.1.2**	**Design, fabrication Supply and installation of steelwork**				
		The rate shall cover the cost of design, trial assembly (if required) and fabrication, supply, and installation/erection of the steelwork complete with all necessary cleats, brackets, gussets, shop fasterners, pack, baseplates and				
5.1.1.1		(a) 254.2m³ (8.54m x 6.1m x 4.88m) pressed hot dip galvinized elevated water tank (ABECO or similar approved) including a 20m stand complete with support steel structure, lockable access & inspection manholes, caged access lader, landing, walkway (flooring) around tank base, handrailers. *Refer to the Bid drawings and make provision for all the required tank components (excluding foundation & pipework priced elsewhere).*	Sum	1		
5.1.1.2		(b) 559m³ (13.42m x 8.54m x 4.88m) pressed steel ground hot dip galvinized steel tank (Abeco or similar approved) complete with lockable access & inspection manholes, caged access lader, handrailers. *Refer to the Bid drawings and make provision for all the required tank components (foundation & pipework priced elsewhere).*	Sum	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
5.2	8.3.1	**STEEL SUNDRY ITEMS**				
		Supply, fabricate, transport or install complete, as detailed on the drawings the following pipes and specials:				
5.2.1		(a) Supply and install manhole cover and frame: Type 9E: 600 mm x 900 mm as detailed on drawings.	No	1		
5.2.2		(b) 6mm tick chequer plate for water meter manhole cover, complete with all the steel structural parts as detailed on the drawing.	Sum	1		
5.2.3		(c) I-Beam - L: 5000 mm, c/w 254 x 146 x 31kg/m (capacity 1.5 t) galvanised I-beam complete with stop ends and painted to ISO 8501 marine C5 specification.	No	1		
5.2.4		(d) Crawler/Trolley with anti-Drop and anti-tilt features (2 ton yale CBTP - Push type or similar and approved)	No	1		
5.2.5		(e) Supply,install and paint 4m wide steel sliding gate with guide locking mechanism and bolts as detailed on bid drawings	No	1		
5.2.6		(f) corrosion protection for all steel works	Sum	1		
5.2.7		(g) Disinfection of storage tanks and pipe works	Sum	1		
5.2.8		(h) Lightning protection of water storage tanks	Sum	1		
					TOTAL SECTION-5 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	PS-PD	SECTION 6: PIPEWORKS FOR WATER TANKS				
	PS-PD 9	SUPPLY/FABRICATE, TRANSPORT, DELIVER, STORE, INSTALL COMPLETE, TEST AND COMMISSION THE FOLLOWING HOT-DIP GALVANIZED PIPES AND SPECIALS. REFER TO PIPE & EQUIPMENT SCHEDULE DRAWING AND SPECIFICATIONS.				
6.1		GROUND WATER RESERVOIR PIPEWORK				
6.1.1		INLET PIPEWORKS				
6.1.1.1	Item 1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No	1		
6.1.1.2	Item 2	150NB STEEL PIPE, 240mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE AND OUTSIDE TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.1.3	Item 3	150NB STEEL PIPE, 225mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.1.4	Item 4	150NB STEEL PIPE, 4000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.1.5	Item 5	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.1.1.6	Item 6	150NB STEEL PIPE, 1560mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.1.2		**OUTLET PIPEWORKS**				
6.1.2.1	**Item 1**	150NB STEEL PIPE, 150mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.1.2.2	**Item 2**	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.2.3	**Item 3**	150NB STEEL PIPE, 1420mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.2.4	**Item 4**	150NB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.2.5	**Item 5**	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No	1		
6.1.3		**OVERFLOW AND DRAIN PIPEWORKS**				
6.1.3.1	**Item 1**	200NB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.1.3.2	**Item 2**	200NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.3	**Item 3**	200NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.1.3.4	**Item 4**	200NB STEEL PIPE, 730mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.5	**Item 5**	200NB x 150NB REDUCING TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.1.3.6	**Item 6**	150NB STEEL PIPE, 252mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.7	**Item 7**	150NB STEEL PIPE, 715mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
6.1.3.8	**Item 8**	150NB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.9	**Item 9**	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.10	**Item 10**	150NB STEEL PIPE, 450mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.11	**Item 11**	150NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
6.1.3.12	**Item 12**	200NB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.1.3.13	**Item 13**	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.2		ELEVATED RESERVOIR PIPEWORK				
6.2.1		INLET PIPEWORKS				
6.2.1.1	Item 1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No	1		
6.2.1.2	Item 2	150NB STEEL PIPE, 240mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE AND OUTSIDE TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.1.3	Item 3	150NB STEEL PIPE, 2000mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.1.4	Item 4	150NB STEEL PIPE, 2740mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.1.5	Item 5	150NB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.2.1.6	Item 6	150NB STEEL PIPE, 3000 mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	2		
6.2.1.7	Item 7	150NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	4		
6.2.1.8	Item 8	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.2.2		OUTLET PIPEWORKS				
6.2.2.1	Item 1	150NB STEEL PIPE, 140mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.2.2.2	Item 2	150 NB KNIFE GATE VALVE (SIMILAR TO "AVK") FLANGED BOTH ENDS, FLANGE: SABS 1123 - 1000/3	No.	1		
6.2.2.3	Item 3	150 NB DISMANTLING JOINT SIMILAR TO "KLAMFLEXT" FLANGED BOTH ENDS. FLANGE: SABS 1123 - 1000/3	No.	1		
6.2.2.4	Item 4	150NB STEEL PIPE, 940mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.2.5	Item 5	150NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	5		
6.2.2.6	Item 6	150NB STEEL PIPE, 3690mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.2.7	Item 7	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.2.3		**OVERFLOW AND DRAIN PIPEWORKS**				
6.2.3.1	**Item 1**	200NB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.2.3.2	**Item 2**	200NB STEEL PIPE, 2080mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.3	**Item 3**	200NB STEEL PIPE, 2230mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.4	**Item 4**	200NB x 150NB REDUCING TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.5	**Item 5**	150NB STEEL PIPE, 100mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	1		
6.2.3.6	**Item 6**	150NB STEEL PIPE, 405mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.7	**Item 7**	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.8	**Item 8**	150NB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.2.3.9	**Item 9**	150NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
6.2.3.10	**Item 10**	200NB STEEL PIPE, 240mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	1		
6.2.3.11	**Item 11**	200NB STEEL PIPE, 3115mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	2		
6.2.3.12	**Item 12**	200NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	4		
6.2.3.13	**Item 13**	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.3	PS-PD 9	WATER METER AND BY-PASS MANHOLE PIPEWORK				
6.3.1	Item 1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No	4		
6.3.2	Item 2	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	2		
6.3.3	Item 3	150NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	No.	5		
6.3.4	Item 4	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	5		
6.3.5	Item 5	150NB EQUAL TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No	2		
6.3.6	Item 6	150NB STEEL PIPE, 410 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	3		
6.3.7	Item 7	DN150, PN16, N100 OPTIMA MULTI-JET WATER METER, CLASS C COMPLETE WITH COUPLINGS, FITTINGS, PIPE WORK, ETC	No.	2		
6.3.8	Item 8	150NB STEEL PIPE, 350mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	2		
6.3.9	Item 9	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	No.	2		
					TOTAL SECTION-6 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION	PS-PF	SECTION 7: PUMP STATION - BUILDING WORKS				
7.1	PF 5.2.1.4	DPC				
7.1.1		(a) Supply and install 250 micron DPC between foundation and superstructure - 220mm brick walls	m	20		
7.1.2		(b) Supply and install 250 micron DPC between foundation and superstructure - 110mm brick walls	m	0		Rate Only
7.1.3		(c) Supply and install 250 micron DPC below surface beds	m²	49		
7.2	PF5.2.1.1	GENERAL BRICKWORK				
		Construct brickwork of varying strengths with class 2 mortar, including brickforce in every 4th brick course for superstructure and every 2nd course for foundation brick.				
7.2.1		(a) 220mm brick walls in foundations, 14MPa super brick	m²	20		
7.2.2		(b) 220mm brick walls in superstructure, 7MPa super brick	m²	54		
7.2.3		(c) 110mm brick walls in superstructure, 7 MPa Super brick	m²	0		Rate Only
7.3	PF 5.2.2	PLASTERING				
7.3.1		(a) One coat wood floated plaster to external brickwork (10mm)	m²	54		
7.3.2		(b) One coat of steel floated plaster to Internal brickwork (10mm)	m²	54		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
7.4	PF 5.2.3	**DOORS AND WINDOWS**				
		Supply and install all inclusive of all ironmongary				
7.4.1		(a) NG4/G4H meranti window complete with burglar bars	No	1		
7.4.2		(b) 900mm x 745mm WISPECO Vermi Proof Steel Louver	No	2		
7.4.3		(c) WISPECO type D (D.V with gauzed vent at bottom) Transformer room door or similar approved with locking mechanism	No.	1		
7.5	PF 8.3.8	**ROOF STRUCTURES**				
		Supply and construct roof for the main pumpstation puilding as per the bid drawings:				
7.5.1		(a) Roof truss; 75x50x20x3mm CFLC welded to 50x50x5mm angle irons as Purlins @ max. 1100mm C/C On 50x50x5mm trusses @ max. 3000mm C/C bolted to concrete ring beam with 2x Y12 holding down bolts.	P C Sum	1		
7.5.2		(b) 0.6mm Galv IBR Roof Sheeting, complete with 300mm x 10mm Thk fascia and eaves closure	m²	38		
7.5.3		(c) Fibre Cement Ridge Cap	m	17		
7.5.4		(d) 15 mm Rhino gypsum plasterboard ceiling including 38 x38mm with SA pine brandering at 400mm centres maximum. Ceiling smooth skimmed with cornices	m²	25		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
7.6	Pf 8.3.10	**PAINTING**				
7.6.1		Paint inside and outside of building walls using a raw cement primer as undercoat, followed by two layers of acrillic PVA. NEO (color by engineer/client)	m^2	108		
7.6.2		Paint Fascias with oil based paint	m^2	5		
7.6.3		Paint the roof using 2 x coats approved acrillic PVA	m^2	38		
7.6.4		Ceiling painted with Polyurethane acrylic enamel coating	m^2	25		
7.7		**SUNDRY ITEMS**				
7.7.1		Supply and install electrical sleeves in the pump building as required	Sum	1		
7.7.2		Supply and and install Ø300mm whillybird as per the schedule and specifications	no	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
7.8	1200 GA	SUPPLY AND ERECT SECURITY FENCING				
		MASS CONCRETE				
6.2.1		Mass concrete (Class 15 MPa) fence kerb size 200 x 300 mm including excavation 200 mm deep and all necessary formwork, finished smooth on all exposed surfaces.	m	278.00		
6.2.2		300 x 300 x 650 mm Deep mass concrete (Class 25 MPa) base for intermediate including formwork and excavation 750 mm deep.	No	93		
6.2.3		450 x 450 x 500 mm Deep mass concrete (Class 25 MPa) base for cornor and straining post including formwork and excavation 900 mm deep.	No	15		
6.2.4		550 x 500 x 800 mm Deep mass concrete (Class 25 MPa) base for gate post including formwork and excavation 900 mm deep.	No	4		
6.2.5		600 x 600 x 600 mm Deep mass concrete (Class 25 MPa) base for stay including formwork and excavation 600 mm deep.	No	30		
6.3		METALWORK				
6.3.1		Razor mesh security fencing 2400mm high vertically with 600mm long 45° overhang to one side formed of 50mm diameter standards 3000mm long with 600mm overhang cast into and including 300 x 300 x 750mm 20MPa concrete base at average 3m centres, six rows of galvanised straining wires and four rows of 2.5mm galvanised double strand reverse twist barbed wires tied to standards, posts and eye bolts, the 2400mm vertical height covered with 50mm galvanised diamond wire mesh fixed at 300mm centres to each straining wire	m	278.00		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.3.2		Extra over for Razor Coil to top of security fencing in lieu of four rows of barbed wire	m	300		
6.3.3		Brace 3,1 m long formed of six strands of straining wire fixed diagonally between posts, looped around posts and tightly twisted.	No	6		
6.3.4		50 mm Diameter x 2,5 mm thick galvanised intermediate post 3 250 mm long overall including 600 mm long overhang at 45 degrees mitred and welded on, fitted with welded capped top and with 200 x 200 x 5 mm base plate welded on, the whole ten times holed for wires and with bottom end cast into concrete base (elsewhere measured).	No	93		
6.3.5		140 mm Diameter x 4,5 mm thick galvanised end post 3 250 mm long overall including 600 mm long overhang at 45 degrees mitred and welded on, fitted with welded capped top and with 200 x 200 x 5 mm base plate welded on, the whole ten times holed for wires and with bottom end cast into concrete base (elsewhere measured) and with one 50 mm diameter x 2,5 mm thick stay 3 150 mm long with top end flattened, bent and bolted to post and bottom end with 200 x 200 x 5 mm base plate welded on and cast into concrete base (elsewhere measured).	No	4		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
6.3.6		100 mm Diameter x 4,5 mm thick galvanised corner or straining post 3 250 mm long overall including 600 mm long overhang at 45 degrees mitred and welded on, fitted with welded capped top and with 200 x 200 x 5 mm base plate welded on, the whole ten times holed for wires and with bottom end cast into concrete base (elsewhere measured) and with two 50 mm diameter x 2,5 mm thick stays, each stay 3 150 mm long with top end flattened, bent and bolted to post and bottom end with 200 x 200 x 5 mm base plate welded on and cast into concrete base (elsewhere measured).	No	15		
6.4		**GATES IN SECURITY FENCING**				
6.4.1		Gate size 4000 x 2350mm high overall in two equal leaves with 600mm long 45° overhang with barbed wire and covered with 50mm galvanised diamond wire mesh as for fencing and with suitable eye-bolt hinges and 300mm long galvanised dropbolts fixed in position complete	No	1		
6.4.2		Gate size 1000 x 2350mm high overall with 600mm long 45° overhang with barbed wire and covered with 50mm galvanised diamond wire mesh as for fencing and with suitable eye-bolt hinges and 300mm long galvanised dropbolts fixed in position complete	No	1		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
7.9	SABS 1200MJ	SECTION G: SEGMENTED PAVING				
		-				
7.9.1		**Construct subbase with imported material in all materials for all roads including overhaul**				
7.9.1.1		(a) 150mm G5 Subbase compacted to 97% modified AASHTO maximum density	m^3	216		
7.9.1.2		(b) Extra over for ordinary Portland cement as additive (50kg)	Bag	40		
7.9.2	8.2.2	**Construct precast concrete segmented paving complete with 20mm clean sand bedding:**				
		Standard grey double zig-zag interlocking roadstone with fly-ash additive paving with open joints on 20mm thick river sand bed with sand and cement mixture swept into joints, hose down including bedding, jointing and pointing				
7.9.2.1		(a) Lay 60mm 30MPa grey interlocks	m^2	1,440.00		
7.9.2.2		(b) Lay 80mm thick, 40MPa Concrete Pavers	m^2	0		
7.10	SABS 1200MK	SECTION F: KERBING AND CHANNELLING				
		Supply and install standard precast concrete kerbs finished smooth on exposed surfaces, including bedding, jointing and pointing and 20/19mm MPa mass concrete haunching at junctions SANS 927				
7.10.1	8.2.2	(a) Barrier kerbs 300 x 150mm high without a channel	m	109.00		
7.10.2		(b) Mountable kerb size 300 x 150mm without a channel	m	10.00		
					TOTAL SECTION-7 CARRIED TO SUMMARY	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
SECTION		**SECTION 8: ELECTRICAL AND MECHANICAL WORKS**				
8.1	PS-PN	**SUPPLY, FABRICATE, TRASNSPORT AND INSTALLATION OF BOOSTER PUMPSET BY NON-NOMINATED SUB-CONTRACTOR**				
8.1.1		(a) Booster pumpset (Grundfos Hydro MPC-E 2 CRE 95-2-1 or similar and approved) complete with Electrical Control Board Vertical, multistage, centrifugal pumps - Flow rate; 124 m³/hr - Head; 40m HEAD - Efficiency; 93% - Power 22kW - Frequenxcy 50Hz - Rated Voltage; 3 x 380-415V - Complete with*: * DN 150, 16 BAR manifold Inlet * DN 150, 16 BAR manifold outlet * Mounted on Skid	Prov. Sum	1	657,999.00	657,999.00
8.1.2		(b) Charge required on item (8.1.1) above:	%	657,999.00		
8.2	PS-PQ	**SUPPLY AND INSTALLATION OF BULK ELECTRICAL CONNECTION BY NON-NOMINATED SUB-CONTRACTOR**				
8.2.1		(a) All electrical works including bulk connection, metering, distribuion box, and building and site lighting.	Prov. Sum	1	250,000.00	250,000.00
8.2.2		(b) Charge required on item (8.2.1) above:	%	250,000.00		
					CARRIED FORWARD	

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE (N$)	AMOUNT (N$)
					BROUGHT FORWARD	
8.3	PS PQ	**TESTING, COMISSIONING & HANDOVER**				
8.3.1		Testing & Comissioning	Sum	1.00		
8.3.2		Pump Operation, Maintenance & Spare Parts Manuals: Pump operation, maintenance and spare parts manual to be submited in softcopy and printed neatly and binded in a file.	Sum	1.00		
8.3.3		Supervision During Maintenance Period: Total cost of two (2) visits during the twelve month"s defect liability period including site visit reports	Sum	1.00		
					TOTAL SECTION-8 CARRIED TO SUMMARY	

PART 2 – Employer's Requirements

Section V - Employer's Requirements

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SCOPE OF WORK & SPECIFICATIONS

The project entails the construction of multidisciplinary works, and this bidding document covers the construction of all disciplines i.e. civil works; electrical supply and the mechanical installation. These project specifications and employer's requirement are presented in three (3) portions.

PORTION 1: SPECIFICATION OF THE WORK

The Contractor should take note that the General Description of the Works serves to outline the extent of the works but does not limit the amount of work which may be required of the Contractor under this contract. Reference must be made to the Project Specifications, the Schedule of Quantities, and the Construction Drawings for a more detail description of the works.

The detail description of the required scope of work and project specifications are included under ***Appendix I*** of this contract. The contractor is required to liaise the project requirements under this section with the provided schedule of quantities and allow for all required works accordingly.

PORTION 2; ADDITIONS & AMENDMENTS TO STANDARDIZED SPECIFICATION

This portion contains the variations and additions (amendments) to the Standardized and Particular Specifications applicable to this contract and that are listed in Portion 1 and Portion 3 of this contract. The detail list and description of the required amendments and additions are included under ***Appendix II*** of this Bid document. The contractor is required to liaise the project requirements under this section with the provided schedule of quantities and allow for all required works accordingly.

PORTION 3; PARTICULAR SPECIFICATION

In addition, the following Particular Specifications that are bound into the Portion-3 of this Contract Document shall apply:

PC	FLEXIBLE PIPE COUPLINGS
PD	SUPPLY OF PIPES, SPECIALS AND FITTINGS FOR CIVIL WORKS
PE	SUPPLY OF VALVES, WATER METERS AND OTHER PIPELINE ACCESSORIES FOR CIVIL WORKS
PF	BUILDING CONSTRUCTION
PG	FENCING
PH	DENSO TAPE WRAPPING
PJ	CLEANING AND FINISHING

The detail list and description of the required amendments and additions are included under ***Appendix III*** of this Bid document.

STATUS

PORTION 2 of the Project Specifications supplements the Standardized and Particular Specifications and forms an integral part of the Contract. Should any requirement of the Project Specifications conflict with any requirement of the Standardized or Particular Specifications, the requirement of the Project Specification shall prevail.

If there is any discrepancy between the project specifications and any part of the SANS 1200 standardized specifications, drawings or the schedule of quantities, the order of precedence shall be:

1. Drawings
2. Portion 2: Amendments to the Requirements of the standard Specifications.
3. Portion 1: General Project Description & Specification
4. Portion 3: Particular Specifications
5. Portion 1: Standardized Specification Civil Engineering Construction, SANS 1200
6. Schedule of Quantities

DRAWINGS

*All the required drawings issued for tendering purpose are included under **Annexure-I** of this Bid Document. The drawings should be read in reference to the provided scope of work, project specifications, and schedule of quantities.*

The list of drawings included under ***Annexure I*** of this Bid Document are outlined in the table below.

Drawing No.	Description
2501- CIV-GEN-00-000	Cover page, Locality Map and List of Drawings
2501- CIV-GEN-00-001	Project Nameboard Detail
2501- CIV-WR-00-001	Civil/Structural General Notes
2501- CIV-WR-01-100	General Arrangement Drawing
2501- CIV-WR-01-110	Bulk Supply and Rising Main Layout
2501- CIV-WR-01-200	Ground Reservoir Foundation Layout
2501- CIV-WR-01-201	Elevated Reservoir Foundation Layout
2501- CIV-WR-01-202	Pump House Layout and Section Details
2501- CIV-WR-01-203	Pump House Elevation Layout
2501- CIV-WR-01-204	Pump House Roof Layout and Details
2501- CIV-WR-01-300	Ground Reservoir Piping Details
2501- CIV-WR-01-301	Elevated Reservoir Piping Details
2501- CIV-WR-01-302	Water Meter and Bypass Manhole Details
2501- CIV-WT-01-400	Pump Station M&E Equipment and Pipe Work
2501- CIV-WR-02-200	Typical Fence Details
2501- CIV-WR-02-201	Paving Details
2501- CIV-WR-03-201	Water Typical Detail -1

SUPPLEMENTARY INFORMATION

The Namibian Advanced OH&S Act or Regulations Relating to the Health and Safety of Employees at Work as per Government Notice 156 in Government Gazette 1617 of 1 August 1997 (issued in terms of the Labour Act, 6 of 1992 which has since been repealed by the Labour Act, 11 of 2007), as amended from time to time is included under ***Appendix-III*** *of this Bid Document.*

This specification shall be used in conjunction with all other applicable safety specifications, legislation and regulations in force at the time of the contract. Where unique site specifications are in force, those site specifications shall take precedence over this specification

PART 3 – Conditions of Contract and Contract Forms

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 is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the SCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

(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,[6] 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 shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as **referred to in the SCC.** The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

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

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this

[6] *In lump sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."*

Contractor's Risks

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 of the Site

20.1 The Employer shall, after receiving the Performance security, 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 30 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:

$$\mathbf{P_c = A_c + B_c\ Imc/Ioc}$$

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[7] **specified in the SCC,** representing the nonadjustable and adjustable portions,

[7] *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]*

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 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the SCC.** The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

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 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:

(i) 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.

(ii) the Contractor shall submit the local manpower employment reports as often as it is reasonably requested by the Employer's Representative.

(iii) 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.

(iv) 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.

(v) 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 ***[GCC 41]***, 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 **Kunene Regional Council**
GCC 1.1 (v)	The intended Completion Date for the whole of the works shall be **within Ten (10) months after project site hand over.**
GCC 1.1 (y)	The Project Manager is *Om'kumoh Consulting Engineers cc*
GCC 1.1 (aa)	The Site is located at ***Sesfontein Settlement, next to the Settlements office*** and Locality Map of the area is included in the drawings list.
GCC 1.1 (dd)	"The Project Start Date shall **be *within 15 days after appointment.***
GCC 1.1 (hh)	The Works consist of construction of bulk water storage infrastructure
GCC 2.2	Sectional Completions are; w*ill be arranged with the Project Manager.*
GCC 2.3(i)	The following documents also form part of the Contract: - Appointment letter and Contractor's acceptance letter - Approved construction program - Relevant and mentioned standard regulations to be obtained by the Contractor's at his own cost.
GCC 5.1	The Project manager *may not* delegate any of his duties and responsibilities.
GCC 6.1	Delivery address for notices is: Employer: ***Kunene Regional Council*** ***Procurement Management Unit*** ***Private Bag 502, Opuwo*** ***Tel + 264 -65 273950*** ***Fax: +264 65 273077*** ***Opuwo, Kunene Region*** Contractor:

GCC 8.1	Schedule of other contractors: should the contractor wish to employee a sub-contractor for part of the work; a written request should be submitted to the project manager for approval.
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: *the full amount of the works including removal of debris, professional fee etc...* (b) for loss or damage to Equipment: *the replacement value of the equipment that the contractor intends to use on site until the taking over by the Employer.* (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract; *for an amount representing the value of the properties that are exposed to the action of the contractor in the execution of the works. It will extend to the property of the Procuring Entity as well.* (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.* (ii) of other people: This cover shall be for an adequate amount for Third Party extended to the Employer and its representatives. (e) for loss or damage to materials on-site and for which payment have been included in the Interim Payment Certificate, where applicable. 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; ***Referenced in Part 2 (Section V, Portion 1: The Works) of this bid document.***
GCC 20.1	The Site Possession Date(s) shall be: ***within 14 days after project award.***
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: ***Kunene Regional Council to choose one of the followings*** "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. *or* " the competent courts of Namibia"
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: **Not applicable.**
GCC 24.4	*For large contracts with domestic contractor or for contract with foreign contractor:* 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 or in any case of disagreement, by an Arbitrator to be appointed by a judge in Chambers of Namibia. The Arbitrator fees will be borne by the losing party. Any decision of the Arbitrator shall be final and binding to both parties". **Not Applicable**
B. Time Control	
GCC 25.1	The Contractor shall submit for approval a Program for the Works **within 14 days from the date of the Notification of award.**
GCC 25.3	The period between Program updates is ***30*** days. The amount to be withheld for late submission of an updated Program is **N$15 000.00** per incidence.
C. Quality Control	

GCC 33.1	The Defects Liability Period is: ***365*** days (12 months).
GCC 39.7	Interim Payment for Plant and Material on site **is** applicable to **80% of the delivered material value.**
D. Cost Control	
GCC 41.1 (l)	*Claims for extension of the completion date as a result of Adverse Weather Conditions, will have to be supported by certified data by the Namibia Meteorological Service as proof that the weather conditions differ vastly from the average.* *A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Project Manager, all progress on an item or items of work on the critical path of the working programme of the contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the contractor shall make provision in his programme of work for an expected delay 36 working days caused by normal rainy weather, for which he will not receive any extension of time.* *Extension of time during working days will be granted to the degree to which actual days, as defined above, exceed the number of 36 work*ing days.
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. The coefficients for adjustment of prices are: (a) For currency *[N/A]*: (i) *[N/A]* percent nonadjustable element (coefficient A). (ii) *[N/A]* percent adjustable element (coefficient B). (b) For currency *[N/A]*: (i) *[N/A]* percent nonadjustable element (coefficient A). (ii) *[N/A]* percent adjustable element (coefficient B). The Index I for local currency shall be *[N/A]*. The Index I for the specified international currency shall be *[N/A]*. *[These proxy indices shall be proposed by the Contractor, subject to acceptance by the* Employer*]* The Index I for currencies other than the local currency and the specified international currency shall be *[N/A]*. *[These proxy indices shall be proposed by the Contractor, subject to*

	acceptance by the Employer.*]*
GCC 45.1	The proportion of payments retained is: ***10 % from each interim payment certificate and a maximum of 5% of the contract sum after the practical completion.***
GCC 46.1	The liquidated damages for the whole of the Works are ***3%*** per week. The maximum amount of liquidated damages for the whole of the Works is ***10% max of the contract amount.***
GCC 47.1	The Bonus for the whole of the Works is ***N/A***. The maximum amount of Bonus for the whole of the Works is *[N/A]* of the final Contract Price.
GCC 48.1	The Advance Payments shall be: *[N/A]* and shall be paid to the Contractor no later than *[N/A]*.
GCC 49.1	The Performance Security amount is ***10% of the Contract Amount*** (a) Bank Guarantee: ***10% of the Contract Amount.***
E. Finishing the Contract	
GCC 55.1	The date by which operating, and maintenance manuals are required is ***seven (7) days after practical completion.*** The date by which "as built" drawings are required is ***seven (7) days after practical completion.***
GCC 55.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is **N$** ***20 000.00.***
GCC 56.1	Operating and maintenance manuals should be supplied to the employer by the contractor no later than: ***seven (7) days after practical completion***.
GCC 56.1	Amount to be withheld should the maintenance and operation manuals not be provided is: ***N$ 15 000.00.***
GCC 57.2 (g)	The maximum number of days is: ***30 days***.
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 ***10%***.

Section VIII - Contract Forms

[This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.]

Table of Forms

Contract Agreement

THIS AGREEMENT made on the . . . . . .day of . . . . . ., ...,

between ..... (hereinafter "the Employer"), of the one part, and

. . . . .(hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as

..... should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

(a) the Notification of award

(b) the Bid

(c) the Addenda Nos . . . .

(d) the Appendix to the General Conditions of Contract

(e) the General Conditions of Contract;

(f) the Specification

(g) the Drawings; and

(h) the completed Schedules,

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Namibia on the day, month and year indicated above.

Signed by: .....
for and on behalf of the Employer

in the presence of: .....
Witness, Name, Signature, Address, Date

Signed by: .....
for and on behalf the Contractor

in the presence of: .....
Witness, Name, Signature, Address, Date

APPENDIX TO CONTRACT

Performance Security (Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

Date: *[insert date (as day, month, and year) of Bid Submission]*

Procurement Reference No. and title: *[insert no. and title of bidding process]*

Bank's Branch or Office: *[insert complete name of Guarantor]*

Beneficiary: *[insert complete name of Purchaser]*

PERFORMANCE GUARANTEE No.: *[insert Performance Guarantee number]*

We have been informed that *[insert complete name of Supplier]* (hereinafter called "the Supplier") has entered into Contract No. *[insert number]* dated *[insert day and month], [insert year]* with you, for the supply of *[description of goods and related services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a Performance Guarantee is required.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum(s) not exceeding *[insert amount(s[8]) in figures and words]* upon receipt by us of your first demand in writing declaring the Supplier to be in default under the Contract, without cavil or argument, or your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This Guarantee shall expire no later than the *[insert number]* day of *[insert month] [insert year]*,[9] and any demand for payment under it must be received by us at this office on or before that date.

*.....**Bank's seal and authorized signature(s)***

[8] *The Bank shall insert the amount(s) specified in the SCC and denominated, as specified in the SCC, in the currency of the Contract.*

[9] *Dates established in accordance with Clause 18.4 of the General Conditions of Contract ("GCC"), taking into account any warranty obligations of the Supplier under Clause 16.2 of the GCC intended to be secured by a partial Performance Guarantee. The Purchaser should note that in the event of an extension of the time to perform the Contract, the Purchaser would need to request an extension of this Guarantee from the Bank. Such request must be in writing and must be made prior to the expiration date established in the Guarantee. In preparing this Guarantee, the Purchaser might consider adding the following text to the Form, at the end of the penultimate paragraph: "We agree to a one-time extension of this Guarantee for a period not to exceed [six months] [one year], in response to the Purchaser's written request for such extension, such request to be presented to us before the expiry of the Guarantee."*

PART 4 – Additions to the Standard Bid Document

Appendix I: Scope of Work

Appendix-II: Project Standard Specifications

Appendix-III: Project Particular Specifications

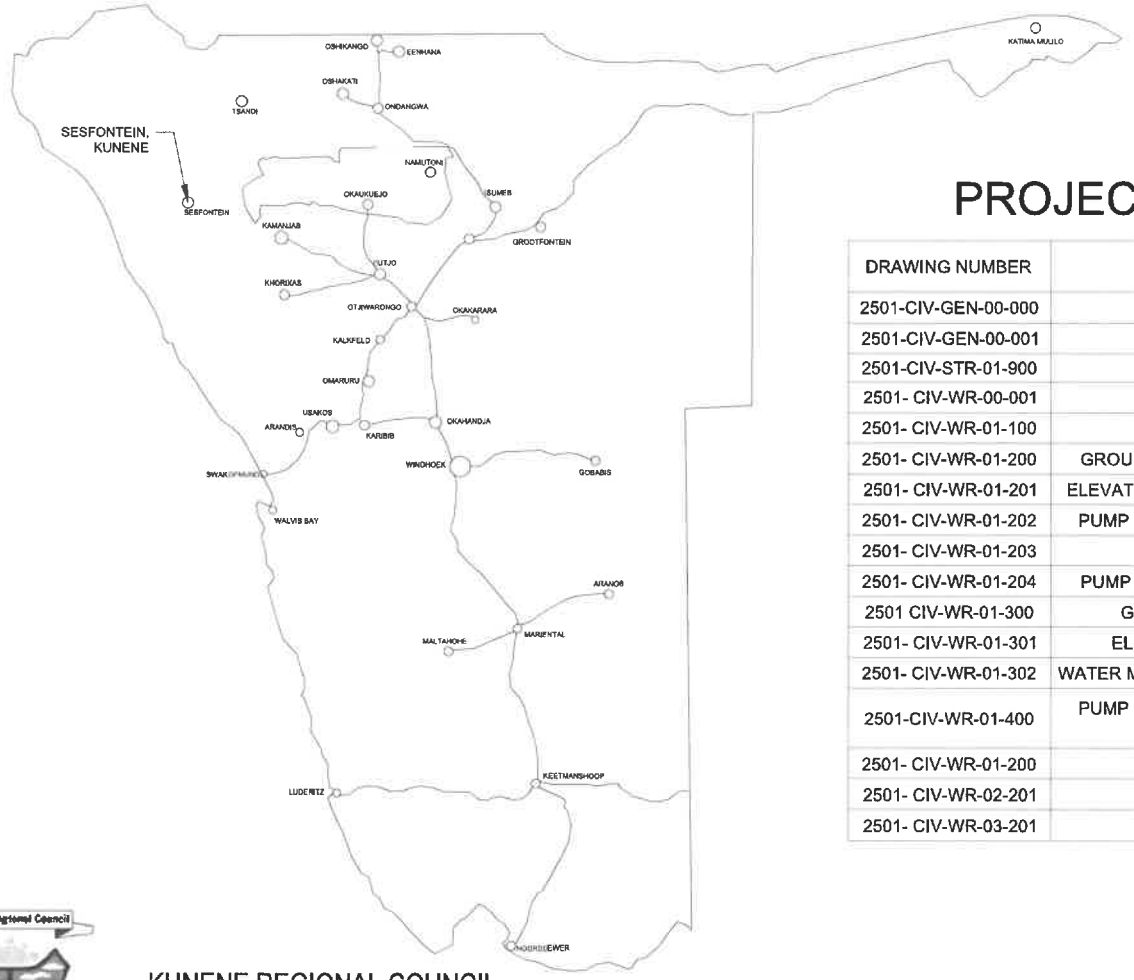
Appendix-IV: Health & Safety Specifications

Annexure-I: Project Drawings Issued for Bid

A1

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN SETTLEMENT IN KUNENE REGION - PHASE 2

LOCALITY MAP



PROJECT DRAWING LIST

DRAWING NUMBER	DESCRIPTION	REV
2501-CIV-GEN-00-000	PROJECT CATALOG	B0
2501-CIV-GEN-00-001	PROJECT NAME BOARD	B0
2501-CIV-STR-01-900	GUARD HOUSE DETAILS	B0
2501- CIV-WR-00-001	CIVIL/STRUCTURAL GENERAL NOTES	B0
2501- CIV-WR-01-100	GENERAL ARRANGEMENT DRAWING	B0
2501- CIV-WR-01-200	GROUND RESERVOIR FOUNDATION DETAIL	B0
2501- CIV-WR-01-201	ELEVATED RESERVOIR FOUNDATION DETAIL	B0
2501- CIV-WR-01-202	PUMP HOUSE LAYOUT & SECTION DETAILS	B0
2501- CIV-WR-01-203	PUMP HOUSE ELEVATION LAYOUT	B0
2501- CIV-WR-01-204	PUMP HOUSE ROOF LAYOUT AND DETAILS	B0
2501 CIV-WR-01-300	GROUND RESERVOIR PIPING DETAILS	B0
2501- CIV-WR-01-301	ELEVATED RESERVOIR PIPING DETAILS	B0
2501- CIV-WR-01-302	WATER METER & BYPASS MANHOLE DETAILS	B0
2501-CIV-WR-01-400	PUMP STATION M&E EQUIPMENT AND PIPE WORK DETAILS	B0
2501- CIV-WR-01-200	TYPICAL FENCE DETAILS	B0
2501- CIV-WR-02-201	PAVING DETAILS	B0
2501- CIV-WR-03-201	WATER TYPICAL DETAIL -1	B0

KUNENE REGIONAL COUNCIL
Private Bag 502
Opuwo, Namibia
Tel No: +264 65 273 950
Fax No: +264 65 273 077

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers

No	REVISION	BY	CK	Ref	DATE
B0	ISSUED FOR TENDER				28-08-2025

GENERAL NOTES:

1. ANY DISCREPANCIES IN DRAWINGS MUST BE REPORTED IMMEDIATELY.
2. NO PART OF THIS DRAWING MAY BE SCALED.
3. ALL DIMENSIONS SHOULD BE CHECKED BEFORE ANY WORK ON THE SITE COMMENCES.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT
KUNENE REGIONAL COUNCIL

CONSULTANTS

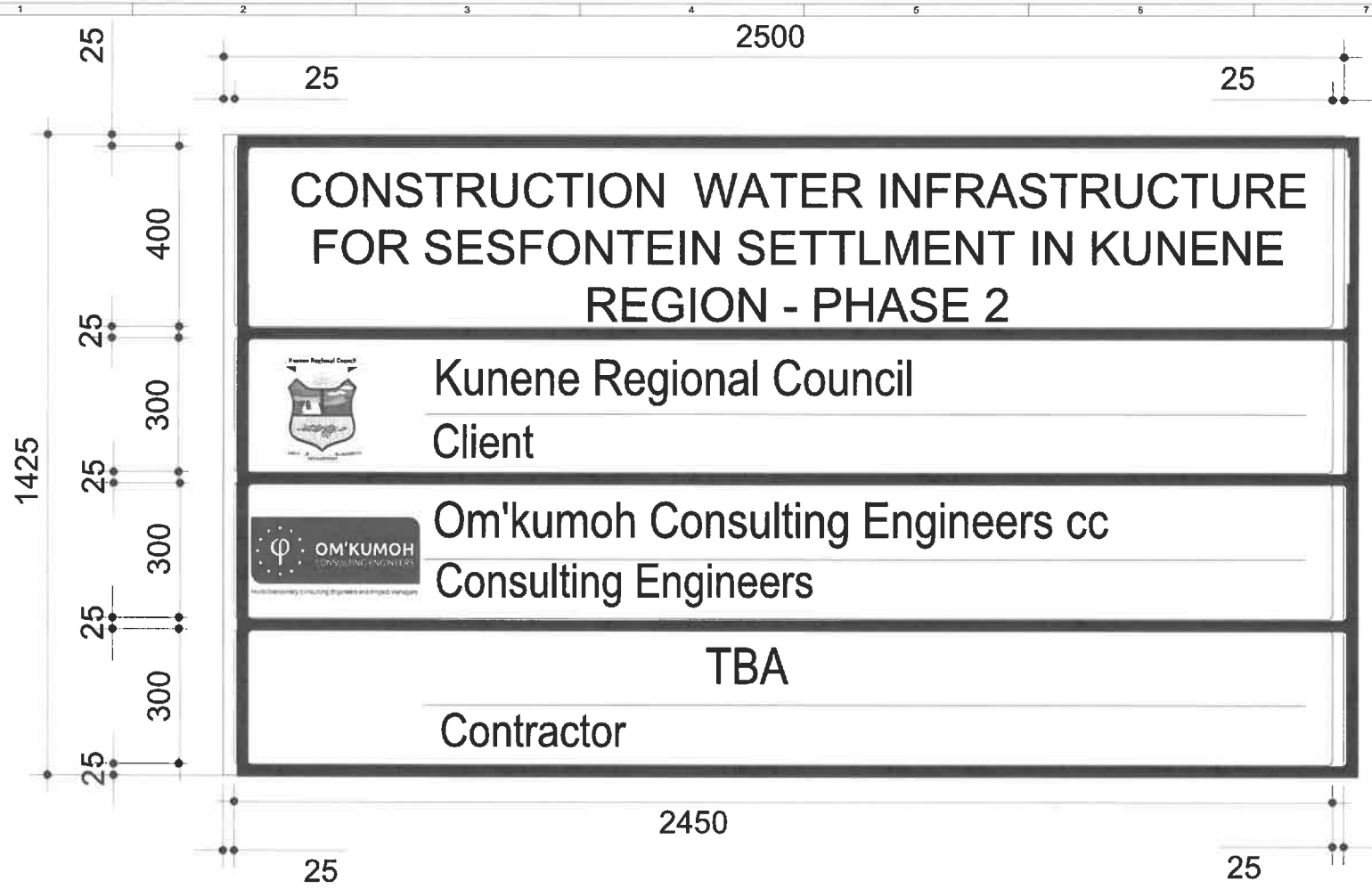
OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

CONTRACTOR

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION PHASE-2

DRAWING TITLE
COVER PAGE, LOCALITY MAP AND LIST OF DRAWINGS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:2500(m)	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-GEN-00-000	REV.: B0



NOTES

- THE BOARD SHALL BE CONSTRUCTED FROM 12mm TEMPERED HARDBOARD BRACED ON THE REVERSED SIDE TO PREVENT WARPING.
- THE QUALITY OF THE PAINT MUST COMPLY WITH THE REQUIREMENTS OF THE CO-ORDINATING SPECIFICATION CKS 193 OF THE SABS.
- THE COLOUR OF THE PAINT MUST COMPLY WITH THE REQUIREMENTS OF THE CO-ORDINATING SPECIFICATION D37 OF CKS 279 OF THE SABS.
- COLOUR SPECIFICATION:
  BACKGROUND = WHITE WITH MIDDLE BLUE (FO7) BORDER
  TYPE A = 85 mm BLACK LETTERS ON WHITE
  TYPE B = 80 mm BLACK LETTERS ON WHITE
  TYPE C = 75 mm AND 50mm BLACK LETTERS ON WHITE
- THE NOTICE BOARD MUST BE MOUNTED ON A STRONG SUPPORTING STEEL STRUCTURE AND MUST BE APPROVED BY THE ENGINEER.
- DURING THE CONSTRUCTION PERIOD THE NOTICE BOARD MUST BE PROPERLY MAINTAINED.

