

**SEKHUKHUNE DISTRICT MUNICIPALITY
PRIVATE BAG X8611
GROBERSDAL
0470**



PROJECT DOCUMENT VOLUME 1

CONTRACT NUMBER:

SK8/3/1-36/2022/2023

PROJECT NAME:

MOOIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1

PROJECT DESCRIPTION:

THE CONSTRUCTION OF A DN200, .PN40 FLANGED STEEL RISING MAIN TO ALVERTON AND UPGRADING OF THE MOOIHOEK WATER TREATMENT WORKS, FETAKGOMO TUBATSE LOCAL MUNICIPALITY

CIDB GRADING:

7CE

CIDB REFERENCE NO.:

100078963

ISSUED SEPTEMBER 2022 BY:

PREPARED BY:

SEKHUKHUNE DISTRICT MUNICIPALITY

PRIVATE BAG X8611
GROBLERSDAL 0470

TUBATSE CONSULTING ENGINEERS

P.O.BOX 708
STEELPOORT 1133

NAME OF TENDERER:

TENDER AMOUNT (incl) :

(i)

LIST OF PROJECT DOCUMENTS

The Tender Documents for this Contract comprise the following:

- 1: *General Conditions of Contract for Construction Works, Third Edition, 2015*, issued by South African Institution of Civil Engineering, which the Tenderer shall purchase himself.
- 2: The SANS *Standardized Specification for Civil Engineering Construction*, prepared by Standards South Africa, which the Tenderer shall purchase himself.

1 and 2 are available from the following organisations:

- **CESA, PO Box 68482, Bryanston, 2021. Tel: 011 463 2022,**
email: general@cesa.co.za
 - **SAICE, Private Bag X200, Halfway House, 1685. Tel: 011 805 5947/8,**
email: civilinfo@saice.org.za
 - **SAFCEC, PO Box 644, Bedfordview, 2008. Tel: 011 409 0900,**
email: admin@safcec.org.za
3. Department of Water and Sanitation Specifications DWS1110, DWS1130, DWS1131, DWS 2510 which the Tenderer shall obtain himself.
 4. The Occupational health and Safety Act and Construction Regulations 2014, which the Tenderer shall purchase himself.
 5. The Project Document, Volume 1, containing the Tender Notice, Conditions of Tender, Tender Data, Returnable Schedules, General Conditions of Contract, Contract Data, Scope of Works, Pricing Instructions, Bills of Quantities, Form of Offer and Site Information, is issued by the Employer. The Employer's Form of Acceptance and any correspondence from and between the selected Tenderer and Employer, Performance Security and all Addenda issued during the period of tender will also form part of this document once a successful tenderer has been appointed. Volume 1 also includes the Health and Safety Specification and the Environmental Management Plan.
 6. Volume 2: The Project Drawings.
 7. The Drawings (PDF) and BOQ (Excel) will be e-mailed to the tenderer by the Employer's Agent on request.

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. SK8/3/1-36/2022/2023

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SEKHUKHUNE DISTRICT MUNICIPALITY

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THE TENDER

PART T1 TENDERING PROCEDURES T1.1

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PART T1 TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER..... T1.2

T1.2 TENDER DATA..... T1.4

Annex F: Standard Conditions of Tender (as published in Government Gazette No 33239 of
28 May 2010) bound directly after Tender Data

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. SK8/3/1-36/2022/2023

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Sekhukhune District Municipality represented by the Municipal Manager, invites tenders for the construction of a three layer polyurethane coated (3LPE) and solvent free epoxy (SFE) lined DN200 PN40 flanged mild steel rising main to Alverton and the upgrading of the Mooihoek Water Treatment Works by installing steel package plant type clarifiers, Fetakgomo Tubatse Local Municipality.

It is estimated that tenderers should have a CIDB contractor grading 7CE or higher.

Quality criteria shall be used only as eligibility criteria for pre-qualification purpose. Tenderers shall note that the quality criteria and maximum score in respect of each of the criteria applicable to this Tender are as follows:

QUALITY CRITERIA		
NO.	CRITERIA	POINTS
1	Company Experience	50
2	Financial Reference	15
3	Experience Key staff	10
4	Specific Knowledge	15
5	Construction Equipment	10
TOTAL		100

Any Tenderer scoring less than 80 points for quality will not be considered eligible.

Tender documents may be collected during work hours after 09h00 on 08 September 2022

The physical address for collection of the Tender Documents is:

Physical address:

Bareki Mall Offices

Cnr. Van Riebeeck and Chris Wiid Str.

Groblersdal

Telephone: 013 262 7300

0470

A non-refundable tender deposit of R5,000.00 payable by cash is required on collection of the Tender Documents.

Queries relating to the issues of these documents may be addressed to:

Mr. Masemola Voster

Tel No. 013 262 7656

Fax No. 013 262 7688

E-mail: masemolav@sekhukhune.gov.za

or

Mr. Ramadje Karabo

Tel No. 013 262 7535

Fax No. 013 262 7688

E-mail: ramajek@sekhukhune.gov.za

or

Mr. J. van Rensburg *[For the Employer's Agent]*

Tel No. 082 871 3744

Fax No. 013 231 7642

E-mail: jvrtubatcon@lantic.net

A compulsory clarification meeting shall be conducted at 10h00 on 15 September 2022 at the fourway crossing of the Praktiseer/Motodi and Burgersfor/Penge roads.

Co-ordinates: 24 34 39.7 S 30 19 44.3 E

The closing time for receipt of tenders is 12h00 on Friday, October 7, 2022.

The physical address for tender submission is

AB Sikhosana Fire Station

On the R33 to Stoffberg, just before the Olifant's River, left hand side

Groblersdal

Co-ordinates: 25 09 45 S, 29 24 39 E

Telephonic, telex, facsimile, emailed and late tenders will not be accepted.

Tenders may only be submitted on the tender documentation that is issued.

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

SEKHUKHUNE DISTRICT MUNICIPALITY

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T1.2 TENDER DATA

The Conditions of Tender are the Standard Conditions of Tender as published in Annex F of the CIDB Standard for Uniformity in Construction Procurement in Board Notice 86 of 2010 in the Government Gazette No 33239 of 28 May 2010.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this Tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

F.1.1 The Employer is:

Sekhukhune District Municipality
Private Bag X8611
Groblersdal
0470

Bareki Mall
Cnr. Van Riebeeck and Chris Wiid Streets
Groblersdal
0470

F.1.2 The Tender Documents issued by the Employer comprise Volume1 and Volume 2.

THE TENDER

Part T1 Tendering procedures

- T1.1 Tender Notice and Invitation to Tender
- T1.2 Tender Data

Part T2 Returnable documents

- T2.1 List of returnable documents
- T2.2 Returnable schedules

THE CONTRACT

Part C1 Agreements and Contract Data

- C1.1 Form of Offer and Acceptance
- C1.2 Contract Data
- C1.3 Performance Guarantee
- C1.4 Form of Retention (Note: Retention Guarantee not acceptable for this Project)
- C1.5 Adjudicator's agreement
- C1.6 Agreement in terms of Occupational Health and Safety Act, 1993

Part C2 Pricing Data

- C2.1 Pricing Instructions
- C2.2 Bill of Quantities

Part C3 Scope of Work

- C3 Scope of Work

Part C4 Site Information

- C4 Site Information

F.1.4 The Employer's Agent is:

Name: Tubatse Consulting Engineers
Address: PO Box 708
STEELPOORT
1133

Contact person: J. van Rensburg
Tel: 082 8713744
Fax: 013 2317642
E-mail: jvrtubatcon@lantic.net

Add the following:

"Tenderers shall note that verbal information given by the Employer's Agent during clarification meetings, site visits or at any time prior to the award of the Contract will not be regarded as binding on the Employer. Only information issued formally in writing in terms of either an Addendum or a Clarification of a Tender Offer will be considered as amending the Tender Documents.

F.1.6 The competitive negotiation procedure and two stage system shall not be followed.

F.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

F.2.1.1 Only those tenderers who score the minimum scores in respect of the quality criteria stated in F.3.11.9 of this Tender Data shall be considered responsive and have their tenders evaluated further.

F.2.1.2 The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated:

- (a) Contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, for a CE class of construction work.

Joint ventures are eligible to submit Tenders provided that:

- (1) every member of the joint venture is registered with the CIDB;
- (2) the lead partner has a contractor grading designation in the CE class of construction work; and
- (3) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a CE class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations.

T1 .6

F.2.12 No alternative tenders will be considered.

F.2.15.1 The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:

Location of Tender box: AB Sikhosana Fire Station, Groblersdal.

Identification details: Tender number: CONTRACT NO. SK8/3/1-36/2022/2023

Title of Tender: Alverton BWS Phase 4G1.1

F.3.5.1 A two-envelope procedure will **not** be followed.

F.2.13.9 Telephonic, facsimile or emailed tender offers will **not** be accepted.

F.2.15 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

F.2.16 The tender offer validity period is ninety days

F.2.20 The Tenderer is required to submit with his Tender a letter of intent from an approved insurer undertaking to provide the Performance Bond to the format included in Part T2.2 of this procurement document.

F.2.22 Return all retained Tender Documents within 28 days after the expiry of the validity period.

F.2.23 The Tenderer is required to submit the following with his tender which will be verified by the Employer.

- (1) a valid Tax Clearance Certificate or tax compliance status pin issued by the South African Revenue Services;
- (2) Proof of Contractor Registration drawn from the Construction Industry Development Board website should be attached to Returnable Schedule Form B2;
- (3) Evidence of registration and proof of good standing with a compensation insurer who is approved by the Department of Labour in terms of Section 80 of the Compensation for Occupational Injuries and Diseases Act (Act No 130 of 1993)(COID). The Tenderer is required to disclose all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the Tenderer at a time during the 36 months preceding the date of this Tender (Refer Returnable Schedule Form C1);
- (4) Proof of Registration in respect of each partner, where a tenderer satisfied the CIDB contractor grading designation requirements through the formation of a joint venture;
- (5) Submit their Broad-Based Black Economic Empowerment status level certificate or certified copy thereof issued by a registered verification agency in accordance with the Preferential Procurement Policy Framework Act, 2000; Preferential Procurement Regulations, 2017. Joint ventures/consortiums will qualify for preference points, provided that the entity submits the relevant certificate/score card in terms of Preferential Procurement Regulations, 2017. Note that in the case of unincorporated entities, a verified score card must be submitted with the Tender.
- (6) Other required documents and schedules as per T2.1 and T2.2

F.3.4 The closing time for receipt of Tenders is:

12h00 on Friday, October 7, 2022.

Location: AB Sikhosana Fire Station, Groblersdal,
co-ordinates: 25 09 45 S, 29 24 39 E

F.3.11.1 The tender evaluation method for the evaluation of all responsive tender offers will be Method 4: Financial offer, quality and preferences. Quality will be scored only for pre-qualifying purpose. Refer to F.3.11.9.

F3.11.7 Scoring financial offers

The financial offer will be scored using Table F.1, Option 1,

F3.11.8 Scoring preference

A maximum of 100 minus W_1 tender evaluation points will be awarded for preference to tenderers who submit responsive tenders and who are found to be eligible for the preference claimed, in accordance with the criteria listed below.

Points are based on a tenderer's scorecard measured in terms of the Broad-Based Black Economic Empowerment Act (Act No 53 of 2003) (B-BBEE) and the Preferential Procurement Regulations, 2017, of the Preferential Procurement Policy Framework Act (Act No 5 of 2000) (PPPFA) and the amendments thereto.

Points awarded will be according to a tenderer's B-BBEE status level of contributor and summarised in the table below:

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

Eligibility for preference points is subject to the following:

- A tenderer's scorecard shall be based on the Construction Sector Codes of Practice promulgated in Government Gazette No 32305 of 5 June 2009; and
- The scorecard shall be submitted as a certificate attached to Returnable Schedule Form C2; and
- Please include a certified copy of the B-BBEE certificate.
- The date of issue of the certificate must be less than 12 (twelve) months prior to the advertised Tender closing date and
- Compliance with any other information requested to be attached to Returnable Schedule Form C2.

F.3.11.9 Scoring Quality

(CIDB best practice guideline #A4, evaluating quality in tender submissions)

The quality criteria and maximum score in respect of each of the criteria are as follows:

Note that this is an eligibility criteria in order to qualify for evaluation according to Method 1.

QUALITY CRITERIA		
NO.	CRITERIA	POINTS
1	Company Experience	50
2	Financial Reference	15
3	Experience of Key staff	10
4	Specific Knowledge	15
5	Construction Equipment	10
TOTAL		100

Quality shall be scored by not less than three evaluators in accordance with the following schedules:

- Schedules corresponding to the above criteria, as detailed in Form A13; Returnable Schedules

The minimum number of evaluation points for quality, in order to qualify for further evaluation, is 80 points.

Each evaluation criteria will be assessed in terms of five indicators – no response, poor, satisfactory, good and very good. Scores of 0, 40, 70, 90 or 100 percent will be allocated to no response, poor, satisfactory, good and very good, respectively. The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for quality. The prompts for judgment and the associated scores used in the evaluation of quality shall be as follows:

Score %	Prompt for judgement
0	Failed to address the question/issue
40	Less than acceptable – response/answer/solution lacks convincing evidence of skill/experience sought or medium risk that relevant skills will not be available.
70	Acceptable response/answer/solution to the particular aspect of the requirements and evidence given of skill/experience sought
90	Above acceptable – response/answer/solution demonstrating real understanding of requirements and evidence of ability to meet it.
100	Excellent – response/answer/solution gives real confidence that the Tenderer will add real value.

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for quality.

F.3.13 Tender offers will only be accepted if:

- the Tenderer submits a valid Tax Clearance Certificate or tax compliance status pin issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations;
- the Tenderer submits a letter of intent from a registered financial institution undertaking to provide the Performance Bond;
- the Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;
- the Tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004, as a person prohibited from doing business with the public sector;
- the Tenderer has not:
 - abused the Employer's Supply Chain Management System; or
 - failed to perform on any previous contract and has been given a written notice to this effect;
- the Tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the Contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state are permitted to submit tenders or participate in the Contract;
- the Tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- the Employer is reasonably satisfied that the Tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely.

T1 .9

- i) the Tenderer has not failed to perform on any previous contracts and has not been given a written notice to this effect.
- k) the Tenderer has not complied with the requirements in Part T2: Returnable Documents and Lists T1.1 and T1.2

F.3.17 The number of paper copies of the signed Contract to be provided by the Employer is 1

Annex F (normative)

Standard Conditions of Tender

F.1 General

F.1.1 Actions

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

F.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

F.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

F.1.3.2 These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body
- f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

F.1.5 The employer's right to accept or reject any tender offer

F.1.5.1 The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4 The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 Tenderer's obligations

F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.2.2 Cost of tendering

Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

F.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the tender offer

F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.

F.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

F.2.12.2 Accept that an alternative tender offer may be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language

other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

F.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

F.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

F.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

F.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

F.2.20 Submit securities, bonds, policies, etc.

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

F.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

F.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data.

F.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

F.3 The employer's undertakings**F.3.1 Respond to requests from the tenderer**

F.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4 Opening of tender submissions

F.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.

F.3.4.3 Make available the record outlined in F.3.4.2 to all interested persons upon request.

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

F.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

F.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.

F.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

F.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

F.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F.3.11 Evaluation of tender offers**F.3.11.1 General**

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

- a) Rank tender offers from the most favourable to the least favourable comparative offer.
- b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.3 Methods 2: Financial offer and preference

In the case of a financial offer and preferences:

- a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_P$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

- a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_Q$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
 N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.5 Method 4: Financial offer, quality and preferences

In the case of a financial offer, quality and preferences:

- a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
- b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula, unless otherwise stated in the Tender Data:

$$T_{EV} = N_{FO} + N_P + N_Q$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
 N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.
 N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

- c) Rank tender offers from the highest number of tender evaluation points to the lowest.
- d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
- e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.6 Decimal places

Score financial offers, preferences and quality, as relevant, to two decimal places.

F.3.11.7 Scoring Financial Offers

Score the financial offers of remaining responsive tender offers using the following formula:

$$N_{FO} = W_1 \times A$$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer.
 W_1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
 A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1 ^a	Option 2 ^a
1	Highest price or discount	$A = (1 + \frac{P - P_m}{P_m})$	$A = P / P_m$
2	Lowest price or percentage commission / fee	$A = (1 - \frac{P - P_m}{P_m})$	$A = P_m / P$
^a P_m is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration.			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences. Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and subcriteria for quality in accordance with the provisions of the Tender Data.

Calculate the total number of tender evaluation points for quality using the following formula:

$$N_Q = W_2 \times S_Q / M_S$$

where: S_Q is the score for quality allocated to the submission under consideration;
 M_S is the maximum possible score for quality in respect of a submission; and
 W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data

F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:

- is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- has the legal capacity to enter into the contract,
- is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- complies with the legal requirements, if any, stated in the tender data, and
- is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents, and
- c) other revisions agreed between the employer and the successful tenderer.

F.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

F.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

F.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender, but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. SK8/3/1-36/2022/2023

PART T2 RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS T2.2

T2.2 RETURNABLE SCHEDULES T2.3

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. SK8/3/1-36/2022/2023

T2.1 AND T2.2 LIST OF RETURNABLE DOCUMENTS AND SCHEDULES**The tenderer must complete the returnable documents as listed**

	Tick if completed
Authority for Signatory (<i>Compulsory</i>)	
Certificate of Authority for Joint Venture (<i>Compulsory where applicable</i>)	
Certified copy of identity documents for directors (<i>Compulsory</i>)	
Compulsory Enterprise Questionnaire-SCHEDULE 1A (<i>Compulsory</i>)	
Copy of Company Registration Documents or CK1 for Close Corporations (<i>Compulsory</i>)	
Form of offer to be properly signed (<i>Compulsory</i>)	
Declaration of Interest (MBD4) (<i>Compulsory</i>)	
Declaration of Bidder's Past Supply Chain Management Practices (MBD8) (<i>Compulsory</i>)	
Certificate of Independent Bid Determination (MBD9) (<i>Compulsory</i>)	
Declaration of Local Content (MBD 6.2 and Annex C) (<i>Compulsory if Applicable</i>)	
Certified B-BEE Status Level Certificate SANAS approved or Sworn affidavit for BBBEE Exempted Micro Enterprises as per bidder's correct turnover category (<i>Required for evaluation</i>)	
<p>MBD5 (Required for evaluation), if tender exceed R10 million. Audited financial statements (<i>Compulsory</i>); if the bidder is required by law to prepare annual financial statements for auditing, their audited annual financial statements: for the past three years, or; since their establishment if established during the past three years;</p> <p>A certificate signed by the bidder certifying that the bidder has no undisputed commitments for municipal services towards a Municipality or other service provider in respect of which Payment is overdue for more than 30 days in accordance with regulation 21 (ii). (<i>Compulsory</i>) The Municipal rates for the bidder and its directors in respect of which payment is not overdue for more than 30 days or proof of lease agreement including rates for the landlord. In case where the Company or Director is registered in a rural area where the rates are not paid, please attach proof from Local Authority and Affidavit under oath indicating that there are no municipal rates payable. (<i>Compulsory</i>)</p>	
Valid Tax Clearance Certificate Issued by the South African Revenue Service. (<i>Compulsory</i>) or PIN issued by SARS	
CSD Registration/CSD Summary Report (<i>Compulsory</i>)	
Proof of insurance with a registered financial services provider	

	Tick if completed
FORM A2: Schedule of work carried out by tenderer (<i>required for evaluation</i>)	
FORM A3: Proposed key staff (<i>required for evaluation</i>)	
FORM A4: Schedule of constructional equipment (<i>required for evaluation</i>)	
FORM A5: Schedule of proposed subcontractors	
FORM A6: Financial related information	
FORM A7: Schedule of current commitments	
FORM A8: Estimated monthly expenditure	
FORM A9: Proposed amendments and qualifications by tenderer	
FORM A12: Preliminary construction programme (for information purposes only)	
FORM A13: Quality criteria schedules (<i>required for evaluation</i>)	
FORM B2: Proof of registration with Construction Industry Development Board (<i>compulsory</i>)	
FORM B3: Form concerning fulfilment of the Construction Regulations, 2014	
FORM B4: Record of addenda to tender documents	
FORM B5: Letter of intent to provide a performance guarantee	

Note:

The meaning of the cursive type for each Form is as follows:

- **Compulsory:** Documentation or Information that must be submitted with the tender (Failing to submit any if the documents may result in the tender being deemed non-responsive).
- **Required for evaluation:** Additional documentation that is required to be submitted with the tender and will be used as part of the tender evaluation.
- It is the responsibility of the bidder to bind the bid document

FORM A1 AUTHORITY FOR SIGNATORY

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

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

A. Certificate for Company

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

As witnesses :

1. Chairman :
2. Date :

The company must attach a copy of the Resolution of the Board to this effect

B. Certificate for Partnership

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

NAME	ADDRESS	SIGNATURE	DATE

C. Certificate for Joint Venture and Joint Venture Agreement

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

A certified signed copy of the Joint Venture Agreement is attached.

A certified signed resolution from each company confirming their legally authorized representative in the Joint Venture is attached.

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME & CAPACITY
Lead partner		

D. Certificate for Sole Proprietor

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

As witnesses:

1. Signature : Sole owner :
2. Date :

E. Certificate for Close Corporation

I/We, the undersigned, being the key member(s) in the business trading as
 hereby authorize Mr/Ms
 acting in the capacity of , to sign all documents in connection with the tender for
 Contract and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

FORM A2 SCHEDULE OF WORK CARRIED OUT BY TENDERER

The Tenderer shall list below the last ten civil engineering contracts of a similar nature awarded to him.

Refer to Form A13 where specific information must be provided.

EMPLOYER (Name, tel no and fax no)	CONSULTING ENGINEER (Name, tel no and fax no)	NAME OF PROJECT STATE NATURE OF WORK AND THE SIMILARITIES WITH THIS CONTRACT	VALUE OF WORK	YEAR OF COMPLETION

CV's of qualified key personnel must be attached

DESIGNATION	NAME AND NATIONALITY OF: (i) NOMINEE (ii) ALTERNATE	SUMMARY OF QUALIFICATIONS, EXPERIENCE AND PRESENT OCCUPATION
<u>HEADQUARTERS</u>		
Partner/Director		
Project manager		
Other key staff		

[illegible]

FORM A4 SCHEDULE OF CONSTRUCTIONAL EQUIPMENT

The Tenderer shall state below the relevant Constructional Equipment which will be available for the work should he be awarded the Contract.

DESCRIPTION, SIZE, CAPACITY	NUMBER

FORM A5 SCHEDULE OF PROPOSED SUBCONTRACTORS

The Tenderer shall, in accordance with the provisions of Conditions of Tender, list below the subcontractors he proposes to employ for part(s) of the work.

The naming of any proposed subcontractor hereunder shall not be deemed to constitute a qualification of the Tender and acceptance of a tender shall not be construed as approval of any or all of the listed subcontractors, neither shall it in any way limit or detract from the powers of the Employer's Agent and the obligations of the Contractor pertaining to subcontracting as stated in the Contract, nor shall it prevent the Tenderer from deviating in any way during the Contract from the list of proposed subcontractors hereunder if the Tender is accepted.

If any or all of the subcontractors listed hereunder are not approved subsequent to acceptance of the Tender, it shall in no way invalidate the Tender or the Contract, and the tendered unit rates for the respective items of work shall remain final and binding even if a subcontractor not listed below is approved by the Employer.

PART OR TYPE OF WORK	PROPOSED SUBCONTRACTOR	WORK RECENTLY EXECUTED BY SUBCONTRACTOR
Mooihoek WTW and Cathodic Protection	Will be a selected subcontractors Will be a nominated subcontractor	

FORM A6 FINANCIAL RELATED INFORMATION

6.1 Details of Company's Bank and Bank Rating

I/We hereby authorise the Employer/Employer's Agent to approach all or any of the following banks for the purposes of confirming a financial reference:

I/We submit additionally an official letter from my/our bank providing my/our financial reference and Bank Rating

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO TENDERER'S HEAD OFFICE
Name of bank	
Branch name	
Branch code	
Street address	
Postal address	
Name of manager	
Telephone number	
Fax number	
Account number	

6.2 Tenderer's Tax Details

Tenderer's VAT vendor registration number:

Tenderer's SARS tax reference number:

Tenderer's CSD number:

6.3 Financial Statements

If the bidder is required by law to prepare audited Annual Financial Statements (Companies Act, 2008, regulation 28), the AFS for the past three years or since establishment, if established during the past three years, must be provided.

6.4 Municipal rates, taxes or services

Provide proof by means of a certified statement, certificate or letter from the relevant municipality or municipal entity or tribal authority that there are no undisputed commitments for municipal rates, taxes or services in respect of which payment is overdue for more than 30 days. Provide separate proof for

1. the company (or companies if JV)
2. and for each director of the company if the company is a (Pty) Ltd or Ltd
3. and for each member of the company if the company is a CC
4. and for each partner of the company if the company is a partnership
5. and for the sole owner
6. Note on JVs: The above apply to all the individual companies, directors, members, partners, sole owners of which the Joint Venture is comprised of.

Provide a certified sworn affidavit if the company, director, member, partner or sole owner has no rates, taxes or services obligation to a municipality or municipal entity. Example: renting, married directors or members, village or township where no payment system exists, etc.

Please contact the Client's Agent if any of the above is not clear.

6.5 Contracts with organs of state

Provide particulars of any material non-compliance or dispute concerning the execution of any contract awarded to the tenderer by an organ of state during the past five years. State if not applicable.

6.6 Sourcing of goods or services

Provide a statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality is expected to be transferred out of the Republic. State if not applicable.

1. The Tenderer shall list below all Contracts currently under construction or awarded and about to commence and tenders for which offers have been submitted but awards not yet made.
2. In the event of a joint venture enterprise, details of all the members of the joint venture shall similarly be attached to this form.
3. The lists must be restricted to not more than 10 Contracts and 10 Tenders. If a tenderer's actual commitments or potential commitments are greater than 10 each, those listed should be in descending order of expected final contract value or sum tendered.

[illegible]

FORM A8 ESTIMATED MONTHLY EXPENDITURE

CLAIMS	VALUE
TOTAL	R

FORM A9 PROPOSED AMENDMENTS AND QUALIFICATIONS BY TENDERER

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

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

If no deviations or modifications are desired, the schedule hereunder is to be marked NIL and signed by the Tenderer. Do not make changes to the Bill of Quantities to accommodate proposed deviations and qualifications. In the event of proposed deviations or qualifications, the Bill Of Quantities must be completed as provided and the deviations or qualifications listed here. Note; no alternative tenders will be considered.

PAGE	CLAUSE OR ITEM	DESCRIPTION

FORM A10 CERTIFICATE OF TAX CLEARANCE

SBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS

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

1. SARS will furnish the bidder with a Tax Clearance Certificate or tax compliance status pin that will be valid for a period of 1(one) year from the date of approval.
2. The valid Tax Clearance Certificate or tax compliance status pin issued by SARS must be submitted together with the bid. Failure to submit the valid Tax Certificate or pin may result in invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
3. In bids where Consortia / Joint Ventures / Sub –Contractors are involved, each party must submit a separate valid Tax Clearance Certificate or pin issued by SARS.

FORM A11 CERTIFICATE OF INSURANCE COVER

Note to Tenderer:

In the event of the Tenderer being a joint venture/consortium, the details of the individual members must also be provided.

Refer to the Contract Data for required insurance.

The Tenderer shall provide the following details of this insurance cover:

- i) Name of Tenderer:
- ii) Period of Validity:
- iii) Value of Insurance:
 - Insurance for Works and Contractor's equipment
 - Company:
 - Value:
 - Insurance for Contractor's personnel
 - Company:
 - Value:
 - General public liability
 - Company:
 - Value:
 - SASRIA
 - Company:
 - Value:

FORM A12 PRELIMINARY CONSTRUCTION PROGRAMME (FOR INFORMATION PURPOSES ONLY)

The Tenderer shall attach a preliminary construction programme to this Form.

Do not provide information regarding the Water Treatment Works which will be done in total by a subcontractor.

This programme shall:

- be in the form of a bar chart (Gantt chart) or similar acceptable time/activity form reflecting the proposed sequence and tempo of execution of the various activities and the quantities that will be carried out every week under each of the elements, comprising the work for this contract;
- also indicate the point where the Tenderer intends to commence work operations and the direction in which the work will proceed;
- be in accordance with the information provided in Form A4: Schedule of Constructional Plant, Form A8: Estimated monthly expenditure, and with all other aspects of the Tender; and
- indicate planned working hours.

The following inserted page must be considered as a guideline only but is not intended to be the Program as required on this page.

GUIDE PROGRAM TO DETERMINE TOTAL TIME ONLY		
	Commencement of Contract	
End month 1	Documents approved. Commencement of Work. Orders and cessions application	
End month 2	Cession(s) (if applicable) approved. Manufacturing pipework commences	Commence civil work Mooihoek WTW Advertise for selected subcontractor at Mooihoek WTW
End month 3	Site establishment complete Receive pipework for bridge crossing. Commence bridge crossing	
End month 4	Clearing complete	Complete civil work at Mooihoek WTW Commence erection of clarifiers
End month 5	Fence barricading complete Complete bridge crossing. Delivery pipework commences. Commence pipelaying, manhole construction, cathodic protection and AC mitigation.	
End month 6	Delivery of pipework, manholes, etc. complete	
End month 7		
End month 8		
End month 9		Complete work at Mooihoek WTW
End month 10		
End month 11	Practical Completion	
End month 12	Final Completion	
Say, month 13 to allow for breaks to be phased in		

FORM A13 QUALITY CRITERIA SCHEDULES

Please provide adequate supporting information in order for the Employer to score the following schedules. Do not refer to Form A3 for information.

Form A13 requires far more information than what is provided in Form A3 which is normally only a concise list or summary.

Provide detailed attachments to support the claimed points for the items required in the various categories in A13. Example:

[illegible]

Table A1: Company Experience

	Targeted Goals	Tendered Goal	Points allocated by the Employer
A1.1	<p>Experience of Company in general civil engineering work other than pipe laying during the past 5 years (concrete, brickwork, roads, earthworks, etc.):</p> <p>2 projects = 5 points</p> <p><u>more than 2 projects = 10 points</u></p>	10	
	Targeted Goals	Tendered Goal	Points allocated by the Employer
A1.2	<p>Experience of Company in general pipe laying work (excluding A1.3) during the past 5 years:</p> <p>2 projects = 10 points</p> <p>More than 2 projects = 20 points</p>	20	
	Targeted Goals	Tendered Goal	Points allocated by the Employer
A1.3	<p>Experience of Company, or Company's approved nominated subcontractor (provide information), in high pressure steel pipe laying construction similar to the specified, during the past 5 years: (This contract 200nb, flanged pn40, tested to 60Bar, as specified)</p> <p>1 project or more = 20 points</p>	20	
	A1 TOTAL	50	

Table A2: Financial Reference

	Targeted Goals	Tendered Goal	Points Allocated by the Employer
2.1	<u>Confirmation from bank</u> that tenderer has a bank rating of C or better	10	
2.2	<u>Letter of intent from a registered financial institution</u> as guarantor to provide 10% of the tendered amount as Performance Guarantee	5	
	A2 TOTAL	15	

Table A3: Experience of Key Staff of the Company

Provide records of education, training, CV's, etc.

	Targeted Goals	Tendered Goal	Points Allocated by the Employe
A3.1	Key Staff, (excluding the Construction Manager and OHS Agent) experience in high pressure steel pipe laying construction similar to the specified, during the past 5 years: (This contract 200nb, flanged pn40, tested to 60Bar, as specified) 1 project or more = 10 points	10	
	A3 TOTAL	10	

TABLE A4: Specific Knowledge and Experience

Provide records of education, training, CV's, etc.

	Targeted Goals	Tendered Goal	Points Allocated by the Employer
A4.1	Construction Manager's (site agent) experience in high pressure steel pipe laying construction similar to the specified during the past 5 years: (This contract 200nb, flanged pn40, tested to 60Bar, as specified) 1 project or more = 10 points	10	
A4.2	Qualified experienced Safety, Health and Environmental Officer 1 project or more = 5 points (work of similar nature)	5	
	A4 TOTAL	15	

Table A5: Construction Plant and Equipment

NOTE: To claim these points the Tenderers must provide proof of ownership or letter of intent from hiring or leasing companies for the minimum construction equipment determined by the Employer's Agent. The plant and equipment must be available as and when required for the current tender. The tenderer shall determine the correct and final equipment needed based on the specifications and visits to site during the tender stage.

	Targeted Goals	Owned (O) or Rented (R)	Tendered Goal	Points allocated by the Client
1	1 x 20t plus Excavator		1	
2	1 x TLB		1	
3	1x 10m3 tipper truck		1	
4	2 x 600 wide vibratory compactors		1	
5	1 x Whacker		1	
6	1 x 10kl plus capacity water tanker		1	
7	1 x flatbed truck		1	
8	Hydraulic/electric torque wrench		1	

9	Side boom		1	
10	Grader for clearing and finishing		1	
	TOTAL		10	10

SUMMARY OF QUALITY AND COMPETENCY EVALUATION

	MAXIMUM POINTS TO BE ALLOCATED	POINTS ALLOCATED BY THE EMPLOYER
Company Experience: TABLE A1	50	
Financial References: TABLE A2	15	
Experience of Key Staff: TABLE A3	10	
Specific Knowledge: TABLE A4	15	
Construction Equipment: TABLE A5	10	
TOTAL	100	

**FORM B1 CERTIFICATE OF TENDERER'S ATTENDANCE AT THE
SITE/CLARIFICATION MEETING**

Refer to Standard Conditions of Tender Data F.2.1 and F.2.7.

This is to certify that I, ,
representative of [*Tenderer*]

.....
of [*address*]

.....
Telephone number

Fax number

visited and examined the Site on [*date*].....

in the company of [*Employer's Agent/Employer's Agent's Representative*].....

TENDERER'S REPRESENTATIVE:

EMPLOYER'S AGENT'S REPRESENTATIVE:

**FORM B2 PROOF OF REGISTRATION WITH CONSTRUCTION INDUSTRY
DEVELOPMENT BOARD**

The Tenderer shall provide a printed copy of the Active Contractor's Listing off the CIDB website. (www.cidb.org.za). In the case of a joint venture, a printed copy of the Active Contractor's listing must be provided for each member of the joint venture.

Name of Contractor:

Contractor Grading Designation:

CIDB Contractor Registration Number:

SIGNED ON BEHALF OF THE TENDERER:

FORM B3 FORM CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2014

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

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

YES	
NO	

- 2 Proposed approach to achieve compliance with the Regulations (Tick)

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

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

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

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

.....
.....

.....

.....

.....

.....

- 5 Potential key risks identified and measures for addressing risks:

.....

.....

.....

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.....

.....

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

YES	
NO	

- 7 The Tenderer shall attach to this Form evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act, 1993 (Act No 130 of 1993)(COID).

The Tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the Tenderer at any time during the 36 months preceding the date of this Tender.

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

1 ID NO:

2 ID NO:

FORM B4 RECORD OF ADDENDA TO TENDER DOCUMENTS

We confirm that the following communications issued by the Employer before the submission of this Tender offer, amending the Tender Documents, have been taken into account in this Tender offer:

	Date	Title or details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

SIGNED ON BEHALF OF TENDERER:

FORM B5 LETTER OF INTENT TO PROVIDE A PERFORMANCE GUARANTEE

It is hereby agreed that a Performance Guarantee drafted **exactly as set out in Appendix 3, General Conditions of Contract, 3rd Edition 2015** and Part 2: Data provided by the Contractor, shall be provided by a registered financial institution named below. A letter of intent from the financial institution to provide such a Guarantee shall be attached hereto.

The expiry date shall be three months after Practical Completion

Name of Guarantor:

Signed by Contractor:

FORM C1 COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of enterprise:

Section 2: VAT registration number:

Section 3: CIDB registration number:

Section 4: CSD registration number:

Section 5: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 6: Particulars of companies and close corporations

Company registration number:

Close corporation number:

Tax reference number:.....

CSD number:.....

Section 7: Record in the service of the state

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

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

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

*

Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

*Insert separate page if necessary.

Section 8: Record of spouses, children and parents in the service of the state

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

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

*

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

*Insert separate page if necessary.

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

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

Signed Date

Name Position

Enterprise name:.....

FORM C2 PREFERENCING SCHEDULES:**MBD6.1****PREFERENCE POINTS CLAIM FORM IN TERMS OF THE
PREFERENTIAL PROCUREMENT REGULATIONS 2017**

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

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

1. GENERAL CONDITIONS

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

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

1.2 The value of this bid is estimated to exceed R50 000 000 (all applicable taxes included) and therefore the 90/10 system shall be applicable.

1.3 Points for this bid shall be awarded for:

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

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

	POINTS
1.3.1.1 PRICE	90
1.3.1.2 B-BBEE STATUS LEVEL OF CONTRIBUTOR	10
Total points for Price and B-BBEE must not exceed	100

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

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

DEFINITIONS

- 2.1 **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.2 **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.
- 2.3 **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- 2.4 **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- 2.5 **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issue in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.6 **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents;
- 2.7 **“prices”** include all applicable taxes less all unconditional discounts;
- 2.8 **“proof of B-BBEE status level of contributor”** means
- B-BBEE Status level certificate issued by an authorized body or person;
 - A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice
 - Any other requirement prescribed in terms of the B-BBEE Act;
- 2.9 **“QSE”** means a qualifying small business enterprise in terms of a code of good practise on black economic empowerment issue in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.10 **“rand value”** means the total estimated value of a Contract in South African currency, calculated at the time of bid invitation, and includes all applicable taxes and excise duties;

3. POINTS AWARDED FOR PRICE

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

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

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Price for bid under consideration

P_{min} = Price of lowest acceptable bid

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

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

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

5. BID DECLARATION

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

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

- 6.1 B-BBEE Status Level of Contributor: (provide)

(maximum of 10 or 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor).

7. SUBCONTRACTING

- 7.1 Will any portion of the contract be subcontracted?
(Tick applicable box)

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

7.1.1 If yes, indicate:

- (i) what percentage of the Contract will be subcontracted? %
- (ii) the name of the subcontractor?
- (iii) the B-BBEE status level of the subcontractor?
- (iv) whether the subcontractor is an EME or QSE
(Tick applicable box)

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

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

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

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm :

8.2 VAT registration number :

8.3 Company registration number :

8.4 TYPE OF COMPANY/FIRM

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

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

8.6 COMPANY CLASSIFICATION

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

[TICK APPLICABLE BOX]

8.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:

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

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

- (i) The information furnished is true and correct;
- (ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
- (iii) In the event of a Contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1 the Contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- (iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have:
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the Contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) Recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been

applied; and

(e) forward the matter for criminal prosecution.

WITNESSES:

1.

2.

SIGNATURE(S) OF BIDDER(S)

.....

DATE:

ADDRESS:

.....

.....

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT

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

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:201x.

1. General Conditions

1.1. Preferential Procurement Regulations, 2011 (Regulation 9.(1) and 9.(3) make provision for the promotion of local production and content.

1.2. Regulation 9.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Regulation 9.(3) prescribes that where there is no designated sector, a specific bidding condition may be included, that only locally produced services, works or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.

1.4. Where necessary, for bids referred to in paragraphs 1.2 and 1.3 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.

1.5. A person awarded a contract in relation to a designated sector, may not subcontract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.6. The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 201x as follows:

$$LC = 1 \left[\frac{x}{y} \right] \times 100$$

Where

x imported content
y bid price excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid as required in paragraph 4.1 below.

1.7. A bid will be disqualified if:

- the bidder fails to achieve the stipulated minimum threshold for local production and content indicated in paragraph 3 below; and.
- this declaration certificate is not submitted as part of the bid documentation.

2. Definitions

2.1. "bid" includes advertised competitive bids, written price quotations or proposals;

2.2. "bid price" price offered by the bidder, excluding value added tax (VAT);

2.3. "contract" means the agreement that results from the acceptance of a bid by an organ of state;

2.4. "designated sector" means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;

2.5. "duly sign" means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility(close corporation, partnership or individual).

2.6. "imported content" means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;

2.7. "local content" means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;

2.8. "stipulated minimum threshold" means that portion of local production and content as determined by the Department of Trade and Industry; and

2.9. "sub-contract" means the primary contractor's assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

3. The stipulated minimum threshold(s) for local production and content for this bid is/are as follows:

Description of services, works or goods	Stipulated minimum threshold
_____	_____%
_____	_____%
_____	_____%

4. Does any portion of the services, works or goods offered have any imported content? YES / NO

4.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.6 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date of the bid.

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

Indicate the rate(s) of exchange against the appropriate currency in the table below:

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

IN RESPECT OF BID No. SK8/3/1-36/2022/2023

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

SEKHUKHUNE DISTRICT MUNICIPALITY

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

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

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

(b) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286.

(c) The local content has been calculated using the formula given in clause 3 of SATS 1286, the rates of exchange indicated in paragraph 4.1 above and the following figures:

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

If the bid is for more than one product, a schedule of the local content by product shall be attached.

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

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

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

ANNEXURE C

LOCAL CONTENT DECLARATION- SUMMARY SCHEDULE

C1

Tender No

SK8/3/1-36/2022/2023

C2

Tender Description

Construction of DN 200, PN40 flanged steel rising main

C3

Designated products

C4

Tender Authority

Sekhukhune District Municipality

C5

Tendering Entity Name

C6

Tender Exchange Rate

C7

Specified local content %

Pula

EU

GB P

List of items

(C8)

(C9)

(C10)

(C11)

(C12)

(C13)

(C14)

(C15)

(C16)

(C17)

(C18)

(C19)

Tender Item no' s

(C20) Total tender value

(C21) Total exempt imported Content

(C22) Total tender value net of imported content

(C23) Total imported content

(C24) Total local content

(25) Average local content % of tender

Note: VAT to be excluded from all calculations

Signature of tenderer

Date

FORM C3 DECLARATION OF INTEREST**MBD 4**

1. No bid will be accepted from persons in the service of the state*.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.

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

- 3.1 Full Name:
- 3.2 Identity Number:
- 3.3 Company Registration Number:
- 3.4 Tax Reference Number:
- 3.5 VAT Registration Number:
- 3.6 Are you presently in the service of the state* YES / NO
- 3.6.1 If so, furnish particulars.
-
-
- 3.7 Have you been in the service of the state for the past twelve months? YES / NO
- 3.7.1 If so, furnish particulars.
-
-

* MSCM Regulations: "in the service of the state"
means to be –

- (a) a member of –
 - (i) any municipal council;
 - (ii) any provincial legislature; or
 - (iii) the national Assembly or the national Council of provinces;
- (b) a member of the board of directors of any municipal entity;
- (c) an official of any municipality or municipal entity;
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
- (e) a member of the accounting authority of any national or provincial public entity; or

(f) an employee of Parliament or a provincial legislature.

3.8 Do you, have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? YES / NO

3.8.1 If so, furnish particulars.

.....

3.9 Are you, aware of any relationship (family, friend, other) between a bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid ? YES / NO

3.9.1 If so, furnish particulars

.....

3.10 Are any of the company's directors, managers, principal shareholders or stakeholders in service of the state? YES / NO

3.10.1 If so, furnish particulars.

.....

3.11 Are any spouse, child or parent of the company's directors, managers, principal shareholders or stakeholders in service of the state? YES / NO

3.11.1 If so, furnish particulars.

.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

.....

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

Signature

.....

Date

.....

Name of bidder

.....

Position

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following for questionnaire:

1. Are you by law required to prepare annual financial statement auditing?
 - 1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during last three years. *YES/NO

.....

.....

2. Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days? *YES /NO
 - 2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.
 - 2.2 If yes, provide particulars.

.....

.....

.....

*Delete if not applicable

3. Has any contract has been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract? *YES /NO
 - 3.1 If yes, furnish particulars

.....

.....

4. Will any portion of goods or services be sourced from outside the Republic, and if so, what portion and whether any portion of payment from the municipality/ municipal entity is expected to be transferred out of the Republic? *YES /NO

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

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

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM C4: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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

Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:	<input type="checkbox"/>	

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM C5: CERTIFICATE OF INDEPENDENT BID DETERMINATION**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *per se* prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

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

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

BID NUMBER: SK8/3/1-36/2022/2023 : CONSTRUCTION OF A NB200 RISING MAIN AT ALVERTON AND UPGRADING OF MOOIHOEK WTW, FETAKGOMO TUBATSE LOCAL MUNICIPALITY

in response to the invitation for the bid made by:

SEKHUKHUNE DISTRICT MUNICIPALITY

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

I certify, on behalf of: _____ that: _____

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)

- (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
 9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
 10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signature

Date

.....

Name of Bidder

.....

Position

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023**

THE CONTRACT

PART C1	AGREEMENT AND CONTRACT DATA	C1.1 – C1.24
PART C2	PRICING DATA	C2.1
PART C3	SCOPE OF WORKS	C3.1 – C3.16
PART C4	SITE INFORMATION	C4.1

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023**

PART C1 AGREEMENT AND CONTRACT DATA

C1.1	FORM OF OFFER AND ACCEPTANCE	C1.2
C1.2	CONTRACT DATA.....	C1.7
C1.3	PERFORMANCE GUARANTEE	C1.13
C1.4	RETENTION MONEY GUARANTEE (PRO FORMA)	C1.14
C1.5	ADJUDICATOR'S AGREEMENT	C1.15

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023****C1.1 FORM OF OFFER AND ACCEPTANCE (AGREEMENT)****OFFER**

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

Construction of a DN200 PN40 steel rising main at Alverton and upgrading of the Mooihoek WTW, Fetakgomo Tubatse Local Municipality: Contract No **SK8/3/1-36/2022/2023**

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

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

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

.....

..... rand *[in words]*;

R..... *[in figures]*,

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

For the Tenderer

Signature(s)

Name(s)

Capacity

[Name and address of organisation]

Name and
signature of
witness

Date _____

Name:

ACCEPTANCE

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

The terms of the Contract are contained in

Part C1 Agreements and Contract Data (which includes this Form of Offer and Acceptance)

Part C2 Pricing Data

Part C3 Scope of Work

Part C4 Site Information

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

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

The Tenderer shall within

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

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

For the Employer;

Signature(s)

_____ Date: _____

Name and Capacity

Name and address
of organisation

Signature of Witness

Date

Name:

SCHEDULE OF DEVIATIONS

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

1 Subject.....

Details

.....

2 Subject.....

Details

.....

3 Subject.....

Details

.....

4 Subject.....

Details

.....

5 Subject.....

Details

.....

6 Subject.....

Details

.....

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

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

FOR THE TENDERER:

Signature(s)

Name(s)
.....

Capacity
.....

.....
[Name and address of organisation]

Name and
signature of
witness Date

FOR THE EMPLOYER:

Signature(s)
.....

Name(s)
.....

Capacity
.....

.....
[Name and address of organisation]

Name and
signature of
witness Date

CONFIRMATION OF RECEIPT

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

the [day]

of [month]

20..... [year]

at[place]

For the Contractor:

.....

Signature

.....

Name

.....

Capacity

Witness:

.....

Signature

.....

Name

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023**

C1.2 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The *General Conditions of Contract for Construction Works, Third Edition*, 2015, published by the South African Institution of Civil Engineering, is applicable to this Contract and is obtainable from www.saice.org.za.

Copies of these Conditions of Contract may be obtained from the South African Institution of Civil Engineering.

CONTRACT SPECIFIC DATA

The following contract specific data are applicable to this Contract:

Clause

- | | | | | | | | | | | | |
|---------------------------------------|---|-------------------|-----------------|---------------------|-------------------|---------------------------------------|------------------|-------------|------|-------------------------|--|
| 1.1.1.13 | The Defects Liability Period is 12 months <i>[measured from the date of the final approval certificate]</i> . | | | | | | | | | | |
| 1.1.1.14 | | | | | | | | | | | |
| 1.1.1.18 | | | | | | | | | | | |
| 1.1.1.24 | The time for achieving final completion is 13 calendar months <i>(measured from the Commencement of Contract Date)</i> | | | | | | | | | | |
| 1.1.1.15 | The name of the Employer is Sekhukhune District Municipality | | | | | | | | | | |
| 1.2.1.2 | <p>The Employer's address for receipt of communications is:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Physical address:</td> <td style="width: 50%;">Postal address:</td> </tr> <tr> <td>Bareki Mall Offices</td> <td>Private Bag X8611</td> </tr> <tr> <td>Cnr. Van Riebeeck and Chris Wiid Str.</td> <td>Groblersdal 0470</td> </tr> <tr> <td>Groblersdal</td> <td></td> </tr> <tr> <td>Telephone: 013 262 7300</td> <td></td> </tr> </table> | Physical address: | Postal address: | Bareki Mall Offices | Private Bag X8611 | Cnr. Van Riebeeck and Chris Wiid Str. | Groblersdal 0470 | Groblersdal | | Telephone: 013 262 7300 | |
| Physical address: | Postal address: | | | | | | | | | | |
| Bareki Mall Offices | Private Bag X8611 | | | | | | | | | | |
| Cnr. Van Riebeeck and Chris Wiid Str. | Groblersdal 0470 | | | | | | | | | | |
| Groblersdal | | | | | | | | | | | |
| Telephone: 013 262 7300 | | | | | | | | | | | |
| 1.1.1.16 | The Employer's Agent is Tubatse Consulting Engineers represented by an Employee duly authorised thereto in writing. | | | | | | | | | | |
| 1.2.1.2 | <p>The Employer's Agent's address for receipt of communications is:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Physical address:</td> <td style="width: 50%;">Postal address:</td> </tr> <tr> <td>90 End Street</td> <td>P.O.Box 708</td> </tr> <tr> <td>Burgersfort</td> <td>Steelpoort</td> </tr> <tr> <td>1150</td> <td>1133</td> </tr> </table> <p>Telephone: 082 8713744
 Fax: 013 231 7642
 email: jvrtubatcon@lantic.net</p> | Physical address: | Postal address: | 90 End Street | P.O.Box 708 | Burgersfort | Steelpoort | 1150 | 1133 | | |
| Physical address: | Postal address: | | | | | | | | | | |
| 90 End Street | P.O.Box 708 | | | | | | | | | | |
| Burgersfort | Steelpoort | | | | | | | | | | |
| 1150 | 1133 | | | | | | | | | | |
| 1.1.1.26 | The Pricing Strategy is: Re-measurement Contract. | | | | | | | | | | |
| 1.3.2 | The governing law is the law of the Republic of South Africa | | | | | | | | | | |
| 1.3.3 | The language of the Contract and for written communications is English | | | | | | | | | | |

- 3.2.3 The Employer's Agent shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract:
1. Clause 6.3: Variations
 2. Clause 5: Extension of Time
 3. Clause 5: Approval or reduction of Penalties
 4. Clause 5: Suspension of the works
 5. Clause 5: Acceleration of the works
- 5.2 Commencement of the Contract
- 5.2.1 The Contract commences one day after the Contractor has been handed a copy of the signed Contract.
- 5.3.1 Commencement of the Works/ time for documents
- 5.3.1.1 The Contractor shall submit all specified documentation to the Employer's Agent within 14 days after the Commencement of the Contract date.
- 5.3.1.2 The Client's Agent should approve the documents within 7 days after 5.3.1.1. (check subclause 5.3.2 re termination). After approval the Client's Agent shall provide the Contractor with a written instruction to commence with the Work.
- 5.3.1.3 **The compulsory documentation required after the Commencement of the Contract date but before Commencement with Works are:**
- (a) **The Contractor's Site Specific Health and Safety Plan (Refer to Clause 4.3)**
 - (b) **Agreement by the Contractor to comply, as Mandatory, with the provisions and requirements of the OHS Act 85 1993 and its Regulations. (Agreement in terms of Section 37(2))**
 - (c) **Valid Letter of Good Standing from the Compensation Commissioner (if not insured with a licensed Compensation Insurer)**
 - (d) **Initial programme (Refer to Clause 5.6)**
 - (e) **Original Security (Performance Guarantee) (Refer to Clause 6.2)**
Originality will be verified. Proof of payment in full will be required
 - (f) **Proof of required Insurance (Refer to Clause 8.6)**
Originality will be verified. Proof of payment in full will be required
 - (g) **Proof of registration of Project with local Department of Labour**
Originality will be verified. Proof of payment in full will be required
 - (h) **Approval of Construction Manager (site agent)**
 - (i) **Approval of Health and Safety Officer**
 - (j) **Approval of pipelaying subcontractor if offered in tender**
- 5.3.2 The time to submit the documentation required in Clause 5.3.1, is fourteen (14) days after the commencement date of the Contract (Refer to Clause 1.1.1.5) and the time for approval by the Client's Agent of the documents after the said (14) fourteen days is (7) days.

- 5.4.2 The access and possession of Site shall be exclusive to the Contractor.
- 5.8.1 The non-working days are Sundays.
- The special non-working days are:
- 1 Public holidays
 - 2 The year end break commencing and ending on dates as specified by SAFCEC.
- 5.13.1 The penalty for failing to complete the Works is R5 000.00 (five thousand rand) per day.
- 5.16.3 The latent defect period is ten (10) years.

Clause

6.5.1.2.3 The percentage allowance to cover overhead charges is 15%.

6.8.2 Contract Price Adjustment: Is applicable.

The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule included in the General Conditions of Contract.

The value of "x" is 0,15

The values of the coefficients are:

a =0.15 Labour

b = 0.2 Contractor's equipment

c = 0.55 Material (increase in steel price will be considered)

d = 0.1 Fuel

The province/urban area nearest the Site is Polokwane

The applicable industry for the Producer Price Index for material is civil construction.

The area for the Producer Price Index for fuel is Polokwane

The base month is the month when the tender is submitted

6.8.3 Price adjustments for variations in the cost of special materials are not allowed.

6.10.1.5 The percentage advance on materials not yet built into the Permanent Works is 80%.

Clause

6.10.3 Percentage retention is 10% of the value of each interim payment certificate.

The limit of retention money is 10% of Contract Sum.

8.6.1.1.2 The value of Plant and materials supplied by the Employer to be included in the insurance sum is Rnil

8.6.1.1.3 The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is Rnil

8.6.1.3 The limit of indemnity for liability insurance is R10, 000, 000.00 for any single claim, the number of claims to be unlimited during construction and Defects Liability Period.

Clause

10.5.3 The number of Adjudication Board Members to be appointed is one.

10.7.1 The determination of disputes shall be by arbitration.

PART 2: DATA PROVIDED BY THE CONTRACTOR**COMPLETE THE FOLLOWING:****Clause**

1.1.1.9 The Contractor is

1.2.1.2 The Contractor's address for receipt of communications is:

Physical address: Postal address:

.....

.....

.....

.....

Telephone:

Fax:

email:

6.2.1 The security to be provided by the Contractor shall be one of the following:

COMPLETE THE FOLLOWING:

TYPE OF SECURITY	CONTRACTOR'S CHOICE. INDICATE "YES" OR "NO"
Cash deposit of 10% of the Contract Sum (inclusive of VAT)	
Fixed Performance Guarantee of 10% of the Contract Sum (inclusive of VAT) The format of the Performance Guarantee shall be Appendix 3 of GCC 2015, Third Edition NOTE: The Fixed Performance Guarantee option shall apply The Expiry Date shall be three calendar months after the date of Practical Completion	

6.5.1.2.3 The percentage allowance to cover overhead charges is 15%

VARIATIONS TO THE CONDITIONS OF CONTRACT ARE:

Clause

5.3 Commencement of the Works

Clause 5.3.1: change the second sentence of the clause in the GCC to read:

“Such instruction shall be subject to the submission by the Contractor, and approval by the Employer’s Agent, of documentation required, as set out in the Contract Data, before commencing to carry out the Works.”

Clause 5.3.3: change the whole of the clause in the GCC to read:

“If the Client’s Agent does not approve or instruct to resubmit the documentation referred to in Clause 5.3.1 within 7 days from the actual date of submission of all the documents, approval shall be taken to be on the expiry of such 7 days.

6.10.4 Delivery, dissatisfaction with and payment of payment certificate

Replace “within 28 days” in the seventh line with “within 60 days”.