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ANY DISCREPANCIES IN DRAWINGS MUST BE REPORTED IMMEDIATELY.
2. NO PART OF THIS DRAWING MAY BE SCALED.
3. ALL DIMENSIONS SHOULD BE CHECKED BEFORE ANY WORK ON THE SITE COMMENCES.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT: KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL admin@omkumoh.com

CONTRACTOR

PROJECT NAME:
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE:
PROJECT NAMEBOARD DETAIL

CONSULTING PROJECT NO	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:2500(m)	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-GEN-00-001	REV.: B0

NOTE :

CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE RELEVANT SANS 1200 SPECIFICATION, THE NATIONAL BUILDING REGULATIONS AND THIS DRAWING, UNLESS OTHERWISE STATED.

GENERAL NOTES :

. THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
2. THE CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF BUILDINGS ON SITE WITH PARTICULAR REFERENCE TO BOUNDARIES AND BUILDING LINES.
3. THE CONTRACTOR TO VERIFY ALL LEVELS AND DIMENSIONS ON SITE.
4. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
5. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ANY RELEVANT ARCHITECTURAL, CIVIL, STRUCTURAL OR OTHER CONSTRUCTION RELATED DRAWINGS.
7. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
8. THE CONTRACTOR IS TO IDENTIFY AND EXPOSE, WHERE RELEVANT, ALL UNDERGROUND SERVICES ON SITE.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION WORKS INFORMATION, OR RELEVANT SANS 1200 (LATEST REVISION)
10. SHOULD THE ENGINEER BE REQUIRED ON SITE, 24 HOURS NOTICE IS REQUESTED.
11. UNLESS STATED PERMISSIBLE DEVIATION WILL BE DEGREE OF ACCURACY II IN TERMS OF RELEVANT SECTION OF SANS 1200 STANDARD SPECIFICATIONS.
12. THE STRUCTURE IS TO BE DESIGNED FOR A 60 MIN FIRE RATING, UNLESS OTHERWISE NOTED.
13. ALL LEVELS INDICATED ARE STRUCTURAL AND NOT FINISHED LEVELS. UNLESS OTHERWISE NOTED.
14. THE CONTRACTOR IS TO ALLOW 7 WORKING DAYS FOR ANY FABRICATION APPROVAL, UNLESS OTHERWISE NOTED.

GENERAL NOTES - CONCRETE

. STRUCTURAL DRAWINGS MUST BE READ IN CONJUNCTION WITH ARCHITECTURAL, SERVICE ENGINEER'S AND SPECIALIST'S DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SANS 1200 G AND SANS2001-CC1 (LATEST REVISIONS).
3. STRIPPING TIMES FOR FORMWORK AND PROPPING SHALL BE IN ACCORDANCE WITH SANS 1200 G (LATEST REVISION).
4. 25mm x 25mm CHAMFER TO ALL EXPOSED CORNERS, UNLESS OTHERWISE NOTED.
5. ALL EXPOSED CONCRETE WORK TO BE OFF-SHUTTER FINISH, GRADE II FINISH OR AS SPECIFIED IN THE BILL OF QUANTITIES.
6. CEMENT EXTENDERS TO BE USED ONLY IF APPROVED BY THE ENGINEER.
7. BEAMS AND SLABS SHALL BE CONSTRUCTED WITH THE FOLLOWING
CAMBERS : CANTILEVER BEAMS AND SLABS = SPAN / 150.
OTHER BEAMS AND SLABS = SPAN / 400. UNLESS OTHERWISE SPECIFIED.
8. ALL CONCRETE ELEMENTS TO BE CURED FOR MIN OF 7 DAYS.
9. ALL CONCRETE MIXES AND CAST CONCRETE TO SATISFY CONCRETE DURABILITY TESTING ACCORDING TO SANS SANS 3001-CO3-1:2015, SANS 3001-CO3-2:2015, AND SANS 001-CO3-3:2015 BESIDES THE REQUIREMENTS OF POINT 2 (ABOVE)

CONCRETE STRENGTHS

Member	Concrete class	Internal mm cover (min)	Exposed cover (min)
Foundations	40	75	75
Beams	35	30	30
Slabs	40	75	75
R.C. Columns	35	30	30
Walls	40	75	75

FOUNDATION NOTES :

. BEFORE CONCRETING TAKES PLACE, ALL FOUNDATIONS ARE TO BE INSPECTED ON SITE BY THE ENGINEERS.
2. FOUNDATION LEVELS INDICATED ARE APPROXIMATE. FINAL FOUNDING LEVELS ARE TO BE DETERMINED ON SITE BY THE ENGINEERS.
3. THE DIFFERENCE BETWEEN FINAL FOUNDING LEVELS AND BOTTOM OF FOUNDATION SHOWN TO BE MADE UP WITH 15 MPA MASS CONCRETE.
4. ALL OTHER FOUNDATIONS HAVE A MINIMUM 50MM OF 15 MPA MASS CONCRETE BLINDING LAYER.
5. DURING CONSTRUCTION ALL EXCAVATIONS SHALL BE KEPT FREE FROM WATER.
6. ALL INTERNAL AND EXPOSED CONCRETE IS TO BE SHUTTERED, IF EXTERNAL CONCRETE IS NOT SHUTTERED, 25MM OF CONCRETE IS TO BE ADDED.
7. NO FOOTINGS MAY BE FOUNDED ON RUBBLE, BACKFILLED MATERIAL OR SOILS CONTAINING HIGH HUMUS CONTENT.
8. THE BOTTOM OF ALL FOUNDATIONS ARE TO LEVEL. IF REQUIRED, STEPS MAY BE FORMED IN ACCORDANCE WITH SANS 0400, BUT TO THE APPROVAL OF THE ENGINEER.
9. ALL EXCAVATIONS TO BE INSPECTED BY GEOTECHNICAL & STRUCTURAL ENGINEERS PRIOR TO CASTING.
10. IN-SITU FOUNDING MATERIAL (150 THK) RIPPED & SCARIFIED & COMPACTED 95%%% MOD ASSHTO AT OPTIMUM MOISTURE.

BRICKWORK :

1. ALL MASONRY MATERIALS, COMPONENTS, WORKMANSHIP AND TESTING SHALL COMPLY WITH SANS 0164 "THE STRUCTURAL USE OF MASONRY" AND SANS 0400 "NATIONAL BUILDING REGULATIONS".
2. THE MINIMUM CRUSHING STRENGTH OF ALL LOADBEARING BRICKWORK SHALL BE 14 MPA AND THE MAXIMUM WATER ABSORBTION 12%.
3. THE MINIMUM CRUSHING STRENGTH OF MORTAR SHALL BE AS FOR CLASS I MORTAR (1:4 CEMENT : SAND, BUT NOT LESS THEN 10 MPa) AS PER TABLE C-1 OF SANS 0164 PART 1 1980.
4. ALL CAVITY WALLS TO HAVE STEPPED DPC'S.
5. SEE ARCHITECTS DRAWINGS FOR GENERAL LAYOUT AND SETTING OUT OF BRICKWORK. .
6. ALL BRICK ANCHORS, WALL TIES AND STRAPS SHALL BE HOT-DIPPED GALVANISED.
7. FULL DEPTH V-JOINTS SHALL BE MADE IN PLASTER WORK WHERE BRICKWORK AND CONCRETE JOIN.
8. NON-LOADBEARING BRICKWORK MAY NOT BE BUILT CLOSER THAN 20mm FROM THE SOFFIT OF BEAMS AND SLABS, UNLESS OTHERWISE NOTED.
9. LOAD BEARING BRICKWORK IS TO BE ERECTED BEFORE CONCRETE IS CAST AND SHALL BE REINFORCED WITH AN APPROVED BRICKFORCE EVERY FOURTH COURSE AND FOR EACH COURSE FOR THREE COURSES ABOVE WALL OPENINGS.
10. GENERALLY BRICKFORCE TO BE PROVIDED EVERY 4 COURSES.
11. WALL TIES IN CAVITY WALLS AND BRICK RETAINING WALLS SHALL BE OF THE VERTICAL TWISTED TYPE AS IN SABS 0164 PART 1-1980 FIGURE 1 OR SIMILAR APPROVED, PLACED EVERY FOURTH LAYER VERTICALLY AND AT 500 CENTRES HORIZONTALLY.
12. CLAY BRICKS MUST BE WETTED BEFORE USE.
13. WALL JOINTS MUST BE REPEATED IN ALL TILED FINISHES.
14. BRICK BALUSTRADES AND PARAPETS ON ROOF TO HAVE JOINTS AT 6m CENTRES.
15. ALL PLANTERS BUILT IN BRICKWORK ARE TO BE PROVIDED WITH 25mm DIA. WEEP HOLES ABOVE THE FINISHED PAVING LEVELS AND AT 1000mm CENTRES.
16. BRICK WALLS TO BE TIED TO CONCRETE COLUMNS OR RING BEAMS WITH A 30 X 1,6mm X 400 LONG GALVANISED MILD STEEL TIES AT EVERY FOURTH COURSE. FIX THE TIES TO THE COLUMNS WITH 2 HILTI SHOT STUDS EACH.
17. CONTROL JOINTS IN THE BRICKWORK SHALL BE PROVIDED AT POSITIONS SHOWN ON THE ARCHITECTS DRAWING, VERTICAL JOINTS TO BE A MAXIMUM 8m CENTRES FOR EXTERNAL WALLS.
18. A 10mm VERTICAL SOFT JOINT TO BE PROVIDED BETWEEN BRICK WALLS AND CONCRETE COLUMNS.
19. ALL BUTT-JOINTS BETWEEN INTERNAL WALLS AND CONCRETE COLUMNS (INTERFACE) EDGES TO RECEIVE VALMETEX EXPANDED METAL V.E.M. 230B WITH A MINIMUM WIDTH OF 400mm.
20. NO VERTICAL OR HORIZONTAL CHASING IN LOAD BEARING BRICKWORK IS PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
21. ALL EXTERNAL JOINTS TO BE SEALED WITH AN APPROVED POLYSULPHIDE JOINT SEALER.
22. LOADBEARING CAVITY WALLS TO BE FILLED SOLID WITH CONCRETE FOR THE TOP 4 COURSES.
23. 12mm VERTICAL SOFTBOARD TO BE PLACED WHERE THE SLAB ABUTS AGAINST THE WALL.
24. SLIP JOINT CONSISTING OF 2 LAYERS OF 3 PLY MALTHOID WITH PLASTIC IN BETWEEN TO BE FORMED ON TOP OF ALL WALLS SUPPORTING THE CONCRETE SLAB.
25. LINTOLS OVER OPENINGS TO HAVE A MINIMUM OF 230MM BEARING EACH END.
26. OUTER SKIN OF FACADE BRICKWORK TO BE SUPPORTED AT SLAB LEVEL WHERE SPECIFIED OFF GALVAISED 90X90X8 L WITH M12 ANCHORS AT 400mm CENTRES.

REINFORCEMENT NOTES :

1. THE ENGINEER IS TO INSPECT ALL REINFORCING PRIOR TO CASTING CONCRETE.
2. THE STEEL STRESS AND BENDING OF ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH SANS 920.
3. REINFORCEMENT SHALL BE FIXED TO COMPLY WITH THE TOLERANCES AS SPECIFIED IN SANS 1200 G.
4. NO HEATING BENDING OR CUTTING OF REINFORCEMENT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR IS REQUESTED TO INSPECT THE FIXED REINFORCEMENT AND TO ENSURE THAT THE CONCRETE COVER IS AS SPECIFIED ON THE RELEVANT DRAWINGS BEFORE THE ENGINEER IS NOTIFIED.
6. MINIMUM LAP LENGTH TO BE AS FOLLOWS UNLESS STATED OTHERWISE:
Y10 - 500mm
Y12 - 600mm
Y16 - 800mm
Y20 - 1000mm
Y25 - 1250mm
Y32 - 1600mm

LEVEL TOLERANCES :

1. ALL LEVEL TOLERANCES FOR EARTHWORKS TO BE DEGREE II (SANS 1200 D) BUT THE SMOOTHNESS TOLERANCE ON THE EXCAVATION/FILLED UP TERRACE PLATFORMS SHALL BE SUCH THAT NO UNEVENNESS WILL BE GREATER THAN 50MM OVER 4M EXCEPT FOR AREAS TO RECEIVE SURFACE BEDS WHERE NO UNEVENNESS MUST BE GREATER THAN 15mm OVER 4m.
2. TOLERANCES IN ACCORDANCE WITH SANS 1200 D (DEGREE II) ARE:
- ± 50mm - ALL AREAS EXCEPT SURFACE BED AREAS.
- ± 16mm - SURFACE BED AREAS.
3. ALL LEVEL TOLERANCES FOR BUILDING TO BE IN ACCORDANCE WITH SANS 1200G AND SANS 0155

GENERAL NOTES- CIVIL :

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE DRAWING SHOWING STANDARD DETAILS. THE PROJECT SPECIFICATION AND THE RELEVANT SANS SPECIFICATION.
2. THE ENGINEER IS TO BE GIVEN THE OPPORTUNITY TO INSPECT ALL PIPES BEFORE BACKFILLING COMMENCES.
3. THE POSITION OF ALL EXISTING SERVICES AS SHOWN ON THE DRAWING IS ONLY SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING SERVICES.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ASSISTANCE FROM THE VARIOUS LOCAL AUTHORITIES TO ENSURE THAT NO OTHER SERVICES EXIST.
5. ALL ROAD CROSSINGS ARE TO BE BACKFILLED WITH CEMENT STABILISED BACKFILL MATERIAL. REFER TO PROJECT SPECIFICATION FOR FURTHER DETAILS.
6. COMPACTION OF BACKFILL TO TRENCHES TO BE CONFIRMED BY IN-SITU NUCLEAR DENSITY TESTS FOR CALIBRATION PURPOSES IS TO BE DONE EVERY TENTH TEST.
7. SAND REPLACEMENT TEST FOR CALIBRATION PURPOSES IS TO BE DONE EVERY TENTH TEST.
8. ALL MANHOLES TO BE CONSTRUCTED USING ENGINEERING BRICKS (BRICKWORK LAID IN ENGLISH BOND AND EMBEDDED WITH 1:5 CEMENT / SAND MORTAR WITH INTERNAL FACES FLUSH JOINTED.
9. COMPACTION OF BACKFILL TO TRENCHES TO BE CONFIRMED BY IN-SITU NUCLEAR DENSITY TESTS AT A RATE OF 1 TEST PER LAYER PER 10m OF TRENCH.

EARTHWORKS GENERAL NOTES :

1. ALL EARTHWORKS TO BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 D - 1988.
2. SELECTED LAYER (ON REDUCED BULK EXCAVATION BED) IN ACCORDANCE WITH SANS 1200 DM.
3. SMALL WORKS IN ACCORDANCE WITH SANS 1200 DB.
4. PIPE TRENCHES IN ACCORDANCE WITH SANS 1200 DB.
5. SITE CLEARANCE AND GRUBBING OPERATIONS SHALL BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 C.
6. THE CONTRACTOR TO IDENTIFY AND EXPOSE, WHERE RELEVANT, ALL UNDERGROUND SERVICES ON SITE. HE SHOULD LAISE WITH ALL RELEVANT AUTHORITIES FOR THE LOCATION AND PROTECTION OF THESE SERVICES.
7. POSITIONS OF EXISTING SERVICES INDICATED ON THIS DRAWING ARE APPROXIMATE AND MUST BE LOCATED BY MEANS OF HAND EXCAVATION TO TO ESTABLISH THEIR EXACT LOCATION. THE LOCATION OF EXISTING SERVICES SERVICES TO TAKE PLACE PRIOR TO CONSTRUCTION.
8. ALL UNSUITABLE MATERIALS I.E. ROOTS, CONCRETE PIPES, OLD FOUNDATIONS, BUILDING RUBBLE SHALL BE DISPOSED OF TO A SUITABLE DUMPING SITE.
9. 150mm TOP SOIL TO BE STOCKPILED ON SITE FOR LATER USE UNLESS OTHERWISE SPECIFIED.
10. ALL APPROVED MATERIAL TO BE STOCKPILED SEPARATELY, AND LATER BE REUSED.
11. THE CONTRACTOR TO USE ONLY APPROVED FILL MATERIAL AS SPECIFIED BY THE ENGINEER.
12. ALL THE EXPOSED REDUCED EXCAVATION BEDS AND AREAS TO RECEIVE FILL SHALL BE CLEARED, RIPPED AND COMPACTED TO 90%%% MOS. AASHTO TO A DEPTH OF 150MM UNLESS OTHERWISE NOTED.
13. ALL AREAS IN CUT SHALL BE RIPPED, SCARIFIED TO A DEPTH OF 150MM AND RECOMPACTED TO 90% MOD. AASHTO AT 1% TO 2% ELOW OMC.
14. THE CONTRACTOR SHALL TIMEOUSLY SUBMIT FIELD AND LABORATORY TEST RESULTS OF RELATIVE COMPACTION DENSITIES, CBR INDICATOR TESTS OR ANY OTHER TEST RESULTS AS REQUIRED, TO THE ENGINEER.
15. THE CONTRACTOR SHOULD MAKE PROVISION FOR STORMWATER CONTROL.
16. MAXIMUM CUT SLOPES TO BE 1:1 AND FILL SLOPES TO BE 1:2 UNLESS OTHERWISE STATED.
17. AS BUILT SURVEY LEVELS TO BE HANDED TO THE ENGINEER AFTER THE COMPLETION OF EARTHWORKS.
18. a. FIELD DENSITY TESTS SHOULD BE CARRIED OUT AT A RATE OF 1 TEST PER 150 SQ. METER PER LAYER.
b. THE POSITION OF TESTS AND LAYERS TO BE INDICATED ON A KEY PLAN AND SUBMITTED WITH THE RESULTS TO THE ENGINEER.
c. TESTS TO BE DONE BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER.
d. POSITIONS OF TESTS TO BE APPROVED BY THE ENGINEER.
e. ONE OF THE DENSITY TESTS SHOULD BE A SAND REPLACEMENT TEST / 10 TROXLER TESTS AND EVENLY SPREAD OVER ALL LAYERS.
19. THE ENGINEER SHALL BE NOTIFIED IF THE EXCAVATION OR SUBGRADE IS IN ROCK
20. THE EXISTING GROUND LEVELS AS PER THE LAND SURVEYOR'S DWG. MUST BE CONFIRMED BEFORE CONSTRUCTION COMMENCES.
21. EXTENT OF EARTHWORKS IS RESTRICTED TO THE INSIDE OF THE ERF BOUNDARY. (UON)
22. 22) PERMISSIBLE DEVIATION (PD) FOR TERRACES AND EXCAVATION FACE ARE AS FOLLOWS :
- 1. AWAY FROM EXCAVATION FACE +40mm
- 2. TOWARDS EXCAVATION FACE ±0mm
- 3. FINAL EXCAVATION FLOOR LEVEL: SEE LEVEL TOLERANCES BELOW.
23. THE CONTRACTOR SHOULD MAKE PROVISION FOR STORMWATER CONTROL DURING CONSTRUCTION.
24. MAXIMUM CUT SLOPES TO BE 1:1 AND FILL SLOPES TO BE 2:1 UNLESS OTHERWISE STATED.
25. AS BUILT SURVEY LEVELS TO BE SUBMITTED TO THE ENGINEER AFTER COMPLETION OF EARTHWORKS.

EARTHWORKS TEST SPECIFICATION :

1. ALL EARTHWORKS TO BE TESTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION:
2. FILL MATERIAL FROM SITE: 3 x ROAD INDICATOR WITH CBR VALUES PER 5000m
3. FILL MATERIAL FROM BORROW PIT: 3 x ROAD INDICATOR WITH CBR VALUES PER 2500m
4. COMPACTION IN PLATFORMS: 1 x NUCLEAR DENSITY TEST PER 1500m² PER LAYER
5. COMPACTION OF ROAD BED: 1 x NUCLEAR DENSITY TEST PER 1500m²
6. COMPACTION OF BERM: 1 x NUCLEAR DENSITY TEST PER 2000m² PER LAYER
7. CONTRACTOR TO KEEP ACCURATE RECORDS THE EXACT POSITION AND LEVELS OF DENSITY TESTS AND WILL SUBMIT COPIES TO THE ENGINEER ON A WEEKLY BASIS.
8. ALL TEST RESULTS WILL BE EVALUATED IN ACCORDANCE WITH SANS 1200.

STRUCTURAL STEELWORK

1. ALL STRUCTURAL STEELWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH SANS 2001 - CS1 : 2005, SANS 10162-2005 AND THE PROJECT SPECIFICATIONS.
1) WELDING SHALL CONFORM TO AWS D1.1-90 SPECIFICATIONS.
2) BUTT-WELDS SHALL DEVELOP THE FULL STRENGTH OF THE ELEMENTS JOINED.
3) ALL WELDING TO BE 8MM CONTINUOUS FILLET WELD UNLESS OTHERWISE SHOWN.
4) WELDING ELECTRODE TO BE E70 XX (U.O.N.).
5) ALL DIMENSIONS SHALL BE CHECKED ON SITE BY THE STEELWORK CONTRACTOR BEFORE SHOP DRAWINGS COMMENCE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
6) A COMPLETE SET OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION COMMENCES.
7) ALL STRUCTURAL STEELWORK GRADE TO BE STAINLESS STEEL GRADE SS316L OR HIGHER AS APPROVED BY THE ENGINEERS.
8) STRUCTURAL BOLTS SHALL BE GRADE 8.8 EXCEPT FOR PURLINS AND GIRTS WHERE BOLTS WILL BE GRADE 4.8. A MINIMUM OF TWO BOLTS PER CONNECTION WILL BE USED (U.O.N.).
9) ALL BOLTS TO BE SIMILAR STEEL GRADE AS STRUCTURAL STEEL.
10) WHERE TEMPORARY BRACING OR PROPPING IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, MAINTENANCE AND REMOVAL OF SUCH SUPPORTS,
11) IF SPLICES IN STEEL MEMBERS ARE REQUIRED FOR TRANSPORT OR MANUFACTURE, PROPOSALS FOR THIS WILL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
12) BASE PLATES SHALL BE GROUTED WITH A CEMENTTIOUS NON-SHRINK GROUT WITH A MINIMUM CRUSHING STRENGTH OF 40 MPA. GROUTING MUST TAKE PLACE BEFORE THE PRIMARY LOADS ARE APPLIED TO THE STRUCTURE.
13) ALL PAINTING MUST COMPLY WITH SANS 1200 HC
14) ALL ANGLE IRONS SUPPORTING BRICKWORK TO BE GALVANISED.
15) CORROSION PROTECTION SHALL CONSIST OF:
16) ALL STRUCTURAL STEEL MUST BE THOROUGHLY CHIPPED AND SCRAPED FREE OF MILL SCALE, REMOVE OIL, GREASE & CONTAMINENTS USING PLASCON AQUASOLV DEGREASER (CODE GR.) OR SIMILAR APPROVED FOLLOWED BY FRESH WATER RINSES. PREPARE STEEL BY WIRE BRUSHING TO GRADE ST.3 OF SWEDISH STANDARD SIS 05 59 00.
17) APPLY ONE COAT (35 MICRON) ZINC PHOSPHATE PRIMER IN ACCORDANCE WITH SANS 681-2007.
18) APPLY ONE COAT (35 MICRON) MULTI-PURPOSE UNDERCOAT IN ACCORDANCE WITH SANS 681-2007.
19) APPLY ONE COAT OF ALKYD BASE ENAMEL (35 MICRON) TO ARCHITECT'S COLOUR SPECIFICATION. DAMAGED AREAS OF PAINT SHALL BE MADE GOOD ON SITE IN ACCORDANCE WITH SANS 10120.
20) FOR STEELWORK BELOW SURFACE BED APPLY ONE COAT OF ALKYD BASE ENAMEL (70 MICRON)
21) FOR EXPOSED STEELWORK 1 TO 4 APPLY, FOR CONCEALED ROOF TRUSSES ONLY 1 AND 2 APPLY (ONLY IN CEILING VOIDS WHERE THERE IS NO LIGHT), FOR STEELWORK BELOW SURFACE BED ONLY 1, 2, 3 & 5 APPLY.
22) CORROSION PROTECTION OF GUTTERS TO BE AS FOLLOWS:
23) PREPARE AND PATCH SURFACE & CLEAN WITH GALVINIZE IRON CLEANER - PLASCON GILI
24) APPLY ONE COAT PLASCON EPOXY TAR EPD 112 WITH A DRY FILM THICKNESS OF 75 MICRONS AND ONE COAT PLASCON EPOXY TAR EPD 100 WITH DRY FILM THICKNESS OF 75 MICRONS TO GIVE A TOTAL DRY FILM THICKNESS OF 150 MICRONS. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE MANUFACTUTERS INSTRUCTIONS.
25) ALL TRUSS SHS JOINTS TO BE WELDED JOINTS UNLESS OTHERWISE SHOWN
26) CANTILEVER PART OF STRUCTURE TO REMAIN TEMPORARILY SUPPORTED UNTIL THE CANOPY FRAME HAS BEEN ANCHORED IN ALL PLACES. TEMPORARY SUPPORT ARE NOT TO BE REMOVED UNTIL STRUCTURAL INSPECTION OF ALL CONNECTIONS

ABBREVIATIONS

R.C. : REINFORCED CONCRETE
T.O.C. : TOP OF CONCRETE
F.F.L. : FINISHED FLOOR LEVEL
DP. : DEEP
TYP. : TYPICAL
COL. : COLUMN
ENG. : ENGINEER

QUALITY CONTROL / REFERENCES :

CONCRETE:

1. 6 CUBES FOR EVERY 50m³ OR EVERY INDEPENDENT POUR (IE. 3 CUBES AT 7 DAYS AND 3 CUBES AT 28 DAYS).
2. PROVIDE CONCRETE MIX DESIGNS FOR APPROVAL

STRUCTURAL BRICKWORK (LOAD BEARING BWK):

1. REQUIRED THEORETICAL COMPRESSIVE STRENGTH TO BE 14 MPA AT 28 DAYS OF STRENGTH.
2. TEST TO CARRIED OUT AS PER SANS 0164.
3. TEST 3 BRICKS PER 10 000 BATCHES, OR TRUCKLOAD.
4. REFER TO STRUCTURAL DRAWINGS FOR FURTHER SPECIFICATIONS.

CLASS / MORTAR REQUIREMENTS:

1. MINIMUM STRENGTH REQUIRED FOR 10 MPA AT 28 DAYS.
2. TEST TO BE CARRIED OUT ONCE A WEEK.
3. TESTS TO BE CARRIES OUT AS PER SANS METHOD 749.

CIVIL WORKS:

1. REFER TO SPECIFICATIONS ON CIVIL DRAWINGS

WATERPROOFING:

1. ALL TO SPECIALISTS / ARCHITECTS SPECIFICATIONS AND TO COMPLY WITH WATERPROOFING : SANS 021 1988 AND SANS 248 1996.

ARCHITECTURAL BRICKWORK:

1. ALL TO COMPLY WITH THE NATIONAL BUILDING REGULATIONS AND RESPECTIVE SANS (SANS) CODES OF PRACTICE ; SANS 0400 AND 0164.

PAVING NOTES :

1. CONSTRUCTION OF ROADS AND PAVING TO COMPLY WITH THE SPECIFICATION OF SANS 1200M.
2. ALL HORIZONTAL DIMENSIONS ARE TO PAVING FACE OF KERBS.
3. ALL CONCRETE BLOCK AND BRICK PAVING TO BE LAID IN A HERRING BONE PATTERN UNLESS OTHERWISE NOTED. REFER TO ARCHITECT'S DRG'S.
4. ALL LEVELS INDICATED THUS 00,000 ARE TO TOP OF PAVING.
5. ALL EDGES OF BLOCK PAVING TO BE CUT TO SUIT LINE OF KERBS AND GROUTED SOLID.
6. HAUNCHING BEHIND KERBS TO BE INSPECTED BY THE ENGINEER PRIOR TO BACKFILLING.
7. EACH LAYER OF ROAD CONSTRUCTION TO BE TESTED BY AN INDEPENDENT LABORATORY AT THE RATE OF ONE TEST PER 1500 SQM.
8. CONCRETE PAVING SURFACE TO BE STEEL POWER FLOATED WITH A BROOM FINISH UNLESS OTHERWISE NOTED.

SPECIFIC WATER REQUIREMENTS:

1. FOR CIVIL WORKS STANDARD DETAILS REFER TO DRAWINGS STAYWELL/100/01, 02, 03 & 04.
2. PROTECTION OF FITTINGS AND MAINS :
2.1. STEEL MAINS: COPON LINED AND SUITABLY WRAPPED PER SPECIFICATION.
2.2. STEEL FITTINGS: COPON COATED INTERNALLY AND SUITABLY WRAPPED PER SPECIFICATION.
2.3. GALVANIZED FITTINGS: SUITABLY WRAPPED PER SPECIFICATION.
3. ALL VALVE AND BELOW GROUND HYDRANT CHAMBERS TO BE WATERTIGHT.
4. POSITION OF ACROSS THE ROAD ERF CONNECTIONS TO BE MARKED BY A W CUT INTO THE KERBSTONE.
5. COVER TO WATER MAINS; THE DEPTHS LISTED ARE DEPTHS TO FINAL GROUND LEVEL INCLUSIVE OF ANY LANDSCAPING UNDERTAKEN ON THE SITE.

	MINIMUM (MM)	MAXIMUM (MM)
- GRAVEL ROAD	1000	1500
- TARRED ROADS AND TRAFFIC AREAS	800	1500
- PEDESTRIAN AREAS AND OTHER AREAS NO USED BY VEHICULAR TRAFFIC	600	1500

6. ALL WATER MAINS ARE TO BE INSTALLED AT 2 METERS FROM ERF BOUNDARIES UNLESS OTHERWISE SHOWN ON THE DRAWING.
7. ANY ANCHOR BLOCKS CONSTRUCTED ARE TO PROPERLY SHUTTERED AND CAST UNDISTURBED GROUND. ANY OVER EXCAVATION IS TO BE FILLED WITH MASS CONCRETE.

NOTE :

CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE RELEVANT SANS 1200 SPECIFICATION, THE NATIONAL BUILDING REGULATIONS AND THIS DRAWING, UNLESS OTHERWISE STATED.

No	REVISION	BLOCK Ref	D
B0	ISSUED FOR TENDER		28-0

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEER
Multi-Disciplinary Consulting Engineers and Project Manag
P.O. BOX 98195 TEL: +264 81 232 052
WINDHOEK TEL: +264 81 232 053
EMAIL: admin@omkumoh.com

PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE F
SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE

CIVIL-STRUCTURAL GENERAL NOTES

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501 CIV	DRWG No. 2501-CIV-WIP-00-DW	REV. B0

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES, AS SHOWN ON THIS DRAWING, IS APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		26-06-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 062 OR TO SABS 719, AND HOT DIPPED GALVANISED TO SABS 763.
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3, UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
5. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER GREATER THAN 150MM SHALL BE GALVANIZED
   - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
   - ALL VALVES SHALL HAVE A SINTER PROXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
   - ALL NUTS, BOLTS AND WASHERS SHALL BE MILD STEEL.
10. ALL uPVC INLET PIPES TO BE OF CLASS 12 & ALL OUTLET PIPES CLASS 9 AND TO SABS 966 PART 1, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
11. OVERFLOW AND DRAIN PIPES TO BE 200MM DIA & 150MM DIA GMS RESPECTIVELY.
12. OUTLET PIPING TO BE 150MM DIA GMS.
13. INLET PIPING TO BE 150MM DIA GMS.
14. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS. THE LOWER TIERS AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 6MM THICK PLATES, OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM.
15. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL TYPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

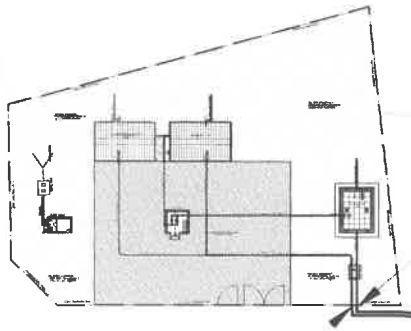
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 WINDHOEK
TEL: +264 81 232 052
TEL: +264 81 232 053
EMAIL: [redacted]@omkumoh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
NEW BULK WATER STORAGE FACILITY
GENERAL ARRANGEMENT DRAWING

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: N.S
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.M
FILE: 2501-QV	DRWG No.: 2501-QV-WR-01-100	REV.: B0



Ø160 uUPVC BULK WATER LINE
TO ELEVATED TOWER

Ø160 uUPVC BULK WATER LINE
TO STORAGE FACILITY

EXISTING Ø160 uUPVC
BULK WATER LINE

PIPE BEND 8

Ø160 uUPVC BULK WATER LINE
TO ELEVATED TOWER

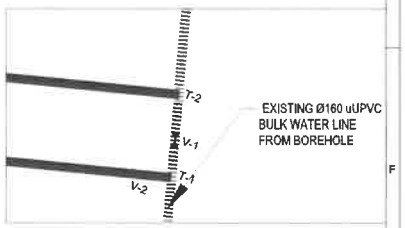
SEE DETAIL A

Ø160 uUPVC BULK WATER LINE
TO STORAGE FACILITY

PIPE BEND 7A

EXISTING Ø160 uUPVC
BULK WATER LINE
FROM BOREHOLE

RISING MAIN WATER SCHEDULE - SETTING OUT DETAIL			
Item	X	Y	Description
T-1	65024.0021	-318267.8062	160mm Dia. Equal Tee
V-1	65023.7522	-318268.1146	
V-2	65023.3545	-318267.3244	
T-2	65023.5156	-318268.4462	160mm Dia. Equal Tee
B-1	64899.2007	-318168.4696	11.25 Deg. Bend
B-2	64889.6926	-318169.0890	11.25 Deg. Bend
B-3	64882.1467	-318161.1702	90 Deg. Bend
B-4	64882.3830	-318162.4624	90 Deg. Bend



DETAIL A
SCALE 1:50

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES, AS SHOWN ON THIS DRAWING, IS APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL EXTERNAL POTABLE WATER RETICULATION TO BE uPVC CLASS 9.
2. EARTHWORKS FOR PIPE TRENCHES TO BE DONE ACCORDING TO SABS/SANS 1200 DB.
3. BEDDING FOR ALL PIPE WORK TO BE DONE TO SABS/SANS 1200LB.
4. ALL EXTERNAL WATER INFRASTRUCTURE TO BE INSTALLED ACCORDING TO SPECIFICATIONS AND DRAWINGS.
5. TESTING TO BE DONE AS PER SANS 1200L.
6. ALL EXTERNAL REDUCERS, VALVES, HYDRANTS, PRESSURE BENDS,TEES AND END CAPS TO BE CONSTRUCTED WITH PROPER THRUST BLOCKS AS PER SUPPORTING DETAILS.
7. ALL VALVES IN THE WATER AND FIRE RETICULATION TO BE RATED PN16.
8. ALL SERVICES UNDER BUILDINGS TO BE INSTALLED IN SLEEVES AND ENCASED IN CONCRETE AS PER SUPPORTING DETAILS.
9. ALL CONCRETE WORKS TO BE GRADE 25/19 UNLESS OTHERWISE SPECIFIED.
10. REFER TO SUPPORTING DRAWINGS FOR TYPICAL DETAILS.
11. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
12. NO PART OF THIS DRAWING MAY BE SCALED.
13. MINIMUM COVER FOR EXTERNAL WATER AND FIRE RETICULATION 1m TO TOP OF THE PIPE.