THE ADDITIONAL CONDITIONS OF CONTRACT ARE:

1. CONTRACT PRICE ADJUSTMENT SCHEDULE

Replace the definitions of "L", "P", "M", "F" with the following:

" 'L' is the 'Labour Index' and shall be the 'Consumer Price Index' for the geographical area nearest the site as stated in the Contract Data and as published in the Statistical News Release, P0141 (Table A) and Additional Tables (Table 13) of Statistics South Africa.

'P' is the 'Plant Index' and shall be the index for 'Civil Engineering Plant' as published in the Statistical News Release P0142.1, Table 12 of Statistics South Africa.

'M' is the 'Materials Index' and shall be the index for 'Building and construction: Civil Engineering' as published in the Statistical News Release P0142.1, Table 11 of Statistics South Africa.

'F' is the 'Fuel Index' and shall be the index for 'Diesel at wholesale level: Coast or Witwatersrand' as stated in the Contract Data and as published in the Statistical News Release P0142.1, Table 12 of Statistics South Africa."

SEKHUKHUNE DISTRICT MUNICIPALITY

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C1.3 PERFORMANCE GUARANTEE

Must be exactly as APPENDIX 3: General Conditions of Contract For Construction Works, Third Edition, 2015.

**The Expiry Date shall be three (3) months after the Practical Completion Date.
The fixed Performance Guarantee Option shall apply**

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

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C1.4 RETENTION MONEY GUARANTEE

NOT ALLOWED

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

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C1.5 ADJUDICATOR'S AGREEMENT

Use APPENDIX 5: General Conditions of Contract For Construction Works, Third Edition 2015

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023****PART C2 PRICING DATA**

C2.0	PRICING SCHEDULE - FIRM PRICES	C2.1
C2.1	PRICING INSTRUCTIONS	C2.3
C2.2	BILL OF QUANTITIES.....	C2.5

FORM MBD 3.1

PRICING SCHEDULE – FIRM PRICES

(PURCHASES)

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

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

COMPLETE:

Name of Bidder.....	Bid Number.....
Closing Time	Closing Date

COMPLETE:

OFFER TO BE VALID FOR (check if not = 3 months F2.16, pT1.6)

DAYS FROM THE CLOSING DATE OF BID.

COMPLETE BELOW IF APPLICABLE:

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

- Required by:

- At:

C1 .18

- *Brand and Model*
- *Country of Origin*
- *Does the offer comply with the specification(s)?* *YES/NO
- *If not to specification, indicate deviation(s)*
- *Period required for delivery*
*Delivery: Firm/Not firm
- *Delivery basis*

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

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

**Delete if not applicable*

SEKHUKHUNE DISTRICT MUNICIPALITY

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C2.1 PRICING INSTRUCTIONS

- 1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the drawings shall be read in conjunction with the Bill of Quantities.
- 2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Employer's Agent is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill.

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 Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

- 3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Scope of Work. No consideration will be given to any claim by the Contractor submitted on such a basis. The Bill has been drawn up generally in accordance with the latest issue of Civil Engineering Quantities¹. Should any requirement of the measurement and payment clause of the appropriate Standardised or Project Specification(s) be contrary to the terms of the Bill or, when relevant, to the Civil Engineering Quantities, the requirement of the appropriate Standardised, Project, or Particular Specification as the case may be, shall prevail.
- 4 Unless stated to the contrary, items are measured net in accordance with the drawings without any allowance having been made for waste.
- 5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based.
- 6 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

The Tenderer shall also fill in a rate against the items where the words "rate only" appear in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the tendered rates shall apply should work under these items actually be required.

Should the Tenderer group a number of items together and tender one sum for such group of items, the single tendered sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

1 South African Institution of Civil Engineers, *The Standard System of Measurement of Civil Engineering Quantities*

The tendered rates, prices and sums shall, subject only to the provisions of the Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

- 7 The quantities of work as measured and accepted and certified for payment in accordance with the Conditions of Contract, and not the quantities stated in the Bill of Quantities, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment.

Ordering of materials are not to be based on the Bill of Quantities, but only on information issued for construction purposes.

- 8 For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

Unit	:	The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of work at which the Tenderer tenders to do the work
Amount	:	The quantity of an item multiplied by the tendered rate of the (same) item
Sum	:	An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units

- 9 The units of measurement indicated in the Bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m ²	=	square metre
m ² -pass	=	square metre-pass
ha	=	hectare
m ³	=	cubic metre
m ³ -km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilonewton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	meganewton
MN-m	=	meganewton-metre
PC Sum	=	prime cost sum
Prov Sum	=	provisional sum

SEKHUKHUNE DISTRICT MUNICIPALITY

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C2.2 BILL OF QUANTITIES

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200 A		SECTION A: PRELIMINARY AND GENERAL				
	A1	Fixed-charge items:				
8.3.1	A1.1	Contractual requirements Please refer to Volume 1, page C1.8 C1.2 Contract Data Clause 5.3.1.3 which shall apply				
		5.3.1.3(a) re OHS Plan	Sum			
		5.3.1.3(b) re OHS Mandatory	Sum			
		5.3.1.3(c) re COIDA	Sum			
		5.3.1.3(d) re program	Sum			
		5.3.1.3(e) re Performance Guarantee	Sum			
		5.3.1.3(f) re Insurance	Sum			
		5.3.1.3(g) re local Dept. Labour	Sum			
		5.3.1.3(h) re Construction Manager	Sum			
		5.3.1.3(i) re OHS Officer	Sum			
		5.3.1.3(j) re subcontractor	Sum			
8.3.2		Establish facilities on the Site				
8.3.2.1	A1.2	Facilities for the Employer's Agent				
		(a) Furnished office (x1)	Sum			
		(b) 1x Raingauge	Sum			
		(c) 2x Namebords	Sum			
		(d) 2x shaded parkings	Sum			
		(e) Survey assistance and materials (as-built survey)	Prov.			35,000.00

		CARRIED FORWARD				
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MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
8.3.2.2	A1.3	Facilities for the Contractor	Sum			
		(a) Offices and storage sheds	Sum			
		(b) Workshops	Sum			
		(c) Living accommodation	Sum			
		(d) Ablution and latrine facilities	Sum			
		(e) Tools and equipment	Sum			
		(f) Water supplies and dealing with water	Sum			
		(g) Electric power	Sum			
		(i) Communications	Sum			
		(j) Access	Sum			
		(k) Fencing	Sum			
		(l) Safety and security	Sum			
8.3.3	A1.4	Other fixed-charge obligations	Sum			
8.3.4	A1.5	Removal of Site Establishment	Sum			
8.4	A2	Scheduled Time-Related Items:				
8.4.1	A2.1	(a) Contractual requirements	Sum			
8.4.2		(b) Operation and maintenance of facilities on site	Sum			
8.4.2.1	A2.2	Facilities for Employer's Agent				
		(a) Furnished office (x1)	Sum			
		(b) 1x Raingauge	Sum			

		CARRIED FORWARD				
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MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
8.4.2.2	A2.3	(c) 2x Namebords	Sum			
		(d) 2x shaded parkings	Sum			
		Facilities for Contractor				
		(a) Offices and storage sheds	Sum			
		(b) Workshops	Sum			
		(c) Living accommodation	Sum			
		(d) Ablution and latrine facilities	Sum			
		(e) Tools and equipment	Sum			
		(f) Water supplies and dealing with water	Sum			
		(g) Electric power				
		(i) Communications	Sum			
		(j) Access	Sum			
		(k) Fencing	Sum			
		(l) Safety and security	Sum			
8.4.3	A2.4	Supervision for duration of construction	Sum			
8.4.4	A2.6	Company and head office overhead costs for the duration of the contract	Sum			
8.4.5	A2.7	Other time-related obligations	Sum			
	A2.8	Full time (for 10 months) quality control official plus transport, accommodation, PPE, etc. (Not included in A2.4) To be approved and managed by TCE	Prov.			800,000.00
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
8.5	A3	Provisional sums				
	A3.1	Third party inspectorates at factory level, OHS, EIA, Social consultants	Prov.			1,200,000.00
	A3.1.1	Contractor's overheads, charges and profit	%	1,200,000		
8.8.4	A3.2	Existing services	Prov.			15,000.00
See Spec. Vol.1	A3.3	Environmental Management	Sum			
	A3.4	CLO and PSC payment	Prov.			150,000.00
	A3.4.1	Contractor's overheads, charges and profit	%	150,000.00		
	A3.5	Cost relating to existing structures	Prov.			30,000.00
	A3.6	Accredited Training	Prov.			100,000.00
	A3.6.1	Contractor's overheads, charges and profit	%	100,000.00		
	A3.7	Unscheduled items	Prov.			75,000.00
8.7	A5	Daywork (as ordered and applicable to all provisional items in contract)	Prov.			200,000.00
	A5.1	Provide the following labour cost to company rates				
	A5.1.1	Skilled (artisans)	h			rate only
	A5.1.2	Semi-skilled	h			rate only
	A5.1.3	Unskilled	h			rate only

		CARRIED FORWARD				
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MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
	A5.2 Materials	Payment will be the purchase cost plus 15 % profit mark-up plus 15% overheads mark-up transport to be agreed, if applicable				
	A5.3 Plant hired by the Contractor	Payment will be the market-related hire cost plus 15 % profit mark-up plus 15% overheads mark-up transport to be agreed, if applicable				
	A5.4 Contractor's own plant	Provide the following cost to company (wet) rates transport to be agreed, if applicable				
		2x2 TLB	h			rate only
		2x4 TLB	h			rate only
		20t- plus excavator	h			rate only
		Water truck: 10-14 kl	h			rate only
		Grader:	h			rate only
		LDV	h			rate only
		Flatbed trucks: state type:	h			rate only
		10 cubic metre tipper truck	h			rate only
		Trench compactors				
		Whacker	h			rate only
		600 Bomag	h			rate only

		TOTAL SECTION A: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		<p>SECTION B: OCCUPATIONAL HEALTH AND SAFETY</p> <p>Refer to Specification</p> <p>Compliance with the OHS Act and its Regulations including the following for the duration of the contract. Refer to the Specifications and the Construction Regulations 2014</p>				
	B1	<p>Procurement of the OSH Act and the Construction Regulations and the in depth study of such by the Contractor and the Construction Manager for the contractor on this project prior to commencement</p>	Sum			
	B2	<p>Health and Safety Plan</p> <p>The Contractor shall provide and demonstrate to the Client, for his approval, a suitable and sufficiently documented Health and Safety Plan. The Plan shall include the Health and Safety Plans of all subcontractors for which the Contractor shall take responsibility in terms of the contract.</p> <p>The Health and Safety Plan shall contain and address the following:</p> <p>The Contractor, and the Contractor on behalf of his Subcontractor, shall</p> <p>ensure that he is fully conversant with the Specification and all relevant health and safety legislation.</p> <p>Provide proof of his registration and good standing with the Compensation Fund prior to commencement with the work.</p> <p>Take full notice of the conditions set out in the Contract Specifications concerning prevention of the Contractor to commence or continue the work.</p>	Sum			
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
		<p>Appoint or designate responsible and competent people in specific areas of construction work as required by the Act and Construction Regulations. <u>This will include a full time health and safety officer. (not rep.)</u></p> <p>The contractor shall, prior to commencement of the works, submit all information required by the client's agent regarding the contractor's proposed full time health and safety officer for approval of the officer.</p> <p>Institute and maintain an adequate reporting system between the appointed personnel and the Principal Contractor.</p> <p>Establish and function Health and Safety Committee as specified.</p> <p>Establish and function Health and Safety Representatives from the workforce as specified.</p> <p>Institute and maintain an adequate reporting, communication and liaison system amongst all parties.</p> <p>Open and keep a Health and Safety File on site at all times which must include all documentation required in terms of The Act, Regulations and the Specification for the duration of the contract.</p> <p>Develop Method Statements and Standard Working Procedures and detail all key activities to be performed.</p> <p>Identify hazards for all key activities.</p> <p>Address the identified hazards.</p> <p>Do Risk Assessments and determine any risk associated with any hazard.</p> <p>(Risk: The probability that injury or damage will occur)</p>				
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
		<p>Establish safe work procedures to mitigate, reduce or control the identified hazards and identify steps needed to be taken to remove, to reduce or control such hazards. Take all necessary and adequate precautions to eliminate or prevent any condition which contribute or may contribute to risk of injury to persons or damage to property. Inspect all work, materials and equipment continuously to discover, determine, eliminate or prevent such conditions.</p> <p>Store all materials and equipment and dispose of all waste material according to the specification.</p> <p>Do pre-work medical and medical surveillance of employees.</p> <p>Do initial and follow-up health evaluations, as specified, of employees.</p> <p>Facilitate and attend audits and inspections by the client and/or its agent on its behalf.</p> <p>Report all incidents as specified.</p> <p>Review hazard identification when changes are made to designs, plans and construction methods and processes.</p> <p>Develop site-specific OH&S rules.</p> <p>Make security and emergency contingency arrangements as specified.</p> <p>Conduct internal training, initially and for the duration of the contract.</p> <p>Do accident and incident investigation and management as specified.</p> <p>Refer to Item 11 of the Specification which serves as an example of project/site-specific requirements.</p> <p>Comply with administrative and legal requirements as specified.</p> <p>Keep records and registers, as specified, on site for periodic inspection.</p>	<p>Sum</p> <p>Sum</p>			
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
	B3	<p>Comply with the following responsibilities, as specified (Item 14 of the Specification):</p> <p>First Aid.</p> <p>Fall Protection.</p> <p>Structures</p> <p>Formwork and Support Work.</p> <p>Excavations</p> <p>Demolition Work</p> <p>Electrical Installations</p> <p>Access Scaffolding</p> <p>Batch plants</p> <p>Cranes and Lifting Equipment</p> <p>Construction Vehicles and Mobile Plant</p> <p>Use and Storage of Flammables</p> <p>Working on or near water</p> <p>Housekeeping</p>	Sum			
	B4	Stacking and Storage	Sum			
	B5	Fire Prevention and Protection	Sum			
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
	B6	Eating, Changing, Washing and Toilet Facilities	Sum			
	B7	Personal and other Protective Equipment	Sum			
	B8	Portable Electrical Tools and Equipment	Sum			
	B9	Public Health and Safety	Sum			
	B10	Hazardous Chemical Substances	Sum			
	B11	Electrical and Mechanical Lock- out	Sum			
	B12	Full time motorised, three shifts per day, two persons per shift high level security by an approved local bona fide security firm for the duration of the contract. Need not be armed. Note: this is not for the contractor's camp.	Sum			
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
	B13	Barricading and fencing Despite the required inclusion thereof in the items above, provide here all charges for signage and barricading of the construction site (not the camp), excavations and other, according to own program and work plan. Danger tape is not acceptable. Provide a 6 strand migrating cattle fence (by local subcontractor)				
	B45.1	Making good of existing fence next to tar road from Praktiseer/Penge road crossing to Steelpoort bridge (2km)	Prov.			150,000.00
	B45.2	Cattle fence 20m opposite B45.1, 1,2m high Assume migrating fence in 4 sections of approximately 700m per section (confirm on site) Fence detail to Dwg Ph4G1.1/19 All poles SABS teated timber				
		(a) Item 13: 100mm straining posts complete per section	No.	20		
		(b) Item 12: 100mm straining poles complete per section	No.	40		
		(c) Item 11: 50mm dropper complete per section	No.	400		
		(d) Item 7: barbed wire complete per section	m	5,000		
		(e) Item 6: 3m wide gate complete per section	No.	2		
		(f) Dismantle (a) to (e) and re-erect twice	Sum			
	B46	Safety signs on fence at entrance(s), reduce speed, vehicles turning, etc. according to normal practice erected both sides of road approaching entrance gates (x2)	Sum			
	B47	Total compliance with existing Covid-19 Regulations	Sum			
		TOTAL SECTION B: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200 C		SECTION D: PIPELINES: TRENCH EXCAVATION AND EARTHWORKS:				
SANS 1200C		Site Clearance				
8.2.1	D1	Clear and grub (including all vegetation, trees and tree stumps to a girth up to 1m) not exceeding 15m wide (width to be agreed)	ha	5		
SANS 1200D						
8.3.1.2	D2	Remove topsoil to 150mm deep to stockpiles within a freehaul distance of 0,5km	m3	7500		
8.3.10	D3	Topsoiling with Item D2 material	m3	7500		
	D4	Excavation Machine Excavation Excavation to varying width and depth Over-excavation shall not be measured Minimum cover above pipe = 1m)				
	D4.1	Setting out and staking by Contractor's surveyor	Sum			
1200DB						
8.3.2	D4.2	Excavate in all materials for trenches, backfill, compact to 90% Mod. AASHTO and dispose surplus material as ordered				
	D4.2.1	Average 1,5m deep, 1,2m wide:				
		(a) 700 deep deposited along trench 2m min. from trench edge for use as bedding (2m restriction to allow for pipe stringing)	m3	2100		
		(b) 700 to 1500 deep deposited along trench 2m min. from other trench edge for use as backfill (2m restriction to allow for pipe stringing)	m3	2400		
	D4.2.2	Dispose surplus excavated material as ordered within a freehaul distance of 3km	m3	500		
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
SANS 1200B	D4.3	Extra-over Item D4.2 for				
		(a) intermediate material	m3	450		
		(b) hard rock material	m3	15		
		(c) Boulder excavation, Class A	m3	10		
		(d) Boulder excavation, Class B	m3	10		
	D4.4	excavate and backfill 1200x750x500 deep forming "foxholes" in trench floor at pipe joints	No.	250		
		TOTAL SECTION D: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200LB 8.2.		SECTION E: BEDDING OF PIPES:				
		Note: the volume of the pipe shall not be subtracted				
	E1	Provision of Class C bedding to 90% of Mod. AASHTO. from stockpiled material				
	E1.1	150mm x 1200 wide (floor) bedding of compacted selected granular material from stockpiled material	m3	600		
	E1.1	150mm x 1200 wide (floor) bedding of compacted selected granular material by working and compacting excavated floor	m3	100		
	E1.2	200mm x 1200 wide bedding of compacted selected granular material from stockpiled material to top of pipe	m3	750		
	E1.3	300mm x 1200 wide bedding of compacted selected granular material above pipe from stockpiled material	m3	1400		
	E2	Supply of class C bedding by importation from other excavations, compacted to 90% of Mod. A.A.S.H.T.O. (freehaul = 1,5km)				
	E2.1	150mm bedding of compacted selected granular material to unsuitable trench floor	m3	25		
	E2.2	Selected fill to top pipe.	m3	50		
	E2.3	Selected fill blanket to 300mm above the pipe.	m3	100		
	E3	Supply of Class C bedding from commercial source				
	E3.1	Class C bedding to floor, top of pipe and 300 above pipe	m3	0		
	E3.2	Overhaul	m3.km	0		
	E3.3	Cost of material	Prov.	0		
	E3.3.1	Contractor's overheads, charges and profit on Item E3.3	%	0		
		TOTAL SECTION E: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200L		<p>SECTION F: MEDIUM PRESSURE PIPELINE:</p> <p>Pipework to bridge crossing excluded in Bridge Crossing Section</p> <p>Summary: Main pipe: 200nb, flanged pn40, steel pipeline 3LPE coated epoxy lined on Class C bedding. 200nb and 150nb pn40 steel pipe specials: epoxy coated and lined and Densotherm HD wrapped where buried. All buried flanged joints shall be protected with the Denso System. Installation of the Cathodic Protection and AC Mitigation system shall be installed concurrent with the pipe laying.</p>				
8.2.1	F1-F2	<p>Procure, transport, offload, store, insure, handle, lay, fit, bed, build in, construct, repair/make good, cutting, jointing, pressure testing, disinfection and commissioning .</p> <p>Note: pressure testing shall be at 60Bar</p>				
	F1	Flanged steel pipes				
	F1.1	<p>200nb steel pipes in Item F1.1.1 and 200nb steel pipe bends in Item F1.1.2</p> <p>Material</p> <p>200nb to SANS 719, X42 steel</p> <p>Coating and lining of items in Item F1.1.1 (pipes): externally coated 3LPE, 2,6mm thick and Internally lined with Carboguard 550 SFE, 300µm thick</p> <p>Coating and lining of items in Item F1.1.2 (bends) externally coated and internally lined with Carboguard 550 SFE, 300µm thick, plus wrapping on site with Densotherm HD, strictly according to the manufacturer's specifications.</p> <p>Flanges to Items F1.1.1, F1.1.2 All flanges to SANS 1123 T4000/3, slip on, flat faced, N11 gramophone finish to flange face, welded to pipe to BS806 Type 6, coated Carboguard 550 SFE, 300µm thick, except gramophone finished area lightly coated red oxide Preference to locally manufactured flanges. Optional</p>				
		CARRIED FORWARD				

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<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	F1.1.1	<p>NOTE: where "Unit" is "No." it is per pipe and not per metre</p> <p>200nb pipes, flanged PN40, wall thickness = 6mm</p> <p>(a) 12,192m long on Class C bedding</p> <p>(b) 6,1m long on Class C bedding</p> <p>(d) 3m long on Class C bedding</p> <p>(e) 2m long on Class C bedding</p> <p>(f) 1m long on Class C bedding</p> <p>(g) 0,5m long on Class C bedding</p>	No.	224		
	F1.1.2	<p>200nb long radius bends (M.O.S), flanged PN40, wall thickness = 10mm</p> <p>(a) 90deg.</p> <p>(b) 45deg.</p> <p>(c) 22deg.</p> <p>(d) 11deg.</p> <p>(e) 6deg.</p>	No.	4		
	F1.1.3	<p>All flanged ends of pipes and bends in Items F1.1.1 and F1.1.2</p> <p>shall be covered both ends with 4mm thick plywood bolted (x4M6) to the flange. Use same between bolt washer and back of flange</p> <p>Where no flange, tape cover strongly to pipe end</p> <p>Covers to remain fixed to the pipes, specials and fittings until to be fitted in final position.</p>	Sum	10		
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	F2	Flanged 200nb and 150nb specials and fittings detailed in Drawing MTBWS PH4G1.1/9-12 Material 200nb to SANS 719, X42, w.t.= 6mm 150nb, 165,1 OD, SANS 62, heavy, w.t.= 4.73mm Coating and lining of items in Item F2 externally coated and internally lined with Carboguard 550 SFE, 300µm thick, plus wrapping on site, where buried, with Densotherm HD, strictly according to the manufacturer's specifications. Flanges to Items F2 All flanges to SANS 1123 T4000/3, slip on, flat faced, N11 gramophone finish to flange face, welded to pipe to BS806 Type 6, coated Carboguard 550 SFE, 300µm thick, except gramophone finished area lightly coated red oxide Preference to locally manufactured flanges.				
	F2-Item					
		General				
	1		No.	1		
	2		No.	1		
	3		Prov.	3		60,000.00
		Scours				
	4		No.	4		
	5		No.	6		
	6		No.	4		
	7		No.	2		
	8		No.	2		

	9		No.	2		
		CARRIED FORWARD				

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<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	10		No.	2		
	11		No.	4		
	12		No.	4		
	13		No.	4		
	14		No.	4		
		Separate air valves				
	15		No.	20		
	16		No.	40		
	17		No.	20		
	18		No.	10		
	19		No.	10		
	20		No.	10		
	21		No.	10		
	22		No.	4		
		Air valve/butterfly valve combination				
	23		No.	4		
	24		No.	6		
	25		No.	2		
	26		No.	2		
	27		No.	2		
	28		No.	2		
	29		No.	2		
	30		No.	2		

	31		No.	2		
		CARRIED FORWARD				

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<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	F3	Joints bolt sets Grade 8.8 105µm hot dipped galvanized bolt sets c/w 60 Bar rated gaskets. Bolts lubricated and torqued with hydraulic torque wrench. No flogging shall be allowed. Confirm torque values. Note: bolts forming part of flange adapters shall be torqued using hydraulic torque wrench. Confirm torque values. Joints to be bolted: (a) 300nb, pn40 flanged joint (b) 200nb, pn40 flanged joint (c) 150nb, pn40 flanged joint (d) 100nb, pn40 flanged joint (e) 200nb, pn40 flange adapter joint to restraining flanges (f) 200nb, pn40 flange adapter joint to PN40 flanges	No.	1 300 16 14 54 54		
	F4	Denso system to 150nb and 200nb buried flanged joints strictly according to the manufacturer's specification	No.	360		
	F5	Densotherm HD wrapping to buried epoxy coated pipework. Assume all = 200nb strictly according to the manufacturer's specification	m pipe	80		
	F6	Protection of pipework and fittings in and around manholes during construction by means of suitable temporary wrapping	Sum			
	F7	Testing of all pipework and fittings to 60Bar Length of testing and disinfection shall be restricted to sections between consecutive air valves and shall be approved before pipework of the following section commences. A method statement shall be required for approval. Water will not be available from any municipal system. The content of water tankers shall be disinfected overnight before used for testing. Obtain type and quantity of disinfectant from supplier.	Sum			

		CARRIED FORWARD				
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<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	F8	Cross-bonding between 200nb pn40 flanged joints of 3LPE coated pipes after successful testing. Connect adjacent flange edges (each 32 wide) by means of welding 2x cleaned 70mm long x 20mm wide x 3mm thick mild steel flat bars onto the two flange edges with 4 x 3mm fillet welds, 30mm long, per flat bar. Remove the epoxy on flanges where to be welded. Brush-paint repair all areas, including flat bars, with epoxy to match. Protect the installed gasget from weld spatter by suitable means. Note: Installation of sacrificial anodes etc. for cathodic protection and AC mitigation, joint sealing and wrapping before earthworks can continue	No. joints	300		
	F9	Sandbag or other approved supports to pipes, pipe specials and fittings according to suppliers' specification for the duration of the contract.	Sum			
	F10	Pipeline markers	No.	12		
	F11	Hydraulic or electric torque wrench c/w accessories and tools (a must)	Sum			
	F12	Hot dipped galvanized pipe supports	No.	18		
	F13	Rough formwork to anchor and thrust blocks	m ²	130		
	F14	Class 15/19 concrete to anchors and thrust blocks	m ³	40		
	F15	Unscheduled items	Prov.			100,000.00
		TOTAL SECTION F: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200		SECTION G: MANHOLES 150NB AND 200NB PN40 STEEL PIPES:				
		Manholes of brick wall and precast concrete rings				
		1829 ID: x 14				
SANS 1200D		Restricted excavation				
8.3.3	G1	(a) Excavate for restricted foundations for manholes and anchors in all materials including battering where deeper than 1,5m and allowing for 1m workspace only	m ³	900		
		(b) Use material from Item G1(a) for backfill to manholes in 150mm layers to 93% of Mod. A.A.S.H.T.O.	m ³	300		
		(c) Dispose <u>as ordered</u> of remaining material after Item G1(b) within a freehaul distance of 1km	m ³	600		
		Extra-over Item G1(a) for				
		(d) intermediate excavation	m ³	200		
		(e) hard rock excavation	m ³	50		
		(f) boulder excavation, Class A	m ³	10		
		(g) boulder excavation, Class B	m ³	10		
		Extra-over Item G1(a) for				
		(h) neat excavation by hand in pickable material for anchor and thrust blocks before pipe is placed.	m ³	125		
		Dimensions per excavation: 1500x1000x2000 deep and battering of top 500mm.				
SANS 1200G						
8.2	G2	Scheduled Formwork Items				
8.2.1	G2.1	Smooth: vertical to sides of floor slabs, 200 high	m ²	35		
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
	G2.1	Rough: vertical to sides of anchors/ thrust blocks 1000 high	m ²	150		
	G2.2	Unformed: wood-floated to top of floor slabs and anchors	m ²	175		
8.2.6	G3	Box Out Holes/ Form Voids				
		(a) 75dia holes through 250 thick reinforced concrete floor and blinding layer of manhole	No.	28		
8.3	G4	Scheduled Reinforcement Items				
8.3.1		(a) Steel mesh Ref. no. 617 (400 overlaps)	t	2		
8.4	G5	Scheduled Concrete Items				
8.4.1		(a) Class 15/19 concrete in 50 thick blinding layer including trimming, levelling and hand compaction of subgrade	m ²	140		
8.4.1		(a) Class 25/19 concrete in 200 thick floors	m ³	30		
8.4.1		(b) Class 25/19 concrete in anchors/thrust blocks	m ³	50		
	G6	Brickwork				
		Curved brick walls, 330 wide by 1,5 high, cement (concrete) bricks, 28 days cured, 15MPa crushing strength. Stretcher bond with alternative rows cross bonded. smoothed joints inside and outside, bagged inside. 1:3 cement: sand mortar. Brickforce every second layer. dpc on floor. 30x450x450 openings in walls for pipe passage.				
	G6.1	Brickwork walls complete, to				
		(a) manholes with 1829 ID precast concrete rings	No.	14		
	G7	Precast concrete manhole rings 500 high c/w cast in steps (Rocla type)				
		1829 ID: 2 per manhole (provisional)	No.	30		
		CARRIED FORWARD				

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		BROUGHT FORWARD				
	G8	Sealing of ring joints with Denso Sealostrip	m	175		
	G9	Sealing of 450x450 wall openings 1:5 cement mortar	No.	30		
	G10	Precast concrete cover slab complete with heavy duty cast in frame and lid (on side), lifting hooks, locking device, key and two 75dia drilled holes				
		(a) 1829 ID precast rings (provisional)	No.	14		
	G11	Alluminium ladders 1000 high (provisional) installed loosely in manhole (may be cut from longer sections)	No.	14		
	G11	Unscheduled items (provisional)				50,000.00
		TOTAL SECTION G: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200 DK		SECTION J: CROSSINGS AND GABIONS:				
		Stream crossings and protection				
		150nb and 200nb pipes				
1200 DK		Gabions and pitching:				
8.2.1(a)	J1	Surface preparation of the foundation and surface for bedding of gabions/mattresses	m2	100		
		Gabion baskets: Provide place and fill				
	J2	4 m x 1 m x 1 m	m3	12		
	J3	3 m x 1 m x 1 m	m3	12		
	J4	2 m x 1 m x 1 m	m3	12		
8.2.2		Gabion mattresses				
	J5	6 m x 1 m x 0,3 m	m3	12		
	J6	3 m x 1 m x 0,3 m	m3	12		
SANS 1200 DK						
8.2.2	J7	Formwork (rough) as ordered, 1.5m high, to sides of concrete encasing and at construction joints	m2	60		
8.3.1	J8	Class 15/19 concrete in pipe encasing	m3	24		
		TOTAL SECTION J: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		SECTION K: Cathodic Protection and AC Mitigation To be done by existing subcontractor appointed for all phases of MTBWS Pase 4G. Amounts are provisional Tenderer to provide mark-up at end of Section Prices are provisional				
	1	Preliminary & General				
	1.1	Workshop drawings and other documentation	Sum	1,700		1,700.00
	1.2	Preliminary & General	Sum	100,000		100,000.00
	2	Supply & Installation of Monitoring Bunker At ch 0 and both sides of bridge				
	2.1	Supply and install secure concrete bunker, 1,2m surround and foundation (incl sleeves and gradient control mat)	No	3	22,000.00	66,000.00
	2.2	Supply and install suitably sized Link Panel inside bunker	No	3	5,000.00	15,000.00
	2.3	Supply and install 1cm ² AC coupon with 10 ohm 50W resistor	No	3	2,000.00	6,000.00
	2.4	Supply and install 10cm ² DC monitor coupon with cables	No	3	3,000.00	9,000.00
	2.5	Supply and install Stationary Reference Electrode	No	3	3,500.00	10,500.00
	2.6	Supply and install VLD (including 16mm ² cabling and terminations to link panel and gradient control mat)	No	3	4,000.00	12,000.00
	2.7	Supply and Install 16mm ² , black, single core, double insulated, Pipe Monitor cable (incl cable labels, cable ties, thermit welds, coating make good) and connect to link panel inside bunker	No	3	3,000.00	9,000.00
	3	Supply & Installation of continuity bonding				
	3.1	Supply and install 2x16mm ² , continuity bonds across buried VJ couplings and flanges (including coating make good and thermit welds) (alternative at flanges = 2x 25x3 flat bars welded to flanges)	No	0		
	3.2	Supply and install 2x16mm ² , continuity bonds around inside of chambers (including 15mm galvanized conduit, coating make good and thermit welds)	No	14	3,500.00	49,000.00

		CARRIED FORWARD				278,200.00
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Number	Item	Bill description	Unit	Bill Qty	Rate	Amount
		BROUGHT FORWARD				278,200.00
	4	Supply & Installation of Insulation Flanges				
	4.1	Supply and install DN200 PN40 Isolating flange kit with surge protection at ch0 and both ends of bridge.	No	0		
	4.2	Supply and install PN40 Isolating flange kit with surge protection	No	0		
	4.3	Supply and install DN300 PN40 Isolating flange kit with surge protection	No	0		
	5	Permanent SACP Supply & Installation				
	5.1	Supply 2x1m length of 1,78kg/m Zinc ribbon anodes, pre packaged in 150mm diameter bag filled with 50:50 gypsum/bentonite, with 2m, 10mm ² DI anode tail.	No	0		
	5.2	Install Anode in Item 5.1 parallel to pipe on trench botom against sidewall. Prepare flange surface, thermit weld anode tail to each flange (2 off thermit welds - one end weld and one through weld). Excavation, backfill and flange encapsulation and wrapping by others. Anode at 12,192m spacing	No	0		
	5.3	Supply 1m length of 1,78kg/m Zinc ribbon anode, pre packaged in 150mm diameter bag filled with 50:50 gypsum/bentonite, with 2m, 10mm ² DI anode tail. At 24m spacing	No	0		
	5.4	Install Anode parallel to pipe on trench botom against sidewall. Prepare flange surface, thermit weld anode tail to each flange (2 off thermit welds - one end weld and one through weld). Excavation, backfill and flange encapsulation and wrapping by others. Anode at 24m spacing.	No	0		
	5.5	Supply and install 100m length of 0,893kg/m Zinc ribbon complete as per Isinyithi specification to eastern end of bridge.	m	100	300.00	30,000.00
	5.6	Supply and install equipotential plane in precast concrete manholes complete as per Isinyithi specification.	No.	14	15,000.00	210,000.00
	5.7	Supply 1m length of 3.57kg/m Zinc ribbon anodes, pre packaged in 150mm diameter bag filled with 50:50 gypsum/bentonite, with 2m, 10mm ² DI anode tail.	No	0		
		CARRIED FORWARD				518,200.00

Number	Item	Bill description	Unit	Bill Qty	Rate	Amount
		BROUGHT FORWARD				518,200.00
	5.8	Excavate to top of flange, remove encapsulation/wrapping,prepare surface, thermit weld anode tail to each flange (2 off thermit welds - one end weld and one through weld) repair encapsulation, place anode at an offset of 1m to the pipe and backfill & Reinstate	No	0		
	5.9	Supply and install Zink mat, complete as per Isinyithi specification at both ends of bridge.	No.	3	40,000.00	120,000.00
	5.10	Supply and install equipotential plane in reinforced concrete manholes, complete as per Isinyithi specification. Incl. exposing rebar and making good	No.	0		
	5.11	Supply and install 2x2,5m length of 1,78kg/m Zinc ribbon anode assembly, each pre packaged in 150mm diameter bag filled with 50:50 gypsum/bentonite, with 2m, 10mm ² DI anode tail. at 24m spacing	No.	120	5,000.00	60,000.00
	5.12	Excavate to top of flange, remove encapsulation/wrapping,prepare surface, thermit weld anode tail to each flange (2 off thermit welds - one end weld and one through weld) repair encapsulation, place anode at an offset of 1m to the pipe and backfill & Reinstate. Spacing between assemblies at 24m	No.	0		
	5.13	Install Item 5.11: at 4G1.2: as Item 5.12 but no excavatiion, encapsulation, backfill. Spacing between assemblies at 24m	No.	0		
	6	Eskom charges and commissioning at remote CP supplies	Prov.			800,000.00
	7	Unscheduled items	Prov.			50,000.00
	8	Subtotal				1,548,200.00
	9	Tenderer's overheads, charges and profit on Item 8	%			
		TOTAL SECTION K: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS 1200L		<p>SECTION L: BRIDGE CROSSING:</p> <p>200nb, 6mm wall thickness, flanged pn40 both ends, mild steel pipes to side of concrete bridge over the Steelpoort River complete as per drawings MTBWS Ph4G1.1/13-17</p>				
8.2.1		<p>Procure, offload, transport, store, insure, handle, lay, fit, bed, build in, construct the following including all repairs, making good, cutting, jointing, pressure testing, disinfection and commissioning .</p> <p>Note: pressure testing shall be 60bar for all pipes</p>				
	L1	<p>Flanged mild steel pipes</p> <p>200nb, to SANS 719, X42 material, 6mm w.t.,</p> <p>Coating and lining of Items L1.1 (to bridge)</p> <p>Externally coated <u>and</u> internally lined with Carboguard 550 SFE, 300µm thick,</p> <p><u>plus</u> hand painted externally, 100µm thick, with Carbothane 134ZA, after installation. All coating and lining strictly according to manufacturer's specification.</p> <p>Coating and lining of Items L1.2 (buried)</p> <p>externally coated and internally lined with Carboguard 550 SFE, 300µm thick plus wrapping with Densotherm HD and Denso system protection to buried flange joints, strictly to manufacturer's specification</p> <p>Flanges to Items L1.1 and L1.2</p> <p>flanged both ends to SANS 1123 T4000/3, slip on, flat faced, N11 gramophone finish to flange face, welded to pipe to BS806 Type 6, coated Carboguard 550 SFE, 300µm thick, except gramophone finished area lightly coated red oxide Preference to locally manufactured flanges. Optional</p>				
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
		<p>(Tenderers and their Suppliers must consult with the Client's Third Party Inspectorate regarding all Quality Control requirements prior to tendering. Contact the Employer's Agent in this regard)</p> <p>Confirm all quantities and dimensions on site before order</p> <p>A method statement for the work must be provided for approval by the employer's agent, bearing in mind that</p> <p>(a) no work on the bridge shall be done after hours</p> <p>(b) all segments (x6) of the existing handrail, if it is envisaged by the contractor to dismantled them, must be totally reinstalled by 17h00 every day at which time the public shall have a free and safe passage of the complete bridge without any obstruction or hindrance at all.</p> <p>(c) only the one lane closest to the pipe shall be occupied during the day for construction activity</p> <p>(d) accommodation of traffic shall be strictly according to the provided drawings and Health and Safety Regulations</p> <p>(e) the contractor shall clearly indicate this activity on his program which is to be approved by the employer's agent</p> <p>L1.1 200nb, flanged pn40, steel pipework to bridge:</p> <p>Note: pipe end covers as specified in Section F shall apply</p>				
	L1.1.1	6000 long (tolerance = 5mm)	No	14		
	L1.1.2	3000 long	No	2		
	L1.1.3	2000 long	No	2		
	L1.1.4	1000 long	No	2		
		CARRIED FORWARD				

Number	Item	Bill description	Unit	Bill Qty	Rate	Amount
		Brought forward				
	L1.1.5	500 long	No	2		
	L1.1.6	Flanged 200nb long radius bend (to M.O.S.) wall thickness = 10mm	No	2		
	L1.1.7	Flanged 200x150x200 unequal tee (M.O.S. with A = 300mm) w.t = 8mm	No	2		
	L1.1.8	Flanged 150nb Ozkan/VAG butterfly valve, wheeled,	No	2		
	L1.1.9					
	L1.1.10	Flanged reducer 150-100, o/a = 300, w.t.= 6mm	No	2		
	L1.1.11	Flanged 100nb Pn40 Vent-o-Mat RBX triple orifice air and vacuum release air valve	No.	2		
	L1.1.12	Purpose made steel cages to air valves	Prov.	2		6,000.00
	L1.2	200nb flanged pn40, steel pipes and bends. SFE coated and lined. Denso wrapped. Denso system to flange joints. On Class C bedding				
	L1.2.1	1000 long	No	4		
	L1.2.2	2000 long	No	4		
	L1.2.3	3000 long	No	4		
		bends to M.O.S., w.t.=8mm				
	L1.2.4	Long radius 90deg. bend	No	2		
	L1.2.5	Long radius 45deg. bend	No	2		
	L1.2.6	Long radius 22deg. bend	No	2		
	L1.2.7	Long radius 11deg. bend	No	4		
	L1.2.8	Long radius 6deg. bend	No	4		
	L1.3	Grade 8.8 hot dipped galvanized bolts, nuts, washers and 60Bar gaskets No flogging allowed. Torqued to provided N.m with hydraulic or electric torque wrench				
	L1.3.1	Bolt sets Pn40 200nb flanges	No	60		
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought forward				
	L1.3.2	Bolt sets Pn40 150nb flanges	No	4		
	L1.3.2	Bolt sets Pn40 100nb flanges	No	2		
	L1.4	Denso applications				
	L1.4.1	Denso system wrapping to 200nb buried flanged joints strictly according to the manufacturer's specifications	No.	15		
	L1.4.2	Densotherm HD wrapping to buried epoxy coated 200nb pipework.	m	20		
	L1.5	Painting by hand				
	L1.5.1	Paint all exposed epoxy coated pipework surfaces after erection with Carbothane 134ZA. 100µm thick to manufacturer's specification.	m ²	75		
	L1.6	Pipe bracket supports to bridge				
	L1.6.1	Hot dipped galvanized pipe supports complete as per drawings MTBWS Ph4G1.1/13-17	No.	50		
	L1.7	Concrete thrust blocks				
	L1.7.1	Class 15/19 concrete in thrust blocks	m ³	15		
	L1.7.2	Rough formwork	m ²	50		
	L1.8	Health and Safety				
	L1.8.1	Compliance with the Health and Safety Regulations. Submit Method Statement to be approved.	Sum			
	L1.8.2	Accommodation of traffic for the duration of construction of the crossing. STOP/GO system shall apply. Submit Method Statement to be approved. Refer to drawing in Volume 2	Sum			
	L1.9	Unscheduled items	Prov.			50,000.00
		TOTAL SECTION L: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SABS 1200DK		SECTION M: PITCHING				
8.2.5	M1	Grouted pitching to 1:1 slope using 200mm nominal stone	m²	80		
		TOTAL SECTION M: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
SANS12 00D		SECTION N: FINISHING OFF				
5.2.4	N1	Finishing off of all working areas and components	Sum	1		
	N2	Additional rehabilitation if required, on Daywork basis	Prov.			15,000.00
		TOTAL SECTION N: CARRIED TO SUMMARY				

MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		SECTION P: MOOIHOEK WTW: CIVIL WORK Refer to Scope of Work in Volume 1 Dwgs PH4G1.1/25-29 For simplicity sake this Section is considered to be a "contract" on its own, inserted into the main contract covered by all the other Sections. Adaptations and logistical challenges shall be dealt with during the course of the Work Civil Work By main contractor or his approved subcontractor				
	P1	PRELIMINARY AND GENERAL				
8.3.1	P1.1	Fixed-charge items: Include in Section A Item A1.1				
8.3.2	P1.2	Establish facilities on the Site				
8.3.2.1	P1.2.1	Facilities for the Employer's Agent	none			
8.3.2.2	P1.2.2	Facilities for the Contractor	Sum			
8.3.3	P1.3	Other fixed-charge obligations	Sum			
8.3.4	P1.4	Removal of Site Establishment	Sum			
8.4	P1.5	Scheduled Time-Related Items:				
8.4.1	P1.5.1	(a) Contractual requirements	Sum			
8.4.2		(b) Operation and maintenance of facilities on site	Sum			
8.4.2.1	P1.6	Facilities for the Employer's Agent	none			
8.4.2.2	P1.6.1	Facilities for the Contractor	Sum			
8.4.3	P1.7	Supervision for duration of construction	Sum			
8.4.4	P1.8	Company and head office overhead costs for the duration of the contract	Sum			
8.4.5	P1.9	Other time-related obligations	Sum			

		CARRIED FORWARD				
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MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
	P1.10	Unscheduled Items	Prov.			150,000.00
	P1.11	Compliance with OHS Act and Regulations	Sum			
	P1.13	Extra-over Item P1.11 for barricading to excavations	Sum			
	P1.14	Exposing existing services and relaying Dayworks under Item P1.10				
	P1.6	Excavation by hand in pickable material and backfill to pipes laid by mechanical subcontractor Dayworks under Item P1.10				
	P1.7	Setting out	Sum			
	P1.8	Clearing: Dayworks under Item P10				
	P1.9	Total excavation in soft material and spoil all within a radius of 500m Average depth 1.75m Note very restricted area	m ³	1100		
	P1.10	Extra-over Item P1.9 to excavate to 1:1 batter as shown	m ²	200		
	P1.11	Trimming and smooth finishing off of all surfaces to a tolerance of 20mm	m ²	750		
	P1.12	Add moisture and compact all surfaces to 90% of MOD A.A.H.T.O. and final trimming	m ²	750		
		Concrete kerbs and edge beam				
	P1.13	Figure 3 precast concrete kerb, 1m long, to edge of excavation. To include excavation, trimming, compaction, Class 15/19 continuous benching, 20mm wide 1:4 tampered mortar joint inserts, cutting at corners x 4 20mm vertical and horizontal tolerance	m	95		
	P1.14	150x400 wide Class 15/19 concrete edge beam including neat hand excavation, steel trowel finish, unfilled formed joints in line with floor joints	m ³	7		
		CARRIED FORWARD				

MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
		Concrete floor				
	P1.15	0,25mm Gunplaster USB Green or approved similar under floor and edge beam including 400mm overlaps	m ²	650		
	P1.15	150 high smooth formwork to sides of concrete panels	m	275		
	P1.16	Steel Mesh Ref. 617 to bottom of concrete panels. 50mm concrete cover. 400mm overlaps Shall not extend into adjacent panels. cutting and waste to be included in rate	t	4		
	P1.17	Class 30/19 concrete 150 thick in alternate panels 5mm height tolerance Includes laboratory testing	m ³	80		
	P1.18	Steel trowel finish to concrete in alternate panels	m ²	535		
	P1.19	Approved curing agent to concrete surface to suppliers specifications	m ²	535		
		Brickwork				
	P1.20	Facebrick wall 1200 high				
	P1.20.1	400x200 Class 15/19 concrete foundation in steps including excavation and backfilling	m	107		
	P1.20.2	220x1200high facebrick wall in steps and construction joints at 5m Stretcher bond and top layer on edge. raked joints Brickforce every third layer 1:5 cement mortar	m	107		
	P1.20.3	Facebrick staircase complete	No.	1		
	P1.21	Paving bricks on 1:1 slope				
	P1.21.1	Cement coloured 60 thick concrete paving bricks in zig-zag pattern on 38mm thick layer of washed river sand treated with termite poison Same sand over bricks vibrated into joints	m ²	350		
		CARRIED FORWARD				

MOOIHOEK/TUBATSE BULKWATER SUPPLY PHASE 4G1.1

CONTRACT NO. SK8/3/1-36/2022/2023

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		Brought Forward				
	P1.21.2	Edge cutting	m	225		
	P1.21.3	1:3 cement mortar infill	m ³	3		
	P1.22	Limited pipelaying on Class C bedding				
	P1.22.1	mPVC/160 pipe	m	30		
	P1.22.2	160 dia 90deg. uPVC bends	No.	4		
	P1.22.2	160 dia 45deg. uPVC bends	No.	4		
	P1.22.3	Breaking through existing concrete and make good	Prov.			5,000.00
	P23	Plumbing and electrical	Prov.			40,000.00
	P24	Unscheduled Items	Prov.			30,000.00
	P25	Finishing off	Sum			
		TOTAL SECTION P: CARRIED TO SUMMARY				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		SECTION Q: MOOIHOEK WTW: STEEL CLARIFIERS Refer to Scope of Work in Volume 1 Clarifier and appurtenant work by a selected subcontractor to be procured during contract period by the main contractor. A Provisional Amount is provided The Tenderer must add a mark-up for overheads, charges and profit The work is provisionally summarised as follows				
SANS 1200A 8.3	1	Fixed charged items				
8.3.1	1.1	Constructual Requirements				
	1.1.1	Retention Guarantee	Sum	1		
	1.1.2	Insurance	Sum	1		
		Other:(list): Co overheads, design dwgs, site meetings, transport	Sum	1		
8.3.2	2	Establishmentof Facilities in Site				
	2.1	Facilities for Engineer: none required				
8.3.2.2	2.2	Facilities for Contractor				
	2.2.2	All Facilities	Sum	1		
8.3.3	3	Other fixed-charge Obligations	Sum	1		
8.3.4	4	Removal of Site establishment	Sum	1		
8.4	5	All Scheduled Time Related items	Sum	1		
	6	Daywork	Prov			
	7	Payment of CLO	Prov			
	8	Third Party Inspectorate	Prov			
Spec	9	OHS and Covid compliance	Sum			
		Clariflocculator				
	10	Complete basic steel Clariflocculator unit on 6mm conveyor belt and complete with supports to concrete floor by other	No	12		
		CARRIED FORWARD				0.00

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				0.00
	11	Complete pipework in flocculator	No	12		
	12	Complete pipework flocculator to clarifier	No	12		
	13	Complete de-sludge pipework in flocculator and clarifier	No	12		
	14	Complete inclined tube system	No	12		
	15	Complete clearwater weir system	No	12		
	16	Sludge level Indicator system per unit	No	12		
	17	Complete variable speed vertical paddle and motor	No	12		
	18	Pipework and 150 butterfly valves to flocculators from T take-offs	No	12		
	19	Electrical control and supply to vertical paddle motors and desludge	Sum	1		
	20	Walkways complete	Sum	1		
	21	Buoys	No	4		
	22	Signs	prov			
	23	Feed pipe(s)				
	24	Outlet pipes from weir outlets to existing 600NB pipe"A" to "B"	Sum			
	25	Automated de-sludge system complete from flocculators and clarifiers to sludge channel next to existing filters	Sum			
	26	Electrical control and supply to automated de-sludge system	Sum			
	27	Remove, spoil and replace filter sand with new	m3	90		
	28	Open and inspect below filter floors, clean and replace nozzles where needed	Prov.			
	29	Upgrading, repairs, replacement at inlet works, chemical, mechanical and other unscheduled items	Prov.			
	30	Testing and commissioning	Sum			
		CARRIED FORWARD				

<u>Number</u>	<u>Item</u>	<u>Bill description</u>	<u>Unit</u>	<u>Bill Qty</u>	<u>Rate</u>	<u>Amount</u>
		BROUGHT FORWARD				
	31	Training and manuals	Sum			
	32	Follow-up visits 2x during 2 months after commissioning	Sum			
	33	Escalation	Prov.			
	34	Total of mechanical subcontractor	Prov.			21,000,000.00
	35	Main Contractor's overheads, charges and profit on Item 34	%			
		TOTAL SECTION Q: CARRIED TO SUMMARY				

SUMMARY**MOOIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1****CONTRACT NO. SK8/3/1-36/2022/2023**

SECTION	DESCRIPTION	AMOUNT
SECTION A	PRELIMINARY AND GENERAL	
SECTION B	OCCUPATIONAL HEALTH AND SAFETY	
SECTION D	EXCAVATION	
SECTION E	BEDDING	
SECTION F	PIPELINES	
SECTION G	MANHOLES	
SECTION J	CROSSINGS	
SECTION K	CATHODIC PROTECTION	
SECTION L	BRIDGE CROSSING	
SECTION M	PITCHING	
SECTION N	FINISHING OFF	
SECTION P	MOOIHOEK WTW CIVIL WORK	
SECTION Q	MOOIHOEK WTW CLARIFIERS	
SUBTOTAL 1		
ADD	CPA 7,5% OF SUBTOTAL 1	
ADD	CONTINGENCIES 5% OF SUBTOTAL 1	
SUBTOTAL 2		
ADD	15% VALUE ADDED TAX TO SUBTOTAL 2	
TOTAL TO FORM OF TENDER		

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023****PART C3 SCOPE OF WORK**

C3.1 DESCRIPTION OF WORK	C3.1 – C3.2
C3.1.1 Employer's objectives	C3.2
C3.1.2 Overview of the Works	C3.2
C3.1.3 Extent of Works.....	C3.2
C3.1.4 Location of the Works	C3.2
C3.2 ENGINEERING	C3.3
C3.2.1 Design	C3.3
C3.2.2 Employer's Design	C3.3
C3.2.3 Contractor's Design.....	C3.3
C3.2.4 Drawings	C3.3
C3.3 PROCUREMENT	C3.4
C3.3.1 Preferential Procurement	C3.4
C3.3.2 Subcontracting	C3.4
C3.4 CONSTRUCTION	C3.5
C3.4.1 Works specifications	C3.6
C3.4.2 Site establishment.....	C3.6
C3.4.3 Plant and materials	C3.14
C3.4.4 Construction equipment	C3.14
C3.4.5 Existing services	C3.14
C3.5 MANAGEMENT OF THE WORKS.....	C3.15
C3.5.1 Generic specifications.....	C3.15
C3.6 HEALTH AND SAFETY.....	C3.16
C3.6.1 Health and Safety requirements and procedures	C3.16

STATUS

In the event of any discrepancy between the Scope of Works and a part or parts of the SANS 1200 Standardized Specifications, DWA Specifications, the Bill of Quantities or the Drawings, the Project Specifications shall take precedence and prevail in the Contract.

C3.1 DESCRIPTION OF THE WORK**C3.1.1 EMPLOYER'S OBJECTIVES**

The Employer's objectives are to deliver public infrastructure using labour-intensive methods.

C3.1.2 OVERVIEW OF THE WORKS

The work to be carried out includes the construction of a 3 Layer Polyethylene (3LPE) coated and Solvent Free Epoxy (SFE) lined DN200 PN40 flanged mild steel rising main at Alverton and the upgrading/refurbishment of the Mooihoek WTW, Fetakgomo Tubatse Local Municipality.

C3.1.3 EXTENT OF WORKS

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

- (a) Construction of approximately 3km 200nb 3LPE coated and SFE lined flanged pn40 mild steel pipe. Pipes 12,192m long. Manholes of precast concrete rings to be provided. Epoxy coating and Denso protection to fittings, pipe specials and flanged connections.
- (b) Crossing the Steelpoort River by attaching a 200nb flanged pn40 epoxy coated steel pipe to the bridge.
- (c) The upgrading and refurbishment of the Mooihoek WTW
A selected mechanical subcontractor will install a steel package plant clarifier comprising of twelve units at the existing WTW as well as replacing existing filter sand, upgrading of the existing inlet and outlet and maintenance to or replacing of existing mechanical fittings.
The main contractor will do the civil work to the clarifiers. The work will mainly consist of excavation to and providing the concrete floor support of the clarifier. Other work will be brick protection to formed slopes, kerbing, exposing and relaying existing services and trench work for pipework by mechanical.
- (b) Cathodic Protection will be done by a nominated subcontractor and will mainly consist of the installation of zinc anodes to the main pipe as the pipelaying progresses..

This description of the Work is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract. Refer to the drawings for completeness.

Approximate quantities of each type of work are given in the Bill of Quantities.

Mechanical subcontractor**Combined Clarifier/Flocculator units**

Design, construct, install and commission 12 inclined tube system steel clarifier/flocculator units.

Each unit shall have a yield of 50m³/h.

The unit shall consist of a clarifier and flocculator component referred to as the clariflocculator.

The flocculator component shall be attached to the clarifier component and not loose standing. Hereinafter named clariflocculator.

The flocculator component shall preferably be attached to the clarifier component and not

C3 .3

loose standing. If loose standing it shall still be manufactured from steel in total. It shall serve one clarifier only. The given concrete floor area shall not be exceeded. No vertical staircases to top of individual flocculators shall be allowed. See Walkways.

The clariflocculator including all support work, shall be built in total, except for feed and take-off pipework, in the tenderer's workshop (off-site) and transported as a complete unit to site on a mat of 6mm thick conveyor belt.

Quality and OHS control in the workshop shall be conducted by an independent inspectorate appointed by Tubatse Consulting Engineers.

Site conditions will be indicated during the compulsory clarification meeting.

Assume that top of concrete surface by other will be approximately 1,3m lower than average ground surface level with sloping sides of same height at 1;1 slope. Final concrete surface level and extent of civil work will be determined by the design.