WATER RETICULATION

- SV — PROPOSED RISING MAIN AND VALVE
- EXISTING WATER LINE
- WM — EXISTING WATER METER
- CADASTRAL BOUNDARY

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

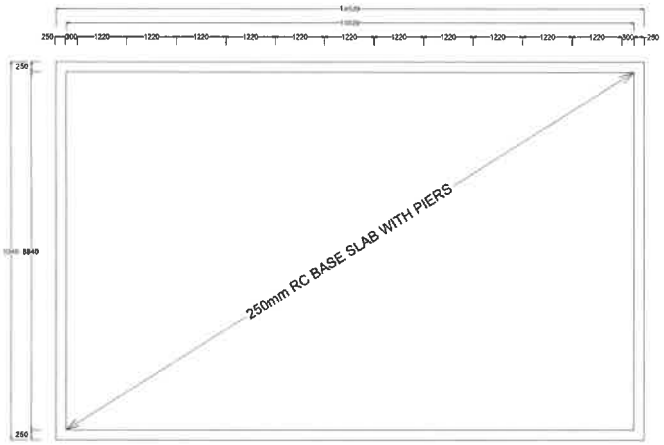
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 81 232 052
WINDHOEK TEL: +264 81 232 053
EMAIL: admi[illegible]

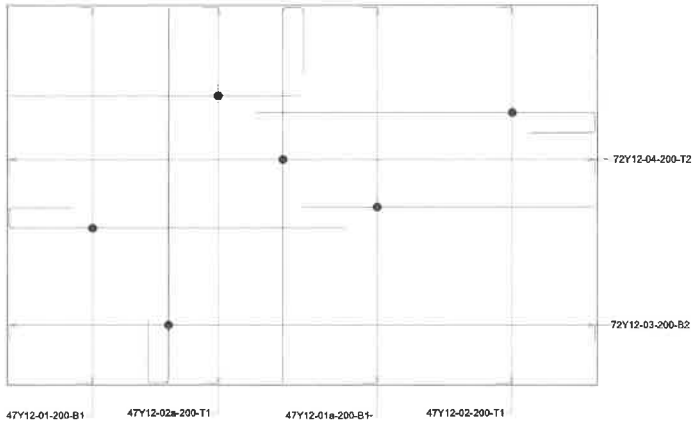
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
BULK SUPPLY LINE AND RISING MAIN - WATER LAYOUT

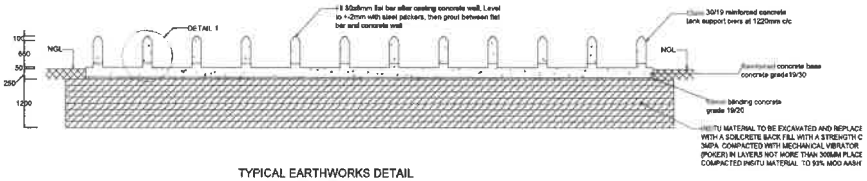
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No: 2501-CIV-WR-01-110	REV: B0



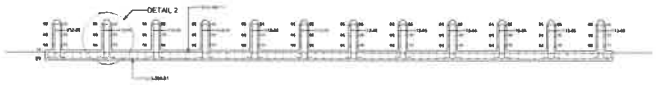
CONCRETE GROUND RESERVOIR SUPPORT PLAN LAYOUT
SCALE 1:20



CONCRETE GROUND RESERVOIR BASE SLAB REINFORCEMENT LAYOUT
SCALE 1:20



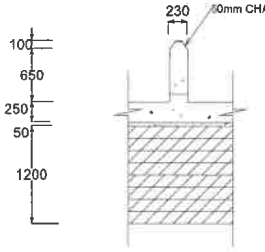
TYPICAL EARTHWORKS DETAIL
SCALE 1:20



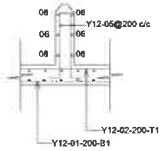
WATER RESERVOIR FOUNDATION REINFORCEMENT - SECTION
SCALE 1:20

MEMBER	NO OF	NO BARS	DIA	CUT LENGTH	TOTAL NO	BAR MARK	SC	A	B	C	D	E/R	kg
BASE	1	47	Y12	9025	47	01	38	8275	150	[900]			377
	1	47	Y12	7225	47	01a	20	7225					302
	1	47	Y12	9025	47	02	38	8275	150	[900]			377
	1	47	Y12	7225	47	02a	20	7225					302
	1	72	Y12	10000	72	03	38	9250	150	[900]			640
	1	72	Y12	10000	72	04	38	9250	150	[900]			640
	1	135	Y12	1150	135	STOOL	63	300	150	[300]	[300]		138
PIERS	12	90	Y12	1225	1080	05	37	250	825	[150]			1180
	12	6	Y12	8750	72	06	20	8750					560

	6	8	10	12	16	20	25	32	40	TOTAL
R										
Y				4516						4516
TOTAL				4516						4516



DETAIL 1
SCALE 1:5



DETAIL 2
SCALE 1:5

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT: KUNENE REGIONAL COUNCIL

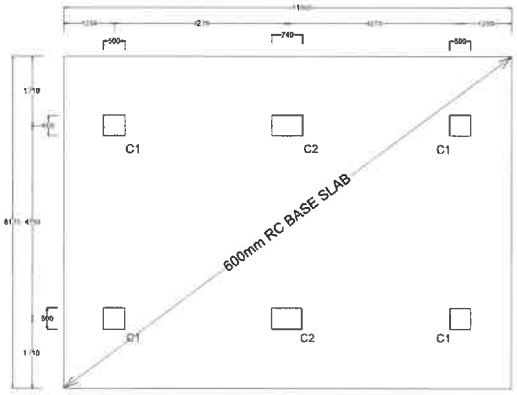
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86186 TEL +264 61 232 052
WINDHOEK TEL +264 61 232 053
EMAIL: info@omkumoh.com

PROJECT NAME:
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

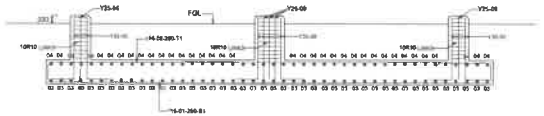
DRAWING TITLE:
GROUND RESERVOIR FOUNDATION LAYOUT & REINFORCEMENT DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-STR	DRWG No.: 2501-CIV-WR-01-200	REV.: B0

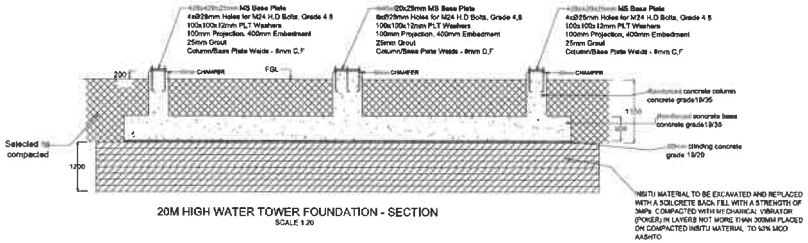


20M HIGH WATER TOWER FOUNDATION - LAYOUT
SCALE 1:20

WATER TOWER FOUNDATION REINFORCEMENT - LAYOUT
SCALE 1:20



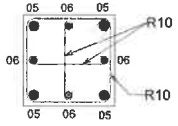
20M HIGH WATER TOWER FOUNDATION REINFORCEMENT - SECTION
Scale 1:20



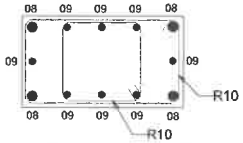
20M HIGH WATER TOWER FOUNDATION - SECTION
SCALE 1:20

MEMBER	NO OF	NO BARS	DIA	CUT LENGTH	TOTAL	BAR MARK	SC	A	B	C	D	E/R	kg
BASE	1	34	Y16	6850	34	01	38	6050	500	[300]			365
	1	34	Y16	6050	34	01a	20	6060					323
	1	34	Y16	6850	34	02	38	6050	500	[300]			365
	1	34	Y16	6050	34	02a	20	6050					323
	1	45	Y16	8850	45	03	38	8060	500	[300]			628
	1	45	Y16	8850	45	04	38	8050	500	[300]			626
	1	88	Y12	1375	88	STOOL	83	300	475	[300]	[300]		108
COLUMN C1	4	4	Y32	1875	16	05	37	1575	300				185
	4	4	Y25	1875	16	06	37	1575	300				113
	4	10	R10	2000	40	07	60	400	400				50
	4	20	R10	600	80	07a	35	400					30
COLUMN C2	2	4	Y32	1875	8	08	37	1575	300				94
	2	8	Y25	1875	16	09	37	1575	300				113
	2	10	R10	2000	20	10	60	400	400				25
	2	10	R10	2750	20	11	60	640	400				35

	6	8	10	12	16	20	25	32	40	TOTAL
R			140							140
Y				108	2632		226	279		3245
TOTAL			140	108	2632		226	279		3385



COLUMN C1 REINFORCEMENT -PLAN LAYOUT
SCALE 1:10



COLUMN C2 REINFORCEMENT -PLAN LAYOUT
SCALE 1:10

WARNING
BEWARE OF UNDERGROUND SERVICES
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No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		25-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4:8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION . 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

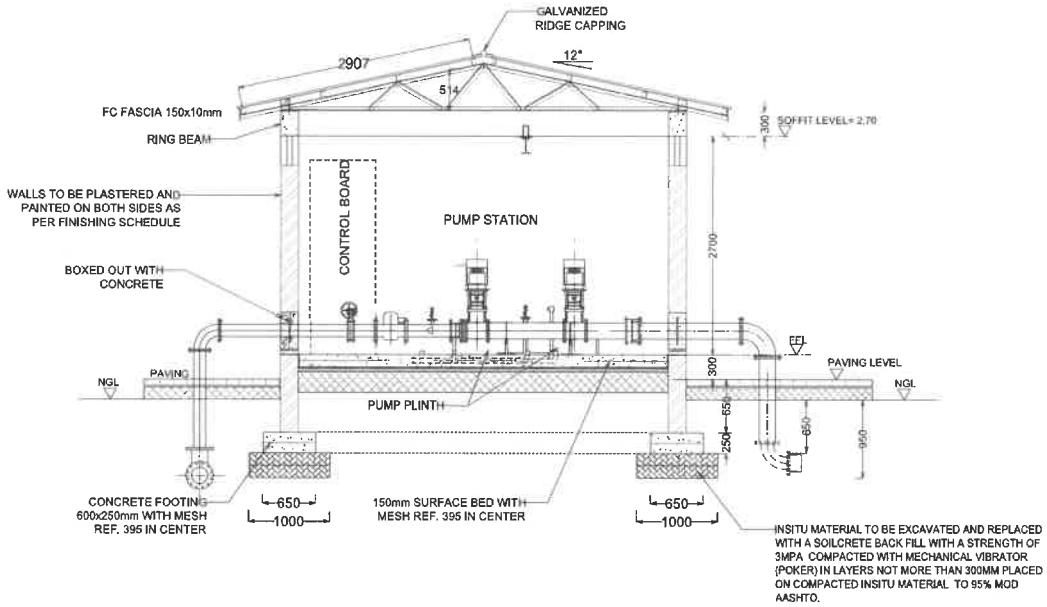
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 96196 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: ad[redacted]oh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

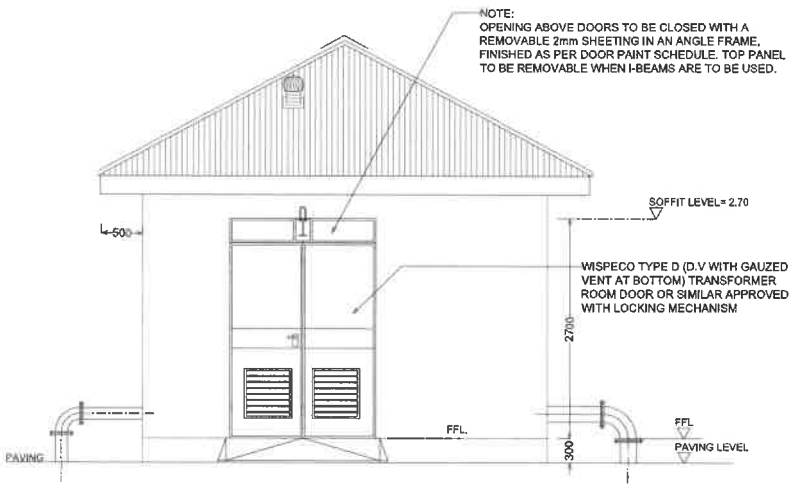
DRAWING TITLE
ELEVATED RESERVOIR FOUNDATION LAYOUT & REINFORCEMENT DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:20	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No. 2501-CIV-WR-01-201	REV. B0



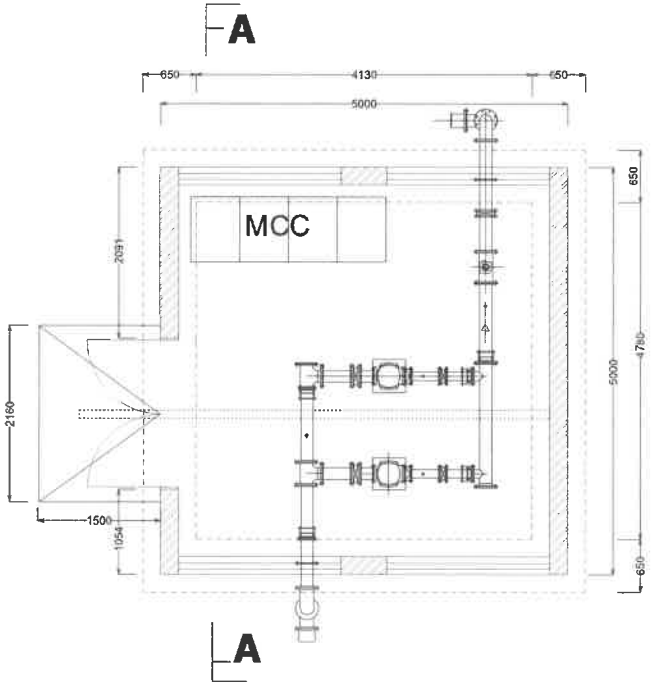
PUMPSTATION: SECTIONAL A-A

SCALE 1:10



PUMPSTATION: FRONT ELEVATION

SCALE 1:10



PUMPSTATION: LAYOUT

SCALE 1:10

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4:8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION , 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
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5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
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8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.
11. 2 LAYERS OF DPC BETWEEN ALL CONCRETE ELEMENTS AND BRICK WALL BELOW.

ISSUED FOR TENDER

CLIENT: KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98196 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

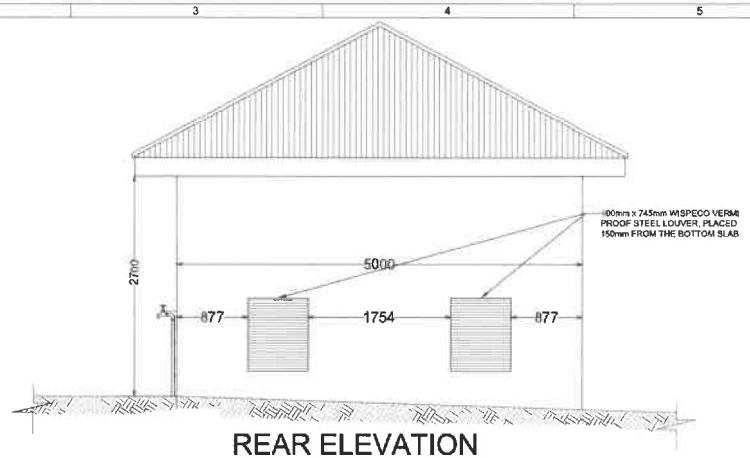
PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

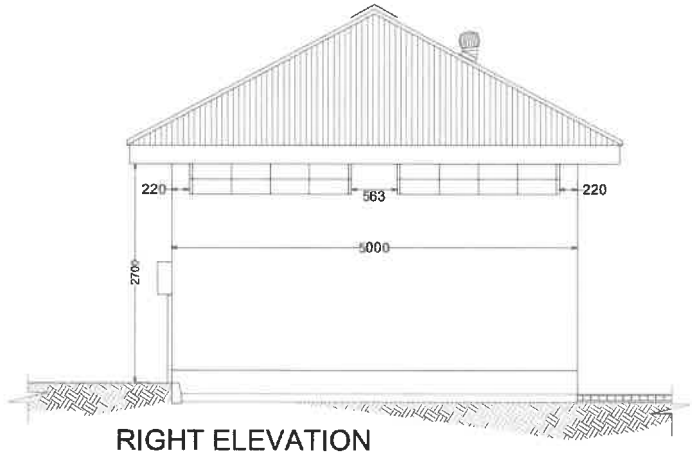
DRAWING TITLE

PUMP HOUSE LAYOUT AND SECTION DETAILS

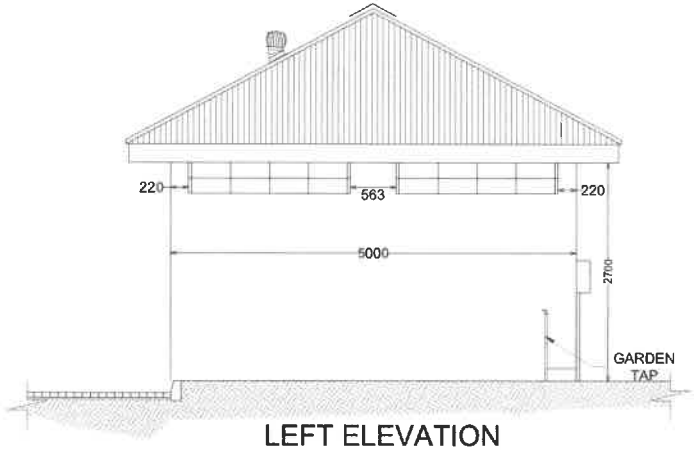
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-QIV	DRWG No. 2501-QIV-WR-01-203	REV. B0



REAR ELEVATION
SCALE 1:10



RIGHT ELEVATION
SCALE 1:10



LEFT ELEVATION
SCALE 1:10

No	REVISION	BLOCK Ref	DATE
	ISSUED FOR TENDER		28-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4;8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION . 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
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6. COVER TO REINFORCEMENT = 50mm
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8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

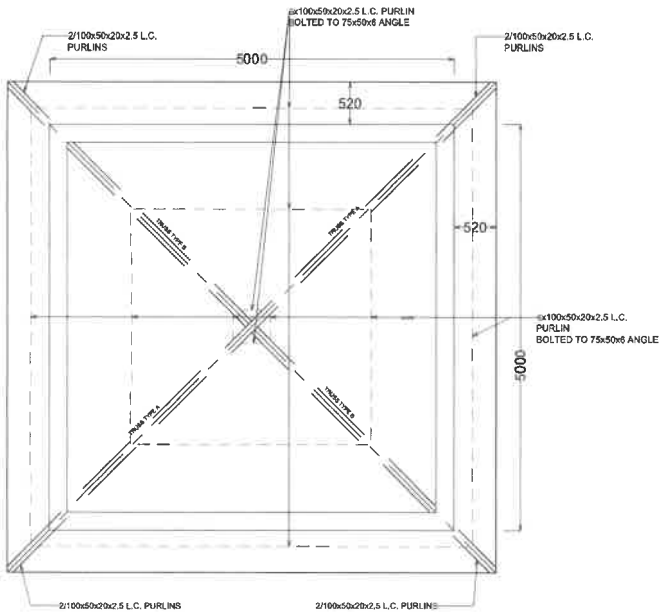
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 96195 TEL: +264 61 232 052
WINDHOEK TEL: +264 81 232 053
EMAIL: admin@omkumoh.com

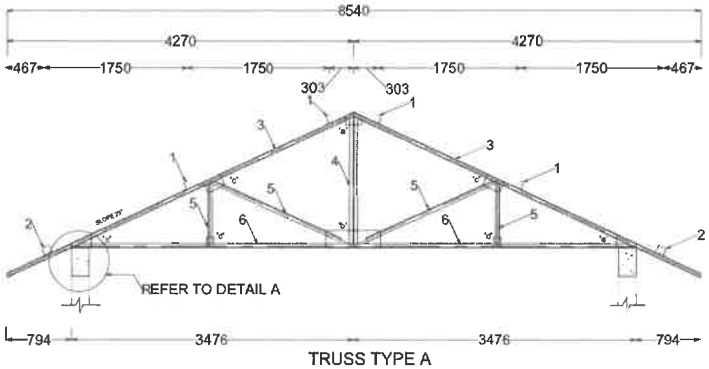
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP HOUSE ELEVATION LAYOUTS

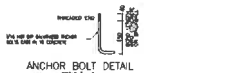
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-203	REV.: B0



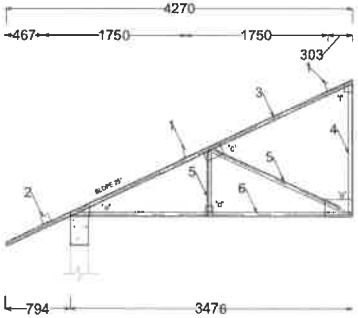
ROOF LAYOUT
SCALE 1:10



TRUSS TYPE A
SCALE 1:10



ANCHOR BOLT DETAIL
SCALE 1 : 5



TRUSS TYPE B
SCALE 1:10

LEGEND

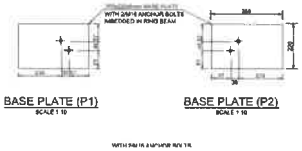
①	100x50x20x2.5mm L.C. PURLIN BOLTED TO 75x50x6mm ANGLE CLEAT WHICH IS WELDED TO TOP MEMBER OF TRUSS
②	2/100x50x20x2.5mm L.C. PURLIN WELDED TO FORM BOX. BOLTED TO 75x50x6mm ANGLE CLEAT WHICH IS WELDED TO TOP MEMBER OF TRUSS
③	TOP CHORD 2/50x50x5mm ANGLE
④	POST 2/50x50x5mm ANGLE
⑤	POSTS & DIAGONALS 50x50x3mm ANGLE
⑥	POST & BOTTOM CHORD 50x50x5mm ANGLE

GUSSET PLATES

* Gusset plates to be trimmed

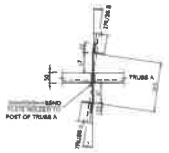
'a' - *200x150x6mm
'b' - 900x150x6mm
'c' - *250x150x6mm
'd' - 130x90x6mm
'e' - *240x170x6mm
'f' - *130x100x6mm
'g' - 330x150x6mm

ALL DOUBLE/SINGLE MEMBERS TO BE WELDED CONTINIOUSLY ALLROUND TO BOTH SIDES OF GUSSET PLATE



BASE PLATE (P1)
SCALE 1:10

BASE PLATE (P2)
SCALE 1:10



TRUSS CONNECTION DETAIL
SCALE 1:10

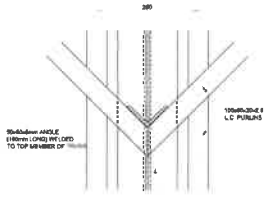
DETAIL A
SCALE 1:10

2/50x50x5mm ANGLES WELDED TOGETHER

TOP CHORD DETAIL
SCALE 1:5

2/100x50x20x2.5mm L.C. WELDED TOGETHERE TO FORM BOX

END PURLIN DETAIL
SCALE 1:5



HIP TRUSS PURLIN SUPPORT DETAIL
SCALE 1:10

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4:8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION , 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

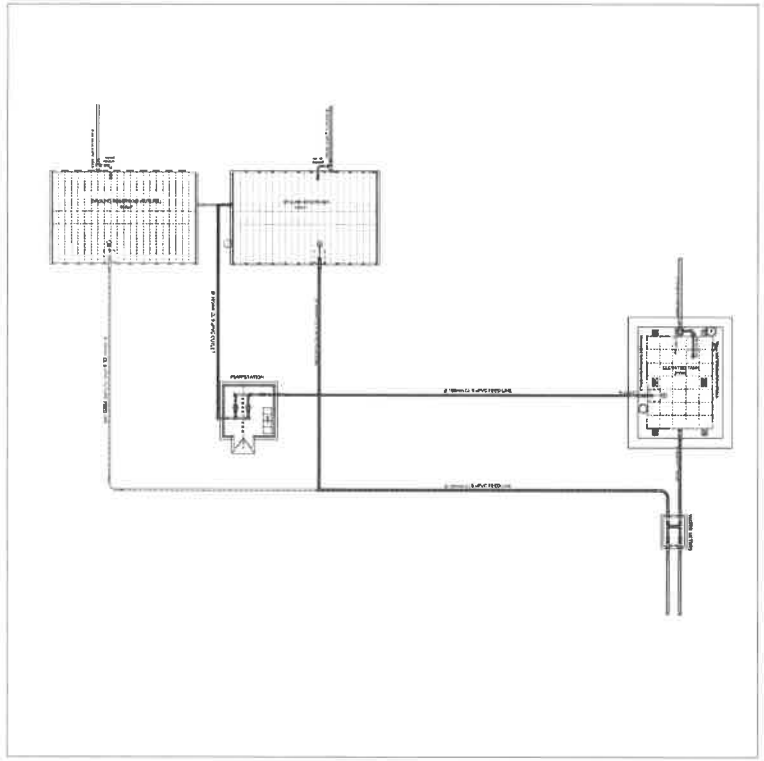
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL +264 61 232 062
WINDHOEK TEL +264 61 232 063
EMAIL: ed[illegible].com

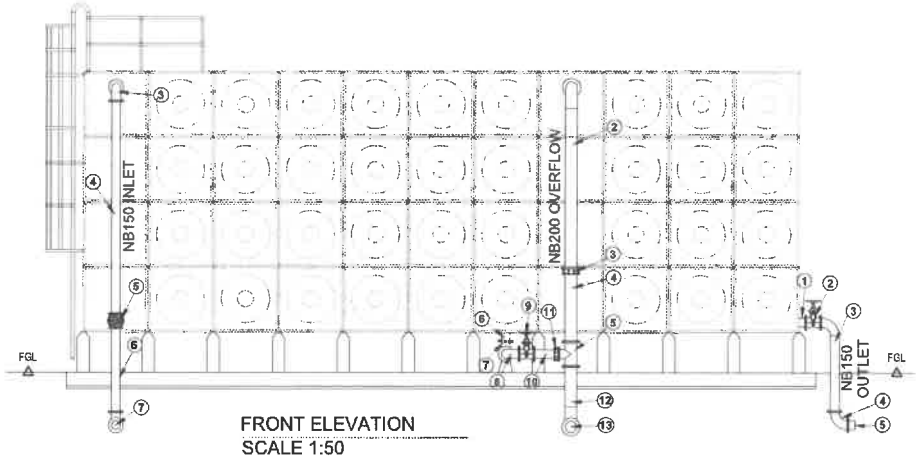
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP HOUSE ROOF LAYOUT AND SECTIONS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.H.T
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-204	REV.: B0



TANK LAYOUT
SCALE 1:200

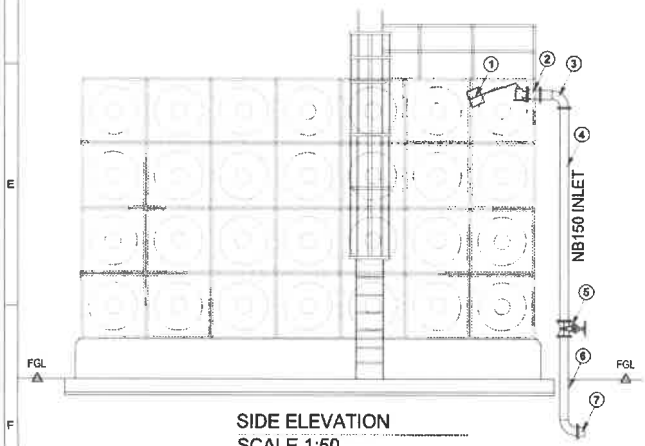


FRONT ELEVATION
SCALE 1:50

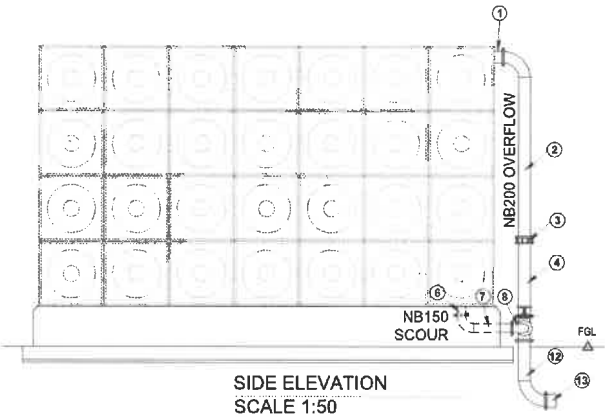
ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (INLET PIPE WORK)	SKETCH
1	150	1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	1	50MB STEEL PIPE, 240mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE AND OUTSIDE TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	150	1	50MB STEEL PIPE, 225mm LONG DISTANCE PIECE, CONNECTED TO 50MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150MB STEEL PIPE, 4000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	DETAILED FACE-TO-FACE DIMENSION: 280mm
6	150	1	150MB STEEL PIPE, 1560mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OUTLET PIPE WORK)	SKETCH
1	150	1	150MB STEEL PIPE, 150mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
3	150	1	150MB STEEL PIPE, 1430mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150MB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OVERFLOW & DRAIN PIPE WORK)	SKETCH
1	200	1	200MB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	200	1	200MB STEEL PIPE, 3000mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	200	1	200MB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200MB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
4	200	1	200MB STEEL PIPE, 780mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	200	1	200MB x 150MB REDUCING PIECE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	1	150MB STEEL PIPE, 252mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150MB STEEL PIPE, 715mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
8	150	1	150MB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
10	150	1	150MB STEEL PIPE, 450mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
11	150	1	150MB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200MB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
12	200	1	200MB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
13	200	1	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	



SIDE ELEVATION
SCALE 1:50



SIDE ELEVATION
SCALE 1:50

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		26-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 062 OR TO SABS 719, AND HOT DIPPED GALVANIZED TO SABS 763.
4. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS, THE LOWER TIERS AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 8MM THICK PLATES, OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM.
5. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL TYPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
6. TANK ROOF SHEETS SHALL BE DESIGNED TO PROVIDE OVERLAP FOR OPTIMUM SEALING AND MANUFACTURED FROM 2.5MM THICK AND 610MM WIDE SHEETS.
7. ALL SEALANTS AND RUBBER COMPONENTS USED SHALL BE APPROVED NON-TOXIC AND NON TAINTING.
8. THE TANK ROOF SHEETS SHALL BE SUPPLIED WITH ONE ACCESS MANHOLE, ONE INSPECTION MANHOLE, AND BUILT-IN SCREENED VENT.
9. THE TANK SHALL BE SUPPLIED WITH ONE INTERNAL AND EXTERNAL LADDERS.
10. PIPE CONNECTION POINTS SHALL BE WELDED TO THE TANK PLATES IN POSITION AS SPECIFIED IN THE DRAWINGS AND;
    - OVERFLOW AND DRAIN PIPES TO BE 200MM Ø 150MM DIA CWS FLANGE ONE SIDE ONLY.
    - OUTLET PIPING TO BE 150MM Ø DIA CWS FLANGED ONE SIDE ONLY.
    - INLET PIPING TO BE 150MM DIA CWS AND FLANGED INSIDE AND OUTSIDE.
11. TANK SHALL BE SUPPLIED WITH A LEVEL INDICATOR.
12. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3, UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
13. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
14. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES.
    - ALL STEEL PIPES SHALL BE GALVANIZED
    - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING
    - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
    - ALL VALVES SHALL HAVE A SAVER PROOF POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
    - ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
15. ALL uPVC INLET PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.
17. PIPE SCHEDULE TO BE READ SEPARATE FOR EACH PART OF THE CONNECTION

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

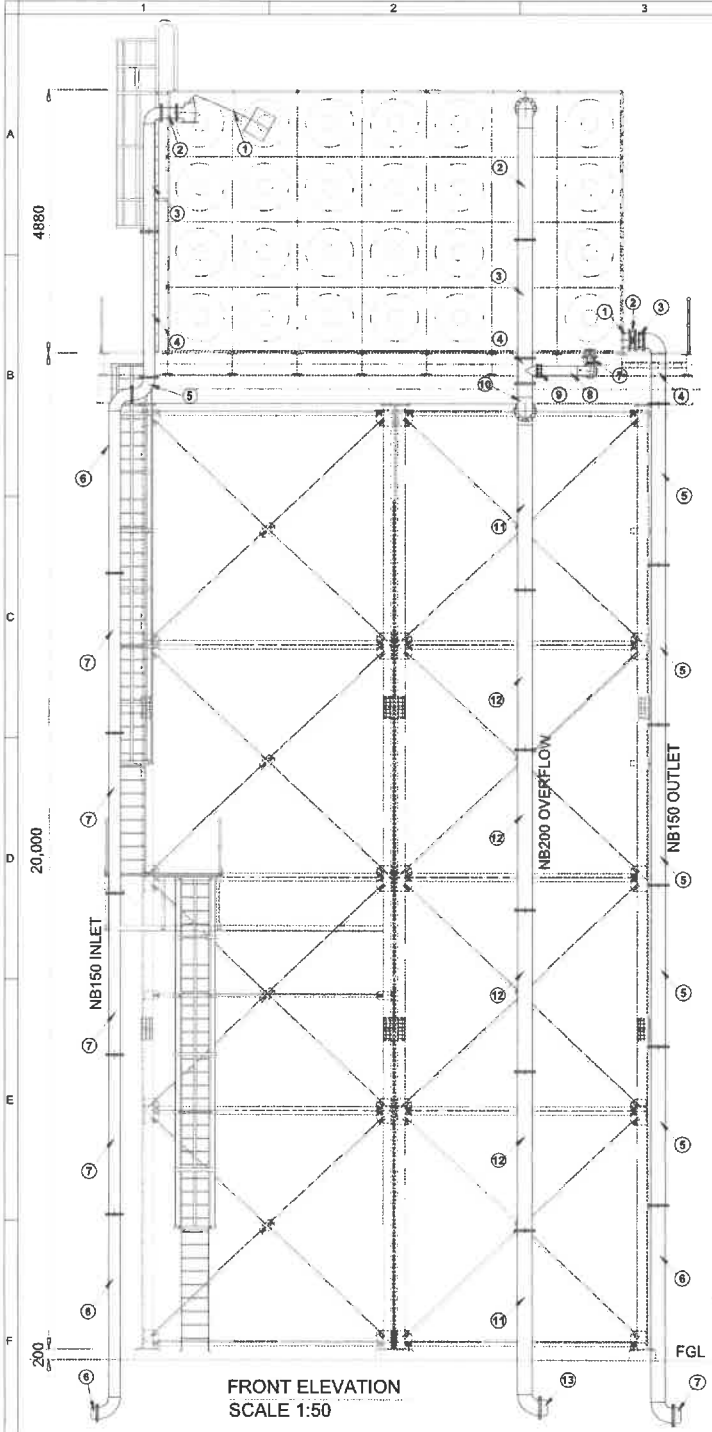
CONSULTANTS

OM'KUMOH
CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 81 232 052
WINDHOEK TEL +264 81 232 053
EMAIL: admin@omkumoh.com

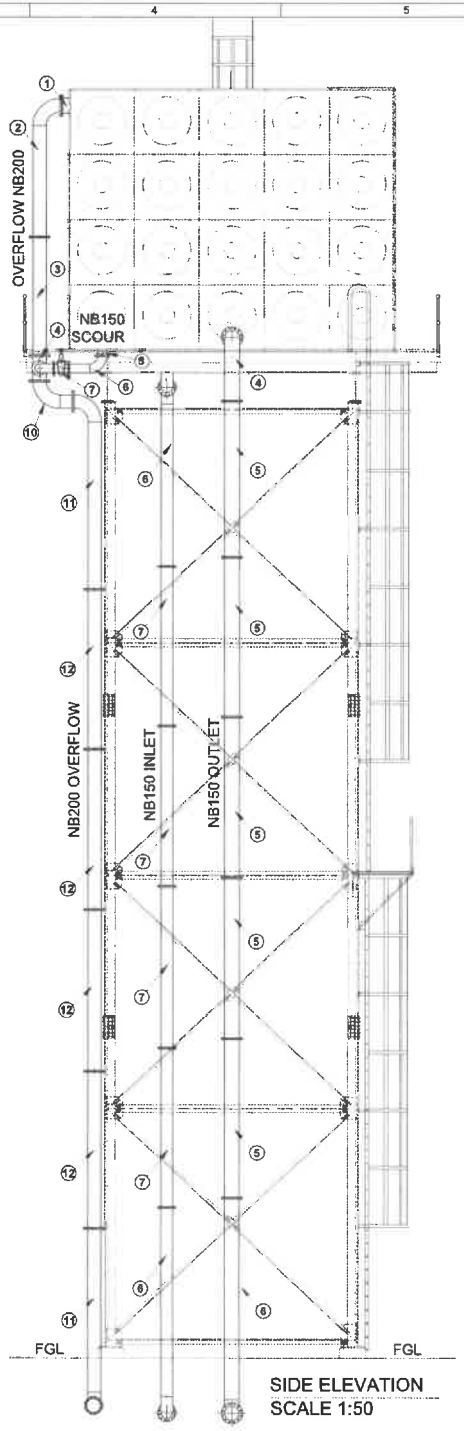
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
GROUND WATER RESERVOIR PIPE WORK DETAIL

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: W.U
FILE: 2501-QIV	DRWG No.: 2501-QIV-WTL-01-300	REV.: B0



FRONT ELEVATION
SCALE 1:50



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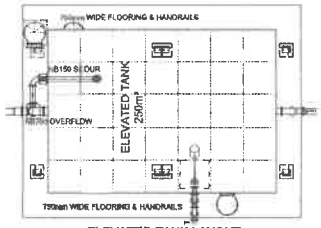
SCALE 1:50



ELEVATED TANK LAYOUT
SCALE 1:100

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (INLET PIPE WORK)	SKETCH
1	150	1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	1	150NB STEEL PIPE, 240mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE AND OUTSIDE TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	150	1	150NB STEEL PIPE, 2000mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150NB STEEL PIPE, 3740mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150NB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	2	150NB STEEL PIPE, 3000 mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	4	150NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
8	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OUTLET PIPE WORK)	SKETCH
1	150	1	150NB STEEL PIPE, 140mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	150	1	150 NB KNIFE GATE VALVE (SIMILAR TO "AVK") FLANGED BOTH ENDS FLANGE: SABS 1123 – 1000/3	
3	150	1	150 NB DISMANTLING JOINT SIMILAR TO "CLAMPLEX" FLANGED BOTH ENDS FLANGE: SABS 1123 – 1000/3	
4	150	1	150NB STEEL PIPE, 940mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	5	150NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	1	150NB STEEL PIPE, 3880mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OF	DESCRIPTION (OVERFLOW & DRAIN PIPE WORK)	SKETCH
1	200	1	200NB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	200	1	200NB STEEL PIPE, 2000mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	200	1	200NB STEEL PIPE, 2720mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	200	1	200NB x 150NB REDUCING TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150NB STEEL PIPE, 100mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	1	150NB STEEL PIPE, 400mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. DETAILS FACE – TO – FACE DIMENSION 280mm	
8	150	1	150NB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	1	150NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
10	200	1	200NB STEEL PIPE, 240mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
11	200	2	200NB STEEL PIPE, 3115mm LONG DISTANCE PIECE, CONNECTED TO 200NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
12	200	4	200NB STEEL PIPE, 3000mm LONG DISTANCE PIECE, ONE END PLAIN OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
13	200	1	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MILD CAUSE STEEL TO SABS 062 OR TO SABS 719, AND HOT DIPPED GALVANIZED TO SABS 763.
4. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS. THE LOWER TIERS AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 8MM THICK PLATES, OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM.
5. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL TYPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
6. TANK ROOF SHEETS SHALL BE DESIGNED TO PROVIDE OVERLAP FOR OPTIMUM SEALING AND MANUFACTURED FROM 2.5MM THICK AND 810MM WIDE SHEETS.
7. ALL SEALANTS AND RUBBER COMPONENTS USED SHALL BE APPROVED NON-TOXIC AND NON TAINTING.
8. THE TANK ROOF SHEETS SHALL BE SUPPLIED WITH ONE ACCESS MANHOLE, ONE INSPECTION MANHOLE, AND BUILT-IN SCREENED VENT
9. THE TANK SHALL BE SUPPLIED WITH ONE INTERNAL AND EXTERNAL LADDERS.
10. PIPE CONNECTION POINTS SHALL BE WELDED TO THE TANK PLATES IN POSITION AS SPECIFIED IN THE DRAWINGS AND;
    - OVERFLOW AND DRAIN PIPES TO BE 200MM & 150MM DIA G/S FLANGE ONE SIDE ONLY.
    - OUTLET PIPING TO BE 150MM DIA G/S FLANGED ONE SIDE ONLY.
    - INLET PIPING TO BE 150MM DIA G/S AND FLANGED INSIDE AND OUTSIDE.
11. TANK SHALL BE SUPPLIED WITH A LEVEL INDICATOR.
12. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3 UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
13. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
14. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
    - ALL STEEL PIPES SHALL BE GALVANIZED.
    - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
    - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
    - ALL VALVES SHALL HAVE A SINTER PROXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
    - ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
15. ALL uPVC INLET PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.
17. PIPE SCHEDULE TO BE READ SEPARATE FOR EACH PART OF THE CONNECTION.

ISSUED FOR TENDER

CLIENT: KUNENE REGIONAL COUNCIL

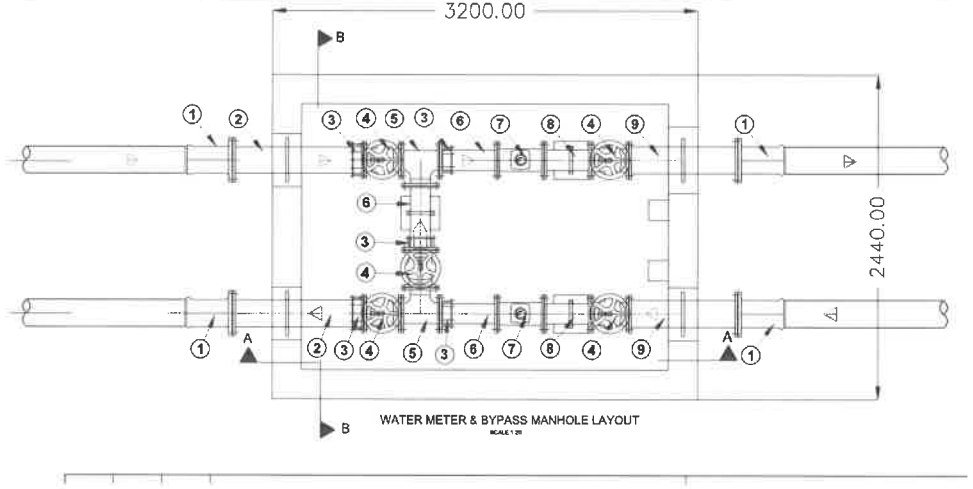
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 81 232 052
WINDHOEK TEL: +264 81 232 053
EMAIL: admin@omkumoh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

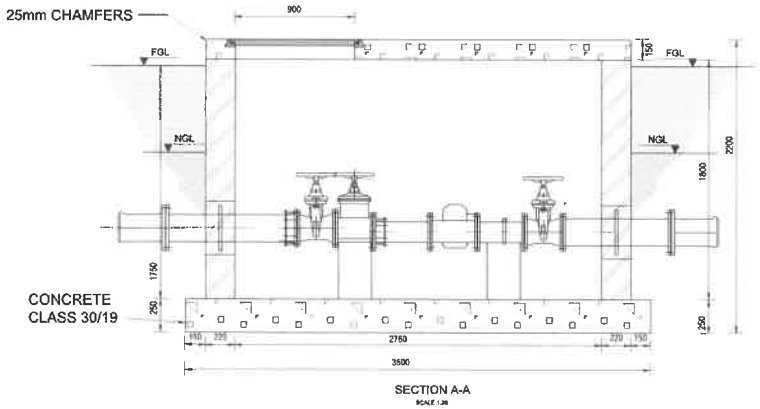
DRAWING TITLE
ELEVATED STEEL RESERVOIR (20m STAND) PIPE WORK DETAIL

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:20	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: W.J
FILE: 2501-QIV	DRWG No: 2501-CIV-WR-01-301	REV: B0

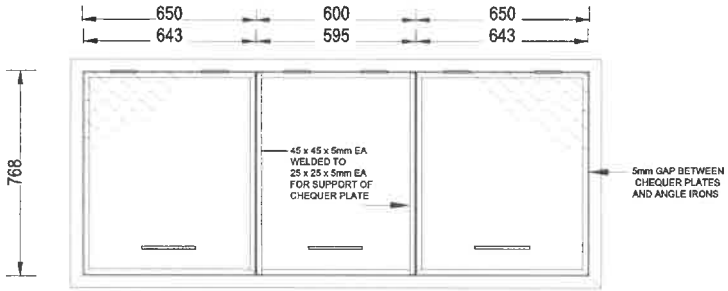


WATER METER & BYPASS MANHOLE LAYOUT
SCALE 1:25

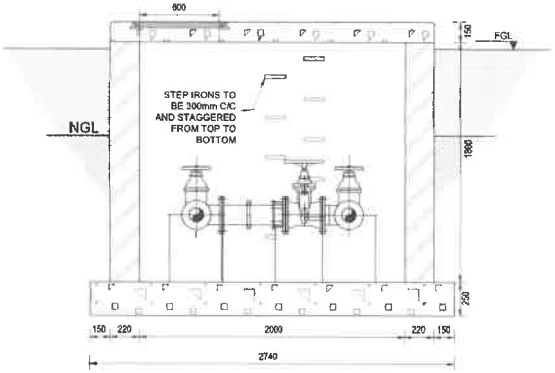
ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (MANHOLE PIPE WORK)	SKETCH
1	150	4	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	2	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	410 560
3	150	5	150NB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
4	150	5	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
5	150	2	150NB EQUAL TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	3	150NB STEEL PIPE, 410 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	410
7	150	2	DN150, PN16, M100 OPTIMA MULTI-JET WATER METER, CLASS C COMPLETE WITH COUPLINGS, FITTINGS, PIPE WORK, ETC FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	
8	150	2	150NB STEEL PIPE, 350mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	2	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	410 410



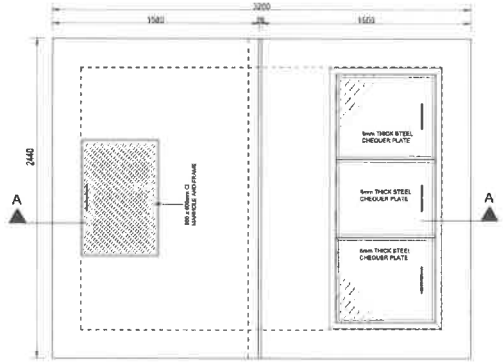
SECTION A-A
SCALE 1:20



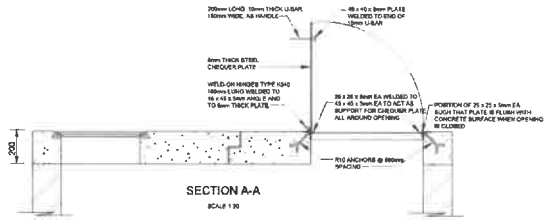
PLAN VIEW OF ANGLE IRON FRAME
SCALE 1:10



SECTION B-B
SCALE 1:20



PLAN VIEW OF COVER SLAB
SCALE 1:20



SECTION A-A
SCALE 1:20

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-06-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE PIPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 062 OR TO SABS 719 AND HOT DIPPED GALVANIZED TO SABS 763
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3 UNLESS OTHERWISE STATED IN PIPE SCHEDULE
5. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER SHALL BE GALVANIZED.
   - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
   - ALL VALVES SHALL HAVE A SANTER EPOXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
   - ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
7. ALL uPVC INLET PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT: KUNENE REGIONAL COUNCIL

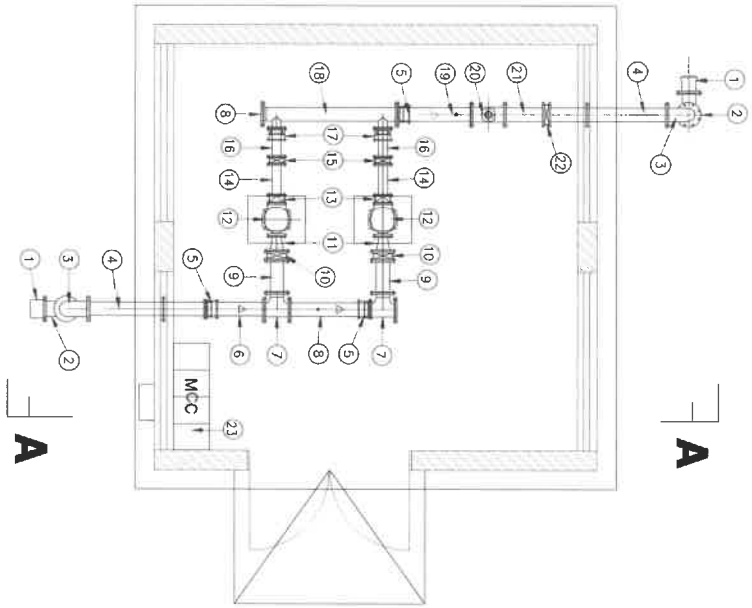
CONSULTANTS:

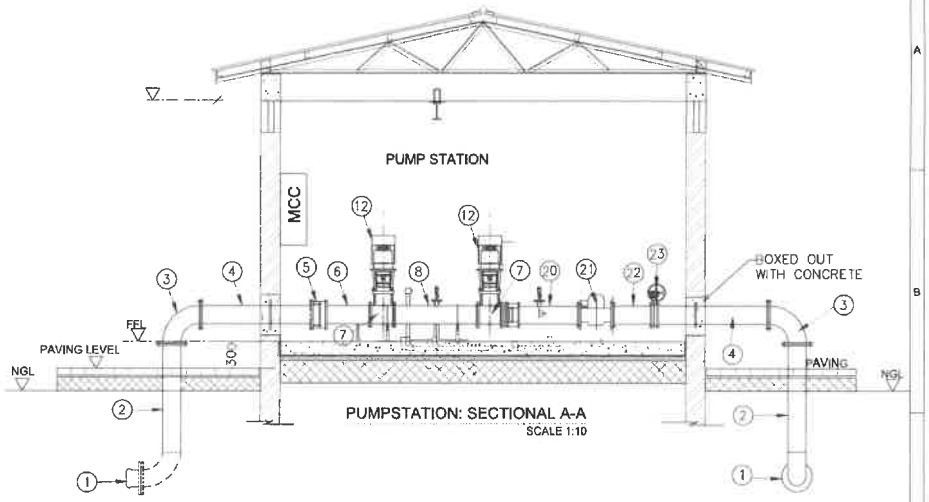
OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: [redacted].com

PROJECT NAME:
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE:
WATER METER AND BY PASS MANHOLE DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-302	REV.: B0





ITEM NO.	SIZE DN	NO. OFF	PIPE WORK SCHEDULE 1 OFF 2	SKETCH
1	150	2	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	2	150NB STEEL PIPE, 1220 mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1220, 241
3	150	2	150NB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	241, 240
4	150	2	150NB STEEL PUDDLE PIPE, 1245mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1245, 785, 410
5	150	3	150NB KLAWFLEX FLANGE RESTRAINING FLANGE ADAPTOR, TO SUIT 150 NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
6	150	2	150NB STEEL PIPE, 680 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	680
7	150	2	150NB TEE AS DETAILED, FLANGED AND DRILLED TO SABS, TABLE 1000. CORROSION PROTECTION: HOT-DIP GALVANIZED	148, 148, 148
8	150	2	150NB STEEL PIPE, 885 MM LONG DISTANCE PIECE, WITH DN 25 DISTANCE PIECE AND 1" BALL VALVE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	885
9	150	2	150NB STEEL PIPE, 360 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	360
10	150	2	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
11	150	2	150 NB x 100 NB STEEL ECCENTRIC REDUCER FLANGED BOTH ENDS FLANGE: SABS 1123 - 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	165

ITEM NO.	SIZE DN	NO. OFF	PIPEWORK SCHEDULE 2 OFF 2	SKETCH
12		2	MULTISTAGE END SUCTION CENTRIFUGAL PUMP - No.: 2 OFF (ONE DUTY ONE STANDBY) - MAKE & MODEL: GRUNDFOS CR95-3-2 OR SIMILAR & APPROVED - CAPACITY: 85m³/hr - HEAD: 37.04 mWC - POWER: 18.50 kW - TYPE OF CONNECTION: FIN - INLET CONNECTION - DN 100mm - OUTLET CONNECTION - DN 100mm	
13	100	2	100 NB SWING CHECK VALVE PN 16 SIMILAR TO "AVK" FLANGED BOTH ENDS FLANGE: SABS 1123 - 1000/3	
14	100	2	100 NB STEEL PIPE, 350 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	350
15	100	2	100 NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	
16	100	2	100 NB STEEL PIPE, 300 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	300
17	100	2	100 NB KLAWFLEX FLANGE RESTRAINING FLANGE ADAPTOR, TO SUIT 150 NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
18	150	1	150NB STEEL PIPE, 1530 mm LONG DISTANCE PIECE DOUBLE TEE (100 NB), BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1530, 165, 1200, 165, 1237
19	150	1	150NB STEEL PIPE, 800 MM LONG DISTANCE PIECE, WITH DN 25 DISTANCE PIECE AND 1" BALL VALVE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	800
20	150	1	150 NB FLOW METER, SIMILAR TO PROMAG ELECTROMAGNETIC FLOW METER, FLANGED BOTH ENDS, FLANGE: SABS 1123 - 1000/3	
21	150	1	150 NB STEEL PIPE, 445 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	445
22	150	1	150 NB KNIFE GATE VALVE (SIMILAR TO "AVK") FLANGED BOTH ENDS FLANGE: SABS 1123 - 1000/3	
23		1	MOTOR CONTROL CENTER (MCC) DESIGN, SUPPLY AND INSTALLATION COMPLETE WITH: - LOCAL CONTROL STATION (CUE 3X380-500V IP20 18,5 KW OR SIMILAR AND APPROVED) - PUMP MOTOR CONNECTION - PROVISION FOR CONNECTION OF ALL CONTROL INSTRUMENTATION	

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 062 OR TO SABS 719. AND HOT DIPPED GALVANISED TO SABS 763.
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3, UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
5. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER GREATER THAN 100MM SHALL BE GALVANIZED
   - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
   - ALL VALVES SHALL HAVE A SINTER PROXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
   - ALL NUTS, BOLTS AND WASHERS SHALL BE MILD STEEL.
10. ALL uPVC INLET PIPES TO BE OF CLASS 12 & ALL OUTLET PIPES CLASS 9 AND TO SABS 966 PART 1, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT
KUNENE REGIONAL COUNCIL

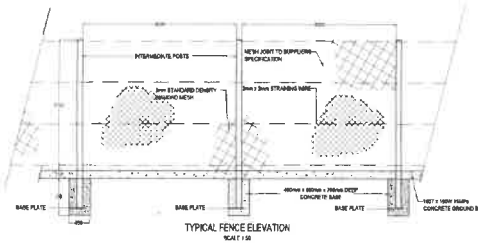
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL +264 61 232 052
WINDHOEK TEL +264 61 232 053
EMAIL: admin@omkumoh.com

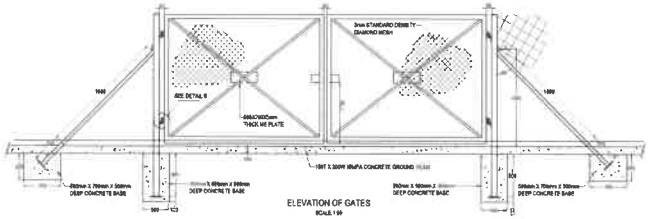
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP STATION M&E EQUIPMENT AND PIPE WORK DETAILS

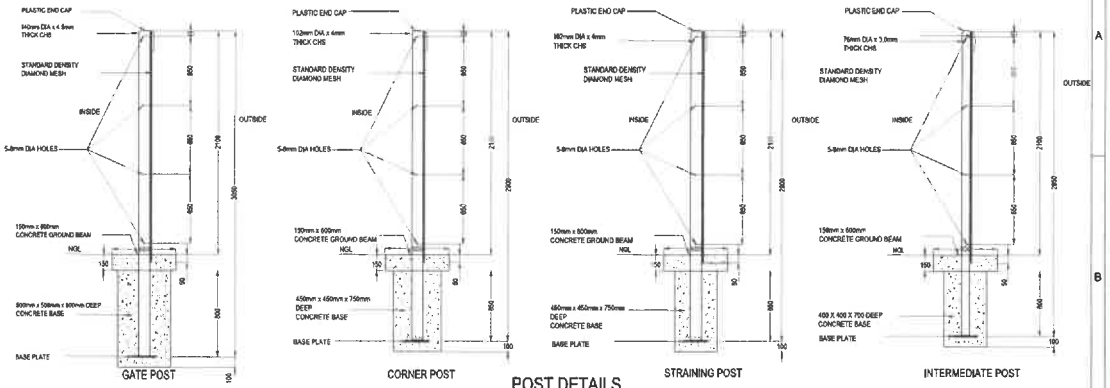
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: O.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WT-01-400	REV.: B0



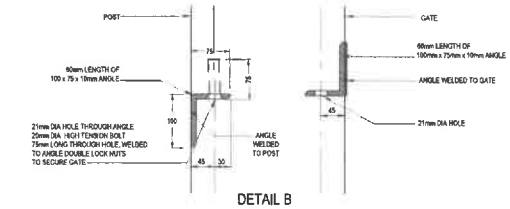
TYPICAL FENCE ELEVATION
SCALE 1:50



ELEVATION OF GATES
SCALE 1:50

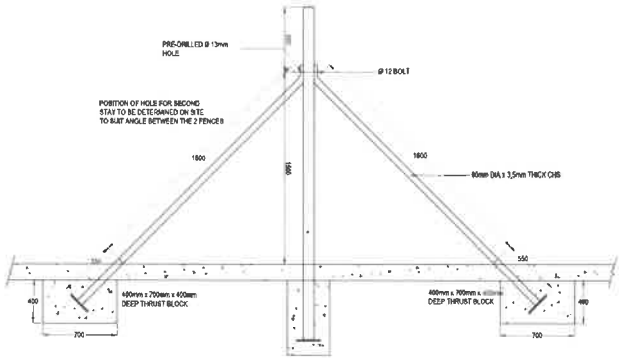


POST DETAILS
SCALE 1:25

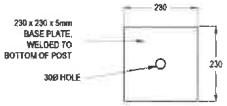


DETAIL B
GATE HINGE
SCALE 1:5

STAY DETAILS
SCALE 1 : 20

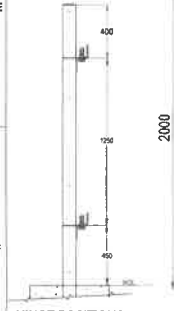


DETAIL OF STAYS AT CORNER POSTS AND STRAINING POSTS
SCALE 1:25

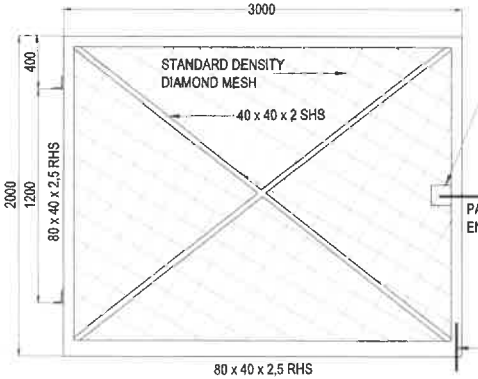


BASE PLATE
SCALE 1:10

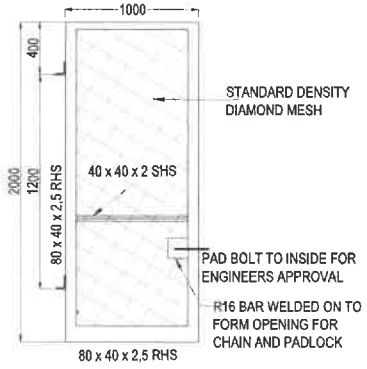
POSTS : ALL SANS 657 - 1 GALVANISED TO SANS 763-CLASS B1
GATE POST 140mm x 4.5mm CHS
CORNER POST 102mm x 4mm CHS
STRAINING POST 102mm x 4mm CHS
INTERMEDIATE POST 76mm x 3mm CHS
STAY 60mm x 4mm CHS



HINGE POSITIONS



GATE DETAIL



PEDESTRIAN GATE DETAIL

NOTES:

1. **FENCE LEVELS:**
   - THE BOTTOM OF THE FENCE IS TO FOLLOW A SERIES OF STRAIGHT LINES, BETWEEN STRAINING POSTS.
2. **FENCE LEVELS:**
   - THE LINE OF THE FENCE IS TO BE AS SHOWN ON THE LAYOUT PLAN AND SHALL BE SET OUT BY A LAND SURVEYOR OR OTHER COMPETENT PERSON.
   - A CORNER POST WITH STAYS IS TO BE PROVIDED AT EACH CHANGE OF DIRECTION.
   - STRAINING POSTS SHALL BE INSTALLED AT DIPS (CHANGES OF GRADE) AND ALSO ALONG STRAIGHT SECTIONS OF FENCE AT INTERVALS NOT EXCEEDING 30 METERS MESH JOINT TO SUPPLIERS SPECIFICATION.
   - **WIRES:** SANS 675 STRAINING WIRE 4mm DIA HIGH TENSILE.
   - **TYING WIRES:** 2.5mm DIA MILD STEEL - STRAINING WIRE TO POST, MESH TO STRAINING WIRE, 1.6mm DIA MILD STEEL - MESH AND FLAT WRAP TO WIRE / MESH.
   - **BARBED WIRE:** 2.5mm GALVANISED DOUBLE STRAND REVERSE TWIST BARBED WIRES TIED TO STANDARDS, POSTS AND EYEBOLTS AT 150mm MAX CENTERS.
3. **GATES AND POSTS:**
   - THE GATES AND ALL POSTS ARE TO BE MANUFACTURED AS DETAILED ON THIS DRAWING.
   - ALL STEEL COMPOENTS ARE TO BE HOT-DIP GALVANISED AFTER MANUFACTURE.
   - THE GATES AND ALL POSTS ARE TO BE ACCURATELY SUPPORTED (POSITION, LEVEL AND PLUMB) BEFORE THE CONCRETE IS CAST AND MAINTAINED THUS UNTIL THE CONCRETE HAS SET.
   - ANY AREAS WHERE ON-SITE DRILLING IS NECESSARY ARE TO BE THOROUGHLY TREATED WITH AN APPROVED COLD GALVANIZING SYSTEM. ALL POSTS AND STAYS TO HAVE 230 x 230 x 5mm THICK BASE PLATES WITH 30mmØ HOLE.
   - PAD BOLTS AND DROP BOLTS 16mmØ TO ENGINEERS APPROVAL.
4. **GROUND BEAM:**
   - THE CONCRETE GROUND BEAM IS TO BE CAST INTO THE GROUND.
   - CONCRETE IN BEAM TO BE GRADE 15/19 CONCRETE IN FOUNDATION TO BE GRADE 20/19 CONCRETE.
   - BEAM IS TO BE CAST IN 6m LENGTHS WITH A SOFTBOARD EXPANSION JOINT AT 18m MAXIMUM CENTERS.

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		26-08-2025

GENERAL NOTES:

1. THE CONTRACTOR SHOULD CHECK ALL DISTANCES AND LEVELS AS INDICATED ON THE DRAWING FOR CORRECTNESS PRIOR TO CONSTRUCTION.
2. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. NO PART OF THIS DRAWING MAY BE SCALED.
4. EARTHWORKS:
   - EXCAVATIONS UNDERNEATH PUMP STATION TO BE INSPECTED BY ENGINEER PRIOR TO CONSTRUCTION OF PUMP STATION.
   - BACKFILL AROUND PUMP STATION IN 200mm LAYERS TO 93% MOD AASHTO DENSITY
   - LAYERWORKS BELOW INTERLOCKINGS
     25mm SAND BEDDING LAYER
     150mm SUBBASE TO 95% MOD AASHTO DENSITY
     150mm SURFACE BED PREPARATION TO 93% MOD AASHTO DENSITY
   - OVER EXCAVATION UNDERNEATH FOUNDATIONS ARE TO BE FILLED WITH 15/19 MASS CONCRETE.
4. CONCRETE
   - A 50mm BLINDING LAYER OF 15/19 CONCRETE IS TO BE CAST UNDER ALL FOUNDATIONS.
   - ALL CONCRETE WORK SHALL BE DONE ACCORDING TO SABS 1200G.
   - CONCRETE CLASS SHALL BE 35/19MPa WITH 30 % FLY-ASH UNLESS STATED OTHERWISE ON THE STRUCTURAL DRAWINGS.
   - MINIMUM CONCRETE COVER SHALL BE 40mm.
   - ALL EXPOSED CONCRETE CORNERS TO HAVE 25m CHAMFERS.
   - ALL EXPOSED CONCRETE TO HAVE SMOOTH OFF-SHUTTER
   - ALL EXPOSED CONCRETE SURFACES TO BE WOOD FLOAT FINISH.
5. STEEL:
   - ALL STEEL PIPES TO BE GRADE 304 STAINLESS STEEL.
   - ALL FLANGES TO BE SABS 1123, TABLE 1000/3.
   - ALL BOLTS & NUTS TO BE STAINLESS STEEL.
   - ALL GASKETS TO BE 3mm Ri GASKETS, RING TYPE.
6. BRICK AND BUILDING:
   - EXTERIOR WALL TO BE PLASTERED AND PAINTED WITH TWO LAYERS EXTERIOR PVA.
   - INTERIOR PAINTED WITH EGGSHELL- SEMIGLOSS ENAMEL OR APPROVED SIMILAR COLOURS BY CLIENT.
   - CEILING TO BE CELOTEX FIXED TO 50x38mm BRANDERING AT 400 c/c IN ONE DIRECTION ONLY.
   - STEEL DOORS PAINTED WITH ONE PRIMER AND ONE UNDERCOAT LAYER, FINISHED WITH TWO MAT ENAMEL FINAL COATS.
   - FACIA TO BE 300mm AC STANDARD PAINTED WITH LAYERS ENAMEL.
7. GENERAL:
   - ALL ELECTRICAL SLEEVES AND DRAINAGE SLEEVES TO BE CHASED INTO WALLS OR SLABS.

ISSUED FOR TENDER

CLIENT: KUNENE REGIONAL COUNCIL

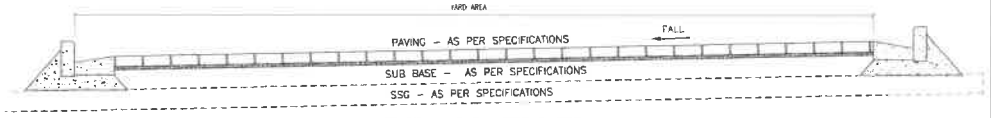
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86186 TEL +264 61 232 052
WINDHOEK TEL +264 61 232 053
EMAIL: adm@[illegible].com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

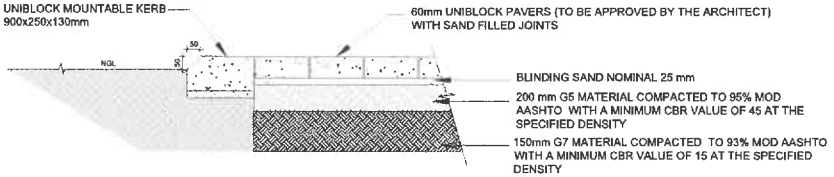
DRAWING TITLE
TYPICAL FENCE DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV-WR	DRWG No.: 2501-CIV-WR-02-200	REV.: B0



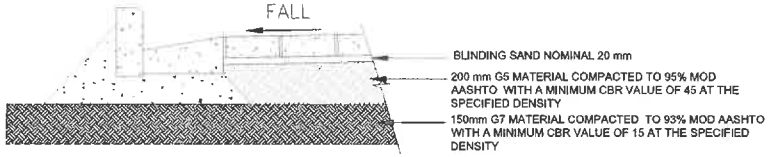
TYPICAL PARKING CROSS SECTION

NTS



TYPICAL SECTION AT THE EDGE CONCRETE PAVEMENT WITH MOUNTABLE KERBS

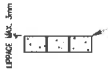
SCALE 1 : 10



TYPICAL SECTION AT THE EDGE CONCRETE PAVEMENT WITH BARRIER KERB & CHANNEL

SCALE 1 : 10

NOTE:JOINT WIDTH ARE MEASURED WITH A RULER FROM INSIDE EDGE OF PAVER TO INSIDE EDGE PAVER BETWEEN ADJACENT PAVERS

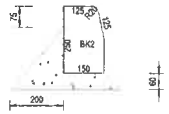


NOTE:LIPPAGE IS MEASURED FROM TOP OF A PAVER TO THE TOP OF THE ADJACENT PAVER

CHAMFER

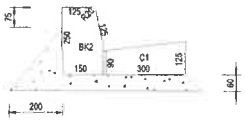
VERTICAL TOLERANCE MEASUREMENT GUIDANCE

SCALE 1 : 10

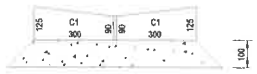


BARRIER KERB

EDGING STONE



BARRIER KERB & CHANNEL



V - CHANNEL

NOTE
ALL UNITS TO LAID WITH 15MPa CONCRETE ON BEDDING /BACKLINE ON WELL COMPACTED SUBGRADE/SUBBASE

KERB, CHANNEL AND EDGING DETAILS
SCALE 1:10

LAYER SPECIFICATION

PARKING AREA:

INTERLOCK PAVING:

60mm pavers (35 Mpa) with 25mm sand.

SUB-BASE COURSE:

200mm Imported gravel compacted to a density of 95% Modified AASHTO. with a minimum CBR value of 45 at the specified density. (G5)

SELECTED LAYER:

150mm Imported gravel compacted to a density of 93% Modified AASHTO. with a minimum CBR value of 15 at the specified density. (G7)

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. THE CONTRACTOR SHOULD CHECK ALL DISTANCES AND LEVELS AS INDICATED ON THE DRAWING FOR CORRECTNESS PRIOR TO CONSTRUCTION.
2. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. NO PART OF THIS DRAWING MAY BE SCALED.
4. DRAWING MUST BE READ IN REFERENCE WITH THE GENERAL ARRANGEMENT AND LAYOUT DRAWING.
4. **EARTHWORKS:**
   - EXCAVATIONS UNDERNEATH PUMP STATION TO BE INSPECTED BY ENGINEER PRIOR TO CONSTRUCTION OF PUMP STATION.
   - BACKFILL AROUND PUMP STATION IN 200mm LAYERS TO 93% MOD AASHTO DENSITY
   - LAYERWORKS BELOW INTERLOCKINGS : 25mm SAND BEDDING LAYER 150mm SUBBASE TO 95% MOD AASHTO DENSITY 150mm SURFACE BED PREPARATION TO 93% MOD AASHTO DENSITY
   - OVER EXCAVATION UNDERNEATH FOUNDATIONS ARE TO BE FILLED WITH 15/19 MASS CONCRETE.
4. **CONCRETE**
   - A 50mm BLINDING LAYER OF 15/19 CONCRETE IS TO BE CAST UNDER ALL FOUNDATIONS.
   - ALL CONCRETE WORK SHALL BE DONE ACCORDING TO SABS 1200G.
   - CONCRETE CLASS SHALL BE 35/19MPa WITH 30 % FLY-ASH UNLESS STATED OTHERWISE ON THE STRUCTURAL DRAWINGS.
   - MINIMUM CONCRETE COVER SHALL BE 40mm.
   - ALL EXPOSED CONCRETE CORNERS TO HAVE 25m CHAMFERS.
   - ALL EXPOSED CONCRETE TO HAVE SMOOTH OFF-SHUTTER
   - ALL EXPOSED CONCRETE SURFACES TO BE WOOD FLOAT FINISH.
5. **STEEL:**
   - ALL STEEL PIPES TO BE MILD STEEL MEMBERS.
   - ALL FLANGES TO BE SABS 1123, TABLE 1000/3.
   - ALL BOLTS & NUTS TO BE STAINLESS STEEL.
   - ALL GASKETS TO BE 3mm RI GASKETS, RING TYPE.
6. **BRICK AND BUILDING:**
   - EXTERIOR WALL TO BE PLASTERED AND PAINTED WITH TWO LAYERS EXTERIOR PVA.
   - INTERIOR PAINTED WITH EGGSHELL- SEMIGLOSS ENAMEL OR APPROVED SIMILAR COLOURS BY CLIENT.
   - CEILING TO BE CELOTEX FIXED TO 50x38mm BRANDERING AT 400 c/c IN ONE DIRECTION ONLY UNLESS OTHERWISE STATED ON THE SECTION DRAWINGS.
   - STEEL DOORS PAINTED WITH ONE PRIMER AND ONE UNDERCOAT LAYER, FINISHED WITH TWO MAT ENAMEL FINAL COATS.
   - FACIA TO BE 300mm AC STANDARD PAINTED WITH LAYERS ENAMEL.
7. **GENERAL:**
   - ALL ELECTRICAL SLEEVES AND DRAINAGE SLEEVES TO BE CHASED INTO WALLS OR SLABS.

ISSUED FOR TENDER

CLIENT

KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98186 TEL +264 61 232 052
WINDHOEK TEL +264 61 232 053
EMAIL: admin@omkumoh.com

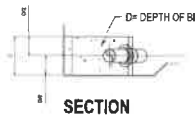
PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

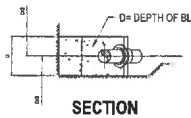
DRAWING TITLE

SEGMENT PAVING DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.H.T
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-02-200	REV.: B0



SECTION
SCALE 1:20



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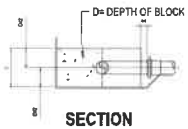

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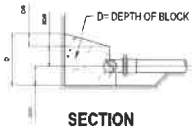

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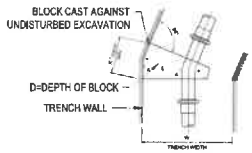
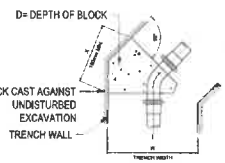
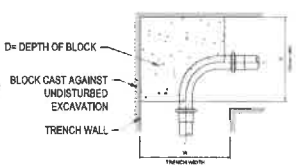


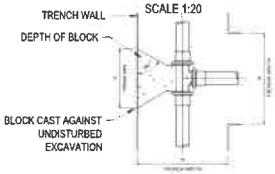
PLAN VIEW OF 22.5° AND 11.25° BEND
N.T.S



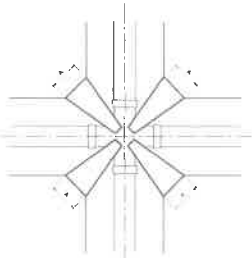
PLAN VIEW OF 45° BEND
N.T.S



PLAN VIEW OF 90° BEND
N.T.S



PLAN VIEW OF THRUST BLOCK FOR TEES
N.T.S



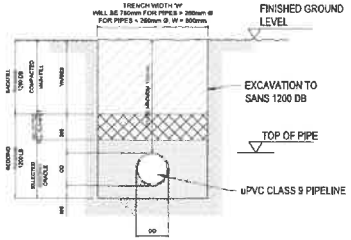
CROSSES

NOMINAL	A	BLOCK DEPTH C
50	130	200
75	160	230
110	200	260
160	250	300
200	300	480

IMPORTANT NOTES :
1. THE RESPONSIBILITY OF SAFEGUARDING THE TRENCH EXCAVATION SIDEWALLS RESTS WITH THE CONTRACTOR.
2. THE PROPPING/SHORING AND/OR SLOPING OF TRENCH EXCAVATIONS MUST BE INCLUDED IN THE TENDERED RATES.

NOTE :
COMPACTION OF BACKFILLING TO SANS 1200 DB & LB,
OR WITH MINIMUM COMPACTION AS FOLLOWS :

BEDDING CRADLE	: HAND COMPACTED IN 100 mm LAYERS
FILL BLANKET	: HAND COMPACTED IN 100 mm LAYERS
MAIN FILL	: 98% MOD AASHTO IN 150 mm LAYERS



TRENCH EXCAVATION AND BACKFILL DETAIL WATER & PUMP LINE
N.T.S.

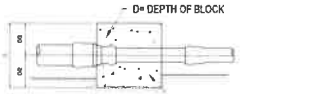
NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	250	350	470
250	800	225	350	450
200	800	150	250	300
160	640	110	210	260
110	440	100	120	170
90	360	100	100	140
75	300	100	100	100
63	250	100	100	100

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	450	550	880
250	800	450	550	870
200	800	300	450	550
160	640	280	370	470
110	440	170	270	330
90	360	130	210	260
75	300	120	200	250
63	250	100	130	180

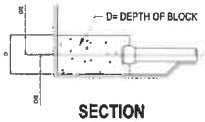
NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	800	1200	1600
250	1000	650	950	1250
200	800	500	750	1000
160	640	420	630	800
110	440	280	440	550
90	360	220	360	450
75	300	200	300	400
63	252	176	252	328

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	580	840	1160
250	1000	450	670	890
200	800	350	550	700
160	820	350	430	590
110	420	220	330	385
90	380	180	270	315
75	300	150	250	300
63	250	130	200	260

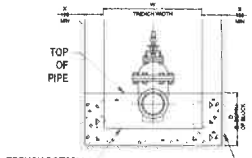
THRUST BLOCK CONCRETE STRENGTH TO CLASS 30/19 MPa.



SECTION
SCALE 1:20



SECTION
SCALE 1:20



SECTION
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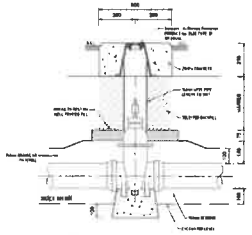
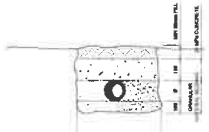
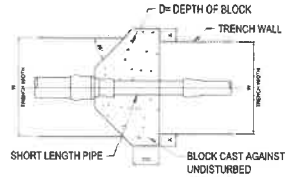


SECTIONAL DETAIL OF SLUICE VALVE
N.T.S

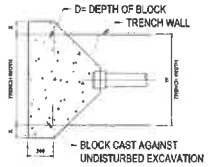


COVER SLAB FOR PIPES LESS THAN 0.5m TO INVERT LEVEL.

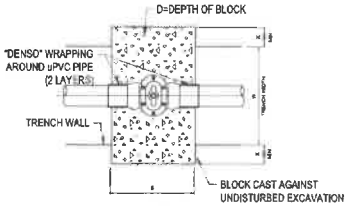
PIPE ENCASING DETAIL FOR COVER LESS THAN 1.0m IN ROADS



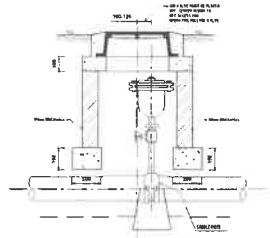
PLAN VIEW OF THRUST BLOCK FOR REDUCERS
N.T.S



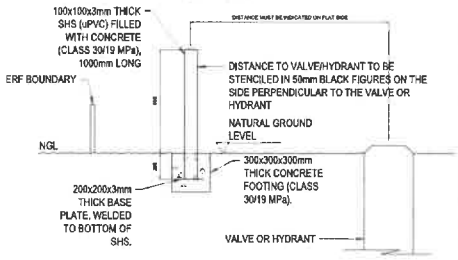
PLAN VIEW OF THRUST BLOCK FOR END CAPS
N.T.S



PLAN VIEW OF THRUST BLOCK FOR GATE VALVE
N.T.S



AIR VALVE BOX



TYPICAL VALVE OR HYDRANT MARKER
SCALE 1:20

NOMINAL DIAMETER Ø 1 (mm)	NOMINAL DIAMETER Ø 2 (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
250	200/160	650	250	350	450
200	160/110	600	200	300	400
160	110/75	500	150	200	250
110	90/63	400	150	150	150
90	75/63	400	150	150	150
75	63	300	100	150	150

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
250	700	0	200	400
200	450	0	200	400
160	300*	0	200	400*
110	200	0	100	200
90	150	0	100	150
75	150	0	0	100
63	150	0	0	0

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	WIDTH OF BLOCK B(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	600	800	500	800	1100
250	550	750	300	500	700
200	500	700	150	300	500
160	400	650	150	250	350
110	300	600	150	150	200
90	250	550	150	150	200
63	200	500	150	150	150

* DEPTH TO INCREASE TO 400mm AT TESTING PRESSURE OF 1800 kPa.

NOTES:
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE.
2. X-DIMENSIONS MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES - TO BE DISCUSSED WITH THE ENGINEER.
3. KEEP COUPLINGS AND FLANGES MIN. 25mm CLEAR OF CONCRETE.
4. DETAILS OF THRUST BLOCKS FOR PIPELINES GREATER THAN 315mm DIAMETER TO BE DISCUSSED WITH THE ENGINEER.
5. HALF THE DEPTH OF THE THRUST BLOCK TO BE PLACED BELOW THE PIPE AXIS.
6. CONCRETE: PUDDLE FLANGES 25/19 OTHER 15/19.