All contact surfaces between concrete surface and clariflocculators and supports shall be provided with 6mm thick conveyor belt.

The clariflocculator, including all external and major internal support work and pipe connections, shall be manufactured from 6mm thick X42 mild steel. Minor supports, hangers etc. shall be of stainless steel.

Pipe connections to inlet from feeder pipe, sludge pipes, outlet pipe(s), etc. shall be PN10 stainless steel (or PVC) flanged and stainless steel bolted.

Provide clearwater outlet weir(s) which may be of stainless steel or PVC and must be slope adjustable.

Provide adjustable clearwater outlet weir(s) stainless steel or PVC

Internal pipework: in flocculator, sludge dispersal in clarifier, sludge withdrawal from clarifier, sludge withdrawal from flocculator, shall be PVC Class 16. Minimum sludge withdrawal points: clarifier = 4, flocculator = 1

At least three sludge level indicators of own design shall be provided to the clarifier and one to the flocculator.

Baseplates for external supports shall be 12mm minimum steel plate. (Design of supports may vary).

Anchor bolts shall be 105 micron hot dipped galvanised steel.

All joints shall be welded to full strength of the mother material. No bolted sealed joints will be allowed.

All free edges shall be stiffened.

Coating;

All steel surfaces (except stainless steel) shall be prepared and coated with 300 micron approved solvent free epoxy coating plus 180 micron UV resistant polyurethane coating.

PVC pipes exposed to direct sunlight shall be coated 180 micron UV resistant polyurethane.

Media:

An approved inclined tube system (Lamella packs) shall be provided and installed.

Tube settlers (Lamella packs): PVC, preferably hexagonal shape, 60mm pitch, inclined at 60°, stainless steel support work.

Flocculator complete:

Shall be a single stage vertical paddle type flocculator with gearbox speed control.

All immersed and partially immersed components of stainless steel. Steel support type and coating as above.

Paddle arms per reel = 2 or 4

Stiffened paddle blades per arm = 1

Adjustable paddle blade connection to arm.

Provide slotted, or other mechanism, to horizontal members of arms to enable variable positioning of paddle blades.

Motor, gearbox, electrical supply to be designed and installed.

New DB next to existing DB indicated on drawing State assumptions.

(Important: emergency cut-off at each flocculator)

External pipework

Design, provide, install, test, commission:

C3 .4

Steel pipe(s) from "A" to inlet connections at flocculators.

Steel take-offs to flocculators, each complete with flow meter and butterfly valve.

PVC/16 de-sludge pipes (110dia minimum) from clarifier and flocculator to existing sludge channel at filter building. (civil contract will break into existing channel, provide and lay PVC pipe from edge of concrete floor to sludge channel) including complete automatic de-sludge system of own design including electrical supply from DB.

Steel collector pipe(s) from clearwater weirs to existing 600dia steel pipe between "A" and "B". Connection shall be by means of sweeping tee.

Provide approved steel pipe supports to concrete plinths or direct to floor.

Buried pipe joints shall be protected using the Denso System (cleaning, priming solution, mastic, petrolatum tape, cling wrap)

All steel pipes and pipe specials X42 steel, 5mm wall thickness, flanged SANS1123 T1000/3 welded BS806 Type 6, coated and lined 300 micron SFE and additional approved 180 micron UV resistant polyurethane coating where above ground. The latter shall also apply to PVC pipes.

Bolts and washers (Grade 4.6) shall be 105 micron hot dipped galvanised.

All pipework shall be tested to 10Bar.

Fittings

All valves, flow meters, etc. shall comply with DWS specifications.

Colour

Confirm the colour of all visible components.

Walkways

Design, provide and install 105micron hot dipped galvanized mild steel ball type walkways, support work complete and rectagrid type flooring (flooring may be PVC type)

Walkways shall be a minimum of 850 wide.

Walkways shall be 105 micron hot dipped galvanised mild steel bolted (not welded) to main structure

Provide walkways to have access to all flocculators, link between and extend to closest side of set-up from where to ground level (If steps: risers = 170-200mm and treads = 250-300mm) Slope from concrete floor to ground level will be 1:1 from concrete edge. Provide concrete base and GMS anchoring.

Provide a continuous constant-level walkway on top of steel structures providing access to all flocculators. Link between where separated and extend to closest side of set-up from where to ground with steps: risers = 170-200mm and treads = 250-300mm. Assume horizontal distance from edge of steel structure to start of steps at ground level = 5m and the vertical distance = 1,65m. Provide concrete base to stairs with GMS anchoring.

Provide 4 safety buoys. Strap to walkways.

Determine which Safety signage is required and attach to walkways.

Electrical

Design, provide, install cable and control systems complete to:

Flocculator motors and automatic de-sludge system.

Assume sufficient power available at indicated DB

Filter sand

Remove, by hand, the filter sand of the existing 4 filters and spoil next to the sludge channel next to the filters. Replace with approved 0,7mm dimension new sand.

Refer to DWS1930 and DWS1940

Total volume of sand is $4\text{filters} \times 8\text{x}3\text{width} \times 0,9\text{deep} = 90\text{m}^3$

C3 .5

A filter shall have the sand removed and replaced before proceeding to the next.

Testing and commissioning

Hydraulic testing and observance testing shall be done before and during commissioning. An independent inspectorate shall inspect materials, welding, coating and lining, etc. Refer, also, to DWS1930 and DWS1940 where applicable

Manuals and training

Three sets of Manuals shall be required before final completion. One day of intensive training shall be provided. Refer to DWS1930 and DWS1940

Follow-up visits

Two follow-up visits shall be required after final completion. Once per month for the first and second month after completion

Filter sand

Refer to DWS1930 and DWS 1940 for media and placing requirements

Sand dimension = 0,7mm

UC1.38

D10 = 0.72

D60 = 1.00

Design Criteria

Freeboard at outlet at "A"		200mm
Clarifier	yield	50 m³/h
	maximum up-flow velocity	2,5 – 2,7m³/m²/h
Feed pipe(s) to flocculators	flow velocity	0.35 - 0,45m/s
Outlet pipe(s) clarifiers to existing 600NB	flow velocity	0,5 - 0,7m/s
Flocculator	inlet flow velocity	0,2 – 0,8m/s
	outlet flow velocity	0,15 – 0,25m/s
	total area of paddles	10 – 20% of cross sectional area of water at right angle
	freeboard	400-500 above paddle 150-400 sides and bottom
	Detention time (Dt)	10 – 30min.
	Velocity gradient (G)	15/s to 75/s
	Gt range	10000 – 100000
	Paddle tip speed	0,2 – 0,75m/s
	Relative velocity of paddle	0,75 x peripheral velocity of paddle
	Drag coefficient of blades (Cd)	1,2

C3.1.4 LOCATION OF THE WORKS

At Alverton, Fetakgomo Tubatse Local Municipality. Access from road D4150.

2 ENGINEERING**C3.2.1 DESIGN**

Works designed by, per design stage:

Concept, feasibility and overall process	Employer
Basic engineering and detail layouts to Tender stage	Employer
Final design to approved for construction stage	Employer
Preparation of as-built drawings	Employer

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

C3.2.2 EMPLOYER'S DESIGN

Refer to extent of works

C3.2.3 CONTRACTOR'S DESIGN

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

C3.2.4 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Employer's Agent. The Employer's Agent will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the Contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Employer's Agent's Representative on a regular basis.

All information in possession of the Contractor, required by the Employer's Agent and/or the Employer's Agent's Representative to complete the as-built/record drawings, must be submitted to the Employer's Agent's Representative before a Certificate of Completion will be issued.

The Drawings prepared by the Employer for the permanent Works are listed and bound in a separate volume. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT

C3.3.1.1 Requirements

Labourers from, and in consultation with the local community.

C3.3.2 SUBCONTRACTING

C3.3.2.1 Scope of mandatory subcontract works

Mooihoek WTW, Cathodic Protection, pipelaying, excavation, bedding, machinery, barricading and fencing, water truck, hauling, construction of manholes, etc.

C3.3.2.2 Preferred subcontractors/suppliers

Nominated and Local

C3.3.2.3 Subcontracting procedures

Consult with and procure local subcontractors and labourers via the Project Steering Committee. Enter into legal written agreements.

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

C3.4.1.1 Applicable SANS 1200 Standardized Specifications

The following SANS 1200 Standardized Specifications for civil engineering construction are applicable:

SANS 1200 A	:	General (1986)
SANS 1200 AB	:	Engineer's office (1986)
SANS 1200 C	:	Site clearance (1980)
SANS 1200 D	:	Earthworks (1988)
SANS 1200 DB	:	Earthworks (pipe trenches) (1989)
SANS 1200 DE	:	Small earth dams (1984)
SANS 1200 DK	:	Gabions and pitching (1996)
SANS 1200 DM	:	Earthworks (roads, subgrade) (1981)
SANS 1200 F	:	Piling (1983)
SANS 1200 G	:	Concrete (structural) (1982)
SANS 1200 GE	:	Precast concrete (structural) (1984)
SANS 1200 GF	:	Prestressed concrete (1984)
SANS 1200 H	:	Structural steelwork (1990)
SANS 1200 HA	:	Structural steelwork (sundry items) (1990)
SANS 1200 HB	:	Cladding and sheeting (1985)
SANS 1200 HC	:	Corrosion protection of structural steelwork (1988)
SANS 1200 HE	:	Structural aluminium work (1983)
SANS 1200 L	:	Medium-pressure pipelines (1983)
SANS 1200 LB	:	Bedding (pipes) (1983)
SANS 1200 LC	:	Cable ducts (1981)
SANS 1200 LD	:	Sewers (1982)
SANS 1200 LE	:	Stormwater drainage (1982)
SANS 1200 LF	:	Erf connections (water) (1983)
SANS 1200 LG	:	Pipe jacking (1983)
SANS 1200 M	:	Roads (general) (1996)
SANS 1200 ME	:	Subbase (1981)
SANS 1200 MF	:	Base (1981)
SANS 1200 MFL	:	Base (light pavement structures) (1996)
SANS 1200 MG	:	Bituminous surface treatment (1996)
SANS 1200 MH	:	Asphalt base and surfacing (1996)
SANS 1200 MJ	:	Segmented paving (1984)
SANS 1200 MK	:	Kerbing and channelling (1983)
SANS 1200 MM	:	Ancillary roadworks (1984)

The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications.

C3.4.1.2 Particular Specifications

The following additional Specifications in conjunction with the SANS 1200 Standardized Specifications:

DEPARTMENT OF WATER AFFAIRS SPECIFICATIONS:

DWS 1110 : construction of pipelines
DWS 1130 : steelpipes
DWS 1131 : lining and coating of steelpipes
DWS 2510 : valves
DWS 9900: corrosion protection

C3.4.1.3 Variations and Additions to the SANS 1200 Standardized Specifications

Variations and additions to the following SANS 1200 Standardized Specifications listed in C3.4.1 are given in section C3.4.6.

C3.4.2 SITE ESTABLISHMENT

C3.4.2.1 Services and facilities provided by the Employer

(a) Water sources

There is no reticulated water supply available in close proximity to the Site. Water supply to the existing reservoir on same site is not reliable.

The Contractor shall, in accordance with the provisions of subclause C3.4.2.2(b), and at his own cost, make all arrangements necessary for the supply and distribution of water required for construction purposes as well as for use in and about his site establishment and for human consumption.

(b) Electricity supply

There is no reticulated electrical power supply available in close proximity to the Site although Eskom could be available at the nearby Motodi and at the reservoir site.

The Contractor shall, in accordance with the provisions of subclause C3.4.2.2(c), and at his own cost, make all arrangements necessary for the supply and distribution of electrical power required for construction purposes as well as for use in and about his site establishment.

The Contractor shall comply with all prevailing legislation in respect of the generation and distribution of electricity and shall, when required by the Engineer, produce proof of such compliance.

(c) Excrement disposal

No water-borne sewage or other off-site excrement disposal systems are available in the vicinity of the Site.

(d) Area for Contractor's site establishment

The Site of the Works is very restricted and the Employer has no other suitable areas available where the Contractor may erect offices, workshops, stores and other facilities that he requires for the purposes of the Contract. The Contractor shall, at his own cost, be responsible for locating and making all arrangements necessary for securing additional area suitable to meet his needs in respect of the erection of the Contractor's

offices, stores and other facilities, including the facilities to be provided for the Employer's Agent in accordance with the Contract.

Any potential area proposed by the Contractor shall be within reasonable proximity to the Site of the Works and its location shall be subject to the approval of the Employer's agent, which approval shall not be unreasonably withheld.

(e) Rail facilities

The nearest goods station is Burgersfort, which is located approximately 20km by road from the Site.

C3.4.2.2 Facilities provided by the Contractor

(a) Facilities for the Employer's agent

Refer to measured items in BOQ.

(b) Water

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

The sources of all water utilised for the purposes of the Contract shall be subject to the prior approval of the Employer's Agent, which approval shall not be unreasonably withheld.

The Contractor shall comply with all prevailing legislation in respect of drawing water from natural and other sources and shall, when required by the Employer's Agent, produce proof of such compliance. The distribution of water shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations.

All water provided by the Contractor for construction purposes shall be clean, free from undesirable concentrations of deleterious salts and other materials and shall comply with any further relevant specifications of the Contract. The Contractor shall, whenever reasonably required by the Employer's Agent, produce test results demonstrating such compliance. Water provided by the Contractor for human consumption shall be healthy and potable to the satisfaction of the health authorities in the area of the Site.

No separate payment will be made to the Contractor for the obtainment, distribution and consumption of water, the costs of which will be deemed to be included in the Contractor's tendered rates.

(c) Electricity

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

The distribution of electricity shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations.

No separate payment will be made to the Contractor for the obtainment, distribution and consumption of electricity, the costs of which will be deemed to be in the Contractor's tendered rates and prices.

(d) Excrement disposal

The Contractor shall, at his own expense, be responsible for safely and hygienically dealing with and disposing of all human excrement and similar matter generated on the Site during the course of the Contract, to the satisfaction of the responsible health authorities in the area of the Site and the Employer's Agent. All such excrement shall be removed from the Site and shall not be disposed of by the Contractor on the Site.

The Contractor shall further comply with any other requirements in this regard as may be stated in the Contract.

No separate payment will be made to the Contractor in respect of discharging his obligations in terms of this subclause and the costs thereof shall be deemed to be included within the Contractor's tendered Preliminary and General items.

C3.4.2.4 Permits and wayleaves

The Employer shall be responsible to obtain all the wayleaves required for this Contract.

C3.4.2.5 Features requiring special attention**(a) Site maintenance**

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner, and shall keep the Site free from debris and obstructions.

(b) Testing and quality control:**(i) Contractor to engage services of an independent laboratory**

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred, from the Contract. These results will be taken into consideration by the Employer's agent in deciding whether the quality of materials utilised and workmanship achieved by the Contractor comply with the requirements of the Specifications. The foregoing shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Employer's agent or by the Contractor.

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

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" which is not under the management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

(ii) Additional testing required by the Engineer

In addition to the provisions of subclause C3.4.2.5(b)(i): Contractor to engage services of an independent laboratory, the Employer's Agent shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in subclause C3.4.2.5(b)(i), at such times and at such locations in the Works as the

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

(iii) Costs of testing

(a) Tests in terms of subclause C3.4.2.5(b)(i)

The costs of all testing carried out by the independent laboratory in accordance with the requirements of subclause C3.4.2.5(b)(i), above shall be borne by the Contractor and shall be to be included in the tendered rates and prices for the respective items of work as listed in the Bill of Quantities and which require testing in terms of the Specifications.

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

(b) Additional tests required by the Employer's Agent

The costs of any additional tests required by the Employer's Agent in terms of subclause C3.4.2.5(b)(i): Additional testing required by the Engineer, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Bill of Quantities; provided always that the costs of any such additional tests ordered by the Employer's Agent, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

(d) Subcontractors

All matters pertaining to subcontractors and the work executed by them shall be dealt with directly by the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Employer's Agent will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Employer's Agent will not become involved.

(e) Opening up and closing down of designated borrow pits

Measurement and payment for opening up and closing down designated borrow pits, including removing and stockpiling overburden and restoring the Site, shall be made under item 8.3.4 of SANS 1200 D. This item applies to all borrow material required under this Contract.

The requirements of subclause 5.2.2.2 of SANS 1200 D regarding the opening up, maintenance and closing down of borrow pits shall be adhered to.

(f) Access to properties

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access

to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 17.1 (GCC 2004)/Clause 8.1.2 (GCC 2010) of the Conditions of Contract.

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

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

(g) Existing residential areas

Electricity and water supply interruptions in existing residential areas shall be kept to a minimum. The Employer's Agent's approval shall be obtained prior to such interruptions and residents shall be notified in writing at least 24 hours but not more than 48 hours in advance. Supplies shall be normalised by 16:00 on the same day.

(i) Employment of unskilled and semi-skilled workers.

1.1 Requirements for the sourcing and engagement of labour

1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- (a) 55% women;
- (b) 55% youth who are between the ages of 18 and 35; and
- (c) 2% on persons with disabilities.

(j) Employment of local labour

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

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

(k) Monthly statements and payment certificates

The statement to be submitted by the Contractor shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Employer's Agent, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

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

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

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

(l) Construction in restricted areas

Working space is extremely restricted. The construction method used in this restricted environment largely depends on the Contractor's Planning. Notwithstanding, measurement and payment will be strictly according to the specifications irrespective of the method used, and the rates and prices tendered will be deemed to include full compensation for any difficulties encountered by the Contractor while working in restricted areas. No extra payment nor any claim for payment due to these difficulties will be considered.

(m) Notices, signs, barricades and advertisements

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Employer's Agent. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

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

(n) Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

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

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

On completion and submission of every part of the work to the Employer's Agent for examination and measurement, the Contractor shall furnish the Employer's Agent with

the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.4.2.6 Extension of time due to abnormal rainfall

- (a) A claim for extension of time in respect of delays suffered by the Contractor in consequence of wet climatic conditions will be considered by the Employer's Agent in terms of Clause 5.12 (GCC 2015) of the Conditions of Contract and in accordance with provisions set out hereunder.
- (b) For the purposes of extension of time, a delay caused by wet climatic conditions will be regarded as a delay only if, in the opinion of the Employer's Agent, all progress on an item or items of work on the critical path of the Contractor's working programme as approved in terms of Clause 5.6 (GCC 2015) of the Conditions of Contract has been brought to a halt.
- (c) Unless it is customary to carry out the work, in respect of which a delay was suffered, by rotary shifts or by day and by night, only delays to critical path items experienced as a result of wet climatic conditions during normal working hours (as defined 5.8 of GCC 2015) of the Conditions of Contract) will be taken into account for extension of time. This will apply notwithstanding the fact that a delay may have occurred on a portion of the Works on the critical path due to wet climatic conditions, which work was being executed outside the said normal hours with the permission of the Employer's Agent, granted in terms of Clause 5.8.1.1 (GCC 2015) of the Conditions of Contract.

C3.4.3 PLANT AND MATERIALS

C3.4.3.1 Plant and materials shall not be supplied by the employer

C3.4.3.2 Materials, samples and shop drawings

(a) Samples

Materials or work which does not conform to the approved samples submitted in terms of Clause 7.4 (GCC 2015) of the Conditions of Contract, will be rejected. The Employer's Agent reserves the right to submit samples to tests to ensure that the material represented by the sample meets the specification requirements.

The costs of any such tests conducted by or on behalf of the Employer's Agent, the results of which indicate that the samples provided by the Contractor do not conform to the requirements of the Contract, shall, in accordance with the provisions of Clause 7.4 (GCC 2015) of the Conditions of Contract, be for the Contractor's account.

C3.4.4 CONSTRUCTION EQUIPMENT

C3.4.4.1 Requirements for equipment

Reasonably acceptable according to good normal practice and applicable specifications.

C3.4.5 EXISTING SERVICES

C3.4.5.1 Known services

Known services will be located on site during construction.

C3.4.5.2 Treatment of existing services

To be determined on site.

C3.4.5.3 Use of detection equipment for the location of underground services

Determine on site.

C3.5 MANAGEMENT OF THE WORKS

C3.5.1 GENERIC SPECIFICATIONS

The SANS 1200 Standardized Specifications and other listed in 4.1.1 are applicable.

C3.6 HEALTH AND SAFETY

C3.6.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

(a) Construction Regulations, 2014

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 (the Regulations). Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The Contractor shall provide a comprehensive project specific health and safety plan detailing his proposed compliance with the Regulations, for approval by the Employer's Agent.

The Contractor shall at all times be responsible for full compliance with the approved Plan and no extension of time will be considered for delays due to non-compliance with the abovementioned Plan or Regulations.

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

SEKHUKHUNE DISTRICT MUNICIPALITY

DEPARTMENT: WATER SERVICES

CONTRACT NO. **SK8/3/1-36/2022/2023**

PART C4 SITE INFORMATION

SITE INFORMATION

1 NATURE OF GROUND AND SUBSOIL CONDITIONS

The in-situ material is classified as mostly soft to intermediate (refer to BOQ) and no adverse conditions are foreseen during excavation.

SEKHUKHUNE DISTRICT MUNICIPALITY

MOOIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1

BULK WATER SUPPLY TO ALVERTON AND UPGRADING OF MOOIHOEK WTW FETAKGOMO TUBATSE LOCAL MUNICIPALITY

CONTRACT NO.: SK/8/3/1-36/2022/23

**TENDER DOCUMENT
SEPTEMBER 2022**

VOLUME 2

TENDERER NAME _____

CLIENT:

SEKHUKHUNE DISTRICT MUNICIPALITY
PRIVATE BAG X 8611
GROBLERSDAL
0470



CONSULTING ENGINEERS:

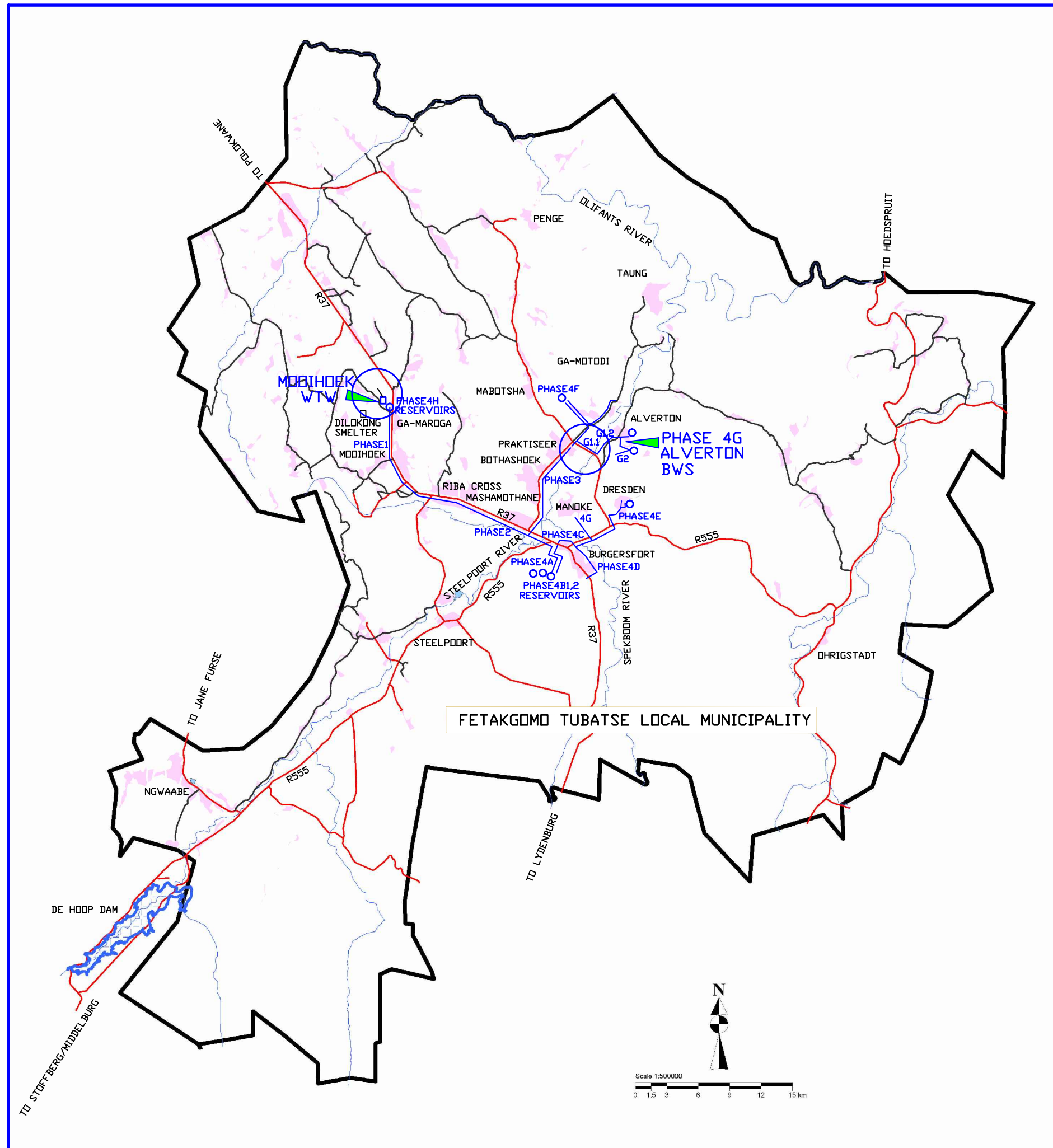
TUBATSE CONSULTING ENGINEERS
P.O.BOX 708
STEELPOORT
1133



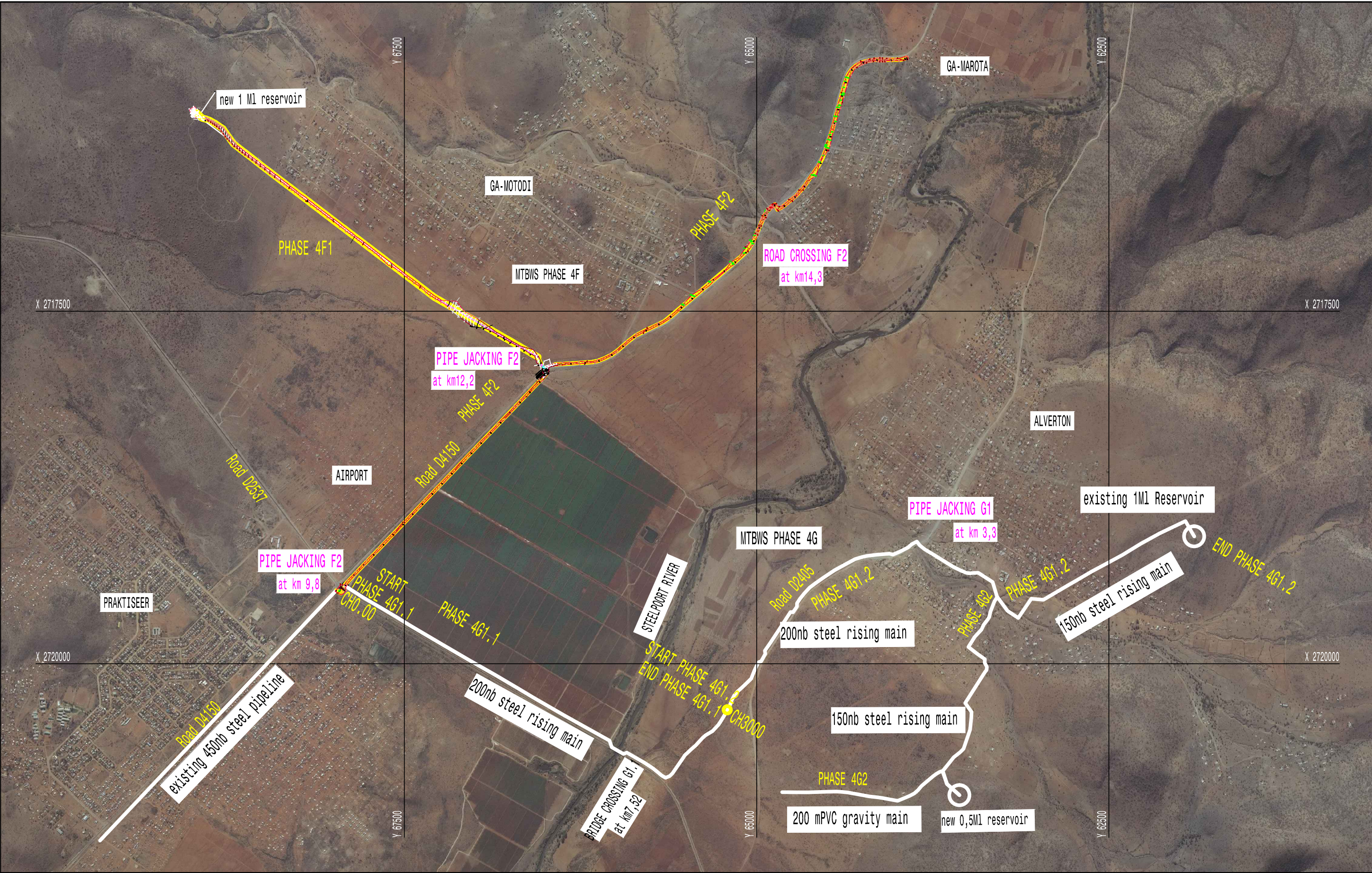
LIST OF DRAWINGS



DRAWING NO. DESCRIPTION

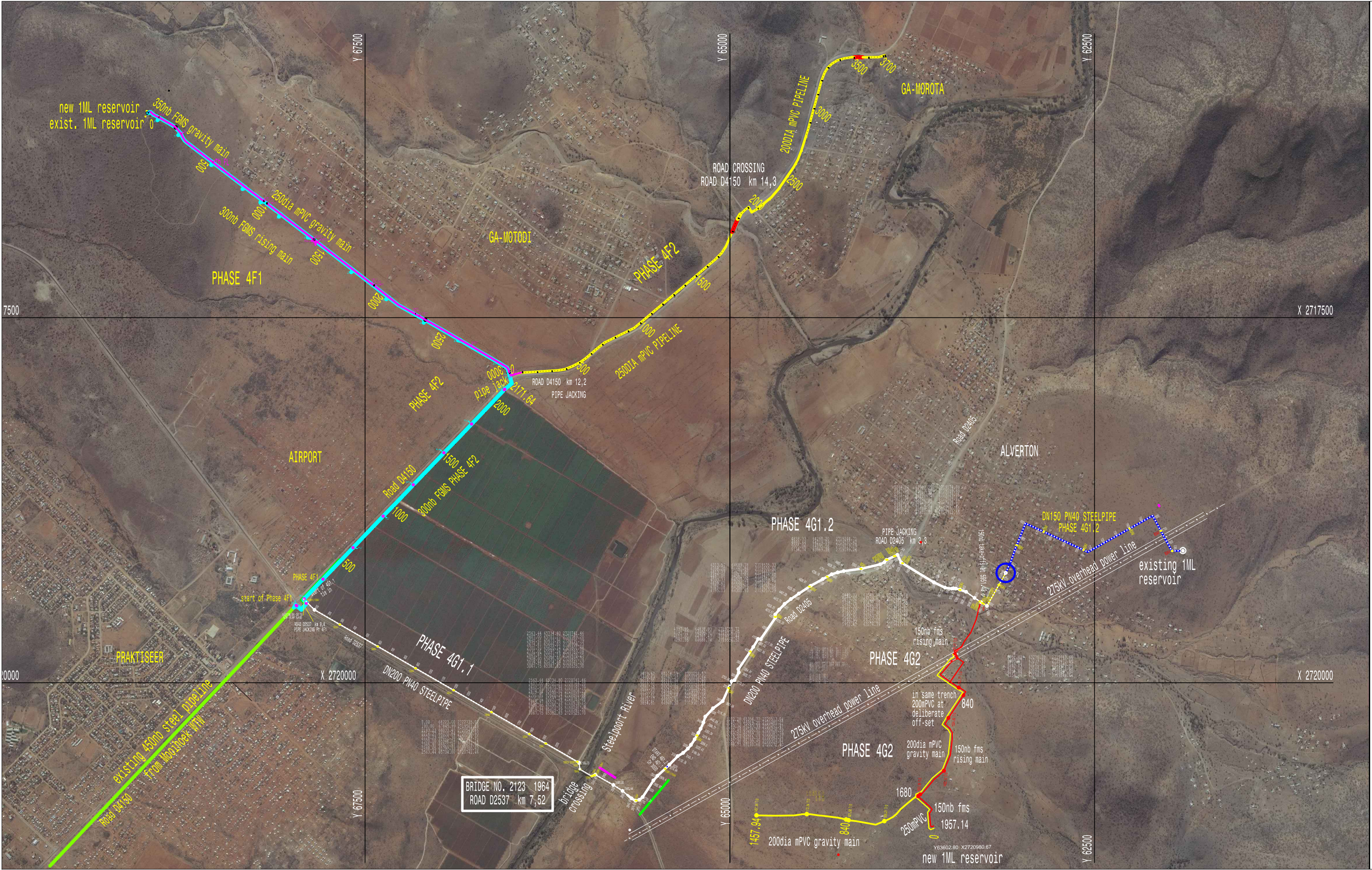
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MTBWS PH4G1.1/5-8	LONG SECTIONS
MTBWS PH4G1.1/9-12	MANHOLES
MTBWS PH4G1.1/13-17	BRIDGE CROSSING
MTBWS PH4G1.1/18-24	TYPICAL DETAIL
MTBWS PH4G1.1/25-29	MOOIHOEK WTW





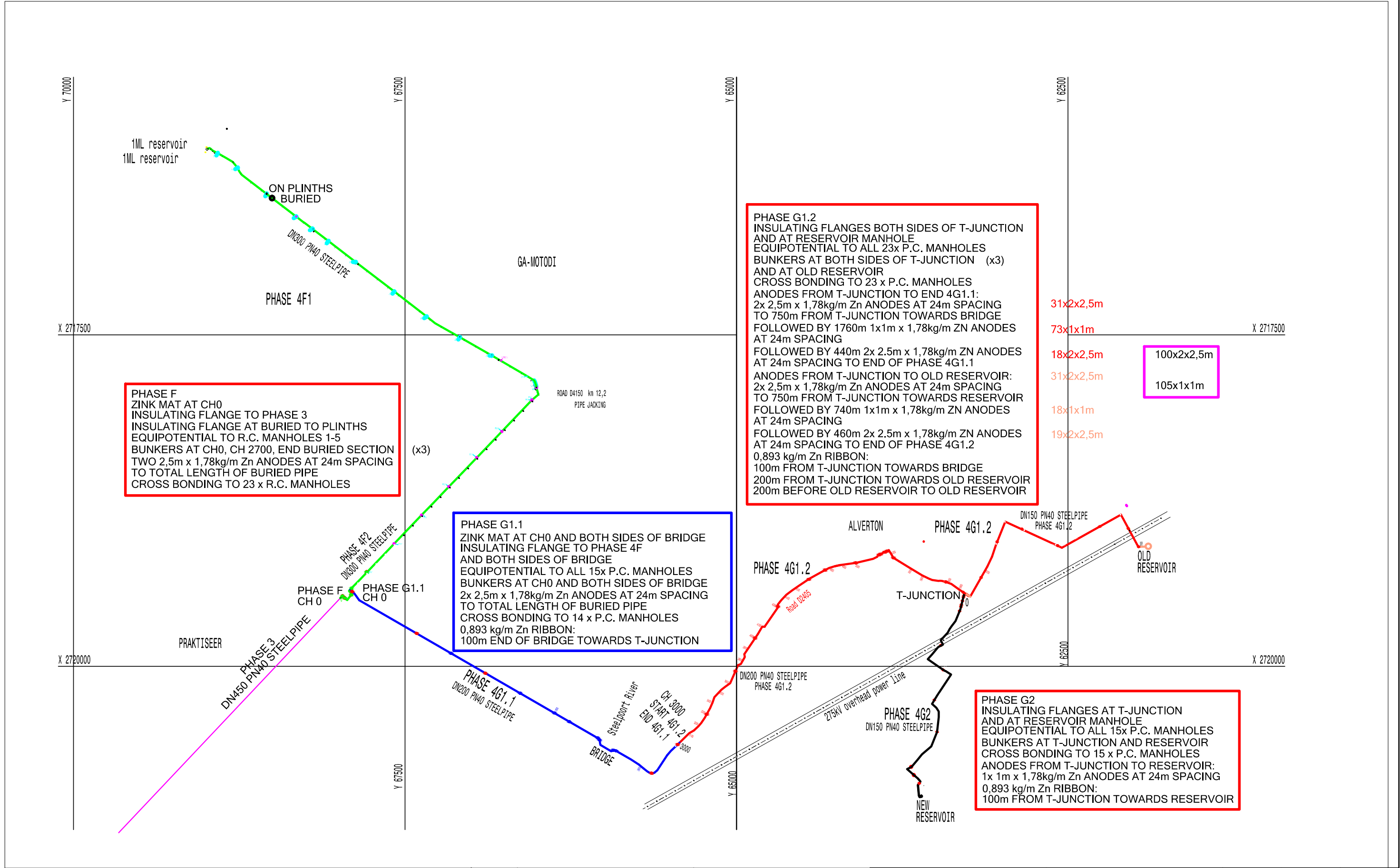
REVISION		
DATE	DESCRIPTION	APPROVED
CLIENT: SEKHUKUNE DISTRICT MUNICIPALITY		
 PRIVATE BAG X 9611 GRUMLERSDAL 0470		
PROJECT: MOOIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1 ALVERTON BWS		
CONTRACT NO. SK8/3/1-36/22/23		
DRAWING TITLE: LOCALITY PLAN		
DESIGN CONSULTANT: TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS  P.O. BOX 708 STELPOORT 1025 TEL: 013 291 7196 CELL: 082 871 3744 FAX: 013 231 7042 e-mail: tubatseconsulting@net		
DRAWN JVR	CHECKED JVR	DATE JUNE 2020
DESIGN JVR	CHECKED JVR	SCALE NTS
APPROVED	DATE	REVISION
		0
DRAWING NO.	MTBWS PH4G1.1/01	





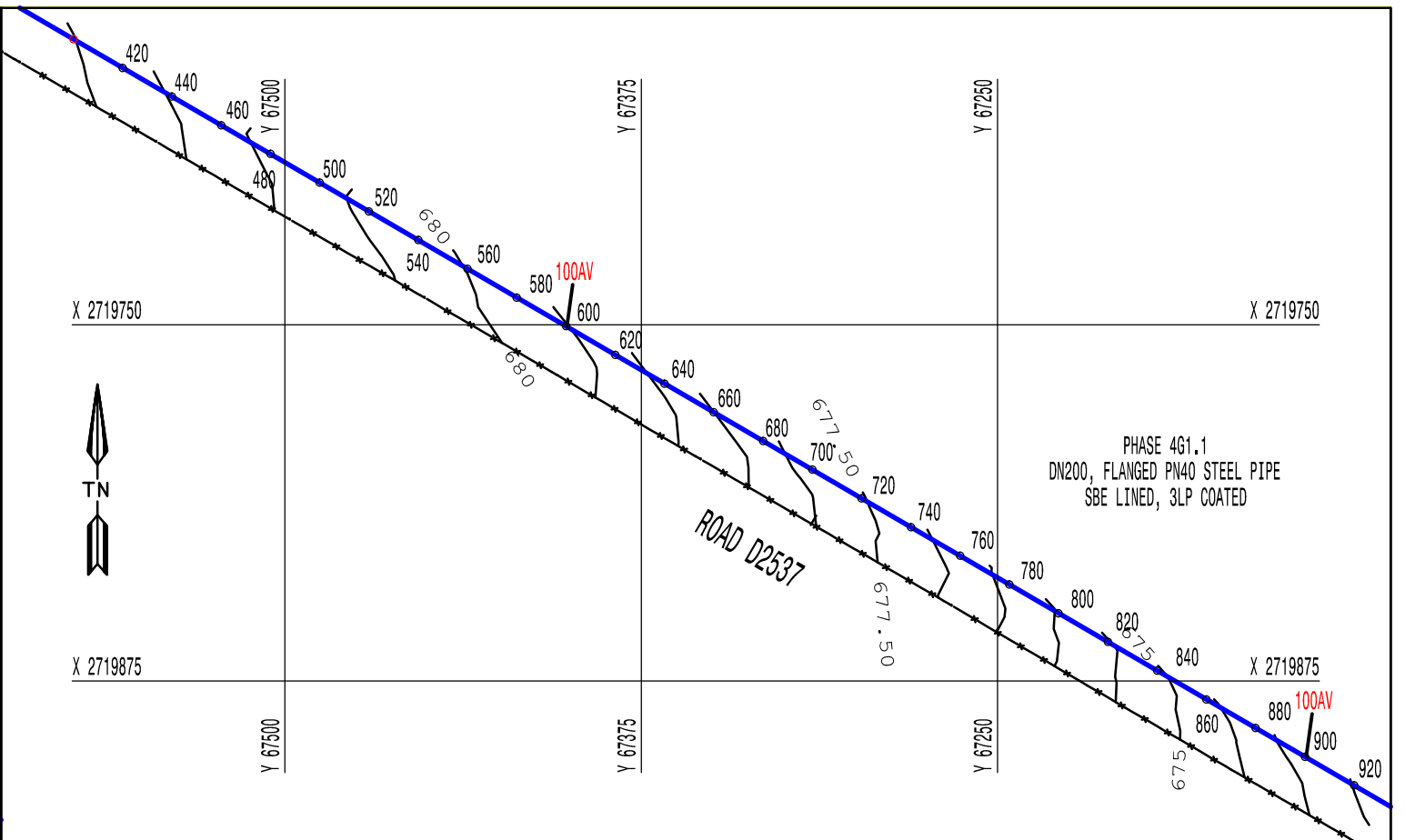
			DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
						SEKHUKUNE DISTRICT MUNICIPALITY	SITE PLAN 1 PHASE 4G1.1	CONTRACT: SK8/3/1-08/22/23 MOOIHOEK/TUBATSE BWS PHASE 4G1.1 ALVERTON BWS	TUBATSE CONSULTING ENGINEERS	BB	JVR	JUNE 2020
						 PRIVATE BAG X 8611 GROBLERSDAL 0470			P.O. BOX 708 STEELPOORT 1133 TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 jvrtubatcon@iantic.net	JVR	JVR	SCALE NTS
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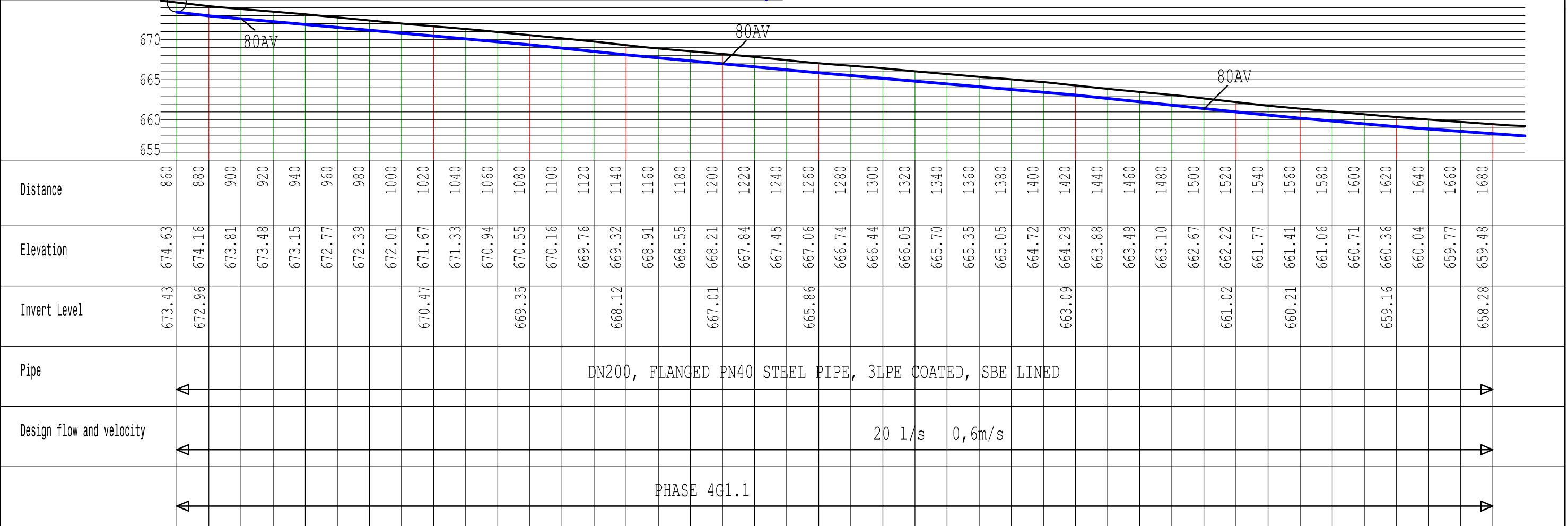
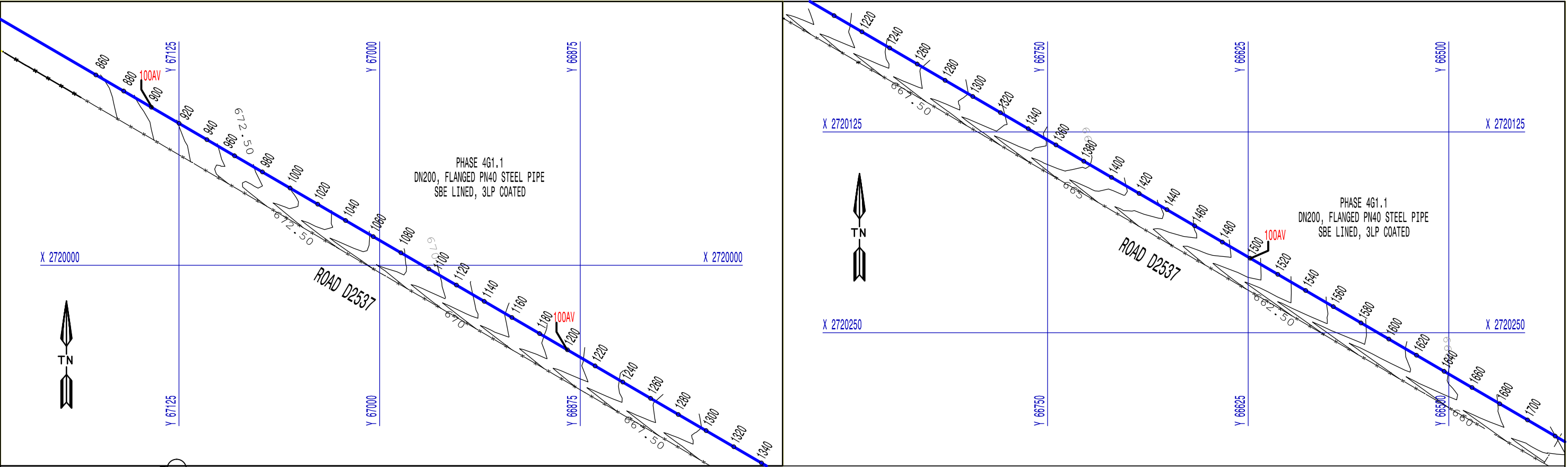




DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN SB	CHECKED JVR	DATE JUNE 2020
			SEKHUKUNE DISTRICT MUNICIPALITY	LAYOUT PLAN PHASE 4G1.1	SK8/3/1-08/22/23 MOOIHOEK/TUBATSE BWS PHASE 4G1.1 ALVERTON BWS	TUBATSE CONSULTING ENGINEERS P.O. BOX 708 STEELPOORT 1133 TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 jvrtubatse@tnt.net	DESIGN JVR	CHECKED JVR	SCALE NTS
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			PRIVATE BAG X 8611 GROBLERSDAL 0470						0
							DRAWING No.	MTBWS PH4G1.1/03	

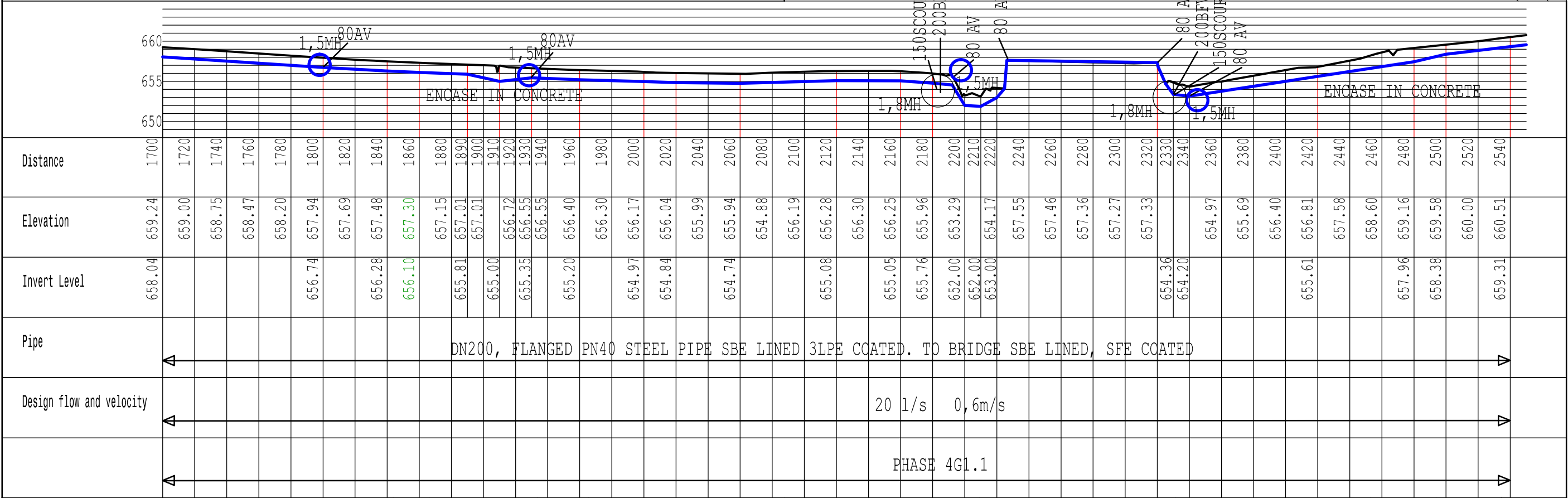
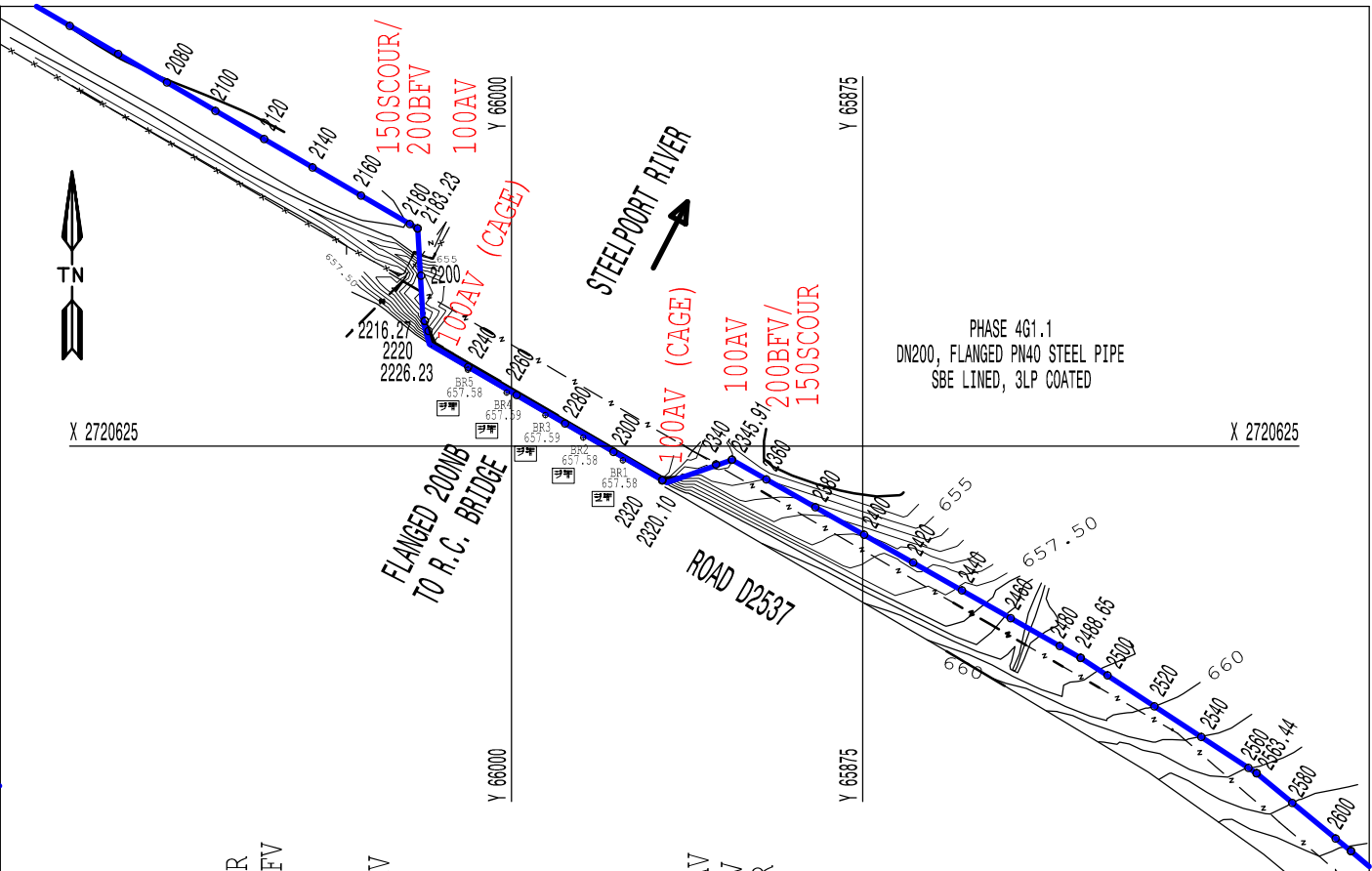
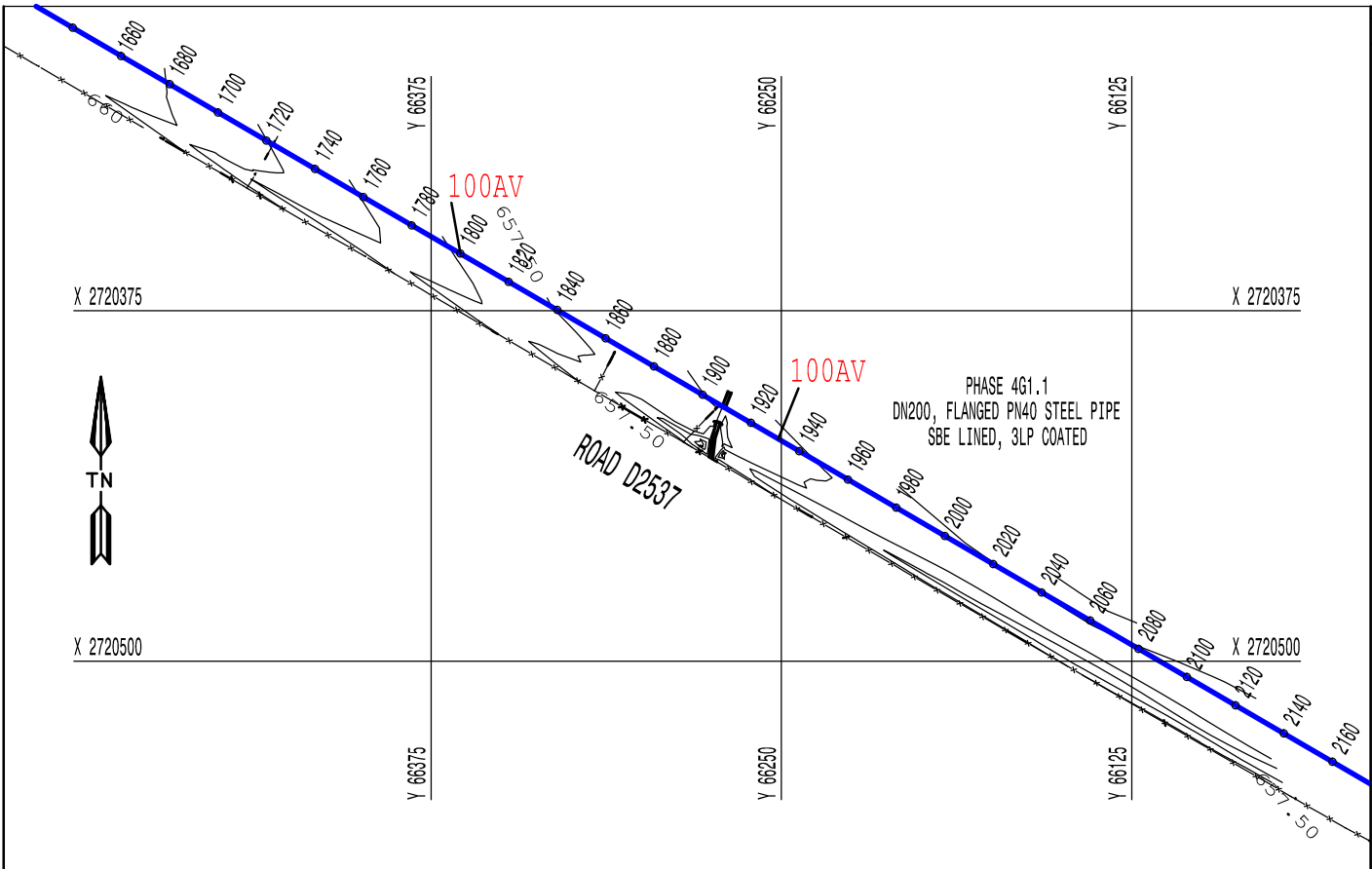


			APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
				SEKHUKUNE DISTRICT MUNICIPALITY	LAYOUT PLAN CATHODIC PROTECTION AC MITIGATION	CONTRACT NO. SK8/3/1-36/22/23 MOOIHOEK/TUBATSE BWS PHASE 4G1.1/1.2/2 ALVERTON BWS	TUBATSE CONSULTING ENGINEERS	BB	JVR	JUNE 2020
				 PRIVATE BAG X 8611 GROBLERSDAL 0470			 P.O. BOX 708 STEELPOORT 1133 TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 jvrtubatcon@lantic.net	DESIGN	CHECKED	SCALE
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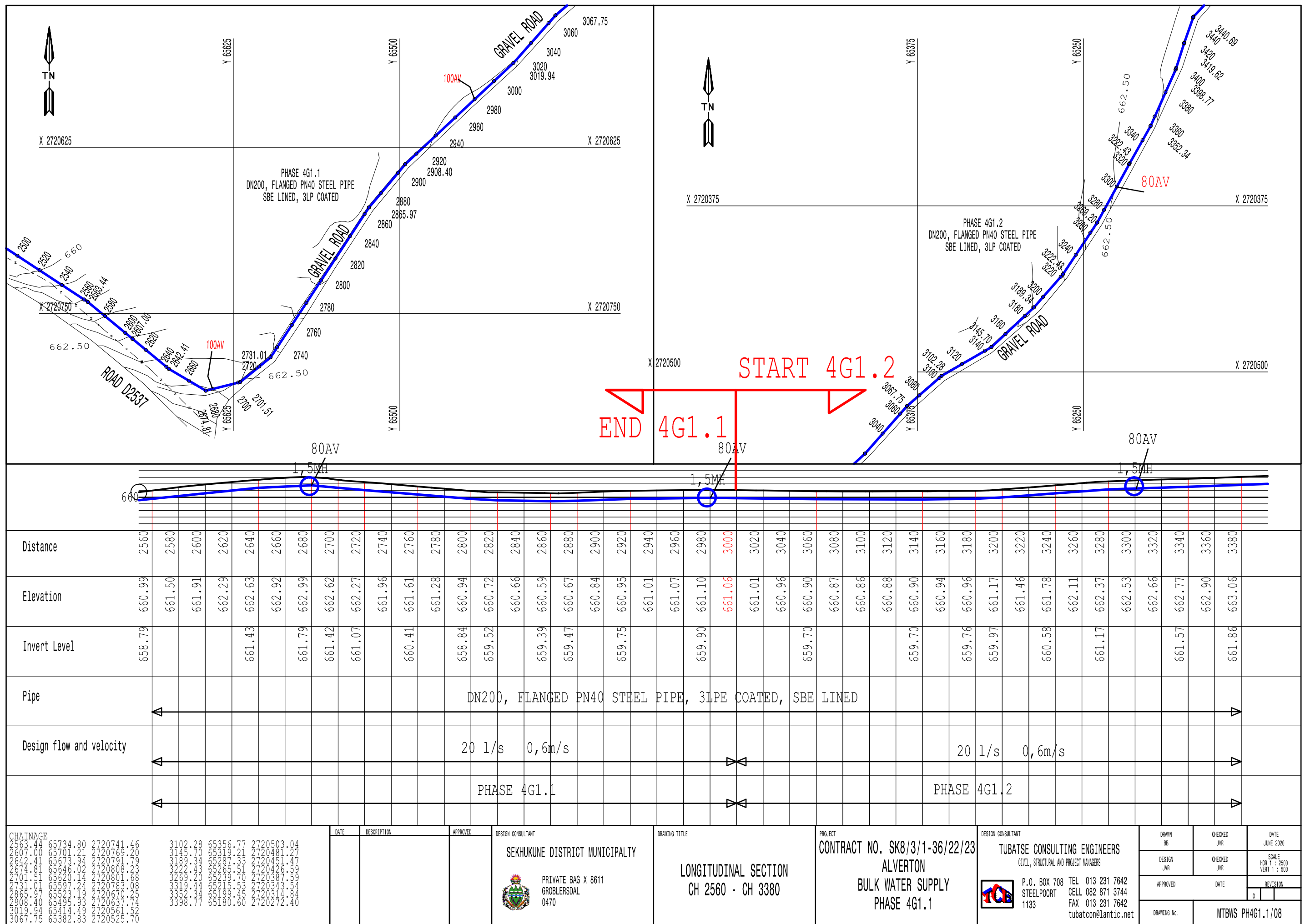


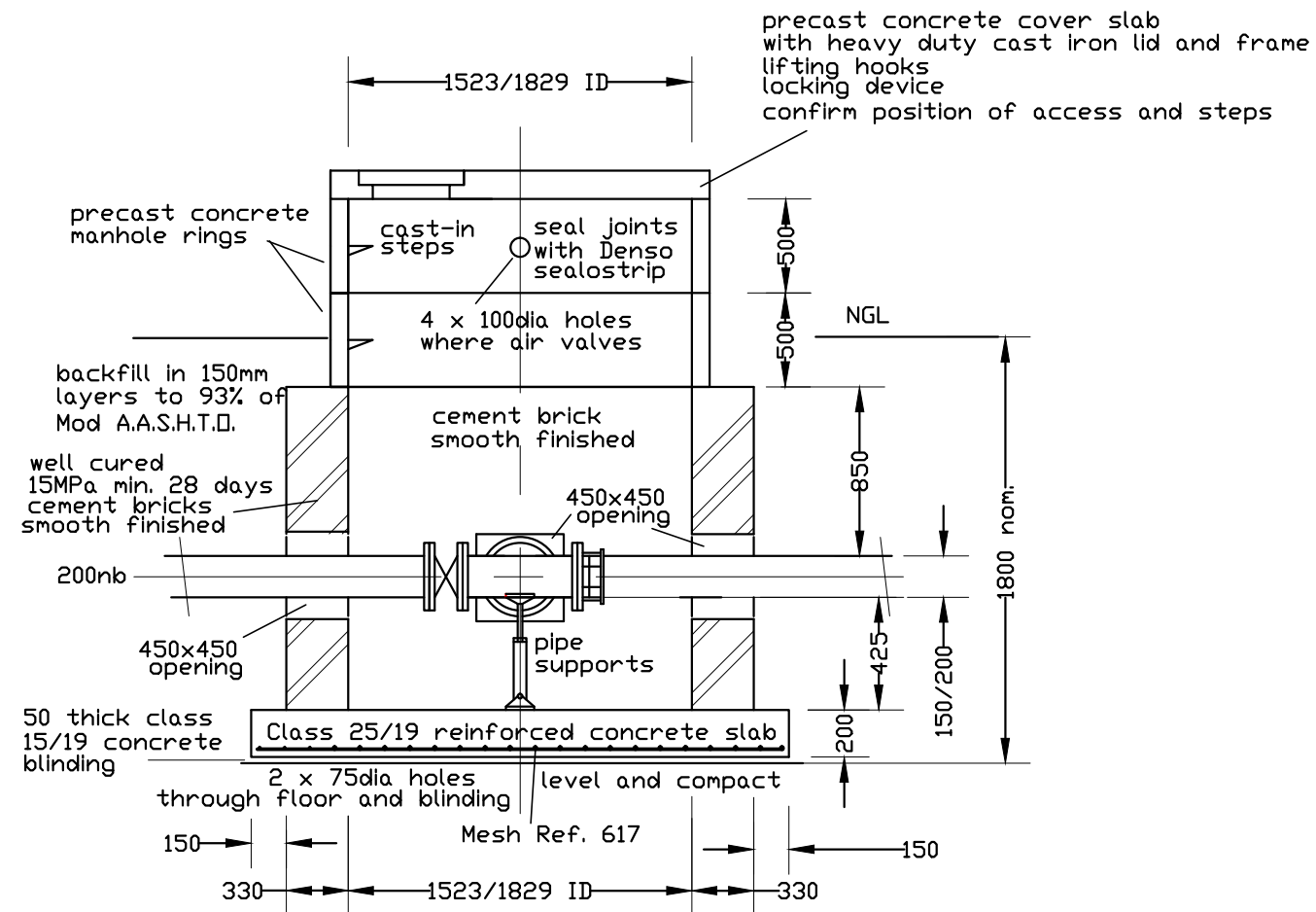


CHAINAGE	DATE	DESCRIPTION	APPROVED	DESIGN CONSULTANT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
				SEKHUKUNE DISTRICT MUNICIPALITY	LONGITUDINAL SECTION	CONTRACT NO. SK8/3/1-36/22/23	TUBATSE CONSULTING ENGINEERS	BB	JVR	JUNE 2020
				 PRIVATE BAG X 8611 GROBLERSDAL 0470	CH 800 - CH 1680	ALVERTON BULK WATER SUPPLY PHASE 4G1.1	CIVIL, STRUCTURAL AND PROJECT MANAGERS	DESIGN	JVR	SCALE HOR 1 : 2500 VERT 1 : 500
							 P.O. BOX 708 STEELPOORT 1133	APPROVED	DATE	REVISION
							TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 tubatcon@lantic.net			0
								DRAWING No.		MTBWS PH4G1.1/06

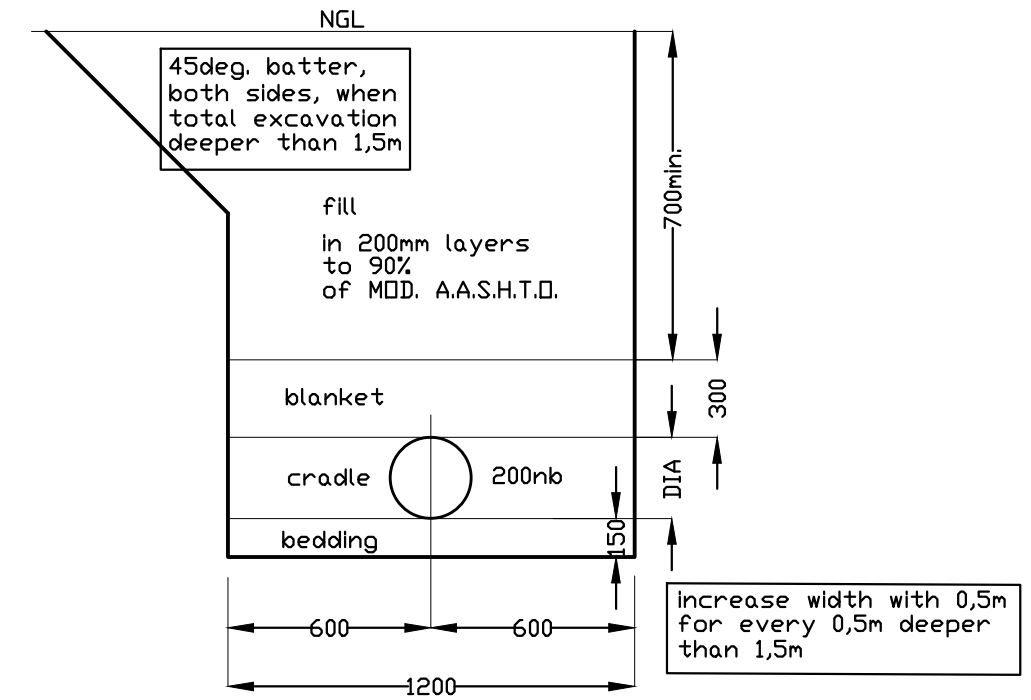


CHAINAGE		DATE	DESCRIPTION	APPROVED	DESIGN CONSULTANT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
2183.23 66033.40 2720547.66					SEKHUKUNE DISTRICT MUNICIPALITY	LONGITUDINAL SECTION	CONTRACT NO.SK8/3/1-36/22/23	TUBATSE CONSULTING ENGINEERS	BB	JVR	JUNE 2020
2216.27 66030.84 2720580.60					PRIVATE BAG X 8611	CH 1700 - CH 2540	ALVERTON	CIVIL, STRUCTURAL AND PROJECT MANAGERS	DESIGN	JVR	SCALE
2226.23 66027.30 2720589.91					GROBLERSDAL	BRIDGE CROSSING	BULK WATER SUPPLY	P.O. BOX 708 TEL 013 231 7642			HOR 1 : 2500
2320.10 65946.24 2720637.24					0470		PHASE 4G1.1	STEELPORT CELL 082 871 3744			VERT 1 : 500
2345.91 65921.47 2720629.98								FAX 013 231 7642	APPROVED	DATE	REVISION
2488.65 65797.33 2720700.43								tubatcon@lantic.net			0
2563.44 65734.80 2720741.46									DRAWING No.	MTBWS PH4G1.1/07	



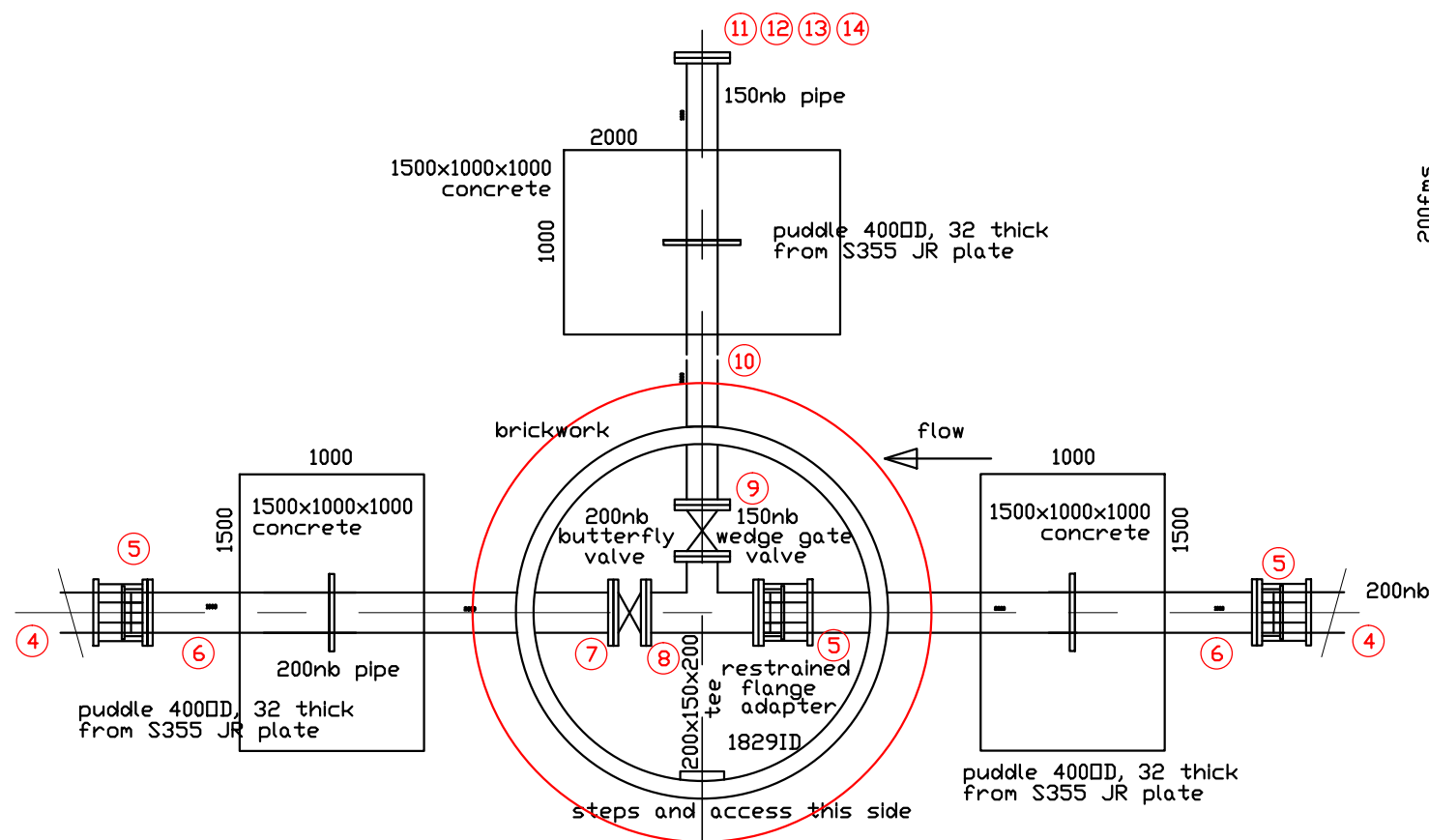


TYPICAL MANHOLE DETAIL

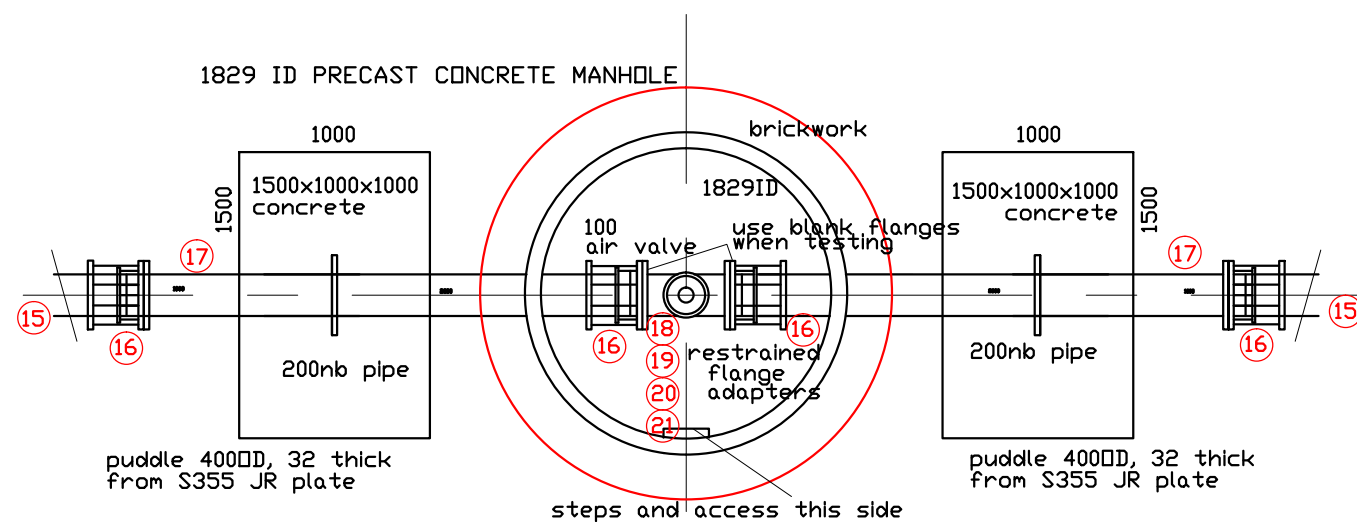


TYPICAL EXCAVATION/BACKFILL DETAIL

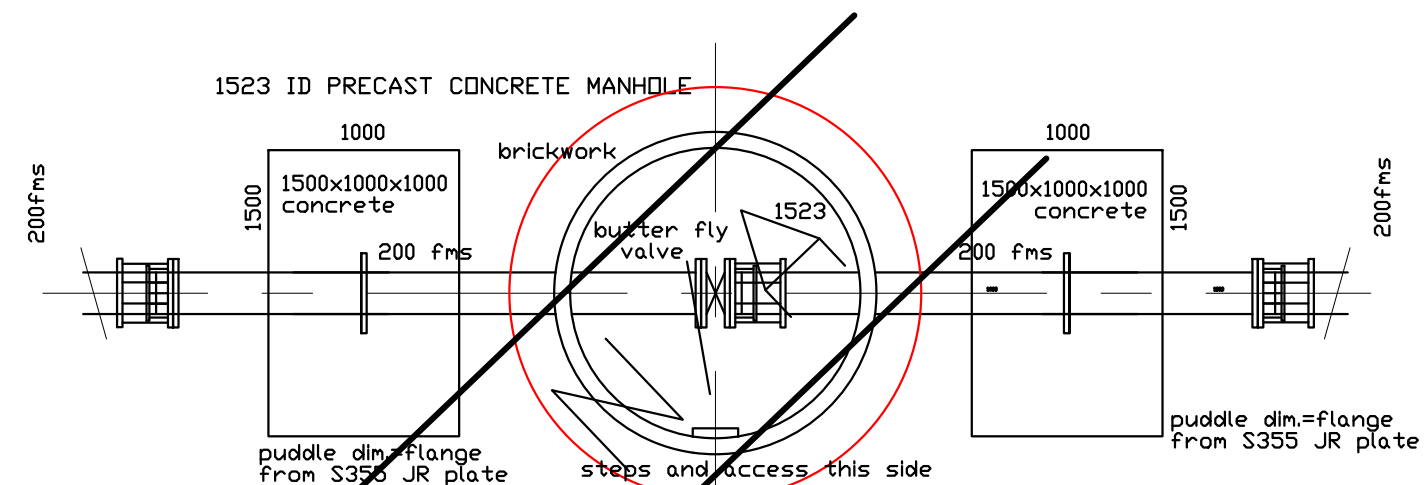
DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
			SEKHUKHUNE DISTRICT MUNICIPALITY	MANHOLES AND FITTINGS FOR 150NB/200NB MS PIPES	CONTRACT SK8/3/1-36/22/23 MOOIHOEK TUBATSE BULK WATER SUPPLY PHASE 4G1.1	TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS P.O. BOX 708 STEELPOORT 1133 TEL: 013 231 7642 FAX: 013 231 7642 e-mail: tubatcon@tantic.net	PVR	JVR	JUNE 2020
							DESIGN	CHECKED	SCALE
							JVR	JVR	NTS
							APPROVED	DATE	REVISION
									0
							DRAWING NO.	MTBWS PH4G1.1/9	



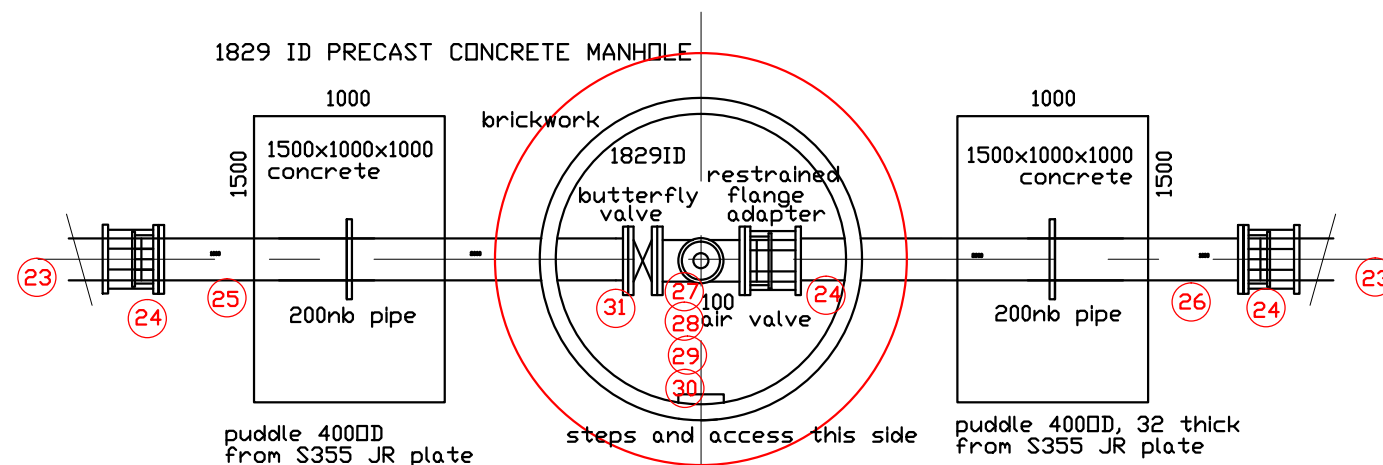
1829 ID PRECAST CONCRETE RINGS AND BRICKWORK MANHOLE
150NB SCOUR TAKE-OFF (x2)



1523 ID PRECAST CONCRETE RINGS AND BRICKWORK MANHOLE
100NB AIR VALVE (x10)
(EXCLUDING x2 AT BRIDGE CROSSING)



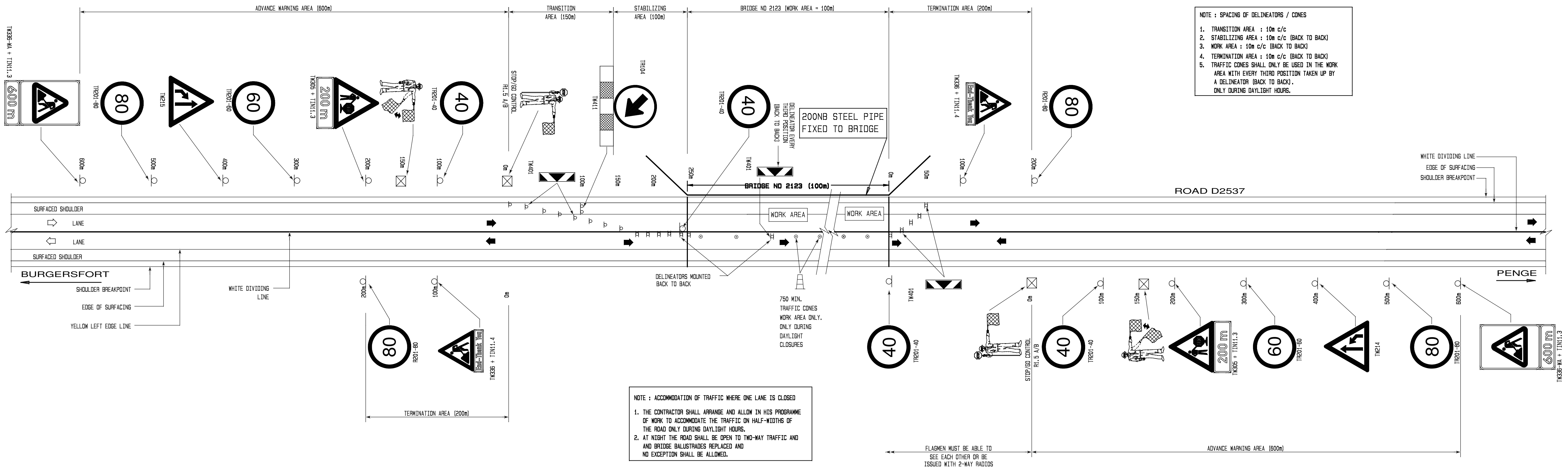
VALVE INSTALLATION
200NB FMS PIPE



1829 ID PRECAST CONCRETE RINGS AND BRICKWORK MANHOLE
100NB AIR VALVE
200NB BUTTERFLY VALVE COMBINATION (x2)

NOTE: Denso system: cleaning of the joints with an approved cleaner followed by the application of the priming solution, mastic, petrolatum tape and cling wrap

DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
			SEKHUKHUNE DISTRICT MUNICIPALITY	MANHOLES AND FITTINGS FOR 150NB/200NB FMS PIPES	CONTRACT SK8/3/1-36/22/23 MODIHOEK TUBATSE BULK WATER SUPPLY PHASE 4G1.1	TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS P.O. BOX 708 STEELPOORT 1133 TEL: 013 231 7642 CELL: 082 871 3744 FAX: 013 231 7642 e-mail: tubatse@tantic.net	PVR	JVR	MARCH 2020
							DESIGN	CHECKED	SCALE
							JVR	JVR	NTS
							APPROVED	DATE	REVISION
									0
							DRAWING NO.	MTBWS PH4G1.1/10	



NOTE : ACCOMMODATION OF TRAFFIC WHERE ONE LANE IS CLOSED

1. THE CONTRACTOR SHALL ARRANGE AND ALLOW IN HIS PROGRAMME OF WORK TO ACCOMMODATE THE TRAFFIC ON HALF-WIDTHS OF THE ROAD ONLY DURING DAYLIGHT HOURS.