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		26-08-2025

GENERAL NOTES:
1. ALL EXTERNAL POTABLE WATER RETICULATION TO BE uPVC CLASS 9.
2. EARTHWORKS FOR PIPE TRENCHES TO BE DONE ACCORDING TO SABS/SANS 1200 DB.
3. BEDDING FOR ALL PIPE WORK TO BE DONE TO SABS/SANS 1200LB.
4. ALL EXTERNAL WATER INFRASTRUCTURE TO BE INSTALLED ACCORDING TO SPECIFICATIONS AND DRAWINGS.
5. TESTING TO BE DONE AS PER SANS 1200L.
6. ALL EXTERNAL REDUCERS, VALVES, HYDRANTS, PRESSURE BENDS,TEES AND END CAPS TO BE CONSTRUCTED WITH PROPER THRUST BLOCKS AS PER SUPPORTING DETAILS.
7. ALL VALVES IN THE WATER AND FIRE RETICULATION TO BE RATED PN16.
8. ALL SERVICES UNDER BUILDINGS TO BE INSTALLED IN SLEEVES AND ENCASED IN CONCRETE AS PER SUPPORTING DETAILS.
9. ALL CONCRETE WORKS TO BE GRADE 25/19 UNLESS OTHERWISE SPECIFIED.
10. REFER TO SUPPORTING DRAWINGS FOR TYPICAL DETAILS.
11. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
12. NO PART OF THIS DRAWING MAY BE SCALED.
13. MINIMUM COVER FOR EXTERNAL WATER AND FIRE RETICULATION 1m TO TOP OF THE PIPE.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

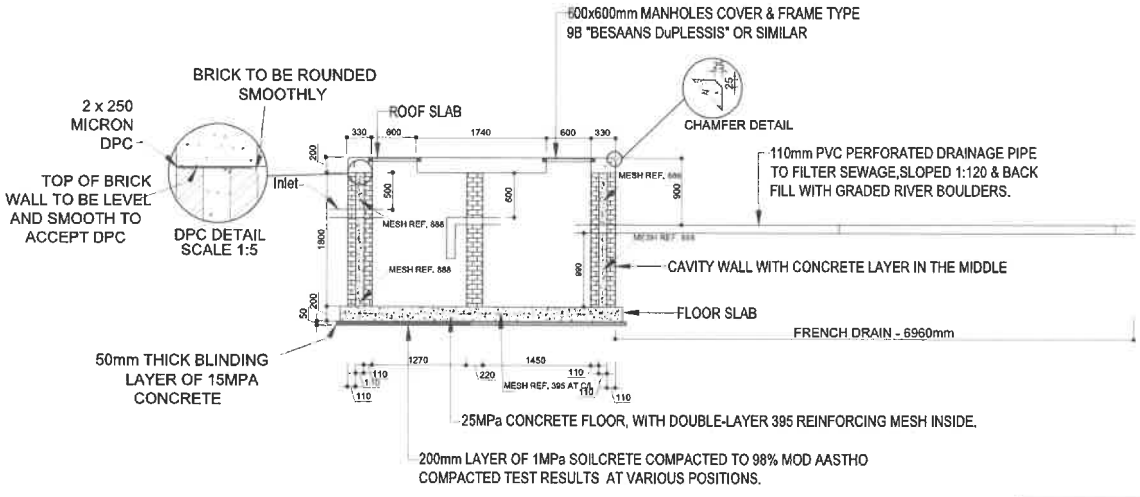
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL +264 61 232 052
WINDHOEK TEL +264 61 232 063
EMAIL [redacted].com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
WATER TYPICAL DETAIL - 1

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-03-201	REV.: B0



SECTION A-A
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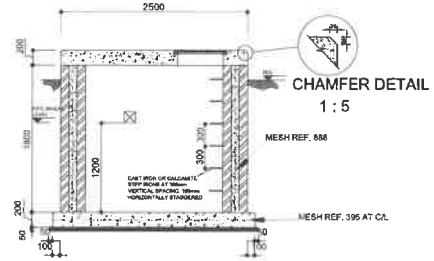
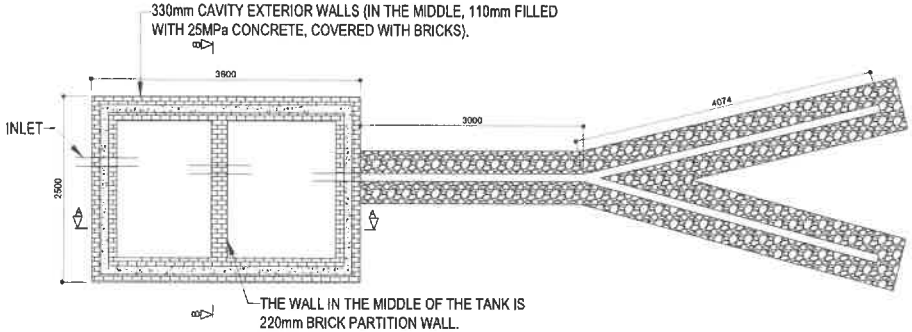
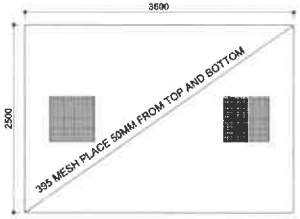


SECTION B-B
SCALE 1:20



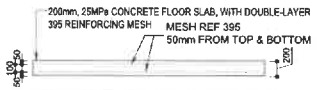
PLAN LAYOUT
1:50



Roof Slab Layout
1:50

FLOOR SLAB LAYOUT
1:50

SECTION THROUGH ROOF SLAB
1:50



SECTION THROUGH FLOOR SLAB
1:50

No	REVISION	BLOCK Ref	DATE
00	ISSUED FOR TENDER		26-08-2025

- ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER.
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ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

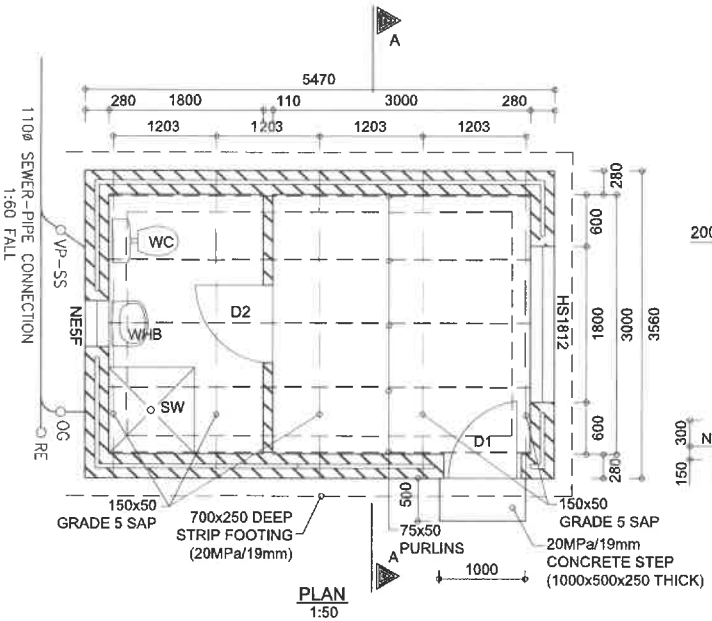
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86195 WINDHOEK
TEL +264 61 232 052
TEL +264 61 232 053
EMAIL: admin@omkumoh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
SEPTIC TANK LAYOUT & DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-STR-01-303	REV.: B0



PLAN
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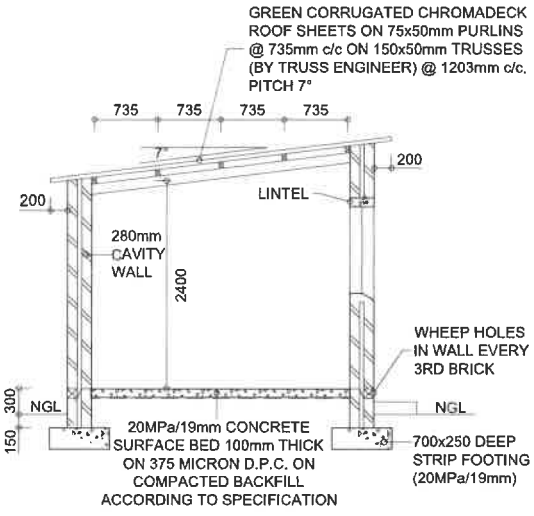

SECTION A-A
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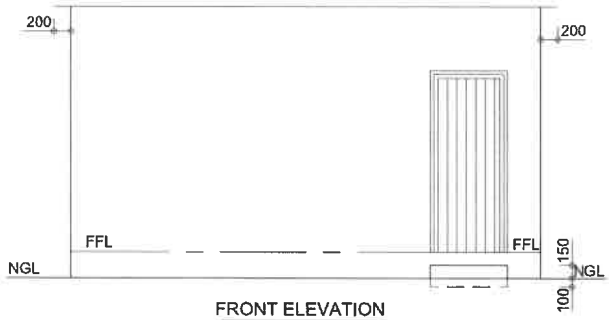
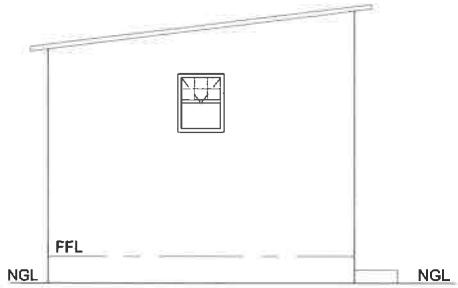
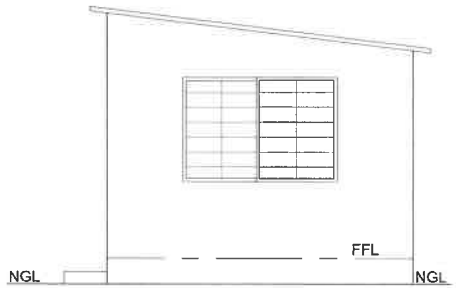


FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION

No	REVISION	BLOCK Ref	DAT
B0	ISSUED FOR TENDER		26-05-

NOTES:

FLOORS:
1. 20MPa/19mm CONCRETE SURFACE BED 100mm THICK ON 375 MICRON D.P.C. ON COMPACTED BACKFILL ACCORDING TO SPECIFICATION.

WALLS:
1. OUTSIDE WALLS TO BE OVERBURNED BRICKS.
2. INSIDE WALLS PLASTERED AND TO BE PROVIDED WITH 2 COATS OF WATERPROOF PAINT (WHITE).
3. BRICKFORCE EVERY 3rd LAYER TURNED AND LAPPED AT CORNERS.
4. BRICKFORCE EVERY LAYER ABOVE OPENINGS.

ROOF:
1. GREEN CORRUGATED CHROMADECK ROOF SHEETS ON 76x50mm PURLINS @ 735mm c/c ON 150x50mm TRUSSES (BY TRUSS ENGINEER) @ 1203mm c/c. PITH 7°
2. NO CEILINGS.

WINDOWS AND DOORS:
1. STEEL WINDOW FRAME WITH BURGLAR BARS NESF.
2. ALUMINIUM HORIZONTAL SLIDING WINDOW WITH BURGLAR BARS HS1612
2. STEEL EXTERIOR DOOR AND STEEL FRAME.(D1)
3. STEEL DOOR INSIDE WITH STEEL FRAME.(D2)
4. ALL WOODWORK VARNISHED.
5. DOORS PROVIDED WITH 3 LEVER LOCKS.
6. TWO AIR VENTS TO BE PROVIDED.

PLUMBING:
1. SHOWER TO BE PROVIDED WITH A "FULL FLOW" SHOWER ROSE.
2. LOW LEVEL CISTERN SET.
3. WASH HAND BASIN TO BE PROVIDED.
4. Ø110mm SEWER PIPE CLASS 34 WITH A MINIMUM GRADE AS SHOWN.
5. RE-RODDING EYE.
6. ALL PLUMBING TO GULLEY TO BE Ø40mm PVC PIPE

WATER SUPPLY:
1. COLD WATER ONLY.
2. WATER PIPE (INTERNAL) TO BE POLYCOP.

GENERAL:
1. INTERNAL WALLS BUILT TO UNDERSIDE OF ROOF SHEETING.
2. 375 MICRON DPC MEMBRANE TO BE PLACED UNDER ALL WALLS AND WINDOWS.
3. MORTAR JOINTS TO BE RAKED ON THE OUTSIDE.
4. LINTELS TO BE USED OVER ALL OPENINGS.
5. OPENINGS UNDER ROOF SHEETING TO BE CLOSED.
6. THE CHROMADECK ROOF SHEETING MUST HAVE A MINIMUM THICKNESS OF 0.50mm AND COMPLY TO THE REQUIREMENTS OF ISQ 550.
7. STEEL DOORS MUST BE HOT DIPPED GALVANISED, ACCORDING TO SANS 121 (ISO 1461).

ISSUED FOR TENDER

CLIENT
OKAHAO TOWN COUNCIL

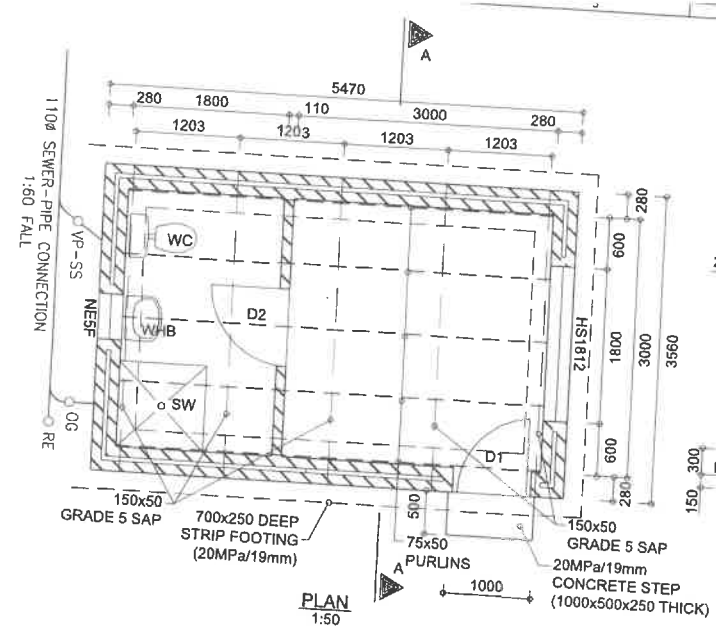
CONSULTANTS

OM'KUMOH
CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Manager
P.O. BOX 98195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
E-MAIL: admin@omkumoh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION PHASE-2

DRAWING TITLE
ADMINISTRATION BUILDING LAYOUT AND SECTION DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN @ A1	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV-01	DRWG No.: 2501-CIV-01-900	REV.: B0



PLAN
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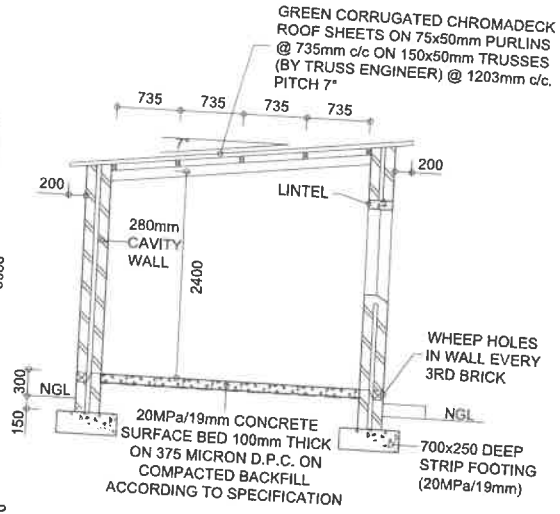

SECTION A-A
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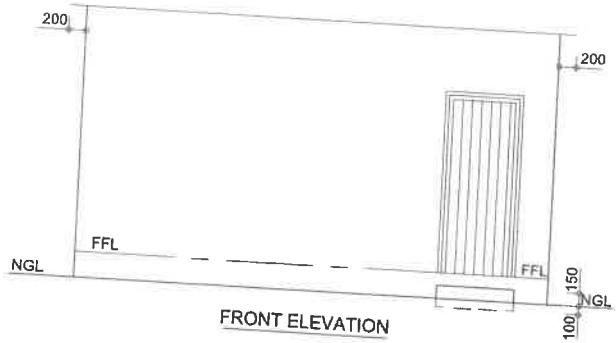
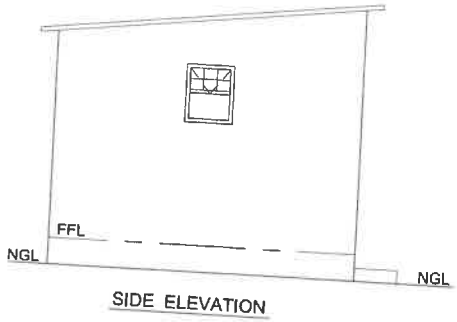
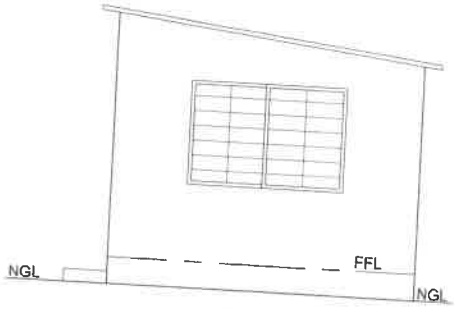


FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION

No	REVISION	BLOCK Ref
00	ISSUED FOR TENDER	

NOTES:

FLOORS:
1. 20MPa/19mm CONCRETE SURFACE BED 100mm THICK ON 375 MICRON D.P.C. ON COMPACTED BACKFILL ACCORDING TO SPECIFICATION.

WALLS:
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2. STEEL EXTERIOR DOOR AND STEEL FRAME.(D1)
3. STEEL DOOR INSIDE WITH STEEL FRAME.(D2)
4. ALL WOODWORK VARNISHED.
5. DOORS PROVIDED WITH 3 LEVER LOCKS.
6. TWO AIR VENTS TO BE PROVIDED.

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ISSUED FOR TENDER

CLIENT
OKAHAO TOWN COUNCIL

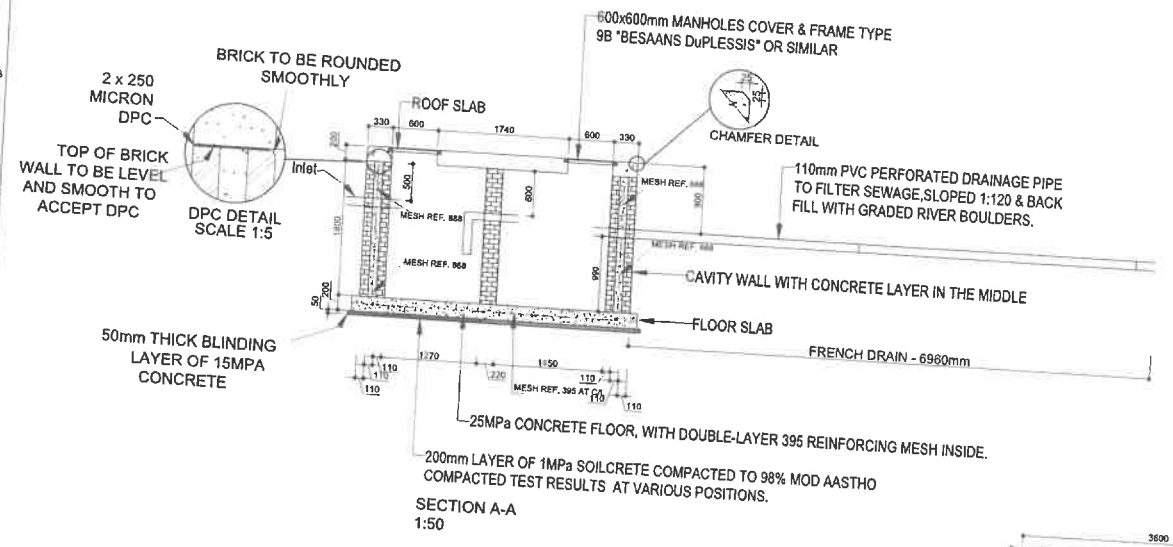
CONSULTANTS

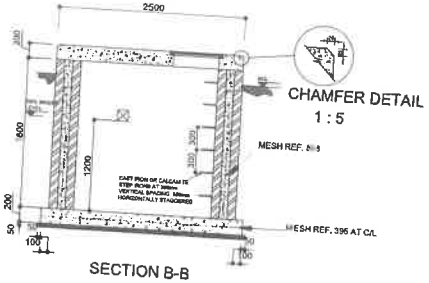
OM'KUMOH
CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Manager:
P.O. BOX 98186
WINDHOEK
TEL: +264 61 232 052
TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

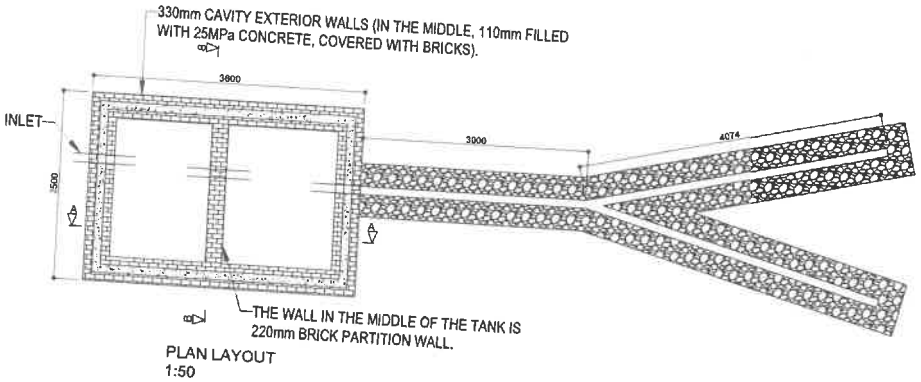
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION PHASE-2

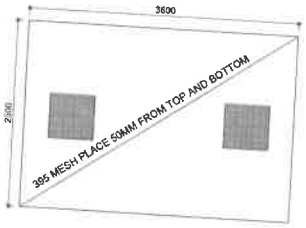
DRAWING TITLE
ADMINISTRATION BUILDING LAYOUT AND SECTION DETAILS

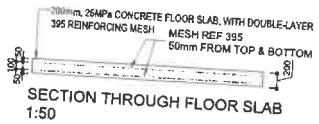
CONSULTING PROJECT NO.	CLIENT PROJECT NO	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN @ A1	DRAWN: GJH
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE	DRWG No.	REV.











No	REVISION	BLOCK Ref	DATE
00	ISSUED FOR TENDER		26-06-2025

- ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER.
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ISSUED FOR TENDER

CLIENT: KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86195
WINDHOEK
EMAIL: admin@[redacted].com
TEL: +264 61 232 052
TEL: +264 61 232 052

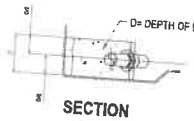
PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

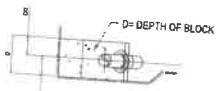
DRAWING TITLE

SEPTIC TANK LAYOUT & DETAILS

CONSULTANTS PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE	DRWG No.	REV



SECTION
SCALE 1:20



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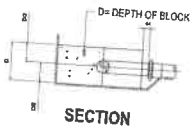
SCALE 1:20



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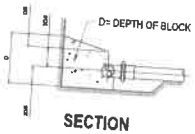
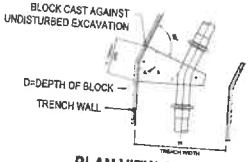
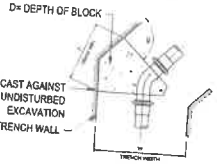


SECTION
SCALE 1:20



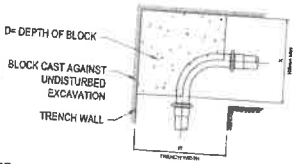
PLAN VIEW OF 22.5° AND 11.25° BEND
N.T.S

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	250	350	470
250	800	225	350	450
200	800	150	250	300
160	640	110	210	260
110	440	100	120	170
90	380	100	100	140
75	300	100	100	100
63	250	100	100	100



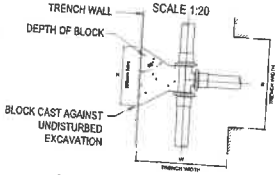
PLAN VIEW OF 45° BEND
N.T.S

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	450	650	860
250	800	450	650	870
200	800	300	450	550
160	640	210	310	470
110	440	170	270	330
90	380	126	210	260
75	300	120	200	250
63	250	100	130	180



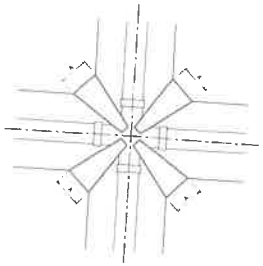
PLAN VIEW OF 90° BEND
N.T.S

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	800	1200	1500
250	1000	650	980	1150
200	800	500	750	1000
180	640	450	670	890
110	440	280	630	600
90	380	220	640	550
75	300	200	360	450
63	250	176	300	400



PLAN VIEW OF THRUST BLOCK FOR TEES
N.T.S

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	1200	580	840	1160
250	1000	450	670	890
200	800	350	550	700
160	620	350	430	590
110	420	226	330	385
90	380	180	270	315
75	300	150	250	300
63	250	130	200	250



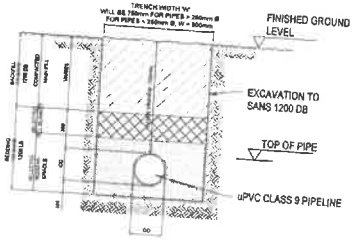
CROSSES

NOMINAL	A	BLOCK DEPTH C
50	120	200
75	160	230
110	200	250
160	320	350
200	300	480

IMPORTANT NOTES :
1. THE RESPONSIBILITY OF SAFEGUARDING THE TRENCH EXCAVATION SIDEWALLS RESTS WITH THE CONTRACTOR.
2. THE PROPPING/SHORING AND/OR SLOPING OF TRENCH EXCAVATIONS MUST BE INCLUDED IN THE TENDERED RATES.

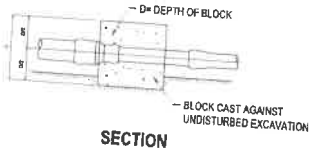
NOTE :
COMPACTION OF BACKFILLING TO SANS 1200 DR & LB, OR WITH MINIMUM COMPACTION AS FOLLOWS :

BEDDING CRADLE	: HAND COMPACTED IN 100 mm LAYERS
FILL BLANKET	: HAND COMPACTED IN 100 mm LAYERS
MAIN FILL	: 98% MOD AASHTO IN 150 mm LAYERS

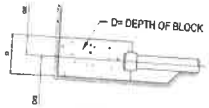


TRENCH EXCAVATION AND BACKFILL DETAIL WATER & PUMP LINE
N.T.S.

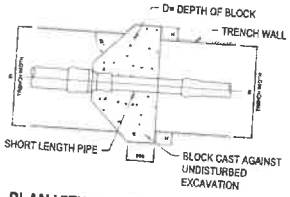
THRUST BLOCK CONCRETE STRENGTH TO CLASS 30/19 MPa.



SECTION
SCALE 1:20

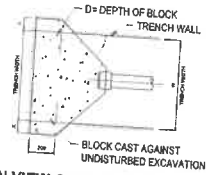


SECTION
SCALE 1:20



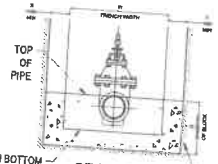
PLAN VIEW OF THRUST BLOCK FOR REDUCERS
N.T.S

NOMINAL DIAMETER Ø 1 (mm)	NOMINAL DIAMETER Ø 2 (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
250	200/160	850	250	360	450
200	160/110	600	200	300	400
160	110/75	500	150	200	250
110	90/63	400	150	150	150
90	75/63	400	150	150	150
75	63	300	100	150	150

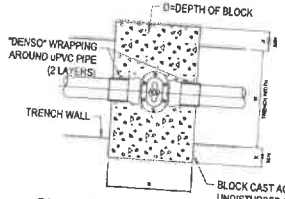


PLAN VIEW OF THRUST BLOCK FOR END CAPS
N.T.S

NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
250	700	0	200	400
200	450	0	200	400
160	300*	0	200	400*
110	200	0	100	200
90	150	0	100	150
75	150	0	0	100
63	150	0	0	0

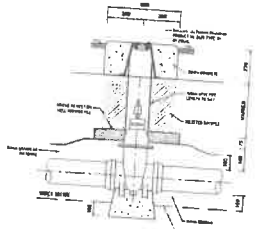


SECTION
N.T.S

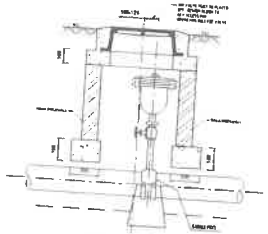


PLAN VIEW OF THRUST BLOCK FOR GATE VALVE
N.T.S

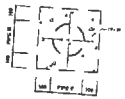
NOMINAL DIAMETER (mm)	DEPTH OF BLOCK D(mm)	WIDTH OF BLOCK B(mm)	MAXIMUM TESTING PRESSURE 900 kPa X(mm)	1350 kPa X(mm)	1800 kPa X(mm)
315	600	800	500	800	1100
250	550	750	300	500	700
200	500	700	150	300	500
160	400	650	150	250	350
110	300	600	150	150	200
90	250	550	150	150	200
63	200	500	150	150	150



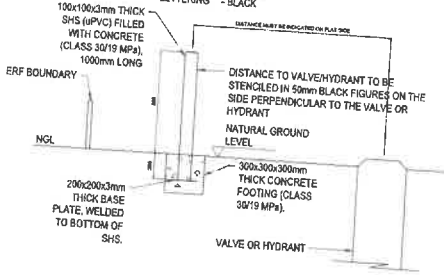
SECTIONAL DETAIL OF SLUICE VALVE
N.T.S



AIR VALVE BOX



PAINT COLOURS FOR MARKER POST:
VALVES - YELLOW
HYDRANT - ORANGE
LETTERING - BLACK



TYPICAL VALVE OR HYDRANT MARKER
SCALE 1:20

* DEPTH TO INCREASE TO 400mm AT TESTING PRESSURE OF 1800 kPa.

NOTES:
1. THIS TABLE IS VALID FOR 100 kPa EARTH BEARING PRESSURE.
2. X-DIMENSIONS MAY BE REDUCED FOR HIGHER EARTH BEARING PRESSURES - TO BE DISCUSSED WITH THE ENGINEER.
3. KEEP COUPLINGS AND FLANGES MIN. 25mm CLEAR OF CONCRETE.
4. DETAILS OF THRUST BLOCKS FOR PIPELINES GREATER THAN 315mm DIAMETER TO BE DISCUSSED WITH THE ENGINEER.
5. HALF THE DEPTH OF THE THRUST BLOCK TO BE PLACED BELOW THE PIPE AXIS.
6. CONCRETE: PUDDLE FLANGES 25/19 OTHER 15/19.

GENERAL NOTES:
1. ALL EXTERNAL POTABLE WATER RETICULATION TO BE uPVC CLASS 9.
2. EARTHWORKS FOR PIPE TRENCHES TO BE DONE ACCORDING TO SABS/SANS 1200 DB.
3. BEDDING FOR ALL PIPE WORK TO BE DONE TO SABS/SANS 1200LB.
4. ALL EXTERNAL WATER INFRASTRUCTURE TO BE INSTALLED ACCORDING TO SPECIFICATIONS AND DRAWINGS.
5. TESTING TO BE DONE AS PER SANS 1200L.
6. ALL EXTERNAL REDUCERS, VALVES, HYDRANTS, PRESSURE BENDS,TEES AND END CAPS TO BE CONSTRUCTED WITH PROPER THRUST BLOCKS AS PER SUPPORTING DETAILS.
7. ALL VALVES IN THE WATER AND FIRE RETICULATION TO BE RATED PN16.
8. ALL SERVICES UNDER BUILDINGS TO BE INSTALLED IN SLEEVES AND ENCASED IN CONCRETE AS PER SUPPORTING DETAILS.
9. ALL CONCRETE WORKS TO BE GRADE 25/19 UNLESS OTHERWISE SPECIFIED.
10. REFER TO SUPPORTING DRAWINGS FOR TYPICAL DETAILS.
11. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
12. NO PART OF THIS DRAWING MAY BE SCALED.
13. MINIMUM COVER FOR EXTERNAL WATER AND FIRE RETICULATION 1m TO TOP OF THE PIPE.

No	REVISION	BLOCK Ref	DATE
00	ISSUED FOR TENDER		28-08-2025

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS

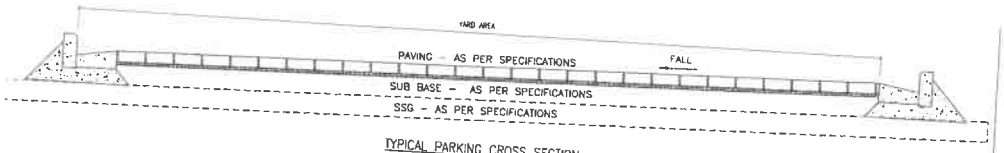
Multi-Disciplinary Consulting Engineers and Project Managers

P.O. BOX 98195
WINDHOEK
EMAIL: admin@omkumoh.com
TEL +264 61 232 052
TEL +264 61 232 053

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

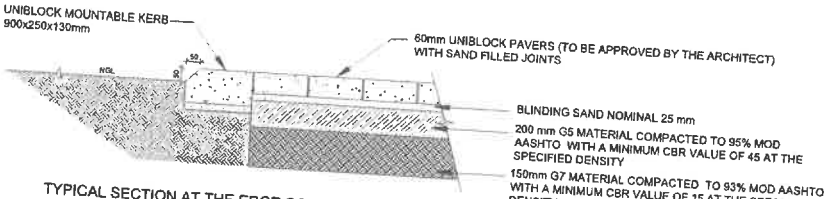
DRAWING TITLE
WATER TYPICAL DETAIL - 1

CONSULTING PROJECT NO.	CLIENT PROJECT NO	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE	DRWG No.	REV



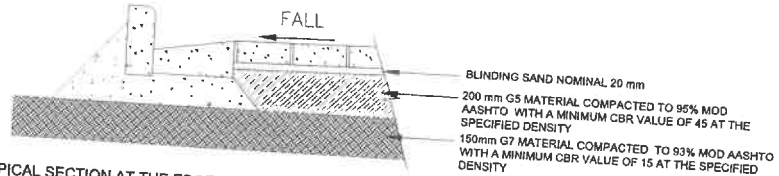
TYPICAL PARKING CROSS SECTION

NTS



TYPICAL SECTION AT THE EDGE CONCRETE PAVEMENT WITH MOUNTABLE KERBS

SCALE 1 : 10



TYPICAL SECTION AT THE EDGE CONCRETE PAVEMENT WITH BARRIER KERB & CHANNEL

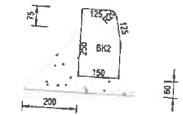
SCALE 1 : 10

NOTE:JOINT WIDTH ARE MEASURED WITH A RULER FROM INSIDE EDGE OF PAVER TO INSIDE EDGE PAVER BETWEEN ADJACENT PAVERS

NOTE:UPPAGE IS MEASURED FROM TOP OF A PAVER TO THE TOP OF THE ADJACENT PAVER

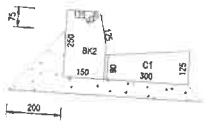
VERTICAL TOLERANCE MEASUREMENT GUIDANCE

SCALE 1 : 10

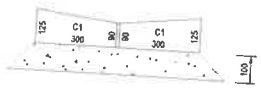


BARRIER KERB

EDGING STONE



BARRIER KERB & CHANNEL



V - CHANNEL

NOTE

ALL UNITS TO LAID WITH 15MPa CONCRETE ON BEDDING /BACKLINE ON WELL COMPACTED SUBGRADE/SUBBASE

KERB CHANNEL AND EDGING DETAILS

SCALE 1:10

No	REVISION	BLOCK Ref	DATE
80	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. THE CONTRACTOR SHOULD CHECK ALL DISTANCES AND LEVELS AS INDICATED ON THE DRAWING FOR CORRECTNESS PRIOR TO CONSTRUCTION.
2. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. NO PART OF THIS DRAWING MAY BE SCALED.
4. DRAWING MUST BE READ IN REFERENCE WITH THE GENERAL ARRANGEMENT AND LAYOUT DRAWING.
4. EARTHWORKS:
   - EXCAVATIONS UNDERNEATH PUMP STATION TO BE INSPECTED BY ENGINEER PRIOR TO CONSTRUCTION OF PUMP STATION.
   - BACKFILL AROUND PUMP STATION IN 200mm LAYERS TO 93% MOD AASHTO DENSITY
   - LAYERWORKS BELOW INTERLOCKINGS :
     25mm SAND BEDDING LAYER
     150mm SUBBASE TO 95% MOD AASHTO DENSITY
     150mm SURFACE BED PREPARATION TO 93% MOD AASHTO DENSITY
   - OVER EXCAVATION UNDERNEATH FOUNDATIONS ARE TO BE FILLED WITH 15/19 MASS CONCRETE.
4. CONCRETE
   - A 50mm BLINDING LAYER OF 15/19 CONCRETE IS TO BE CAST UNDER ALL FOUNDATIONS.
   - ALL CONCRETE WORK SHALL BE DONE ACCORDING TO SABS 1200G.
   - CONCRETE CLASS SHALL BE 35/19MPa WITH 30 % FLY-ASH UNLESS STATED OTHERWISE ON THE STRUCTURAL DRAWINGS.
   - MINIMUM CONCRETE COVER SHALL BE 40mm.
   - ALL EXPOSED CONCRETE CORNERS TO HAVE 25m CHAMFERS.
   - ALL EXPOSED CONCRETE TO HAVE SMOOTH OFF-SHUTTER
   - ALL EXPOSED CONCRETE SURFACES TO BE WOOD FLOAT FINISH.
5. STEEL:
   - ALL STEEL PIPES TO BE MILD STEEL MEMBERS.
   - ALL FLANGES TO BE SABS 1123, TABLE 1000/3
   - ALL BOLTS & NUTS TO BE STAINLESS STEEL.
   - ALL GASKETS TO BE 3mm Rf GASKETS, RING TYPE.
6. BRICK AND BUILDING:
   - EXTERIOR WALL TO BE PLASTERED AND PAINTED WITH TWO LAYERS EXTERIOR PVA.
   - INTERIOR PAINTED WITH EGGSHELL- SEMI GLOSS ENAMEL OR APPROVED SIMILAR COLOURS BY CLIENT.
   - CEILING TO BE CELOTEX FIXED TO 50x38mm BRANDERING AT 400 c/c IN ONE DIRECTION ONLY UNLESS OTHERWISE STATED ON THE SECTION DRAWINGS.
   - STEEL DOORS PAINTED WITH ONE PRIMER AND ONE UNDERCOAT LAYER, FINISHED WITH TWO MAT ENAMEL FINAL COATS
   - FACIA TO BE 300mm AC STANDARD PAINTED WITH LAYERS ENAMEL.
7. GENERAL:
   - ALL ELECTRICAL SLEEVES AND DRAINAGE SLEEVES TO BE CHASED INTO WALLS OR SLABS.

ISSUED FOR TENDER

CLIENT

KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS

Multi-Disciplinary Consulting Engineers and Project Managers

P.O. BOX 98185
WINDHOEK
EMAIL: [redacted]

TEL +264 61 232 062
TEL +264 61 232 053
[redacted].com

PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE

SEGMENT PAVING DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.H.T
FILE: 2501-CIV	DRWG No. 2501-CIV-WRI-02-200	REV. R0

LAYER SPECIFICATION

PARKING AREA:

INTERLOCK PAVING:

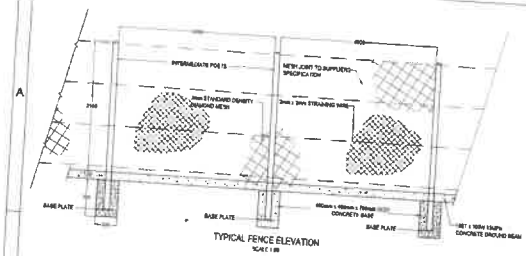
60mm pavers (35 Mpa) with 25mm sand.

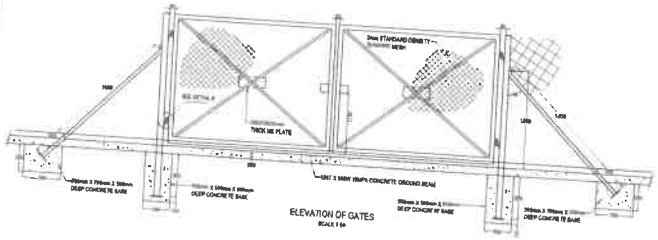
SUB-BASE COURSE:

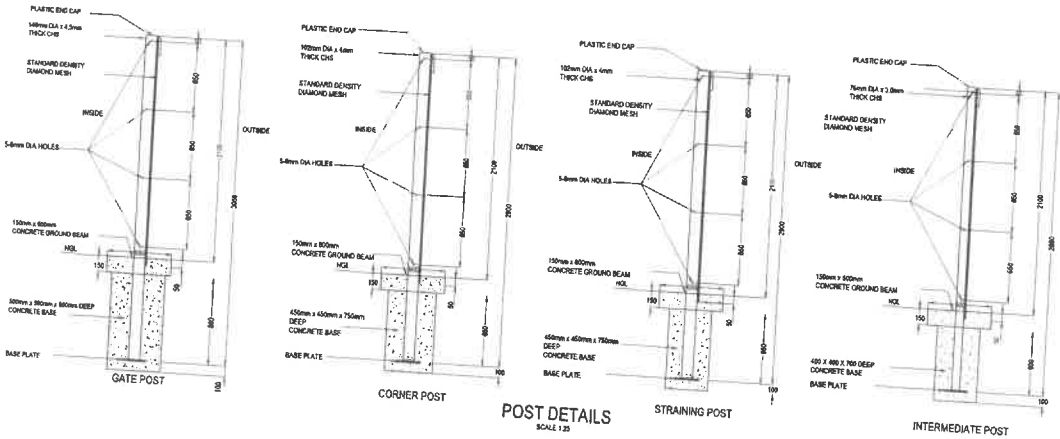
200mm Imported gravel compacted to a density of 95% Modified AASHTO. with a minimum CBR value of 45 at the specified density. (G5)

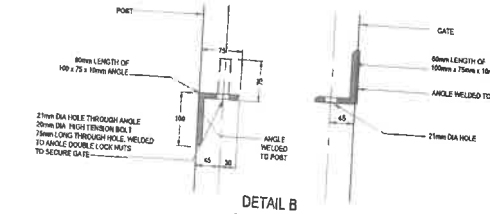
SELECTED LAYER:

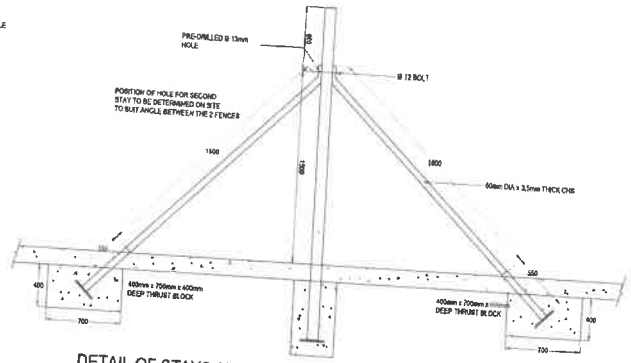
150mm Imported gravel compacted to a density of 93% Modified AASHTO. with a minimum CBR value of 15 at the specified density. (G7)

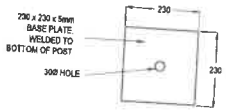




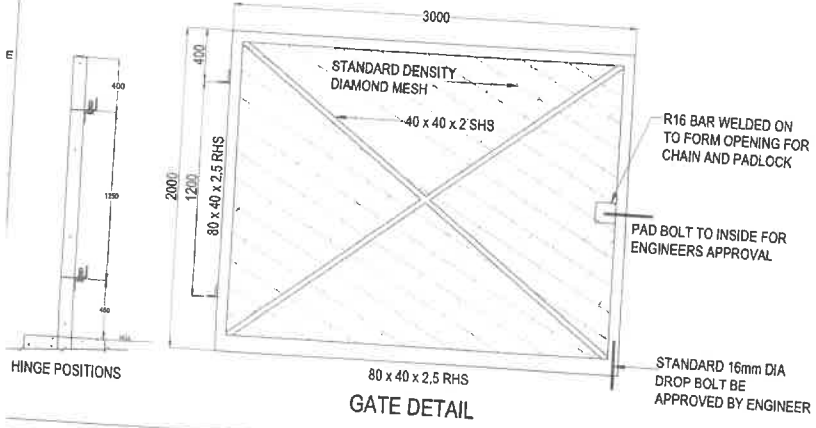


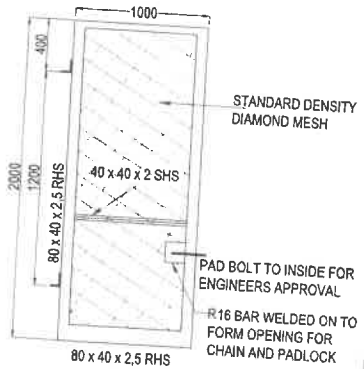






POSTS : ALL SANS 657 - 1 GALVANISED TO SANS 763-CLASS B1
GATE POST 140mm x 4.5mm CHS
CORNER POST 102mm x 4mm CHS
STRAINING POST 102mm x 4mm CHS
INTERMEDIATE POST 76mm x 3mm CHS
STAY 60mm x 4mm CHS





NOTES:

1. **FENCE LEVELS:**
   - THE BOTTOM OF THE FENCE IS TO FOLLOW A SERIES OF STRAIGHT LINES, BETWEEN STRAINING POSTS.
2. **FENCE LEVELS:**
   - THE LINE OF THE FENCE IS TO BE AS SHOWN ON THE LAYOUT PLAN AND SHALL BE SET OUT BY A LAND SURVEYOR OR OTHER COMPETENT PERSON.
   - A CORNER POST WITH STAYS IS TO BE PROVIDED AT EACH CHANGE OF DIRECTION.
   - STRAINING POSTS SHALL BE INSTALLED AT DIPS (CHANGES OF GRADE) AND ALSO ALONG STRAIGHT SECTIONS OF FENCE AT INTERVALS NOT EXCEEDING 30 METERS MESH JOINT TO SUPPLIERS SPECIFICATION.
   - **WIRES:** SANS 675 STRAINING WIRE 4mm DIA HIGH TENSILE.
   - **TYING WIRES:** 2.5mm DIA MILD STEEL - STRAINING WIRE TO POST, MESH TO STRAINING WIRE. 1.6mm DIA MILD STEEL - MESH AND FLAT WRAP TO WIRE / MESH.
   - **BARBED WIRE:** 2.5mm GALVANISED DOUBLE STRAND REVERSE TWIST BARBED WIRES TIED TO STANDARDS.
   - POSTS AND EYEBOLTS AT 150mm MAX CENTERS.
3. **GATES AND POSTS:**
   - THE GATES AND ALL POSTS ARE TO BE MANUFACTURED AS DETAILED ON THIS DRAWING.
   - ALL STEEL COMPOENTS ARE TO BE HOT-DIP GALVANISED AFTER MANUFACTURE.
   - THE GATES AND ALL POSTS ARE TO BE ACCURATELY SUPPORTED (POSITION, LEVEL AND PLUMB) BEFORE THE CONCRETE IS CAST AND MAINTAINED THUS UNTIL THE CONCRETE HAS SET.
   - ANY AREAS WHERE ON-SITE DRILLING IS NECESSARY ARE TO BE THOROUGHLY TREATED WITH AN APPROVED COLD GALVANIZING SYSTEM. ALL POSTS AND STAYS TO HAVE 230 x 230 x 5mm THICK BASE PLATES WITH 30mmØ HOLE.
   - PAD BOLTS AND DROP BOLTS 16mmØ TO ENGINEERS APPROVAL.
4. **GROUND BEAM:**
   - THE CONCRETE GROUND BEAM IS TO BE CAST INTO THE GROUND.
   - CONCRETE IN BEAM TO BE GRADE 15/19 CONCRETE IN FOUNDATION TO BE GRADE 20/19 CONCRETE.
   - BEAM IS TO BE CAST IN 6m LENGTHS WITH A SOFTBOARD EXPANSION JOINT AT 18m MAXIMUM CENTERS.

No	REVISION	BLOCK Ref	DATE
00	ISSUED FOR TENDER		26-06-2025

GENERAL NOTES.

1. THE CONTRACTOR SHOULD CHECK ALL DISTANCES AND LEVELS AS INDICATED ON THE DRAWING FOR CORRECTNESS PRIOR TO CONSTRUCTION.
2. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. NO PART OF THIS DRAWING MAY BE SCALED.
4. **EARTHWORKS**
   - EXCAVATIONS UNDERNEATH PUMP STATION TO BE INSPECTED BY ENGINEER PRIOR TO CONSTRUCTION OF PUMP STATION.
   - BACKFILL AROUND PUMP STATION IN 200mm LAYERS TO 93% MOD AASHTO DENSITY
   - LAYERWORKS BELOW INTERLOCKINGS
     25mm SAND BEDDING LAYER
     150mm SUBBASE TO 95% MOD AASHTO DENSITY
     150mm SURFACE BED PREPARATION TO 93% MOD AASHTO DENSITY
   - OVER EXCAVATION UNDERNEATH FOUNDATIONS ARE TO BE FILLED WITH 15/19 MASS CONCRETE.
4. **CONCRETE**
   - A 50mm BLINDING LAYER OF 15/19 CONCRETE IS TO BE CAST UNDER ALL FOUNDATIONS.
   - ALL CONCRETE WORK SHALL BE DONE ACCORDING TO SANS 1200G.
   - CONCRETE CLASS SHALL BE 35/19MPa WITH 30 % FLY-ASH UNLESS STATED OTHERWISE ON THE STRUCTURAL DRAWINGS.
   - MINIMUM CONCRETE COVER SHALL BE 40mm.
   - ALL EXPOSED CONCRETE CORNERS TO HAVE 25m CHAMFERS.
   - ALL EXPOSED CONCRETE TO HAVE SMOOTH OFF-SHUTTER
   - ALL EXPOSED CONCRETE SURFACES TO BE WOOD FLOAT FINISH.
5. **STEEL:**
   - ALL STEEL PIPES TO BE GRADE 304 STAINLESS STEEL.
   - ALL FLANGES TO BE SABS 1123, TABLE 1000/3
   - ALL BOLTS & NUTS TO BE STAINLESS STEEL.
   - ALL GASKETS TO BE 3mm Ri GASKETS. RING TYPE
6. **BRICK AND BUILDING:**
   - EXTERIOR WALL TO BE PLASTERED AND PAINTED WITH TWO LAYERS EXTERIOR PVA.
   - INTERIOR PAINTED WITH EGGSHELL- SEMIGLOSS ENAMEL OR APPROVED SIMILAR COLOURS BY CLIENT.
   - CEILING TO BE CELOTEX FIXED TO 50x38mm BRANDERING AT 400 c/c IN ONE DIRECTION ONLY
   - STEEL DOORS PAINTED WITH ONE PRIMER AND ONE UNDERCOAT LAYER, FINISHED WITH TWO MAT ENAMEL FINAL COATS
   - FACIA TO BE 300mm AC STANDARD PAINTED WITH LAYERS ENAMEL
7. **GENERAL:**
   - ALL ELECTRICAL SLEEVES AND DRAINAGE SLEEVES TO BE CHASED INTO WALLS OR SLABS.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

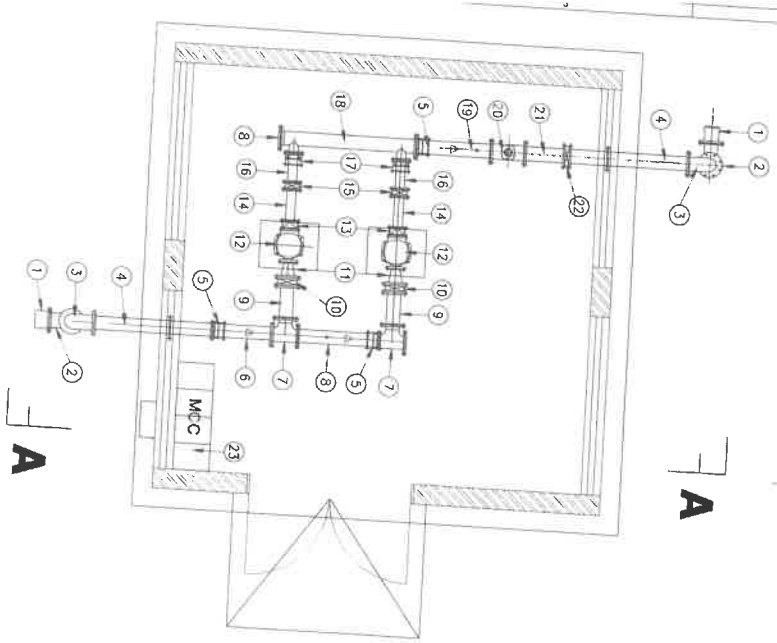
CONSULTANTS

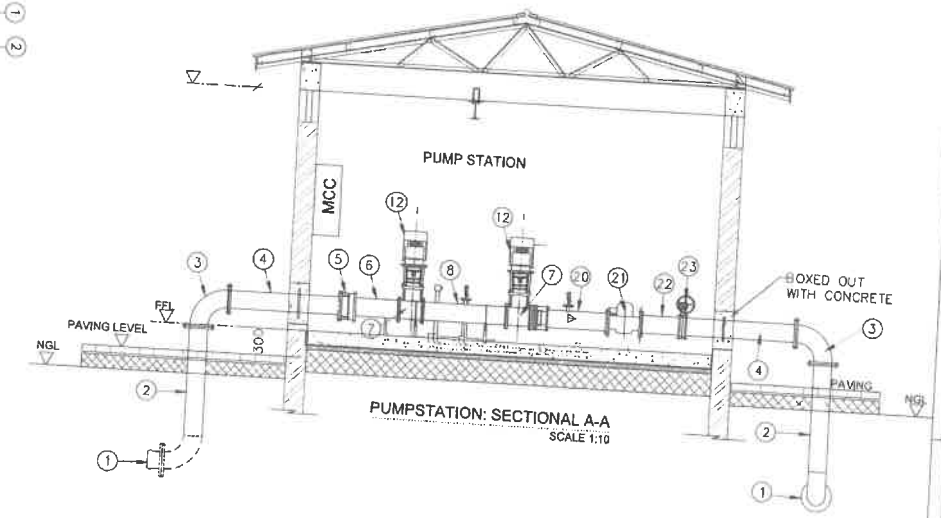
OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98795
WINDHOEK
TEL +264 61 232 062
TEL +264 61 232 063
EMAIL [redacted]

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
TYPICAL FENCE DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: ---	DRWG No: -	REV:





PUMPSTATION: SECTIONAL A-A
SCALE 1:10

ITEM NO.	SIZE DN	NO. OFF	PIPE WORK SCHEDULE 1 OFF 2	SKETCH
1	150	2	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	2	150NB STEEL PIPE, 1220 mm LONG DISTANCE PIECE, CONNECTED TO 150NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1220 241
3	150	2	150NB. 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	241 240
4	150	2	150NB STEEL PUDDLE PIPE, 1245mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1245 195 490
5	150	3	150NB KLAWFLEX FLANGE RESTRAINING FLANGE ADAPTOR, TO SUIT 150 NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
6	150	2	150NB STEEL PIPE, 880 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	880
7	150	2	150NB TEE AS DETAILED, FLANGED AND DRILLED TO SABS, TABLE 1000. CORROSION PROTECTION: HOT-DIP GALVANIZED	148 148 148
8	150	2	150NB STEEL PIPE, 885 MM LONG DISTANCE PIECE, WITH DN 25 DISTANCE PIECE AND 1" BALL VALVE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	885
9	150	2	150NB STEEL PIPE, 360 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	360
10	150	2	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
11	150	2	150 NB x 100 NB STEEL ECCENTRIC REDUCER FLANGED BOTH ENDS FLANGE. SABS 1123 - 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	135

ITEM NO.	SIZE DN	NO. OFF	PIPEWORK SCHEDULE 2 OFF 2	SKETCH
12		2	MULTISTAGE END SUCTION CENTRIFUGAL PUMP - No.: 2 OFF (ONE DUTY ONE STANDBY) - MAKE & MODEL: GRUNDFOS CR95-3-2 OR SIMILAR & APPROVED - CAPACITY: 85m³/hr - HEAD: 37.04 mWC - POWER: 18.50 kW - TYPE OF CONNECTION: FIN - INLET CONNECTION - DN 100mm - OUTLET CONNECTION - DN 100mm	
13	100	2	100 NB SWING CHECK VALVE PN 16 SIMILAR TO "AVK" FLANGED BOTH ENDS FLANGE: SABS 1123 - 1000/3	
14	100	2	100 NB STEEL PIPE, 350 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	350
15	100	2	100 NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	
16	100	2	100 NB STEEL PIPE, 350 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	300
17	100	2	100 NB KLAWFLEX FLANGE RESTRAINING FLANGE ADAPTOR, TO SUIT 150 NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
18	150	1	150NB STEEL PIPE, 1530 mm LONG DISTANCE PIECE DOUBLE TEE (100 NB). BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	1530 185 1200 145 225
19	150	1	150NB STEEL PIPE, 800 MM LONG DISTANCE PIECE, WITH DN 25 DISTANCE PIECE AND 1" BALL VALVE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	800
20	150	1	150 NB FLOW METER, SIMILAR TO PROMAG ELECTROMAGNETIC FLOW METER. FLANGED BOTH ENDS, FLANGE: SABS 1123 - 1000/3	
21	150	1	150 NB STEEL PIPE, 445 mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	445
22	150	1	150 NB KNIFE GATE VALVE (SIMILAR TO "AVK") FLANGED BOTH ENDS FLANGE: SABS 1123 - 1000/3	
23		1	MOTOR CONTROL CENTER (MCC) DESIGN, SUPPLY AND INSTALLATION COMPLETE WITH: - LOCAL CONTROL STATION (CUE 3X380-500V IP20 18.5 KW DR SIMILAR AND APPROVED) - PUMP MOTOR CONNECTION - PROVISION FOR CONNECTION OF ALL CONTROL INSTRUMENTATION	

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 062 OR TO SABS 719. AND HOT DIPPED GALVANISED TO SABS 763.
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3, UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
5. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER GREATER THAN 100MM SHALL BE GALVANIZED
   - ALL WILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
   - ALL VALVES SHALL HAVE A SINTER PROXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
   - ALL NUTS, BOLTS AND WASHERS SHALL BE WILD STEEL.
10. ALL uPVC INLET PIPES TO BE OF CLASS 12 & ALL OUTLET PIPES CLASS 9 AND TO SABS 966 PART 1. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT
KUNENE REGIONAL COUNCIL

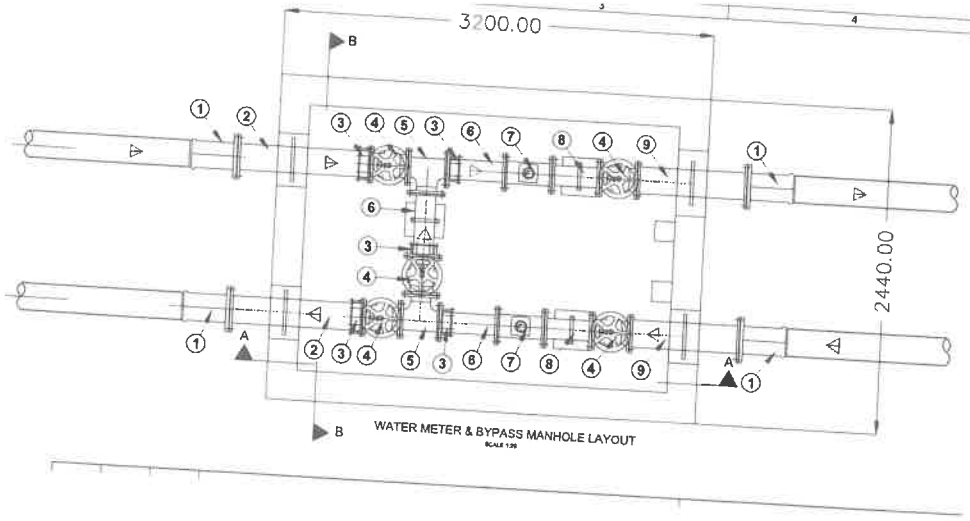
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86195
WINDHOEK
TEL: +264 81 232 062
TEL +264 81 232 053
EMAIL: [illegible]@[illegible].com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP STATION M&E EQUIPMENT AND PIPE WORK DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WT-01-600	REV.: B0

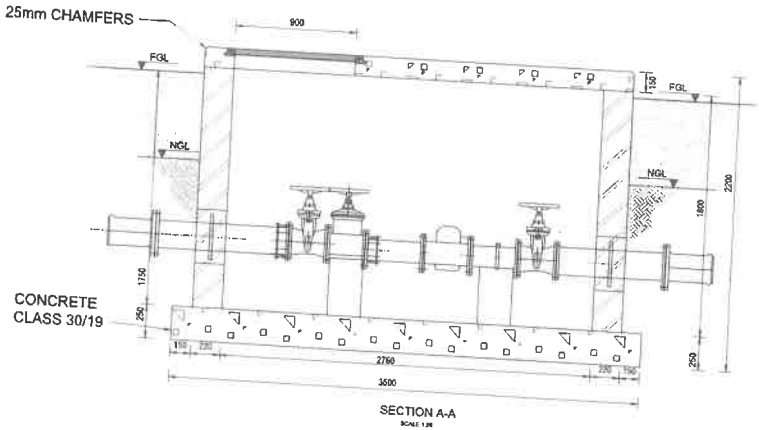


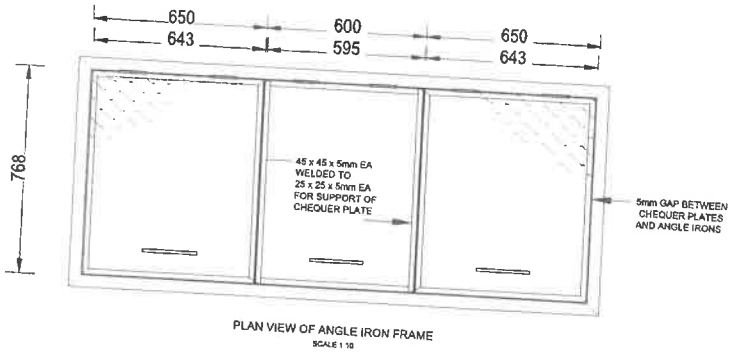
ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (MANHOLE PIPE WORK)	SKETCH
1	150	4	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	2	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	410 360
3	150	5	150NB KLAWFLEX FLANGE ADAPTOR, TO SUIT 200NB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
4	150	5	150NB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
5	150	2	150NB EQUAL TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	3	150NB STEEL PIPE, 410 mm LONG DISTANCE PIECE, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	410
7	150	2	DN150, PN16, N100 OPTIMA MULTI-JET WATER METER, CLASS C COMPLETE WITH COUPLINGS, FITTINGS, PIPE WORK, ETC FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	
8	150	2	150NB STEEL PIPE, 350mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	2	150NB STEEL PUDDLE PIPE,970mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	

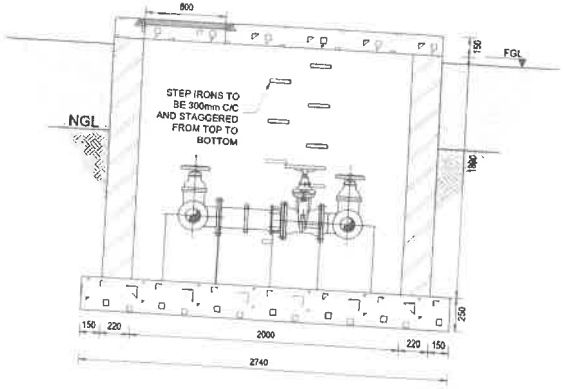
No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

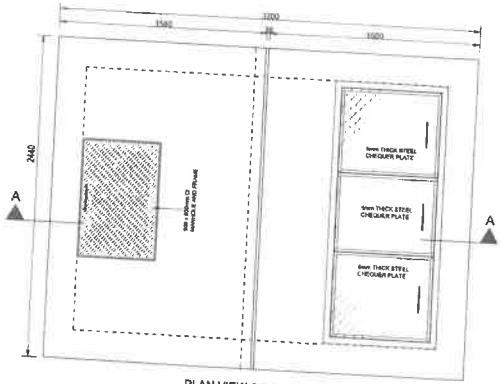
GENERAL NOTES:

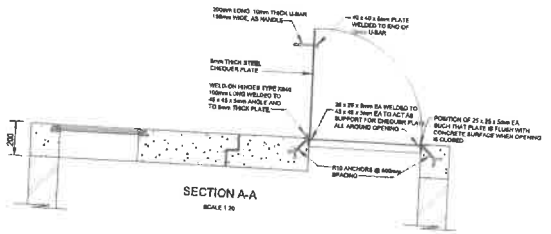
1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. CALICE STEEL TO SABS 062 OR TO SABS 718 AND HOT DIPPED GALVANIZED TO SABS 763
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3 UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
5. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER SHALL BE GALVANIZED
   - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY
   - ALL VALVES SHALL HAVE A SANTUR PROOF POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES.
4. ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
7. ALL uPVC RULE PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1, UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.











ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT: KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195
WINDHOEK
EMAIL: ad[illegible].com
TEL: +264 61 232 052
TEL: +264 61 232 053

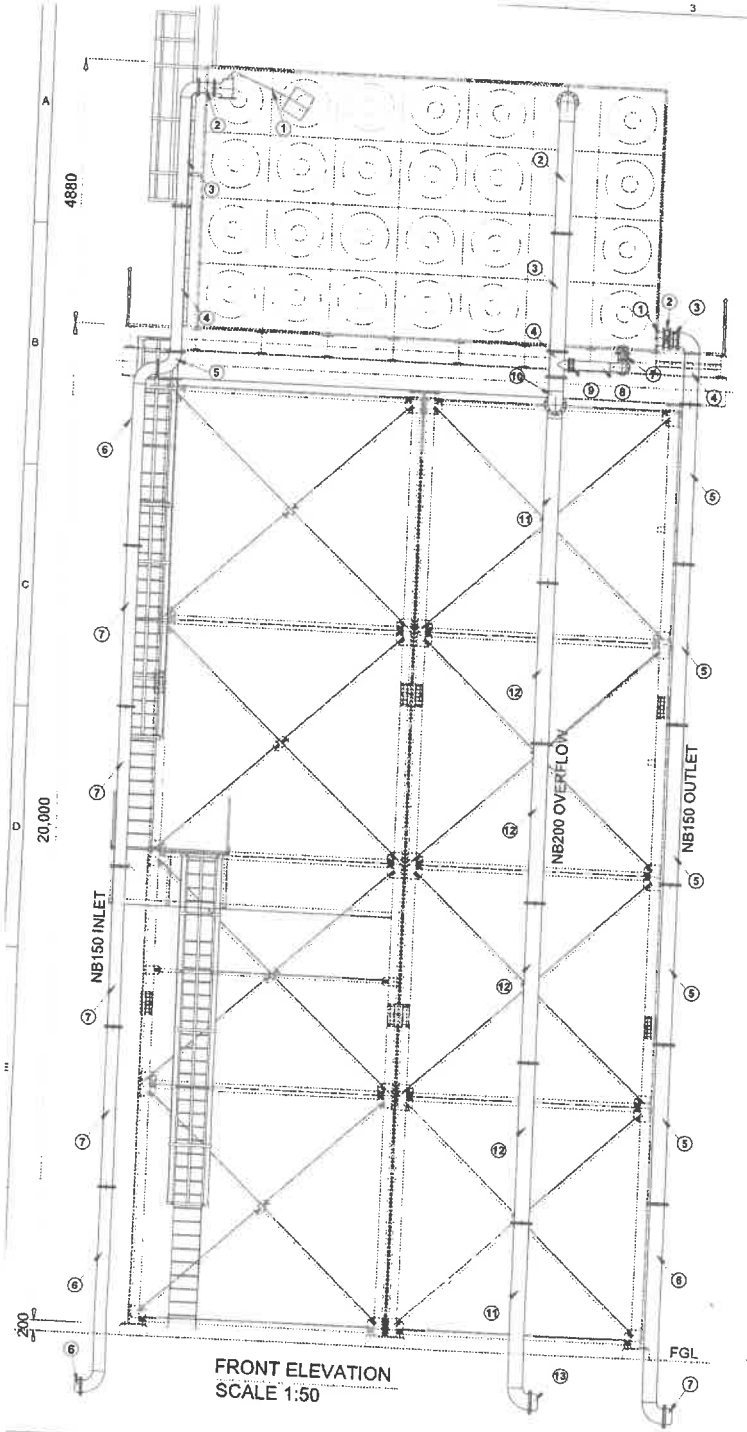
PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

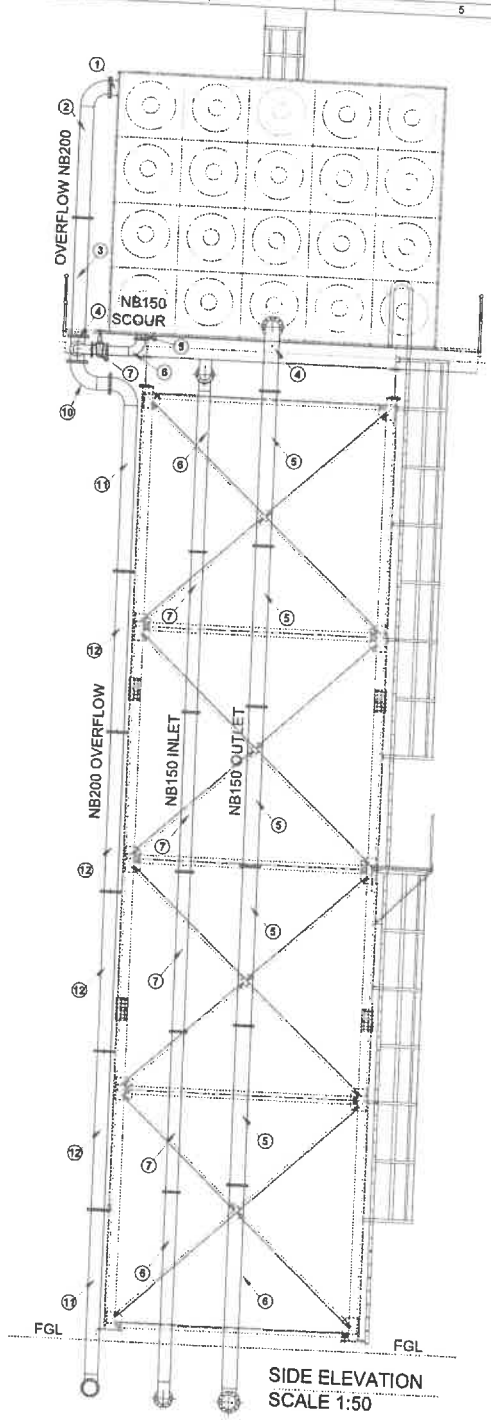
DRAWING TITLE

WATER METER AND BY PASS MANHOLE DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-302	REV.: B0



FRONT ELEVATION
SCALE 1:50



SIDE ELEVATION
SCALE 1:50

ELEVATED TANK LAYOUT
SCALE 1:100

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (INLET PIPE WORK)	SKETCH
1	150	1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	1	150MB STEEL PIPE, 340mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE OUTSIDE TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	150	1	150MB STEEL PIPE, 2800mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150MB STEEL PIPE, 2740mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150MB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	2	150MB STEEL PIPE, 3000 mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	4	150MB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
8	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OUTLET PIPE WORK)	SKETCH
1	150	1	150MB STEEL PIPE, 140mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	150	1	150 NB KNIFE GATE VALVE (SIMILAR TO "AMC") FLANGED BOTH ENDS FLANGE: SABS 1123 – 1000/3	
3	150	1	150 NB DISMANTLING JOINT SIMILAR TO "DUMATEX" FLANGED BOTH ENDS FLANGE: SABS 1123 – 1000/3	
4	150	1	150MB STEEL PIPE, 340mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	5	150MB STEEL PIPE, 3000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	1	150MB STEEL PIPE, 2880mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 160mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OVERFLOW & DRAIN PIPE WORK)	SKETCH
1	200	1	200MB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	200	1	200MB STEEL PIPE, 2080mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	200	1	200MB STEEL PIPE, 330mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	200	1	200MB x 150MB REDUCING TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150MB STEEL PIPE, 100mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
6	150	1	150MB STEEL PIPE, 450mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION
8	150	1	150MB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, ONE END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	1	150MB KLAMFLEX FLANGE ADAPTOR, TO SUIT 200MB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
10	200	1	200MB STEEL PIPE, 340mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
11	200	2	200MB STEEL PIPE, 3115mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
12	200	4	200MB STEEL PIPE, 3000mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
13	200	1	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		29-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED. MILD STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TO SABS 082 OR TO SABS 719, AND HOT DIPPED GALVANIZED TO SABS 763.
4. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS. THE LOWER THIRD AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 5MM THICK PLATES, OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM.
5. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL TYPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
6. TANK ROOF SHEETS SHALL BE DESIGNED TO PROVIDE OVERLAP FOR OPTIMUM SEALING AND MANUFACTURED FROM 2.5MM THICK AND 610MM WIDE SHEETS.
7. ALL SEALANTS AND RUBBER COMPONENTS USED SHALL BE APPROVED NON-TOXIC AND NON TAINTING.
8. THE TANK ROOF SHEETS SHALL BE SUPPLIED WITH ONE ACCESS MANHOLE, ONE INSPECTION MANHOLE, AND BUILT-IN SCREENED VENT.
9. THE TANK SHALL BE SUPPLIED WITH ONE INTERNAL AND EXTERNAL LADDERS.
10. PIPE CONNECTION POINTS SHALL BE WELDED TO THE TANK PLATES IN POSITION AS SPECIFIED IN THE DRAWINGS AND;
    - OVERFLOW AND DRAIN PIPES TO BE 200MM ø 150MM DIA CMS FLANGE ONE SIDE ONLY.
    - OUTLET PIPING TO BE 150MM DIA CMS FLANGED ONE SIDE ONLY
    - INLET PIPING TO BE 150MM DIA CMS AND FLANGED INSIDE AND OUTSIDE.
11. TANK SHALL BE SUPPLIED WITH A LEVEL INDICATOR.
12. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3. UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
13. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
14. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
    - ALL STEEL PIPES SHALL BE GALVANIZED
    - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO PAPE SYSTEM OVER THE GALVANIZING.
    - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
    - ALL VALVES SHALL HAVE A SINTER EPOXY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES
    - ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
15. ALL uPVC INLET PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1 UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.
17. PIPE SCHEDULE TO BE READ SEPARATE FOR EACH PART OF THE CONNECTION

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

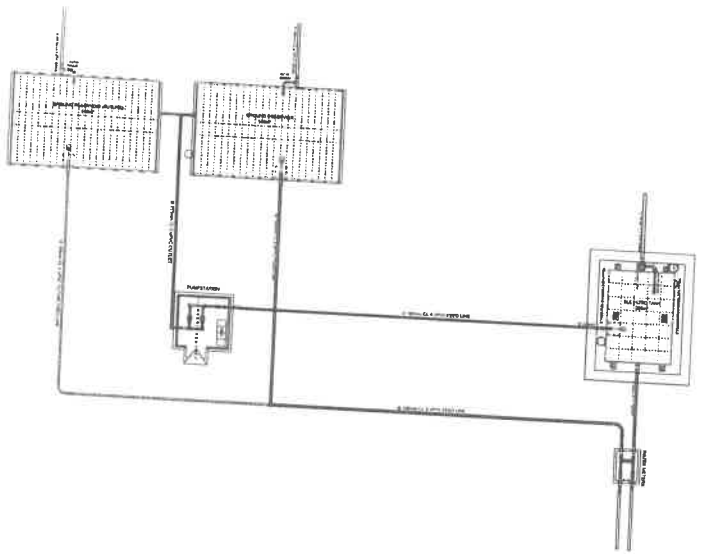
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 86195
WINDHOEK
EMAIL: ...oh.com
TEL: +264 81 232 052
TEL: +264 81 232 053

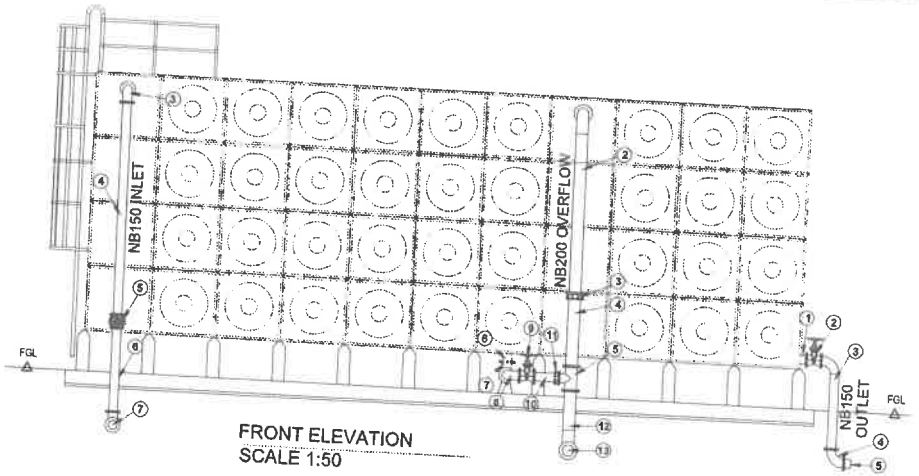
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
ELEVATED STEEL RESERVOIR (20m STAND) PIPE WORK DETAIL

CONSULTING PROJECT NO	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:20	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: W.U
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-301	REV: B0



TANK LAYOUT
SCALE 1:200

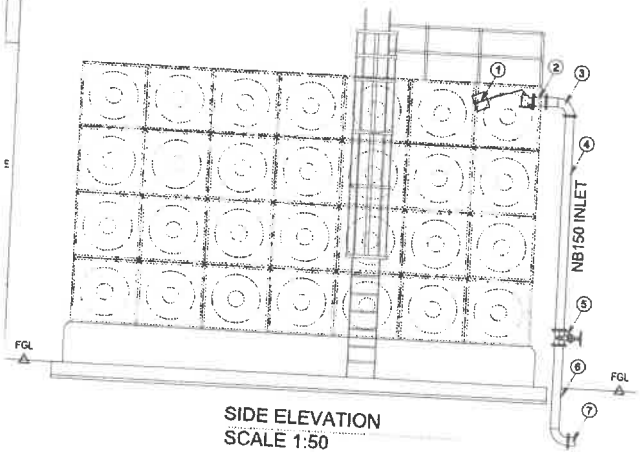


FRONT ELEVATION
SCALE 1:50

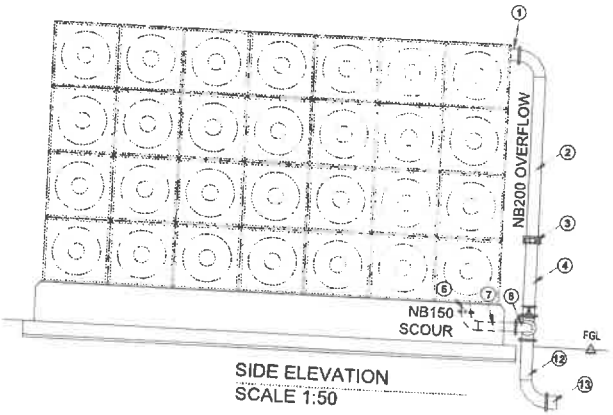
ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (INLET PIPE WORK)	SKETCH
1	150	1	150 NB EQUILIBRIUM FLOAT VALVE FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
2	150	1	150NB STEEL PIPE, 240mm LONG DISTANCE PIECE, INLET CONNECTION WELDED TO THE TANK AND FLANGED & DRILLED INSIDE AND OUTSIDE TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	150	1	150NB STEEL PIPE, 225mm LONG DISTANCE PIECE, CONNECTED TO 50MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150NB STEEL PIPE, 4000mm LONG DISTANCE PIECE, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3 CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
6	150	1	50NB STEEL PIPE, 1360mm LONG DISTANCE PIECE, CONNECTED TO 50NB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OUTLET PIPE WORK)	SKETCH
1	150	1	150NB STEEL PIPE, 150mm LONG DISTANCE PIECE, OUTLET CONNECTION POINT, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/? CORROSION PROHIBITION: HOT-DIP GALVANIZED	
2	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
3	150	1	50MB STEEL PIPE, 1420mm LONG DISTANCE PIECE, CONNECTED TO 50MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
4	150	1	150MB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	150	1	150 NB CAST IRON FLANGED ADAPTOR TO SUIT 150mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	

ITEM NO.	SIZE DN	NO. OFF	DESCRIPTION (OVERFLOW & DRAIN PIPE WORK)	SKETCH
1	200	1	200MB STEEL PIPE, 170mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
2	200	1	200MB STEEL PIPE, 3000mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
3	200	1	200MB FLANGE x FLANGE ADAPTOR, TO SUIT 200MB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
4	200	1	200MB STEEL PIPE, 30mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
5	200	1	200MB x 150MB REDUCING TEE AS DETAILED, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	
6	150	1	150MB STEEL PIPE, 253mm LONG DISTANCE PIECE, ONE END WELDED TO THE TANK AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
7	150	1	150MB STEEL PIPE, 715mm LONG DISTANCE PIECE, CONNECTED TO 150MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
8	150	1	150MB, 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
9	150	1	150MB, PN 16, SABS 664 RESILIENT SEAL GATE VALVE (NON-RISING SPINDLE) WITH HANDLE WHEEL, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3.	DETAILED FACE-TO-FACE DIMENSION: 280mm
10	150	1	150MB STEEL PIPE, 450mm LONG DISTANCE PIECE, ONE END PLAIN AND OTHER END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
11	150	1	150MB FLANGE x FLANGE ADAPTOR, TO SUIT 200MB STEEL PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	
12	200	1	200MB STEEL PIPE, 745mm LONG DISTANCE PIECE, CONNECTED TO 200MB 90° MEDIUM RADIUS BEND, BOTH END FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3. CORROSION PROTECTION: HOT-DIP GALVANIZED	
13	200	1	200 NB CAST IRON FLANGED ADAPTOR TO SUIT 200mm CLASS 9 uPVC PIPE, FLANGED AND DRILLED TO SABS 1123, TABLE 1000/3	



SIDE ELEVATION
SCALE 1:50



SIDE ELEVATION
SCALE 1:50

NO	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED. MILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM.
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MILD GAUGE STEEL TO SABS 062 OR TO SABS 719 AND HOT DIPPED GALVANIZED TO SABS 763.
4. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS. THE LOWER RIMS AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 8MM THICK PLATES. OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM.
5. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL PIPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
6. TANK ROOF SHEETS SHALL BE DESIGNED TO PROVIDE OVERLAP FOR OPTIMUM SEALING AND MANUFACTURED FROM 2.5MM THICK AND 610MM WIDE SHEETS.
7. ALL SEALANTS AND RUBBER COMPONENTS USED SHALL BE APPROVED NON-TOXIC AND NON TAINTING.
8. THE TANK ROOF SHEETS SHALL BE SUPPLIED WITH ONE ACCESS MANHOLE, ONE INSPECTION MANHOLE, AND BUILT-IN SCREENED VENT
9. THE TANK SHALL BE SUPPLIED WITH ONE INTERNAL AND EXTERNAL LADDERS.
10. PIPE CONNECTION POINTS SHALL BE WELDED TO THE TANK PLATES IN POSITION AS SPECIFIED IN THE DRAWINGS AND:
    - OVERFLOW AND DRAIN PIPES TO BE 200MM Ø 150MM DIA CWS FLANGE ONE SIDE ONLY.
    - OUTLET PIPING TO BE 150MM DIA CWS FLANGED ONE SIDE ONLY.
    - INLET PIPING TO BE 150MM DIA CWS AND FLANGED INSIDE AND OUTSIDE.
11. TANK SHALL BE SUPPLIED WITH A LEVEL INDICATOR
12. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3. UNLESS OTHERWISE STATED IN PIPE SCHEDULE
13. ALL VALVES AND FITTINGS TO BE RATED MIN. 16 BAR. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
14. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES.
    - ALL STEEL PIPES SHALL BE GALVANIZED
    - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING
    - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
    - ALL VALVES SHALL HAVE A SUITER PINSKY POWDERED COATING ON INTERIOR AND EXTERIOR METAL SURFACES
    - ALL NUTS, BOLTS AND WASHERS SHALL BE HIGH TENSILE GRADE.
15. ALL uPVC INLET PIPES TO BE OF CLASS 9 AND TO SABS 966 PART 1. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.
17. PIPE SCHEDULE TO BE READ SEPARATE FOR EACH PART OF THE CONNECTION

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

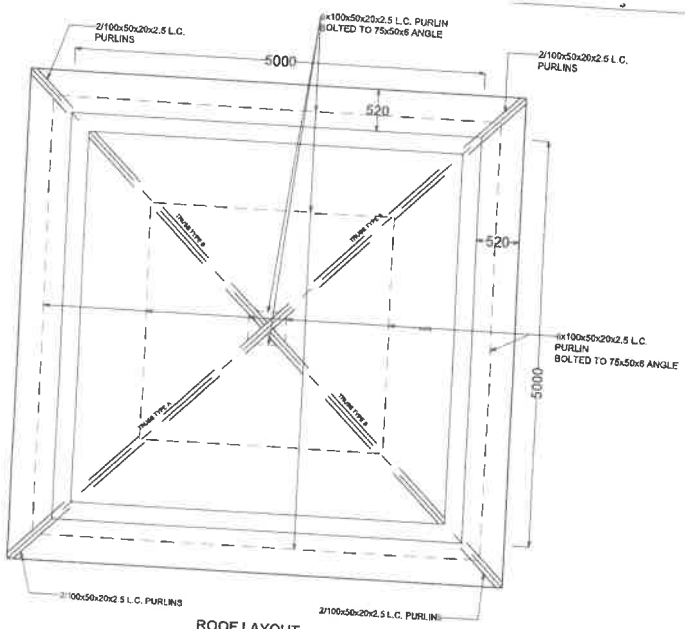
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98198
WINDHOEK
TEL: +264 81 232 052
TEL: +264 81 232 053
EMAIL: [redacted].com

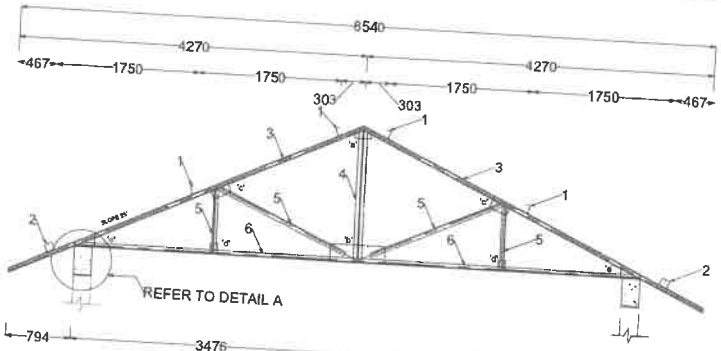
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
GROUND WATER RESERVOIR PIPE WORK DETAIL

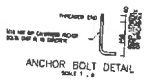
CONSULTING OBJECT NO. 2501	CLIENT PROJECT NO.	APPOINTMENT NO.
DATE AUGUST 2025	SCALE AS SHOWN	DRAWN G.N
DESIGN M.A	CHECKED M.A	APPROVED W.U
FILE 2501-GW	DRWG No. 2501-GW-WR-01-300	REV B0



ROOF LAYOUT
SCALE 1:10



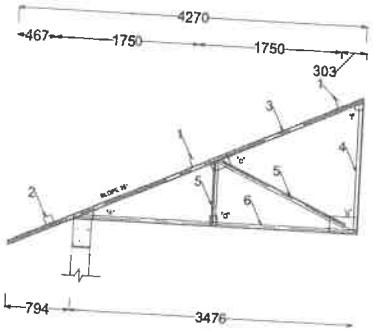
TRUSS TYPE A
SCALE 1:10



ANCHOR BOLT DETAIL
SCALE 1 : 5

BASE PLATE (P1)
SCALE 1:10

BASE PLATE (P2)
SCALE 1:10



TRUSS TYPE B
SCALE 1:10

LEGEND

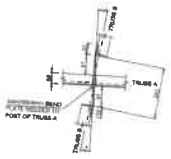
1. 100x50x20x2.5mm L.C. PURLIN BOLTED TO 75x50x6mm ANGLE CLEAT WHICH IS WELDED TO TOP MEMBER OF TRUSS
2. 2/100x50x20x2.5mm L.C. PURLIN WELDED TO FORM BOX. BOLTED TO 75x50x6mm ANGLE CLEAT WHICH IS WELDED TO TOP MEMBER OF TRUSS
3. TOP CHORD 2/50x50x5mm ANGLE
4. POST 2/50x50x5mm ANGLE
5. POSTS & DIAGONALS 50x50x3mm ANGLE
6. POST & BOTTOM CHORD 50x50x5mm ANGLE

GUSSET PLATES

* Gusset plates to be trimmed

'a' - *200x150x6mm
'b' - 900x150x6mm
'c' - *250x150x6mm
'd' - 130x90x6mm
'e' - *240x170x6mm
'f' - *130x100x6mm
'g' - 330x150x6mm

ALL DOUBLE/SINGLE MEMBERS TO BE WELDED CONTINIOUSLY ALLROUND TO BOTH SIDES OF GUSSET PLATE



TRUSS CONNECTION DETAIL
SCALE 1:10

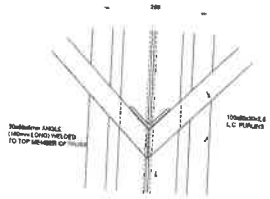
DETAIL A
SCALE 1:10

2/50x50x5mm ANGLES WELDED TOGETHER

TOP CHORD DETAIL
SCALE 1:5

2/100x50x20x2.5mm L.C. WELDED TOGETHERE TO FORM BOX

END PURLIN DETAIL
SCALE 1:5



HIP TRUSS PURLIN SUPPORT DETAIL
SCALE 1:10

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		26-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4:8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION . 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920. BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

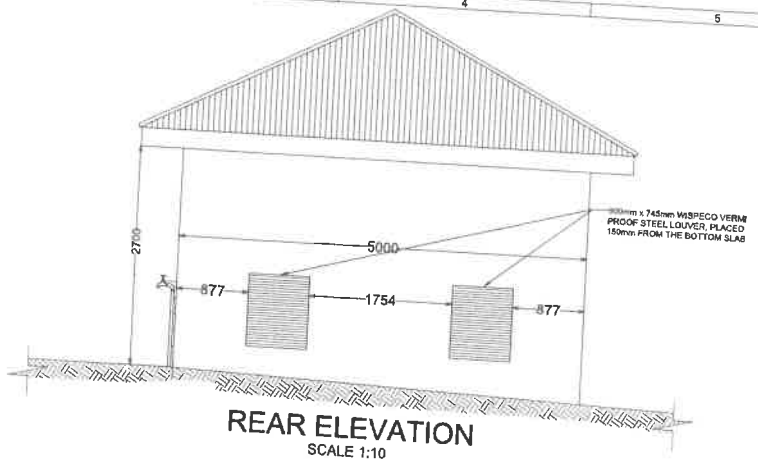
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98186
WINDHOEK
TEL: +264 61 232 052
TEL +264 61 232 053
EMAIL: [redacted]

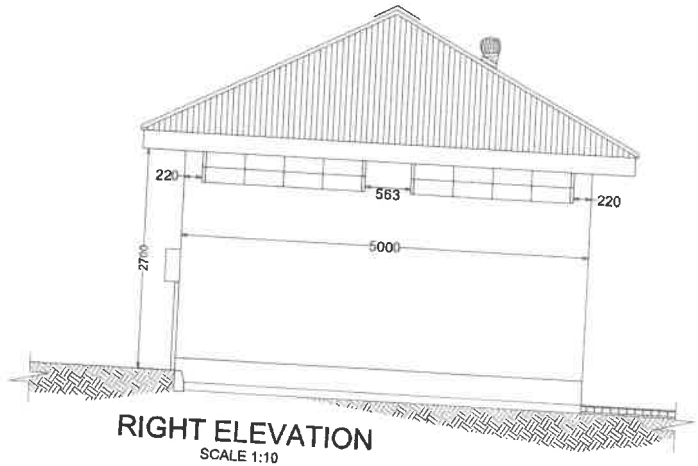
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP HOUSE ROOF LAYOUT AND SECTIONS

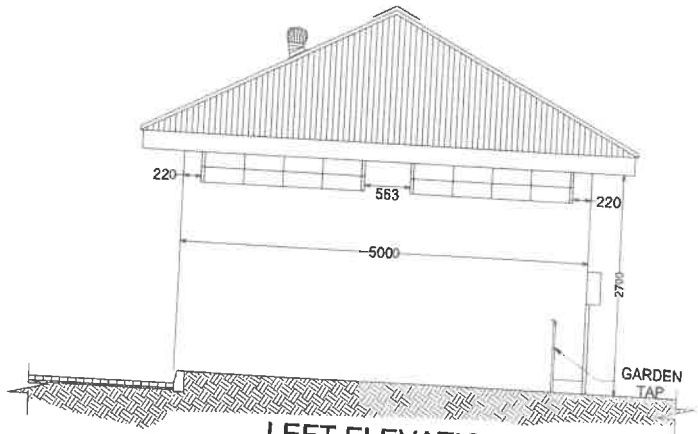
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.H.T
FILE: 2501.CIV	DRWG No.: 2501-CIV-WR-01-304	REV.: B0



REAR ELEVATION
SCALE 1:10



RIGHT ELEVATION
SCALE 1:10



LEFT ELEVATION
SCALE 1:10

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4.8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION . 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

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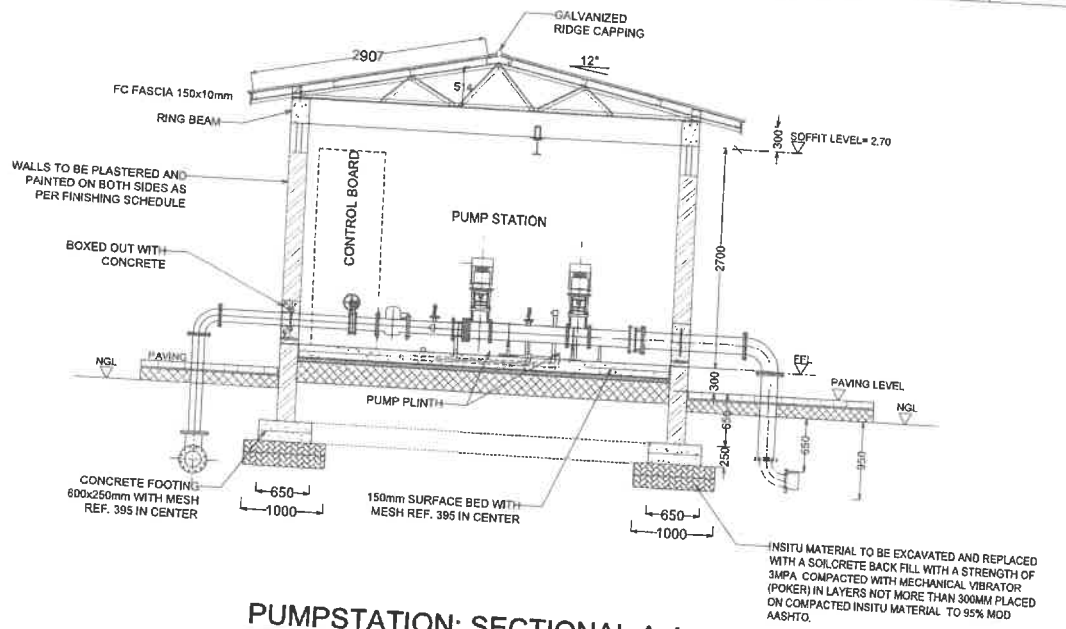
CONSULTANTS

OM'KUMOH
CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195
WINDHOEK
TEL +264 61 232 052
TEL +264 61 232 053
EMAIL: [redacted].com

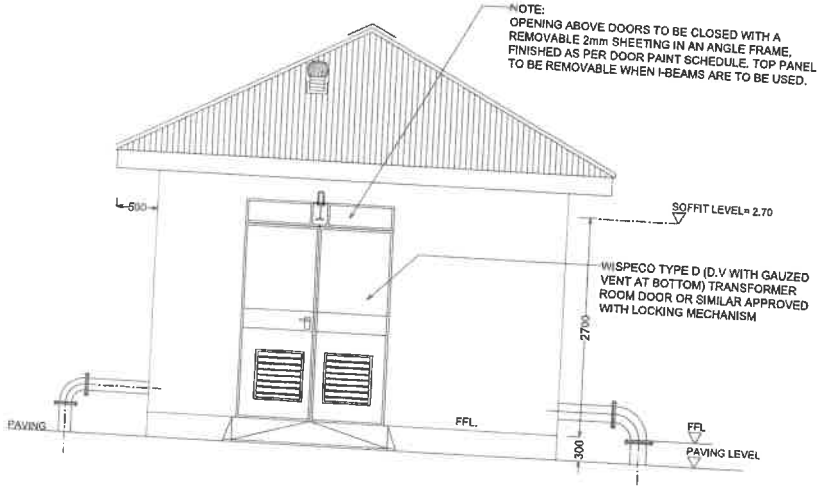
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PUMP HOUSE ELEVATION LAYOUTS

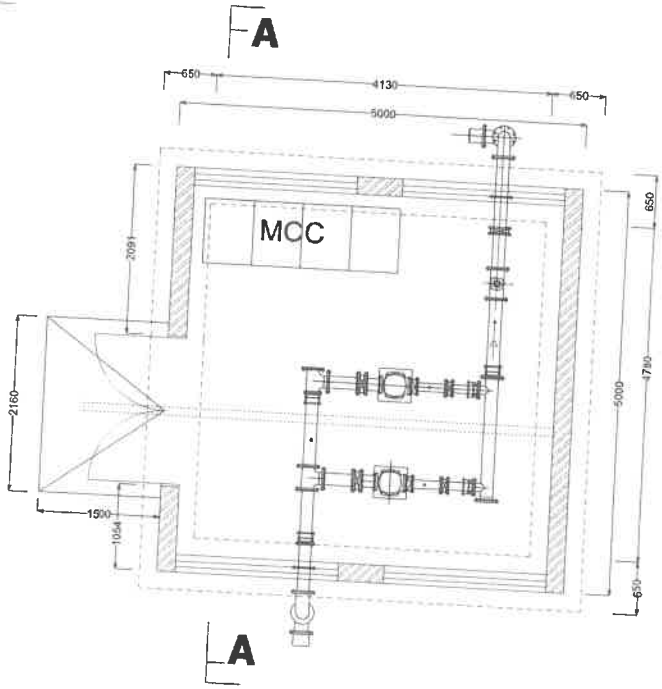
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-WR-01-303	REV: B0



PUMPSTATION: SECTIONAL A-A
SCALE 1:10



PUMPSTATION: FRONT ELEVATION
SCALE 1:10



PUMPSTATION: LAYOUT
SCALE 1:10

NO	REVISION	BLOCK Ref	DATE
R0	ISSUED FOR TENDER		29-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4:8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION , 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
6. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.
11. 2 LAYERS OF DPC BETWEEN ALL CONCRETE ELEMENTS AND BRICK WALL BELOW.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

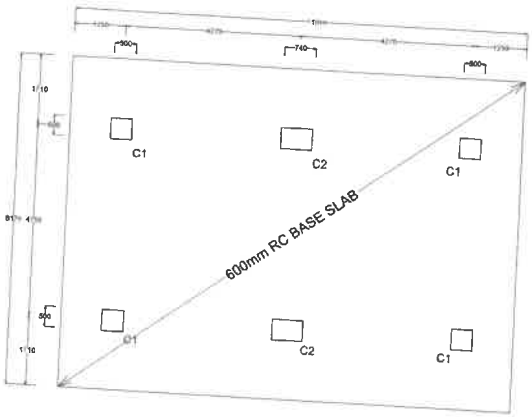
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195
WINDHOEK
TEL: +264 61 232 062
TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

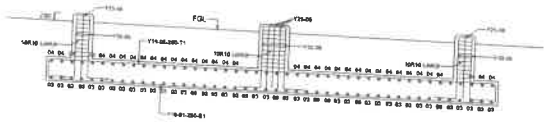
DRAWING TITLE
PUMP HOUSE LAYOUT AND SECTION DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-GV	DRWG No. 2501-GW-WR-01-202	REV. R0

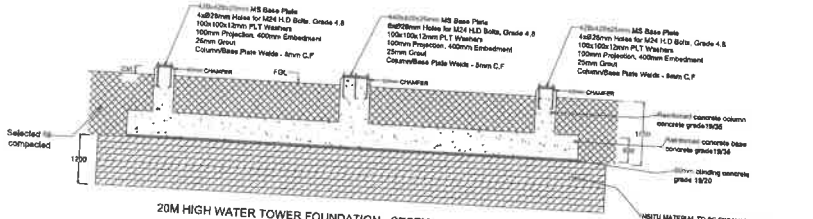


20M HIGH WATER TOWER FOUNDATION - LAYOUT
SCALE 1:20

WATER TOWER FOUNDATION REINFORCEMENT - LAYOUT
SCALE 1:20



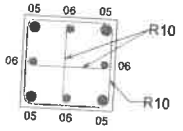
20M HIGH WATER TOWER FOUNDATION REINFORCEMENT - SECTION
Scale 1:20



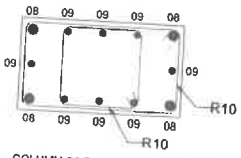
20M HIGH WATER TOWER FOUNDATION - SECTION
SCALE 1:20

MEMBER	NO OF	NO BARS	DIA	CUT LENGTH	TOTAL	BAR MARK	SC	A	B	C	D	E/R	kg
BASE	1	34	Y16	6850	34	01	38	6050	500	[300]			365
	1	34	Y16	6050	34	01a	20	6050					323
	1	34	Y16	6850	34	02	38	6050	500	[300]			365
	1	34	Y16	6050	34	02a	20	6050					323
	1	45	Y16	8850	45	03	38	8050	500	[300]			628
	1	45	Y16	8850	45	04	38	8050	500	[300]			628
	1	88	Y12	1375	88	STOOL	83	300	475	[300]	[300]		106
COLUMN C1	4	4	Y32	1875	16	05	37	1575	300				185
	4	4	Y25	1875	16	06	37	1575	300				113
	4	10	R10	2000	40	07	60	400	400				50
	4	20	R10	600	80	07a	35	400					30
COLUMN C2	2	4	Y32	1875	8	08	37	1575	300				94
	2	6	Y25	1875	16	09	37	1575	300				113
	2	10	R10	2000	20	10	60	400	400				25
	2	10	R10	2750	20	11	60	640	400				35

	6	8	10	12	16	20	25	32	40	TOTAL
R			140							140
Y				108	2632		226	279		3245
TOTAL			140	108	2632		226	279		3385



COLUMN C1 REINFORCEMENT -PLAN LAYOUT
SCALE 1:10



COLUMN C2 REINFORCEMENT -PLAN LAYOUT
SCALE 1:10

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES, AS SHOWN ON THIS DRAWING, IS APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

BASE PLATE NOTES:

1. 420x420x25 BASE PLATE
2. 28 DIA. HOLES FOR M24 GRADE 4.8 HD BOLTS
3. 100x100x12 WASHER PLATE
4. HD BOLTS 100 PROJECTION , 400 EMBEDMENT
5. 8mm CONTINUOUS FILLET WELD

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200C READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920. BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

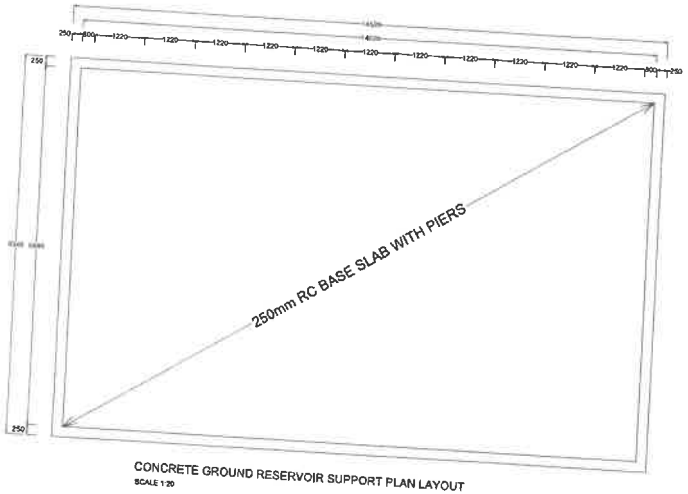
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 96196
WINDHOEK
EMAIL:
TEL: +264 61 232 052
TEL +264 61 232 053

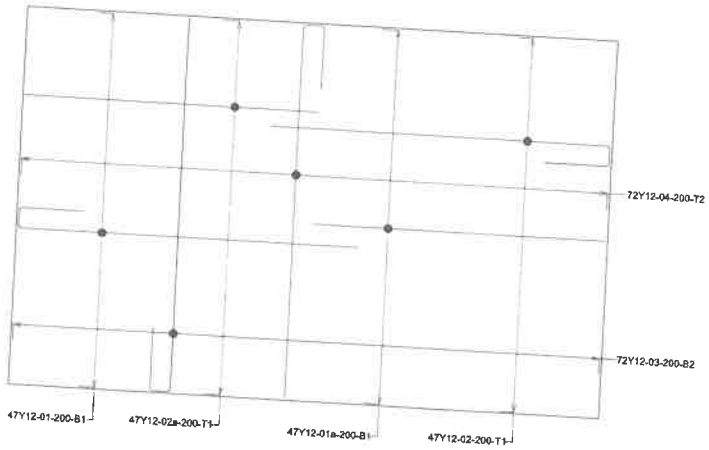
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
ELEVATED RESERVOIR FOUNDATION LAYOUT & REINFORCEMENT DETAILS

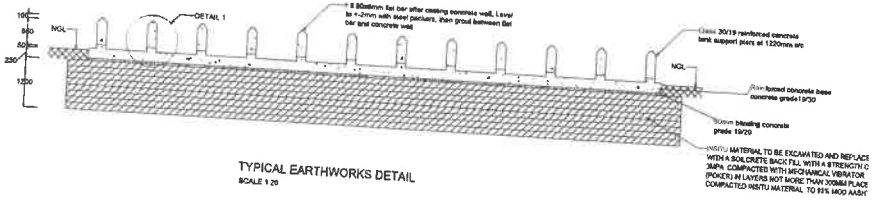
CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:20	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-QV	DRWG No.: 2501-QV-WR-01-201	REV.: B0



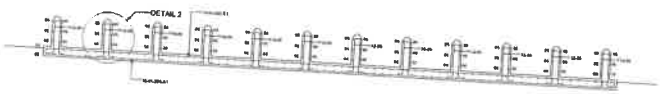
CONCRETE GROUND RESERVOIR SUPPORT PLAN LAYOUT
SCALE 1:20



CONCRETE GROUND RESERVOIR BASE SLAB REINFORCEMENT LAYOUT
SCALE 1:20



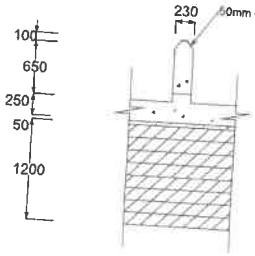
TYPICAL EARTHWORKS DETAIL
SCALE 1:20



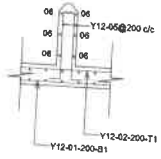
WATER RESERVOIR FOUNDATION REINFORCEMENT - SECTION
SCALE 1:20

MEMBER	NO OF	NO BARS	DIA	CUT LENGTH	TOTAL NO	BAR MARK	SC	A	B	C	D	E/R	kg
BASE	1	47	Y12	9025	47	01	38	8275	150	[800]			377
	1	47	Y12	7225	47	01a	20	7225					302
	1	47	Y12	9025	47	02	38	8275	150	[800]			377
	1	47	Y12	7225	47	02a	20	7225					302
	1	72	Y12	10000	72	03	38	9250	150	[800]			640
	1	72	Y12	10000	72	04	38	9250	150	[800]			640
	1	135	Y12	1150	135	STOOL	83	300	150	[300]	[300]		138
PIERS	12	90	Y12	1225	1080	05	37	250	825	[150]			1160
	12	8	Y12	8750	72	06	20	8750					560

	6	8	10	12	16	20	25	32	40	TOTAL
R										
Y				4516						4516
TOTAL				4516						4516



DETAIL 1
SCALE 1:5



DETAIL 2
SCALE 1:5

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		28-08-2025

NOTES:

1. NO PART OF THIS DRAWING IS TO BE SCALED.
2. ALL DIMENSIONS AND LEVELS GIVEN MUST BE CHECKED BEFORE COMMENCING ANY WORK AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER WITHOUT DELAY.
3. ALL CONCRETE WORK TO BE IN ACCORDANCE WITH SABS1200G READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS WHERE APPLICABLE.
4. REINFORCEMENT TO BE IN ACCORDANCE WITH SABS920, BENT IN ACCORDANCE WITH SABS82. WELDED MESH FABRIC TO COMPLY WITH SABS 1024.
5. ALL FOUNDATION EXCAVATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING.
6. COVER TO REINFORCEMENT = 50mm
7. CONCRETE STRENGTH TO BE OF CLASS 35/19.
8. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR THE POSITIONING AND CONDITION OF REINFORCEMENT BEFORE CASTING ANY CONCRETE.
9. ALL REINFORCEMENT BARS SHALL BE THOROUGHLY CLEANED WITH APPROPRIATE SPACER BLOCKS IN POSITION TO ENSURE ADEQUATE CONCRETE COVER AS SPECIFIED.
10. NO OFF-CUTS OF REINFORCEMENT BARS SHALL BE USED.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT
KUNENE REGIONAL COUNCIL

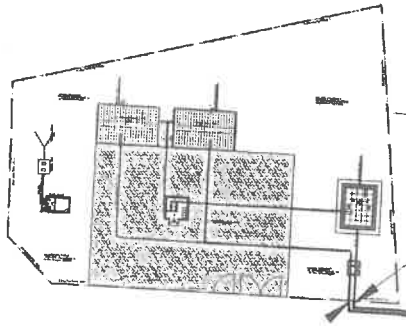
CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195
WINDHOEK
EMAIL: admin@omkumoh.com
TEL +264 61 232 052
TEL +264 61 232 053

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
GROUND RESERVOIR FOUNDATION LAYOUT & REINFORCEMENT DETAILS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-STR	DRWG No: 2501-CIV-WR-01-200	REV: B0



Ø160 uUPVC BULK WATER LINE
TO ELEVATED TOWER

Ø160 uUPVC BULK WATER LINE
TO STORAGE FACILITY

EXISTING Ø160 uUPVC
BULK WATER LINE

PIPE BEND 8

Ø160 uUPVC BULK WATER LINE
TO ELEVATED TOWER

SEE DETAIL A

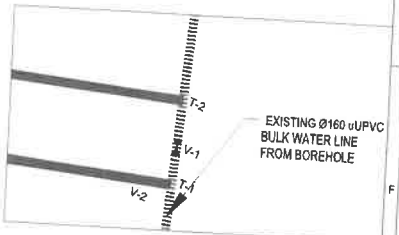
Ø160 uUPVC BULK WATER LINE
TO STORAGE FACILITY

PIPE BEND 7A

EXISTING Ø160 uUPVC
BULK WATER LINE
FROM BOREHOLE

RISING MAIN WATER SCHEDULE - SETTING OUT DETAIL

Item	X	Y	Description
T-1	65024.9021	-318267.8062	160mm Dia. Equal Tee
V-1	65023.7522	-318268.1146	
V-2	65023.3545	-318267.3244	
T-2	65023.5156	-318268.4462	160mm Dia. Equal Tee
B-1	64890.2007	-318168.4696	11.25 Deg. Bend
B-2	64889.6926	-318189.0890	11.25 Deg. Bend
B-3	64882.1487	-318161.1702	90 Deg. Bend
B-4	64882.3830	-318162.4624	90 Deg. Bend



DETAIL A
SCALE 1:20

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES, AS SHOWN ON THIS DRAWING, IS APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

No	REVISION	BLOCK Ref	DATE
00	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL EXTERNAL POTABLE WATER RETICULATION TO BE uPVC CLASS 9.
2. EARTHWORKS FOR PIPE TRENCHES TO BE DONE ACCORDING TO SABS/SANS 1200 DB.
3. BEDDING FOR ALL PIPE WORK TO BE DONE TO SABS/SANS 1200LB.
4. ALL EXTERNAL WATER INFRASTRUCTURE TO BE INSTALLED ACCORDING TO SPECIFICATIONS AND DRAWINGS.
5. TESTING TO BE DONE AS PER SANS 1200L.
6. ALL EXTERNAL REDUCERS, VALVES, HYDRANTS, PRESSURE BENDS,TEES AND END CAPS TO BE CONSTRUCTED WITH PROPER THRUST BLOCKS AS PER SUPPORTING DETAILS
7. ALL VALVES IN THE WATER AND FIRE RETICULATION TO BE RATED PN16.
8. ALL SERVICES UNDER BUILDINGS TO BE INSTALLED IN SLEEVES AND ENCASED IN CONCRETE AS PER SUPPORTING DETAILS.
9. ALL CONCRETE WORKS TO BE GRADE 25/19 UNLESS OTHERWISE SPECIFIED.
10. REFER TO SUPPORTING DRAWINGS FOR TYPICAL DETAILS.
11. ANY DISCREPANCIES AND AMBIGUITIES ON THIS DRAWING TO BE REPORTED TO THE CONSULTING ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
12. NO PART OF THIS DRAWING MAY BE SCALED
13. MINIMUM COVER FOR EXTERNAL WATER AND FIRE RETICULATION 1m TO TOP OF THE PIPE

WATER RETICULATION
- SV — PROPOSED RISING MAIN AND VALVE
- EXISTING WATER LINE
- WM — EXISTING WATER METER
- CADASTRAL BOUNDARY

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 9186
WINDHOEK
EMAIL: [illegible]
TEL: +264 61 232 062
TEL: +264 61 232 063

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
BULK SUPPLY LINE AND RISING MAIN - WATER LAYOUT

CONSULTING PROJECT NO	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-000	DRWG No. --	REV.

WARNING
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NO	REVISION	BLOCK Ref	DATE
88	ISSUED FOR TENDER		28-08-2025

GENERAL NOTES:

1. ALL DIMENSIONS ON THIS DRAWING SHALL BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER.
2. DIMENSIONS MAY VARY DEPENDING ON THE TYPE AND MAKE OF ITEMS SUCH AS VALVES, PIPES, AND FITTINGS, EXCEPT WHERE OTHERWISE STATED, WILL BE STEEL (SABS 719) WITH WALL THICKNESS OF 4.5MM
3. ALL STEEL ITEMS SHALL BE MANUFACTURED FROM MED. GAUGE STEEL TU SABS 062 OR TO SABS 719, AND HOT DIPPED GALVANISED TO SABS 763.
4. ALL FLANGES TO BE DRILLED TO SABS 1123 TABLE 1000/3. UNLESS OTHERWISE STATED IN PIPE SCHEDULE.
5. ALL VALVES AND FITTINGS TO BE RATED MIN 16 BAR. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
6. CORROSION PROTECTION OF PIPES, SPECIALS, COUPLINGS AND VALVES:
   - ALL STEEL PIPES WITH DIAMETER GREATER THAN 150MM SHALL BE GALVANIZED
   - ALL MILD STEEL PIPE WORK AND COUPLING BURIED IN THE GROUND SHALL EXTERNALLY BE PROTECTED BY DENSO TAPE SYSTEM OVER THE GALVANIZING.
   - ALL COUPLINGS SHALL BE GALVANIZED INTERNALLY AND EXTERNALLY.
   - ALL VALVES SHALL HAVE A SINTER PROXY POWDERED COATING ON INTERNAL AND EXTERIOR METAL SURFACES.
   - ALL NUTS, BOLTS AND WASHERS SHALL BE MILD STEEL.
10. ALL uPVC INLET PIPES TO BE OF CLASS 12 & ALL OUTLET PIPES CLASS 9 AND TO SABS 966 PART 1. UNLESS OTHERWISE STATED IN THE PIPE SCHEDULE.
11. OVERFLOW AND DRAIN PIPES TO BE 200MM DIA & 150MM DIA CMS. RESPECTIVELY.
12. OUTLET PIPING TO BE 150MM DIA CMS.
13. INLET PIPING TO BE 150MM DIA CMS.
14. TANK SHALL BE OF THE PRESSED STEEL TANK TYPE AND THE STAND SHALL BE OF MILD STEEL MEMBERS. THE LOWER TIERS AND THE BOTTOM OF THE TANKS SHALL BE MADE OF 6MM THICK PLATES, OTHER PLATES SHALL HAVE A THICKNESS OF 4.5MM
15. TANK INSTALLATIONS SHALL BE COMPLETE WITH LOCKABLE MANHOLE, STANDARD BALL TYPE HAND RAILING, GALVANIZED ACCESS LADDERS WITH CAGE AND ALL PIPE-WORK.
16. THE POSITION OF DRAIN PIPE END TO BE DETERMINED ON SITE AND IT SHOULD BE LOCATED AT A STABLE GROUND TO AVOID SOIL EROSION.

ISSUED FOR TENDER

CLIENT
KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98196
WINDHOEK
TEL: +264 61 232 052
TEL: +264 61 232 053
EMAIL: [redacted].com

PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
NEW BULK WATER STORAGE FACILITY GENERAL ARRANGEMENT DRAWING

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: N.S
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-GV	DRWG No: 2501-GV-WB-01-10	REV: R0

CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE RELEVANT SANS 1200 SPECIFICATION, THE NATIONAL BUILDING REGULATIONS AND THIS DRAWING, UNLESS OTHERWISE STATED.

GENERAL NOTES :

- THE CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
2. THE CONTRACTOR IS RESPONSIBLE FOR CORRECT SETTING OUT OF BUILDINGS ON SITE WITH PARTICULAR REFERENCE TO BOUNDARIES AND BUILDING LINES.
3. THE CONTRACTOR TO VERIFY ALL LEVELS AND DIMENSIONS ON SITE.
4. DO NOT SCALE, USE FIGURED DIMENSIONS ONLY.
5. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ANY RELEVANT ARCHITECTURAL, CIVIL, STRUCTURAL OR OTHER CONSTRUCTION RELATED DRAWINGS.
7. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY FOR CORRECTION BEFORE WORK IS UNDERTAKEN.
8. THE CONTRACTOR IS TO IDENTIFY AND EXPOSE, WHERE RELEVANT, ALL UNDERGROUND SERVICES ON SITE.
9. CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION WORKS INFORMATION, OR RELEVANT SANS 1200 (LATEST REVISION)
10. SHOULD THE ENGINEER BE REQUIRED ON SITE, 24 HOURS NOTICE IS REQUESTED.
11. UNLESS STATED PERMISSIBLE DEVIATION WILL BE DEGREE OF ACCURACY II IN TERMS OF RELEVANT SECTION OF SANS 1200 STANDARD SPECIFICATIONS.
12. THE STRUCTURE IS TO BE DESIGNED FOR A 60 MIN FIRE RATING, UNLESS OTHERWISE NOTED.
13. ALL LEVELS INDICATED ARE STRUCTURAL AND NOT FINISHED LEVELS, UNLESS OTHERWISE NOTED.
14. THE CONTRACTOR IS TO ALLOW 7 WORKING DAYS FOR ANY FABRICATION APPROVAL, UNLESS OTHERWISE NOTED.

NERAL NOTES - CONCRETE

STRUCTURAL DRAWINGS MUST BE READ IN CONJUNCTION WITH ARCHITECTURAL, SERVICE ENGINEER'S AND SPECIALIST'S DRAWINGS AND ANY DISCREPANCIES MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF SANS 1200 G AND SANS2001-CC1 (LATEST REVISIONS).

STRIPPING TIMES FOR FORMWORK AND PROPPING SHALL BE IN ACCORDANCE WITH SANS 1200 G (LATEST REVISION).

25mm x 25mm CHAMFER TO ALL EXPOSED CORNERS. UNLESS OTHERWISE NOTED.

ALL EXPOSED CONCRETE WORK TO BE OFF-SHUTTER FINISH, GRADE II FINISH OR AS SPECIFIED IN THE BILL OF QUANTITIES.

CEMENT EXTENDERS TO BE USED ONLY IF APPROVED BY THE ENGINEER.

BEAMS AND SLABS SHALL BE CONSTRUCTED WITH THE FOLLOWING

CAMBERS : CANTILEVER BEAMS AND SLABS = SPAN / 150.

OTHER BEAMS AND SLABS = SPAN / 400. UNLESS OTHERWISE SPECIFIED.

ALL CONCRETE ELEMENTS TO BE CURED FOR MIN OF 7 DAYS.

ALL CONCRETE MIXES AND CAST CONCRETE TO SATISFY CONCRETE DURABILITY TESTING ACCORDING TO SANS SANS 3001-CO3-1:2015, SANS 3001-CO3-2.2015, AND SANS 3001-CO3-3:2015 BESIDES THE REQUIREMENTS OF POINT 2 ABOVE)

CONCRETE STRENGTHS			
ber	Concrete class	Internal mm cover (min)	Exposed cover (min)
ndations	40	75	75
ls	35	30	30
	40	75	75
Columns	35	30	30
	40	75	75

ATION NOTES :

FORE CONCRETING TAKES PLACE, ALL FOUNDATIONS ARE TO BE INSPECTED ON SITE BY THE ENGINEERS.

INDATION LEVELS INDICATED ARE APPROXIMATE. FINAL NDING LEVELS ARE TO BE DETERMINED ON SITE BY THE GINEERS.

DIFFERENCE BETWEEN FINAL FOUNDING LEVELS AND TOM OF FOUNDATION SHOWN TO BE MADE UP WITH 15 MASS CONCRETE.

OTHER FOUNDATIONS HAVE A MINIMUM 50MM OF 15 MPA S CONCRETE BLINDING LAYER.

NG CONSTRUCTION ALL EXCAVATIONS SHALL BE KEPT E FROM WATER.

NTERNAL AND EXPOSED CONCRETE IS TO BE TTERED. IF EXTERNAL CONCRETE IS NOT SHUTTERED, E OF CONCRETE IS TO BE ADDED.

OOTINGS MAY BE FOUNDED ON RUBBLE, BACKFILLED RIAL OR SOILS CONTAINING HIGH HUMUS CONTENT.

IOTTOM OF ALL FOUNDATIONS ARE TO LEVEL. IF IRED, STEPS MAY BE FORMED IN ACCORDANCE WITH 0400, BUT TO THE APPROVAL OF THE ENGINEER.

KCAVATIONS TO BE INSPECTED BY GEOTECHNICAL & CTURAL ENGINEERS PRIOR TO CASTING.

D FOUNDING MATERIAL (150 THK) RIPPED & SCARIFIED & ACTED 95%%% MOD ASSHTO AT OPTIMUM MOISTURE.

BRICKWORK :

1. ALL MASONRY MATERIALS, COMPONENTS, WORKMANSHIP AND TESTING SHALL COMPLY WITH SANS 0164 "THE STRUCTURAL USE OF MASONRY" AND SANS 0400 "NATIONAL BUILDING REGULATIONS".
2. THE MINIMUM CRUSHING STRENGTH OF ALL LOADBEARING BRICKWORK SHALL BE 14 MPA AND THE MAXIMUM WATER ABSORBTION 12%.
3. THE MINIMUM CRUSHING STRENGTH OF MORTAR SHALL BE AS FOR CLASS I MORTAR (1:4 CEMENT : SAND, BUT NOT LESS THEN 10 MPa) AS PER TABLE C-1 OF SANS 0164 PART 1 1980.
4. ALL CAVITY WALLS TO HAVE STEPPED DPCS.
5. SEE ARCHITECTS DRAWINGS FOR GENERAL LAYOUT AND SETTING OUT OF BRICKWORK.
6. ALL BRICK ANCHORS, WALL TIES AND STRAPS SHALL BE HOT-DIPPED GALVANISED.
7. FULL DEPTH Y-JOINTS SHALL BE MADE IN PLASTER WORK WHERE BRICKWORK AND CONCRETE JOIN.
8. NON-LOADBEARING BRICKWORK MAY NOT BE BUILT CLOSER THAN 20mm FROM THE SOFFIT OF BEAMS AND SLABS, UNLESS OTHERWISE NOTED.
9. LOAD BEARING BRICKWORK IS TO BE ERECTED BEFORE CONCRETE IS CAST AND SHALL BE REINFORCED WITH AN APPROVED BRICKFORCE EVERY FOURTH COURSE AND FOR EACH COURSE FOR THREE COURSES ABOVE WALL OPENINGS.
10. GENERALLY BRICKFORCE TO BE PROVIDED EVERY 4 COURSES.
11. WALL TIES IN CAVITY WALLS AND BRICK RETAINING WALLS SHALL BE OF THE VERTICAL TWISTED TYPE AS IN SABS 0164 PART 1-1980 FIGURE 1 OR SIMILAR APPROVED, PLACED EVERY FOURTH LAYER VERTICALLY AND AT 500 CENTRES HORIZONTALLY.
12. CLAY BRICKS MUST BE WETTED BEFORE USE.
13. WALL JOINTS MUST BE REPEATED IN ALL TILED FINISHES.
14. BRICK BALUSTRADES AND PARAPETS ON ROOF TO HAVE JOINTS AT 6m CENTRES.
15. ALL PLANTERS BUILT IN BRICKWORK ARE TO BE PROVIDED WITH 25mm DIA. WEEP HOLES ABOVE THE FINISHED PAVING LEVELS AND AT 1000mm CENTRES.
16. BRICK WALLS TO BE TIED TO CONCRETE COLUMNS OR RING BEAMS WITH A 30 X 1.6mm X 400 LONG GALVANISED MILD STEEL TIES AT EVERY FOURTH COURSE. FIX THE TIES TO THE COLUMNS WITH 2 HILTI SHOT STUDS EACH.
17. CONTROL JOINTS IN THE BRICKWORK SHALL BE PROVIDED AT POSITIONS SHOWN ON THE ARCHITECTS DRAWING. VERTICAL JOINTS TO BE A MAXIMUM 8m CENTRES FOR EXTERNAL WALLS.
18. A 10mm VERTICAL SOFT JOINT TO BE PROVIDED BETWEEN BRICK WALLS AND CONCRETE COLUMNS.
19. ALL BUTT-JOINTS BETWEEN INTERNAL WALLS AND CONCRETE COLUMNS (INTERFACE) EDGES TO RECEIVE VALMETEX EXPANDED METAL V.E.M. 230B WITH A MINIMUM WIDTH OF 400mm.
20. NO VERTICAL OR HORIZONTAL CHASING IN LOAD BEARING BRICKWORK IS PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
21. ALL EXTERNAL JOINTS TO BE SEALED WITH AN APPROVED POLYSULPHIDE JOINT SEALER.
22. LOADBEARING CAVITY WALLS TO BE FILLED SOLID WITH CONCRETE FOR THE TOP 4 COURSES.
23. 12mm VERTICAL SOFTBOARD TO BE PLACED WHERE THE SLAB ABUTS AGAINST THE WALL.
24. SLIP JOINT CONSISTING OF 2 LAYERS OF 3 PLY MALTHOID WITH PLASTIC IN BETWEEN TO BE FORMED ON TOP OF ALL WALLS SUPPORTING THE CONCRETE SLAB.
25. LINTOLS OVER OPENINGS TO HAVE A MINIMUM OF 230MM BEARING EACH END.
26. OUTER SKIN OF FACADE BRICKWORK TO BE SUPPORTED AT SLAB LEVEL WHERE SPECIFIED OFF GALVAISED 90X90X8 L WITH M12 ANCHORS AT 400mm CENTRES.

REINFORCEMENT NOTES :

1. THE ENGINEER IS TO INSPECT ALL REINFORCING PRIOR TO CASTING CONCRETE.
2. THE STEEL STRESS AND BENDING OF ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH SANS 920.
3. REINFORCEMENT SHALL BE FIXED TO COMPLY WITH THE TOLERANCES AS SPECIFIED IN SANS 1200 G.
4. NO HEATING BENDING OR CUTTING OF REINFORCEMENT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR IS REQUESTED TO INSPECT THE FIXED REINFORCEMENT AND TO ENSURE THAT THE CONCRETE COVER IS AS SPECIFIED ON THE RELEVANT DRAWINGS BEFORE THE ENGINEER IS NOTIFIED.
6. MINIMUM LAP LENGTH TO BE AS FOLLOWS UNLESS STATED OTHERWISE:
   - Y10 - 500mm
   - Y12 - 600mm
   - Y16 - 800mm
   - Y20 - 1000mm
   - Y25 - 1250mm
   - Y32 - 1600mm

LEVEL TOLERANCES :

1. ALL LEVEL TOLERANCES FOR EARTHWORKS TO BE DEGREE II (SANS 1200 D) BUT THE SMOOTHNESS TOLERANCE ON THE EXCAVATION/FILLED UP TERRACE PLATFORMS SHALL BE SUCH THAT NO UNEVENNESS WILL BE GREATER THAN 50MM OVER 4M EXCEPT FOR AREAS TO RECEIVE SURFACE BEDS WHERE NO UNEVENNESS MUST BE GREATER THAN 15mm OVER 4m.
2. TOLERANCES IN ACCORDANCE WITH SANS 1200 D (DEGREE II) ARE:
   - ± 50mm - ALL AREAS EXCEPT SURFACE BED AREAS.
   - ± 15mm - SURFACE BED AREAS.
3. ALL LEVEL TOLERANCES FOR BUILDING TO BE IN ACCORDANCE WITH SANS 1200G AND SANS 0155

GENERAL NOTES- CIVIL :

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE DRAWING SHOWING STANDARD DETAILS, THE PROJECT SPECIFICATION AND THE RELEVANT SANS SPECIFICATION.
2. THE ENGINEER IS TO BE GIVEN THE OPPORTUNITY TO INSPECT ALL PIPES BEFORE BACKFILLING COMMENCES.
3. THE POSITION OF ALL EXISTING SERVICES AS SHOWN ON THE DRAWING IS ONLY SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING SERVICES.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ASSISTANCE FROM THE VARIOUS LOCAL AUTHORITIES TO ENSURE THAT NO OTHER SERVICES EXIST.
5. ALL ROAD CROSSINGS ARE TO BE BACKFILLED WITH CEMENT STABILISED BACKFILL MATERIAL. REFER TO PROJECT SPECIFICATION FOR FURTHER DETAILS.
6. COMPACTION OF BACKFILL TO TRENCHES TO BE CONFIRMED BY IN-SITU NUCLEAR DENSITY TESTS FOR CALIBRATION PURPOSES IS TO BE DONE EVERY TENTH TEST.
7. SAND REPLACEMENT TEST FOR CALIBRATION PURPOSES IS TO BE DONE EVERY TENTH TEST.
8. ALL MANHOLES TO BE CONSTRUCTED USING ENGINEERING BRICKS (BRICKWORK LAID IN ENGLISH BOND AND EMBEDDED WITH 1:5 CEMENT / SAND MORTAR WITH INTERNAL FACES FLUSH JOINTED.
9. COMPACTION OF BACKFILL TO TRENCHES TO BE CONFIRMED BY IN-SITU NUCLEAR DENSITY TESTS AT A RATE OF 1 TEST PER LAYER PER 10m OF TRENCH.

EARTHWORKS GENERAL NOTES :

1. ALL EARTHWORKS TO BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 D - 1988.
2. SELECTED LAYER (ON REDUCED BULK EXCAVATION BED) IN ACCORDANCE WITH SANS 1200 DM.
3. SMALL WORKS IN ACCORDANCE WITH SANS 1200 DB.
4. PIPE TRENCHES IN ACCORDANCE WITH SANS 1200 DB.
5. SITE CLEARANCE AND GRUBBING OPERATIONS SHALL BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 C.
6. THE CONTRACTOR TO IDENTIFY AND EXPOSE, WHERE RELEVANT, ALL UNDERGROUND SERVICES ON SITE. HE SHOULD LIAISE WITH ALL RELEVANT AUTHORITIES FOR THE LOCATION AND PROTECTION OF THESE SERVICES.
7. POSITIONS OF EXISTING SERVICES INDICATED ON THIS DRAWING ARE APPROXIMATE AND MUST BE LOCATED BY MEANS OF HAND EXCAVATION TO TO ESTABLISH THEIR EXACT LOCATION. THE LOCATION OF EXISTING SERVICES SERVICES TO TAKE PLACE PRIOR TO CONSTRUCTION.
8. ALL UNSUITABLE MATERIALS I.E. ROOTS, CONCRETE PIPES, OLD FOUNDATIONS, BUILDING RUBBLE SHALL BE DISPOSED OF TO A SUITABLE DUMPING SITE.
9. 150mm TOP SOIL TO BE STOCKPILED ON SITE FOR LATER USE UNLESS OTHERWISE SPECIFIED.
10. ALL APPROVED MATERIAL TO BE STOCKPILED SEPARATELY, AND LATER BE REUSED.
11. THE CONTRACTOR TO USE ONLY APPROVED FILL MATERIAL AS SPECIFIED BY THE ENGINEER.
12. ALL THE EXPOSED REDUCED EXCAVATION BEDS AND AREAS TO RECEIVE FILL SHALL BE CLEARED, RIPPED AND COMPACTED TO 90%%% MOS. AASHTO TO A DEPTH OF 150MM UNLESS OTHERWISE NOTED.
13. ALL AREAS IN CUT SHALL BE RIPPED, SCARIFIED TO A DEPTH OF 150MM AND RECOMPACTED TO 90% MOD. AASHTO AT 1% TO 2% BLOW OMC.
14. THE CONTRACTOR SHALL TIMEOUSLY SUBMIT FIELD AND LABORATORY TEST RESULTS OF RELATIVE COMPACTION DENSITIES, CBR INDICATOR TESTS OR ANY OTHER TEST RESULTS AS REQUIRED, TO THE ENGINEER.
15. THE CONTRACTOR SHOULD MAKE PROVISION FOR STORMWATER CONTROL.
16. MAXIMUM CUT SLOPES TO BE 1:1 AND FILL SLOPES TO BE 1:2 UNLESS OTHERWISE STATED.
17. AS BUILT SURVEY LEVELS TO BE HANDED TO THE ENGINEER AFTER THE COMPLETION OF EARTHWORKS.
18. a. FIELD DENSITY TESTS SHOULD BE CARRIED OUT AT A RATE OF 1 TEST PER 150 SQ. METER PER LAYER.
    b. THE POSITION OF TESTS AND LAYERS TO BE INDICATED ON A KEY PLAN AND SUBMITTED WITH THE RESULTS TO THE ENGINEER.
    c. TESTS TO BE DONE BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER.
    d. POSITIONS OF TESTS TO BE APPROVED BY THE ENGINEER.
    e. ONE OF THE DENSITY TESTS SHOULD BE A SAND REPLACEMENT TEST / 10 TROXLER TESTS AND EVENLY SPREAD OVER ALL LAYERS.
19. THE ENGINEER SHALL BE NOTIFIED IF THE EXCAVATION OR SUBGRADE IS IN ROCK.
20. THE EXISTING GROUND LEVELS AS PER THE LAND SURVEYOR'S DWG. MUST BE CONFIRMED BEFORE CONSTRUCTION COMMENCES.
21. EXTENT OF EARTHWORKS IS RESTRICTED TO THE INSIDE OF THE ERF BOUNDARY. (UON)
22. 22) PERMISSIBLE DEVIATION (PD) FOR TERRACES AND EXCAVATION FACE ARE AS FOLLOWS :
    - 1. AWAY FROM EXCAVATION FACE +40mm
    - 2. TOWARDS EXCAVATION FACE ±0mm
    - 3. FINAL EXCAVATION FLOOR LEVEL: SEE LEVEL TOLERANCES BELOW.
23. THE CONTRACTOR SHOULD MAKE PROVISION FOR STORMWATER CONTROL DURING CONSTRUCTION.
24. MAXIMUM CUT SLOPES TO BE 1:1 AND FILL SLOPES TO BE 2:1 UNLESS OTHERWISE STATED.
25. AS BUILT SURVEY LEVELS TO BE SUBMITTED TO THE ENGINEER AFTER COMPLETION OF EARTHWORKS.

EARTHWORKS TEST SPECIFICATION :

1. ALL EARTHWORKS TO BE TESTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION:
2. FILL MATERIAL FROM SITE: 3 x ROAD INDICATOR WITH CBR VALUES PER 5000m
3. FILL MATERIAL FROM BORROW PIT: 3 x ROAD INDICATOR WITH CBR VALUES PER 2500m
4. COMPACTION IN PLATFORMS: 1 x NUCLEAR DENSITY TEST PER 1500m² PER LAYER
5. COMPACTION OF ROAD BED: 1 x NUCLEAR DENSITY TEST PER 1500m²
6. COMPACTION OF BERM: 1 x NUCLEAR DENSITY TEST PER 2000m² PER LAYER
7. CONTRACTOR TO KEEP ACCURATE RECORDS THE EXACT POSITION AND LEVELS OF DENSITY TESTS AND WILL SUBMIT COPIES TO THE ENGINEER ON A WEEKLY BASIS.
8. ALL TEST RESULTS WILL BE EVALUATED IN ACCORDANCE WITH SANS 1200.

STRUCTURAL STEELWORK

1. ALL STRUCTURAL STEELWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH SANS 2001 - CS1 : 2005, SANS 10162-2005 AND THE PROJECT SPECIFICATIONS.
1) WELDING SHALL CONFORM TO AWS D1.1-90 SPECIFICATIONS.
2) BUTT-WELDS SHALL DEVELOP THE FULL STRENGTH OF THE ELEMENTS JOINED.
3) ALL WELDING TO BE 8MM CONTINUOUS FILLET WELD UNLESS OTHERWISE SHOWN.
4) WELDING ELECTRODE TO BE E70 XX (U.O.N.).
5) ALL DIMENSIONS SHALL BE CHECKED ON SITE BY THE STEELWORK CONTRACTOR BEFORE SHOP DRAWINGS COMMENCE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
6) A COMPLETE SET OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION COMMENCES.
7) ALL STRUCTURAL STEELWORK GRADE TO BE STAINLESS STEEL GRADE SS316L OR HIGHER AS APPROVED BY THE ENGINEERS.
8) STRUCTURAL BOLTS SHALL BE GRADE 8.8 EXCEPT FOR PURLINS AND GIRTS WHERE BOLTS WILL BE GRADE 4.8, A MINIMUM OF TWO BOLTS PER CONNECTION WILL BE USED (U.O.N.).
9) ALL BOLTS TO BE SIMILAR STEEL GRADE AS STRUCTURAL STEEL.
10) WHERE TEMPORARY BRACING OR PROPPING IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, MAINTENANCE AND REMOVAL OF SUCH SUPPORTS.
11) IF SPLICES IN STEEL MEMBERS ARE REQUIRED FOR TRANSPORT OR MANUFACTURE, PROPOSALS FOR THIS WILL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
12) BASE PLATES SHALL BE GROUTED WITH A CEMENTITIOUS NON-SHRINK GROUT WITH A MINIMUM CRUSHING STRENGTH OF 40 MPA. GROUTING MUST TAKE PLACE BEFORE THE PRIMARY LOADS ARE APPLIED TO THE STRUCTURE.
13) ALL PAINTING MUST COMPLY WITH SANS 1200 HC
14) ALL ANGLE IRONS SUPPORTING BRICKWORK TO BE GALVANISED.
15) CORROSION PROTECTION SHALL CONSIST OF:
16) ALL STRUCTURAL STEEL MUST BE THOROUGHLY CHIPPED AND SCRAPED FREE OF MILL SCALE. REMOVE OIL, GREASE & CONTAMINENTS USING PLASCON AQUASOLV DEGREASER (CODE GR.) OR SIMILAR APPROVED FOLLOWED BY FRESH WATER RINSES. PREPARE STEEL BY WIRE BRUSHING TO GRADE ST.3 OF SWEDISH STANDARD SIS 05 59 00.
17) APPLY ONE COAT (35 MICRON) ZINC PHOSPHATE PRIMER IN ACCORDANCE WITH SANS 681-2007.
18) APPLY ONE COAT (35 MICRON) MULTI-PURPOSE UNDERCOAT IN ACCORDANCE WITH SANS 681-2007.
19) APPLY ONE COAT OF ALKYD BASE ENAMEL (35 MICRON) TO ARCHITECT'S COLOUR SPECIFICATION. DAMAGED AREAS OF PAINT SHALL BE MADE GOOD ON SITE IN ACCORDANCE WITH SANS 10120.
20) FOR STEELWORK BELOW SURFACE BED APPLY ONE COAT OF ALKYD BASE ENAMEL (70 MICRON)
21) FOR EXPOSED STEELWORK 1 TO 4 APPLY. FOR CONCEALED ROOF TRUSSES ONLY 1 AND 2 APPLY (ONLY IN CEILING VOIDS WHERE THERE IS NO LIGHT). FOR STEELWORK BELOW SURFACE BED ONLY 1, 2, 3 & 5 APPLY.
22) CORROSION PROTECTION OF GUTTERS TO BE AS FOLLOWS:
23) PREPARE AND PATCH SURFACE & CLEAN WITH GALVINIZE IRON CLEANER - PLASCON GILI
24) APPLY ONE COAT PLASCON EPOXY TAR EPD 112 WITH A DRY FILM THICKNESS OF 75 MICRONS AND ONE COAT PLASCON EPOXY TAR EPD 100 WITH DRY FILM THICKNESS OF 75 MICRONS TO GIVE A TOTAL DRY FILM THICKNESS OF 150 MICRONS. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE MANUFACTUTERS INSTRUCTIONS.
25) ALL TRUSS SHS JOINTS TO BE WELDED JOINTS UNLESS OTHERWISE SHOWN
26) CANTILEVER PART OF STRUCTURE TO REMAIN TEMPORARILY SUPPORTED UNTIL THE CANOPY FRAME HAS BEEN ANCHORED IN ALL PLACES. TEMPORARY SUPPORT ARE NOT TO BE REMOVED UNTIL STRUCTURAL INSPECTION OF ALL CONNECTIONS

ABBREVIATIONS

R.C. : REINFORCED CONCRETE
T.O.C. : TOP OF CONCRETE
F.F.L. : FINISHED FLOOR LEVEL
DP. : DEEP
TYP. : TYPICAL
COL : COLUMN
ENG. : ENGINEER

QUALITY CONTROL / REFERENCES :

CONCRETE:

1. 6 CUBES FOR EVERY 50m³ OR EVERY INDEPENDENT POUR (IE. 3 CUBES AT 7 DAYS AND 3 CUBES AT 28 DAYS).
2. PROVIDE CONCRETE MIX DESIGNS FOR APPROVAL

STRUCTURAL BRICKWORK (LOAD BEARING BWK):

1. REQUIRED THEORETICAL COMPRESSIVE STRENGTH TO BE 14 MPA AT 28 DAYS OF STRENGTH.
2. TEST TO CARRIED OUT AS PER SANS 0164.
3. TEST 3 BRICKS PER 10 000 BATCHES, OR TRUCKLOAD.
4. REFER TO STRUCTURAL DRAWINGS FOR FURTHER SPECIFICATIONS.

CLASS / MORTAR REQUIREMENTS:

1. MINIMUM STRENGTH REQUIRED FOR 10 MPA AT 28 DAYS.
2. TEST TO BE CARRIED OUT ONCE A WEEK.
3. TESTS TO BE CARRIES OUT AS PER SANS METHOD 749.

CIVIL WORKS:

1. REFER TO SPECIFICATIONS ON CIVIL DRAWINGS

WATERPROOFING:

1. ALL TO SPECIALISTS / ARCHITECTS SPECIFICATIONS AND TO COMPLY WITH WATERPROOFING : SANS 021 1988 AND SANS 248 1996.

ARCHITECTURAL BRICKWORK:

1. ALL TO COMPLY WITH THE NATIONAL BUILDING REGULATIONS AND RESPECTIVE SANS (SANS) CODES OF PRACTICE ; SANS 0400 AND 0164.

PAVING NOTES :

1. CONSTRUCTION OF ROADS AND PAVING TO COMPLY WITH THE SPECIFICATION OF SANS 1200M.
2. ALL HORIZONTAL DIMENSIONS ARE TO PAVING FACE OF KERBS.
3. ALL CONCRETE BLOCK AND BRICK PAVING TO BE LAID IN A HERRING BONE PATTERN UNLESS OTHERWISE NOTED, REFER TO ARCHITECT'S DRG'S.
4. ALL LEVELS INDICATED THUS 00,000 ARE TO TOP OF PAVING.
5. ALL EDGES OF BLOCK PAVING TO BE CUT TO SUIT LINE OF KERBS AND GROUTED SOLID.
6. HAUNCHING BEHIND KERBS TO BE INSPECTED BY THE ENGINEER PRIOR TO BACKFILLING.
7. EACH LAYER OF ROAD CONSTRUCTION TO BE TESTED BY AN INDEPENDENT LABORATORY AT THE RATE OF ONE TEST PER 1500 SQM.
8. CONCRETE PAVING SURFACE TO BE STEEL POWER FLOATED WITH A BROOM FINISH UNLESS OTHERWISE NOTED.

SPECIFIC WATER REQUIREMENTS:

1. FOR CIVIL WORKS STANDARD DETAILS REFER TO DRAWINGS STAYWELL/100/01, 02, 03 & 04.
2. PROTECTION OF FITTINGS AND MAINS :
   2.1. STEEL MAINS: COPON LINED AND SUITABLY WRAPPED PER SPECIFICATION.
   2.2. STEEL FITTINGS: COPON COATED INTERNALLY AND SUITABLY WRAPPED PER SPECIFICATION.
   2.3. GALVANIZED FITTINGS: SUITABLY WRAPPED PER SPECIFICATION.
3. ALL VALVE AND BELOW GROUND HYDRANT CHAMBERS TO BE WATERTIGHT.
4. POSITION OF ACROSS THE ROAD ERF CONNECTIONS TO BE MARKED BY A W CUT INTO THE KERBSTONE.
5. COVER TO WATER MAINS, THE DEPTHS LISTED ARE DEPTHS TO FINAL GROUND LEVEL INCLUSIVE OF ANY LANDSCAPING UNDERTAKEN ON THE SITE.

	MINIMUM (MM)	MAXIMUM (MM)
- GRAVEL ROAD	1000	1500
TARRED ROADS AND - TRAFFIC AREAS	800	1500
- PEDESTRIAN AREAS AND OTHER AREAS NO USED BY VEHICULAR TRAFFIC	600	1500

6. ALL WATER MAINS ARE TO BE INSTALLED AT 2 METERS FROM ERF BOUNDARIES UNLESS OTHERWISE SHOWN ON THE DRAWING.
7. ANY ANCHOR BLOCKS CONSTRUCTED ARE TO PROPERLY SHUTTERED AND CAST UNDISTURBED GROUND, ANY OVER EXCAVATION IS TO BE FILLED WITH MASS CONCRETE.

NOTE :

CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE RELEVANT SANS 1200 SPECIFICATION, THE NATIONAL BUILDING REGULATIONS AND THIS DRAWING, UNLESS OTHERWISE STATED.

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ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Manag
P.O. BOX 86195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

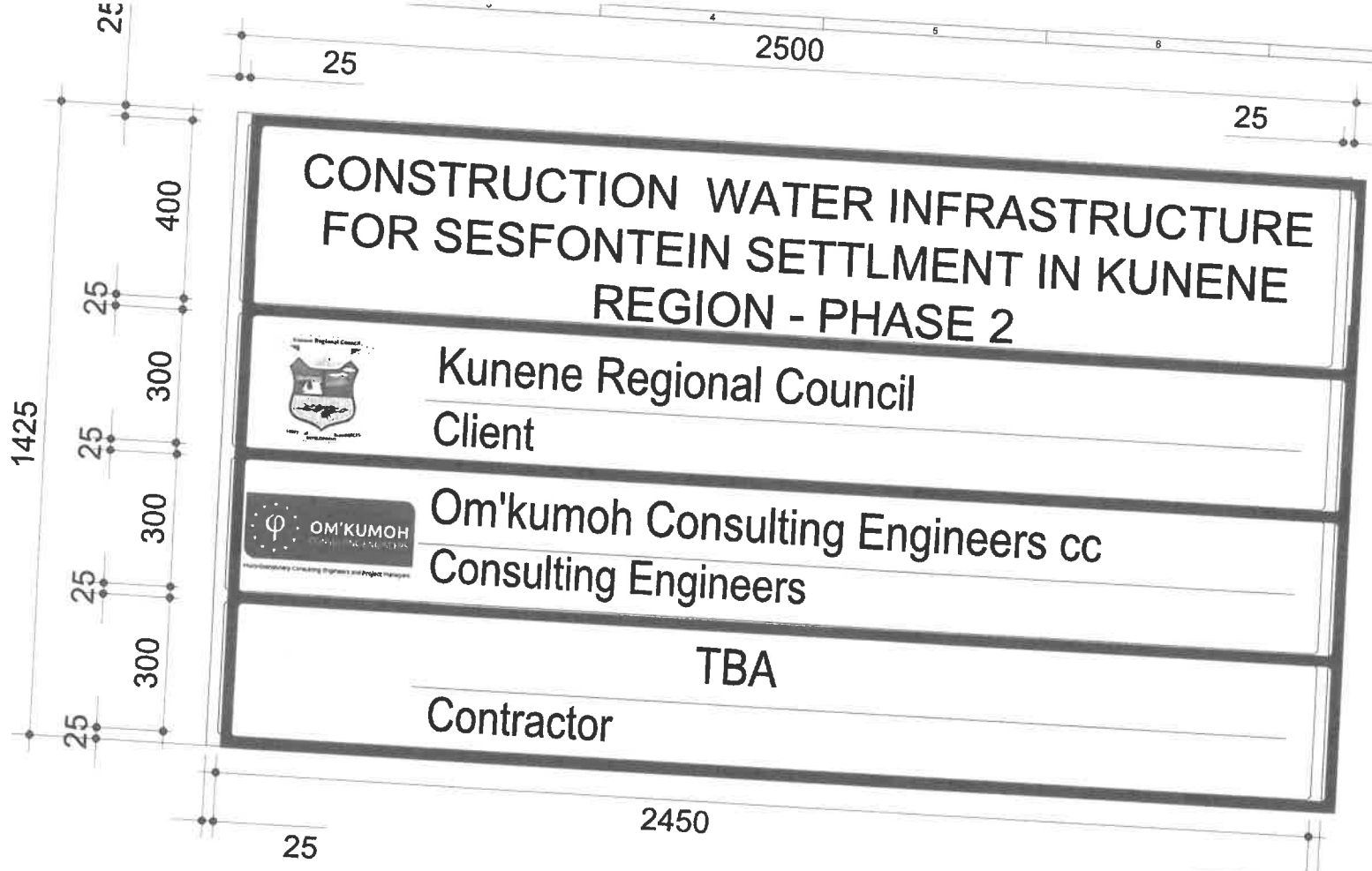
PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FI
SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE

CIVIL-STRUCTURAL GENERAL NOTES

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO
2501		
DATE: AUGUST 2025	SCALE: AS SHOWN	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H



NOTES

- THE BOARD SHALL BE CONSTRUCTED FROM 12mm TEMPERED HARDBOARD BRACED ON THE REVERSED SIDE TO PREVENT WARPING.
- THE QUALITY OF THE PAINT MUST COMPLY WITH THE REQUIREMENTS OF THE CO-ORDINATING SPECIFICATION CKS 193 OF THE SABS.
- THE COLOUR OF THE PAINT MUST COMPLY WITH THE REQUIREMENTS OF THE CO-ORDINATING SPECIFICATION D37 OF CKS 279 OF THE SABS.
- COLOUR SPECIFICATION:
  BACKGROUND = WHITE WITH MIDDLE BLUE (FO7) BORDER
  TYPE A = 85 mm BLACK LETTERS ON WHITE
  TYPE B = 80 mm BLACK LETTERS ON WHITE
  TYPE C = 75 mm AND 50mm BLACK LETTERS ON WHITE
- THE NOTICE BOARD MUST BE MOUNTED ON A STRONG SUPPORTING STEEL STRUCTURE AND MUST BE APPROVED BY THE ENGINEER.
- DURING THE CONSTRUCTION PERIOD THE NOTICE BOARD MUST BE PROPERLY MAINTAINED.

No	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		29-09-2025

GENERAL NOTES:

1. ANY DISCREPANCIES IN DRAWINGS MUST BE REPORTED IMMEDIATELY.
2. NO PART OF THIS DRAWING MAY BE SCALED.
3. ALL DIMENSIONS SHOULD BE CHECKED BEFORE ANY WORK ON THE SITE COMMENCES.

ISSUED FOR TENDER

FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT
KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98196 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 063
EMAIL: admin@omkumoh.com

CONTRACTOR

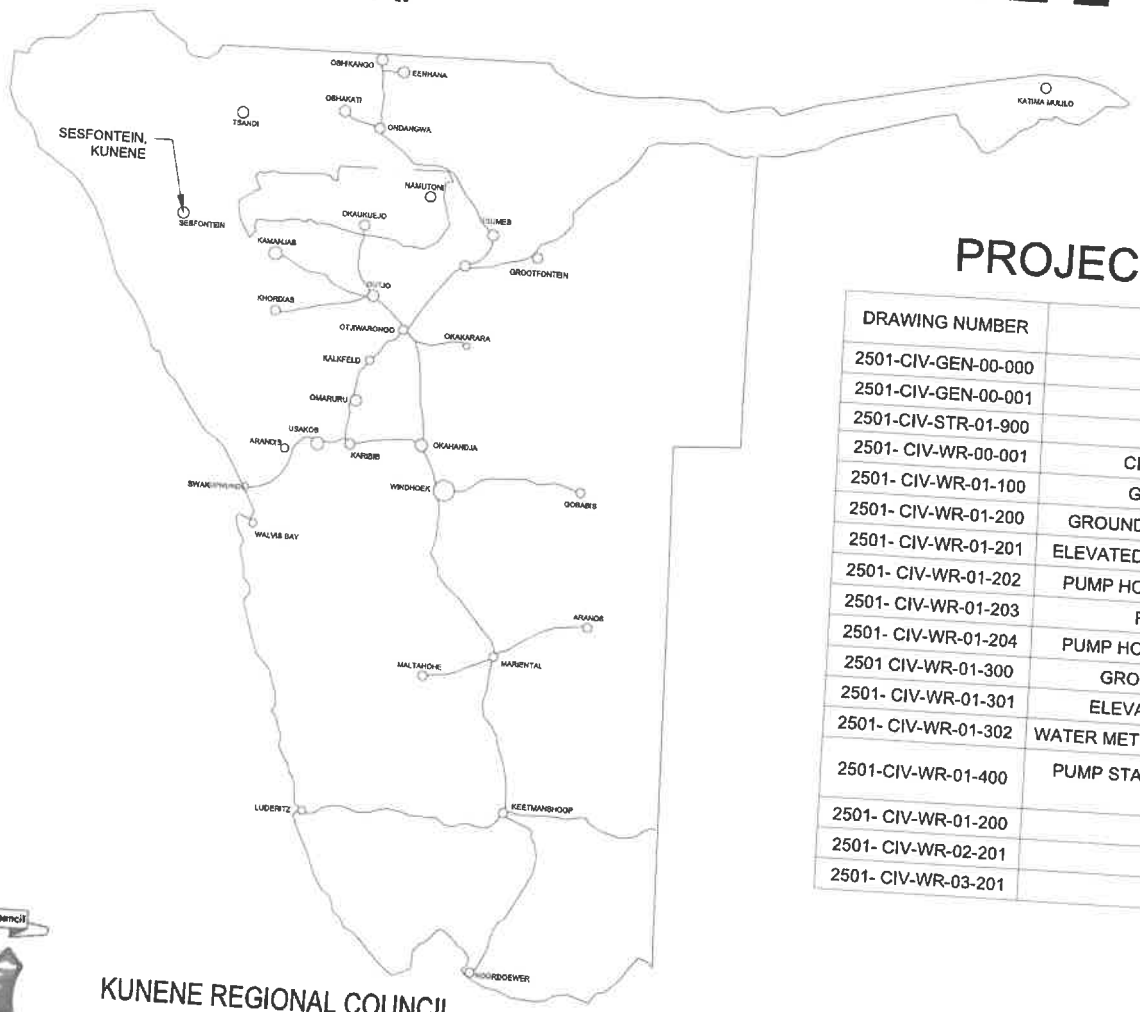
PROJECT NAME
CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION -PHASE 2

DRAWING TITLE
PROJECT NAMEBOARD DETAIL

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:2500(m)	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
FILE: 2501-CIV	DRWG No.: 2501-CIV-GEN-00-001	REV: B0

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN SETTLEMENT IN KUNENE REGION - PHASE 2

LOCALITY MAP



PROJECT DRAWING LIST

DRAWING NUMBER	DESCRIPTION	REV
2501-CIV-GEN-00-000	PROJECT CATALOG	B0
2501-CIV-GEN-00-001	PROJECT NAME BOARD	B0
2501-CIV-STR-01-900	GUARD HOUSE DETAILS	B0
2501- CIV-WR-00-001	CIVIL/STRUCTURAL GENERAL NOTES	B0
2501- CIV-WR-01-100	GENERAL ARRANGEMENT DRAWING	B0
2501- CIV-WR-01-200	GROUND RESERVOIR FOUNDATION DETAIL	B0
2501- CIV-WR-01-201	ELEVATED RESERVOIR FOUNDATION DETAIL	B0
2501- CIV-WR-01-202	PUMP HOUSE LAYOUT & SECTION DETAILS	B0
2501- CIV-WR-01-203	PUMP HOUSE ELEVATION LAYOUT	B0
2501- CIV-WR-01-204	PUMP HOUSE ROOF LAYOUT AND DETAILS	B0
2501 CIV-WR-01-300	GROUND RESERVOIR PIPING DETAILS	B0
2501- CIV-WR-01-301	ELEVATED RESERVOIR PIPING DETAILS	B0
2501- CIV-WR-01-302	WATER METER & BYPASS MANHOLE DETAILS	B0
2501-CIV-WR-01-400	PUMP STATION M&E EQUIPMENT AND PIPE WORK DETAILS	B0
2501- CIV-WR-01-200	TYPICAL FENCE DETAILS	B0
2501- CIV-WR-02-201	PAVING DETAILS	B0
2501- CIV-WR-03-201	WATER TYPICAL DETAIL -1	B0

KUNENE REGIONAL COUNCIL
Private Bag 502
Opuwo, Namibia
Tel No: +264 65 273 950
Fax No: +264 65 273 077

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers

no	REVISION	BLOCK Ref	DATE
B0	ISSUED FOR TENDER		19-08-2025

GENERAL NOTES:

1. ANY DISCREPANCIES IN DRAWINGS MUST BE REPORTED IMMEDIATELY.
2. NO PART OF THIS DRAWING MAY BE SCALED.
3. ALL DIMENSIONS SHOULD BE CHECKED BEFORE ANY WORK ON THE SITE COMMENCES.

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FOR CIVIL/STRUCTURAL ENGINEERING ONLY

CLIENT: KUNENE REGIONAL COUNCIL

CONSULTANTS

OM'KUMOH CONSULTING ENGINEERS
Multi-Disciplinary Consulting Engineers and Project Managers
P.O. BOX 98195 TEL: +264 61 232 052
WINDHOEK TEL: +264 61 232 053
EMAIL: admin@omkumoh.com

CONTRACTOR

PROJECT NAME

CONSTRUCTION OF WATER INFRASTRUCTURE FOR SESFONTEIN IN KUNENE REGION PHASE-2

DRAWING TITLE

COVER PAGE, LOCALITY MAP AND LIST OF DRAWINGS

CONSULTING PROJECT NO.	CLIENT PROJECT NO.	APPOINTMENT NO.
2501		
DATE: AUGUST 2025	SCALE: 1:2500(m)	DRAWN: G.N
DESIGN: M.A	CHECKED: M.A	APPROVED: M.T.H
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