2. AT NIGHT THE ROAD SHALL BE OPEN TO TWO-WAY TRAFFIC AND AND BRIDGE BALUSTRADES REPLACED AND NO EXCEPTION SHALL BE ALLOWED.

SIGN SEQUENCE FOR STOP / GO OPERATION FOR LANE CLOSURE ON BRIDGE NO 2123 (DAYLIGHT CLOSURE ONLY)

TEMPORARY ROAD SIGN SCHEDULE		
SIGN NO	SIGN SIZE (mm)	NUMBER REQUIRED
TW336-WA	1600 X 1200	2
TIN 11.3 (200m)	1200 x 400	2
TIN 11.3 (600m)	1200 x 400	2
TIN 11.4	1200 x 400	2
END-THANK YOU	1200 (SIDE LENGTH)	2
TW214	1200 (SIDE LENGTH)	1
TW215	1200 (SIDE LENGTH)	1
TW305	1200 (SIDE LENGTH)	2
TW411	2400 X 400	1
TW401	800 X 200	58
TR201-80	1200 (DIA)	4
TR201-60	1200 (DIA)	2
TR201-40	1200 (DIA)	4
TR104	1200 (DIA)	1
R 1.5 A/B (STOP/GO)	1200	2
TRAFFIC CONES	750 (HEIGHT)	7
FLAGMEN	TO BE SUPPLIED ON A DAILY BASIS AS REQUIRED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PROGRAMME (2 FLAGMEN ON EACH SIDE)	



NOTE:

A PROVISIONAL SUM IS ALLOWED FOR ACCOMMODATION OF TRAFFIC IN THE PROJECT BQQ. THE CONTRACTOR TO INCLUDE FOR ALL TEMPORARY SIGNAGE, SUPPORTS, STAYS, CONES, FLAGMEN, RADIOS AND DAILY NIGHT OPENING WITH THE QUOTATION TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO UTILIZATION OF THE PROVISIONAL SUM.

Bends, specials and fittings in 200nb fms rising main		
ITEM	QTY	DESCRIPTION
		GENERAL
1	1	Flanged PN40 reducer, 600 long, 300nb to 200nb to existing 300nb fms pipe of Phase 4F2. Add DHD (1x300nb and 1x200nb, PN40, joints)
2	1	Flanged PN40 reducer, 600 long, 300nb to 200nb to existing 300nb fms pipe of Phase 4F2.
3	3	DN200 PN40 isolating flange kit c/w surge protection
		SCOURS IN 200NB PIPE
4	4	1000 long 200nb pipe flanged pn40 one end c/w restraining flange other end 300 from pipe end
5	6	200nb, pn40 restrained flange adapter (Klamflex or approved similar) Check fit to pipes
6	4	3000 long 200nb pipe flanged pn40 both ends with puddle flange 32x400 1000 from one end.
7	2	200nb flanged pn40 butterfly valve (VAG, Ozkan or approved similar with Auma (or approved similar) gearbox
8	2	200nb flanged pn40 unequal tee with 150nb ecentric take-off. 200nb: 600 long. 150nb: 400 from 200nb centreline
9	2	150nb flanged pn40 approved wedge gate valve
10	2	3000 long 150nb pipe flanged pn40 both ends with puddle flange 32x400 1000 from one end.



11	4	150nb flanged pn40 90deg. long radius bends to MDS
12	4	1000 long 150nb pipe flanged pn40.
13	4	500 long 150nb pipe flanged pn40.
14	4	150nb pn40 blank flange

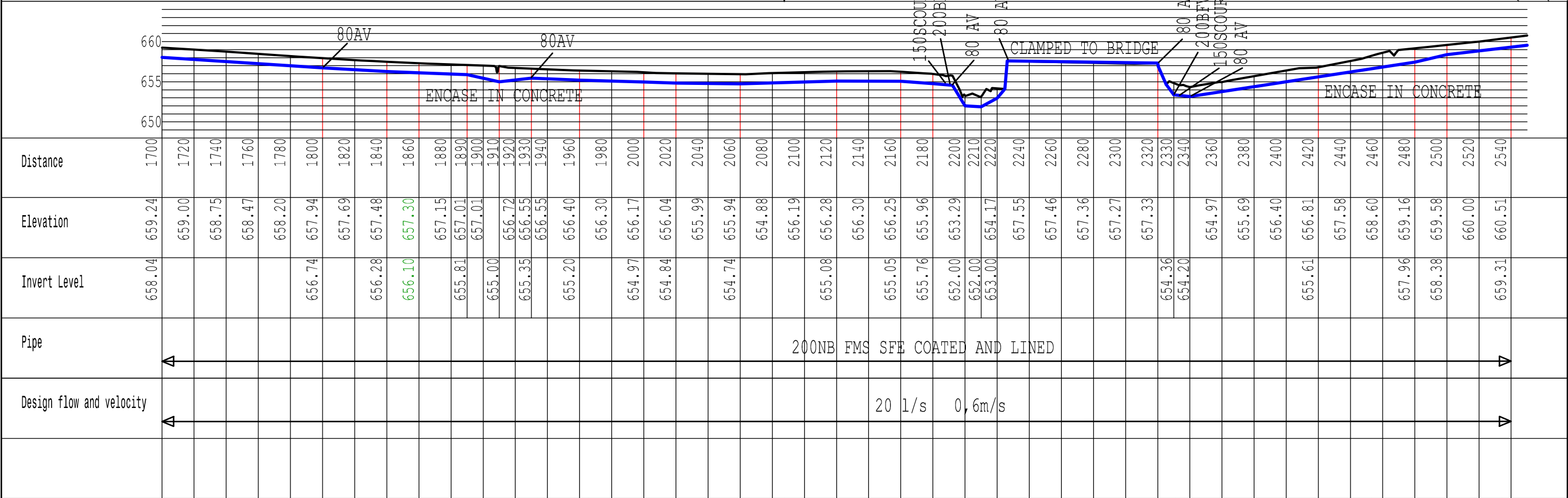
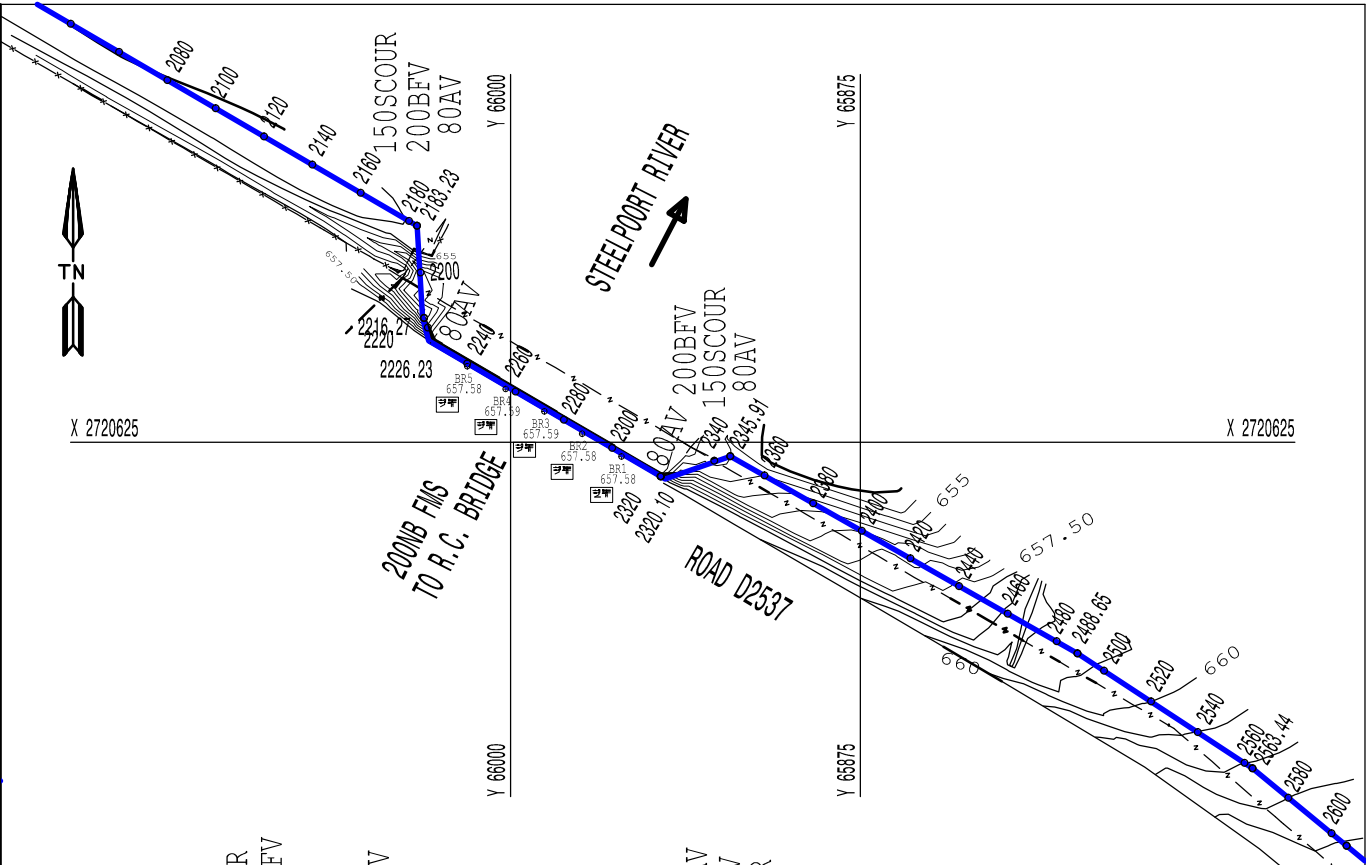
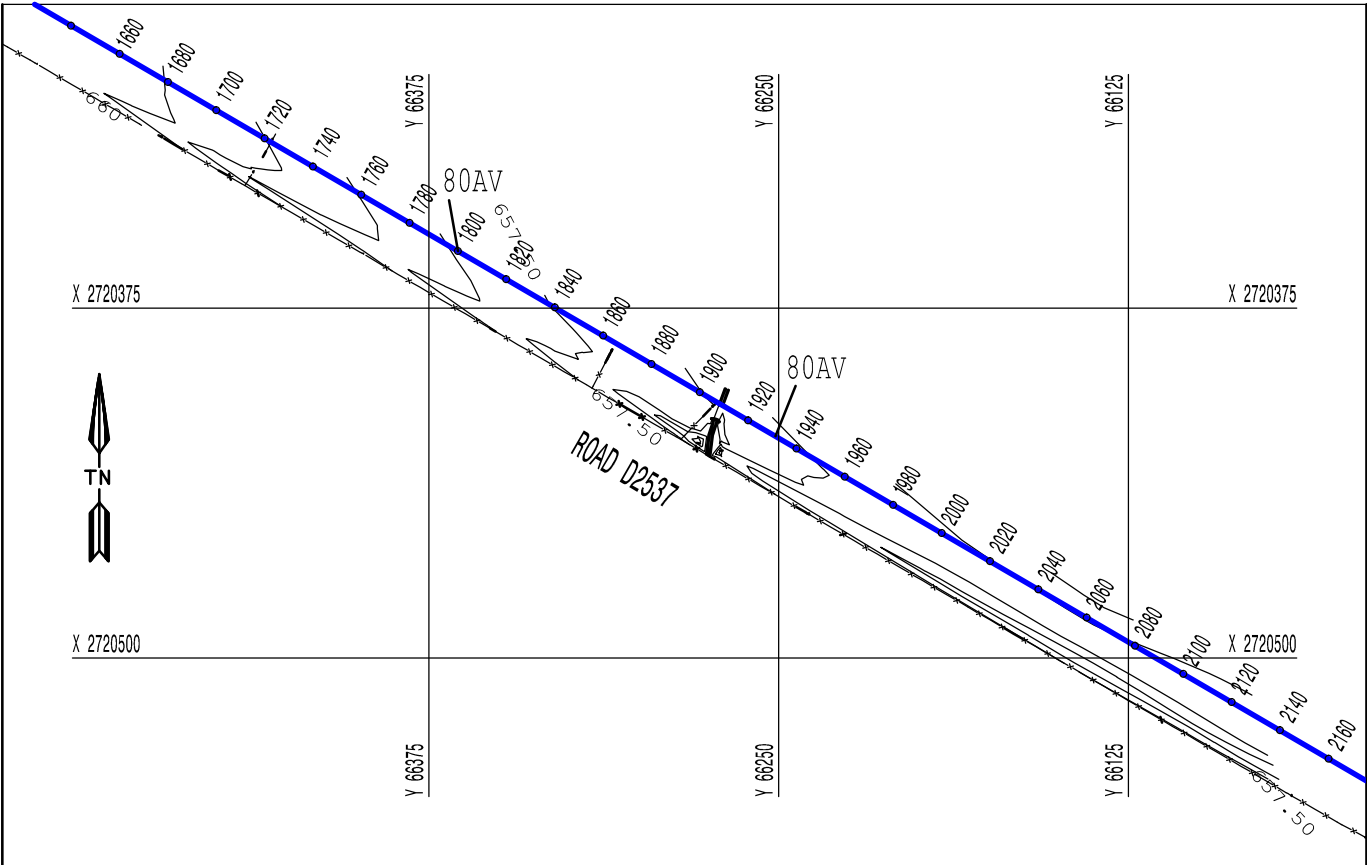
NOTE: Denso system: cleaning of the joints with an approved cleaner followed by the application of the priming solution, mastic, petrolatum tape and cling wrap



	DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
				SEKHUKHUNE DISTRICT MUNICIPALITY	PIPE AND FITTING SCHEDULE FOR 200NB FMS PIPES	CONTRACT SK8/3/1-36/22/23 MOOIHOEK TUBATSE BULK WATER SUPPLY PHASE 4G1.1	TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS P.O. BOX 708 STEELPOORT 1133 TEL: 013 231 7642 CELL: 082 871 3744 FAX: 013 231 7642 e-mail: tubatsecon@tantic.net	PVR	JVR	MARCH 2020
								DESIGN JVR	CHECKED JVR	SCALE NTS
				PRIVATE BAG X 8611 GROBLERSDAL 0470				APPROVED	DATE	REVISION
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								DRAWING NO.	MTBWS PH4G1.1/11	

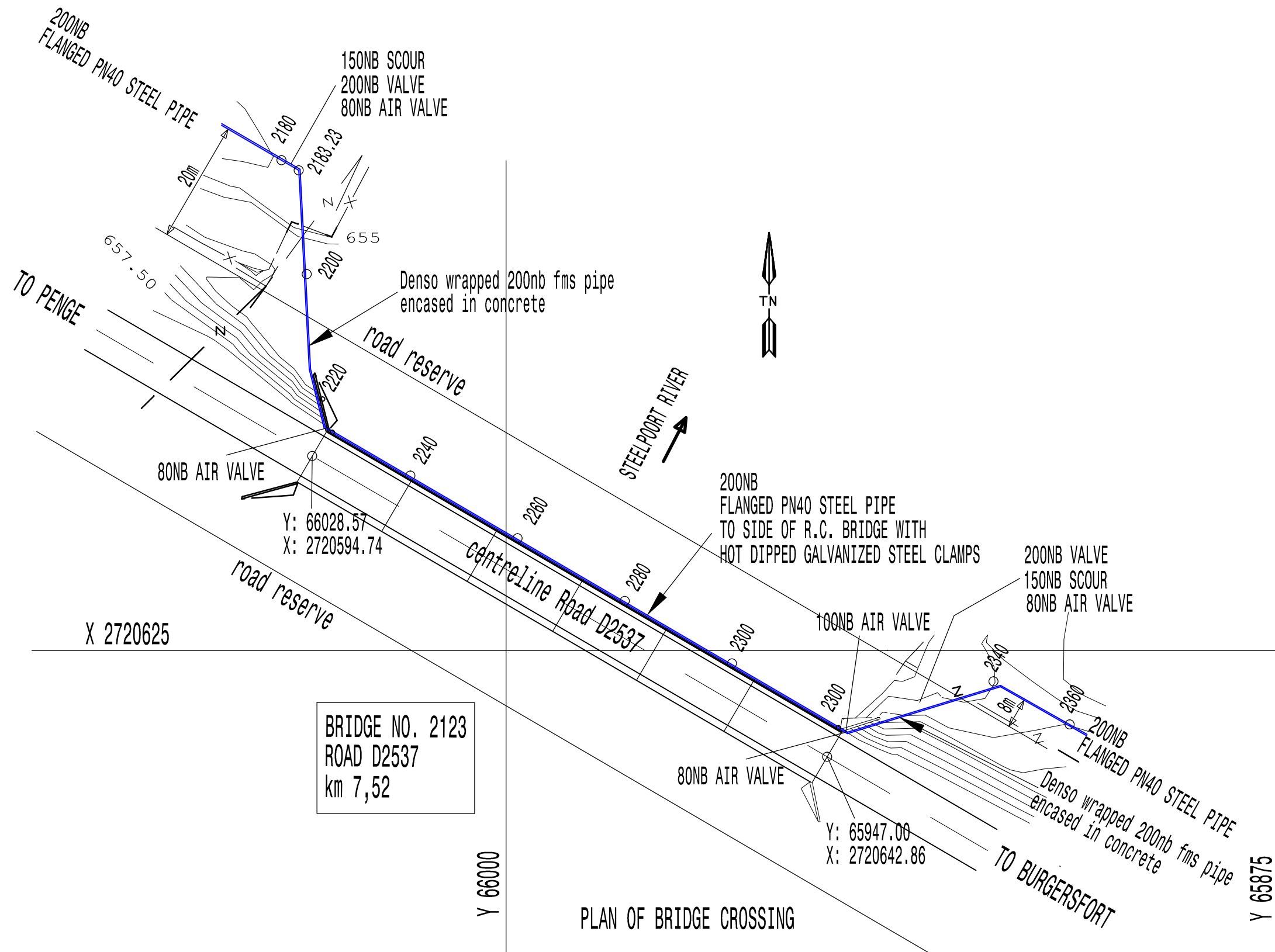
ITEM	QTY	DESCRIPTION
		SEPERATE AIR VALVES IN 200NB FMS PIPE
15	20	1000 long 200nb pipe flanged pn40 one end c/w restraining flange other end 300 from pipe end
16	40	200nb, pn40 restrained flange adapter (Klamflex or approved similar)
17	20	3000 long 200nb pipe flanged pn40 both ends with puddle flange 32x400 1000 from one end.
18	10	200nb flanged pn40 unequal tee with 150nb take-off. 200nb: 600 long, 150nb: 400 from 200nb centreline
19	10	150nb flanged pn40 butterfly valve (VAG, Ozkan or approved similar)
20	10	Flanged PN40 reducer, 300 long, 150nb to 100nb
21	10	100dia flanged PN40 Vent-o-Mat RBX, triple orifice, air and vacuum release valve.
22	4	200nb pn40 blank flange

ITEM	QTY	DESCRIPTION
		AIR VALVE/BUTTERFLY COMBINATION IN 200NB PIPE
23	4	1000 long 200nb pipe flanged pn40 one end c/w restraining flange other end 300 from pipe end
24	6	200nb, pn40 restrained flange adapter (Klamflex or approved similar)
25	2	3000 long 200nb pipe flanged pn40 both ends with puddle flange 32x400 1000 from one end.
26	2	3000 long 200nb pipe flanged pn40 one end with restraining flange to other end and puddle flange 32x400 1000 from restraining flange end
27	2	200nb flanged pn40 unequal tee with 150nb take-off. 200nb: 600 long, 150nb: 400 from 200nb centreline
28	2	150nb flanged pn40 butterfly valve (VAG, Ozkan or approved similar)
29	2	Flanged PN40 reducer, 300 long, 150nb to 100nb
30	2	100dia flanged PN40 Vent-o-Mat RBX, triple orifice, air and vacuum release valve.
31	2	200nb flanged pn40 butterfly valve (VAG, Ozkan or approved similar with Auma (or approved similar) gearbox

	DATE	DESCRIPTION	APPROVED	CLIENT	DRAWING TITLE	PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
				SEKHUKHUNE DISTRICT MUNICIPALITY			TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS	PVR	JVR	MARCH 2020
				 PRIVATE BAG X 8611 GROBLERSDAL 0470	PIPE AND FITTING SCHEDULE FOR 200NB FMS PIPES	CONTRACT SK8/3/8-36/22/23 MOOIHOEK TUBATSE BULK WATER SUPPLY PHASE 4G1.1	 P.O. BOX 708 STEELPOORT 1183 TEL : 013 231 7642 CELL : 082 871 3744 FAX : 013 231 7642 e-mail tubatcon@tantic.net	DESIGN JVR	CHECKED JVR	SCALE NTS
								APPROVED	DATE	REVISION
										0
								DRAWING NO.	MTBWS PH4G1.1/12	



CHAINAGE 0+00 67919.77 2719448.52 2183.23 66033.40 2720547.66 2216.27 66030.84 2720580.60 2226.23 66027.30 2720589.91 2320.10 65946.24 2720637.24 2345.91 65921.47 2720629.98 2488.65 65797.33 2720700.43 2563.44 65734.80 2720741.46			DATE	DESCRIPTION	APPROVED	DESIGN CONSULTANT SEKHUKUNE DISTRICT MUNICIPALITY  PRIVATE BAG X 8611 GROBLERSDAL 0470	DRAWING TITLE LONGITUDINAL SECTION CH 1700 - CH 2540 BRIDGE CROSSING	PROJECT CONTRACT NO: SK8/3/1-36/22/23 ALVERTON BULK WATER SUPPLY PHASE 4G1.1	DESIGN CONSULTANT TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS  P.O. BOX 708 TEL 013 231 7642 STEELPOORT CELL 082 871 3744 1133 FAX 013 231 7642 tubatcon@lantic.net	DRAWN BB	CHECKED JVR	DATE JUNE 2020
										DESIGN JVR	CHECKED JVR	SCALE HOR 1 : 2500 VERT 1 : 500
										APPROVED	DATE	REVISION
											0	
										DRAWING No.	MTBWS PH4G1.1/13	



CHAINAGE		
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2183.23	66033.40	2720547.66
2216.27	66030.84	2720580.60
2226.23	66027.30	2720589.91
2320.10	65946.24	2720637.24
2345.91	65921.47	2720629.98
2488.65	65797.33	2720700.43
2563.44	65734.80	2720741.46

APPROVED

DESIGN CONSULTANT

SEKHUKUNE DISTRICT MUNICIPALITY



PRIVATE BAG X 8611
GROBLERSDAL
0470

DRAWING TITLE

LAYOUT OF BRIDGE CROSSING

PROJECT

CONTRACT NO: SK8/3/1-36/22/23
ALVERTON
BULK WATER SUPPLY
PHASE 4G1.1

DESIGN CONSULTANT

TUBATSE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND PROJECT MANAGERS



P.O. BOX 708 TEL 013 231 7642
STEELPOORT CELL 082 871 3744
1133 FAX 013 231 7642
tubatcon@lantic.net

DRAWN

BB

CHECKED

JVR

DATE

JUNE 2020

DESIGN

JVR

CHECKED

JVR

SCALE

HOR 1 : 2500
VERT 1 : 500

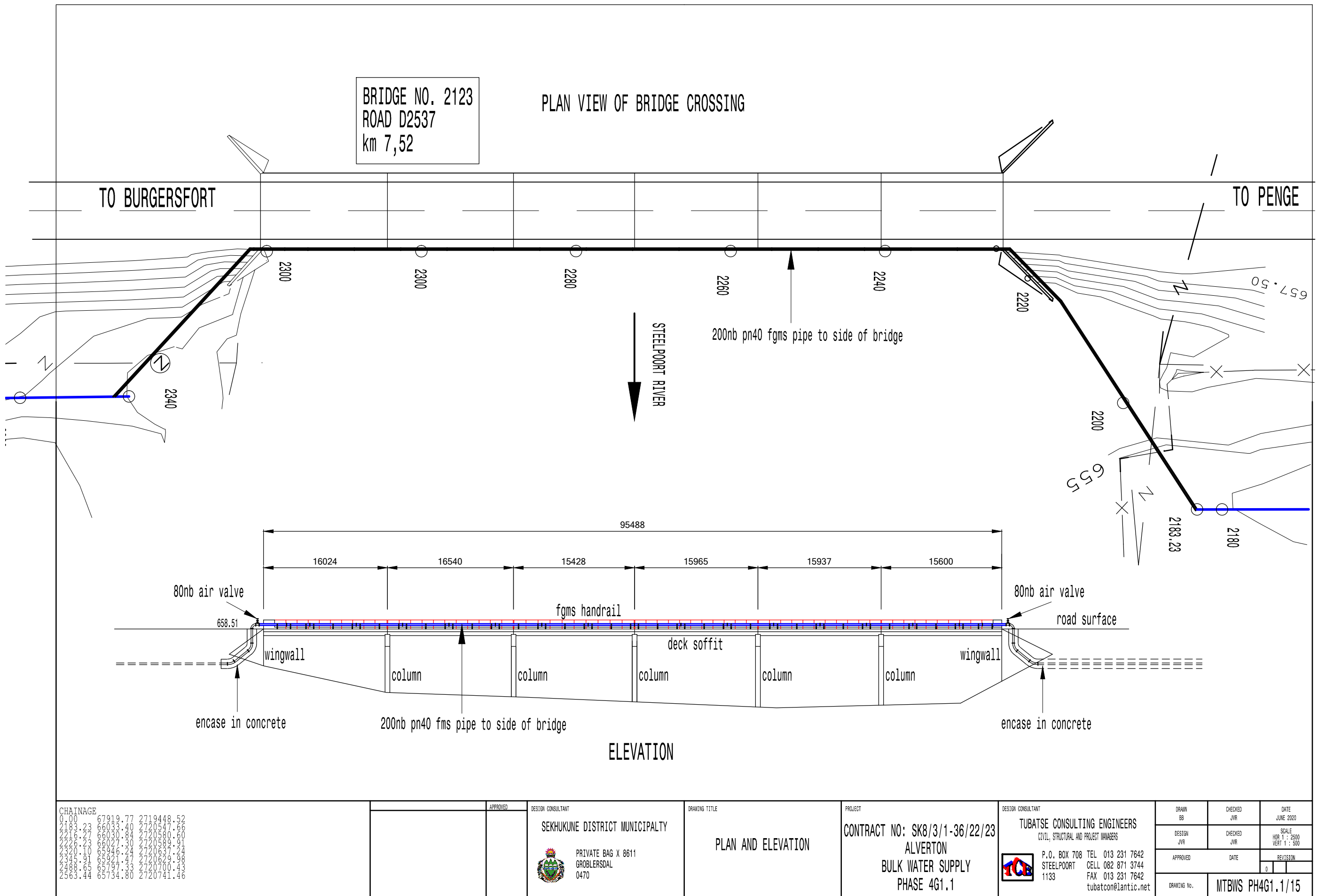
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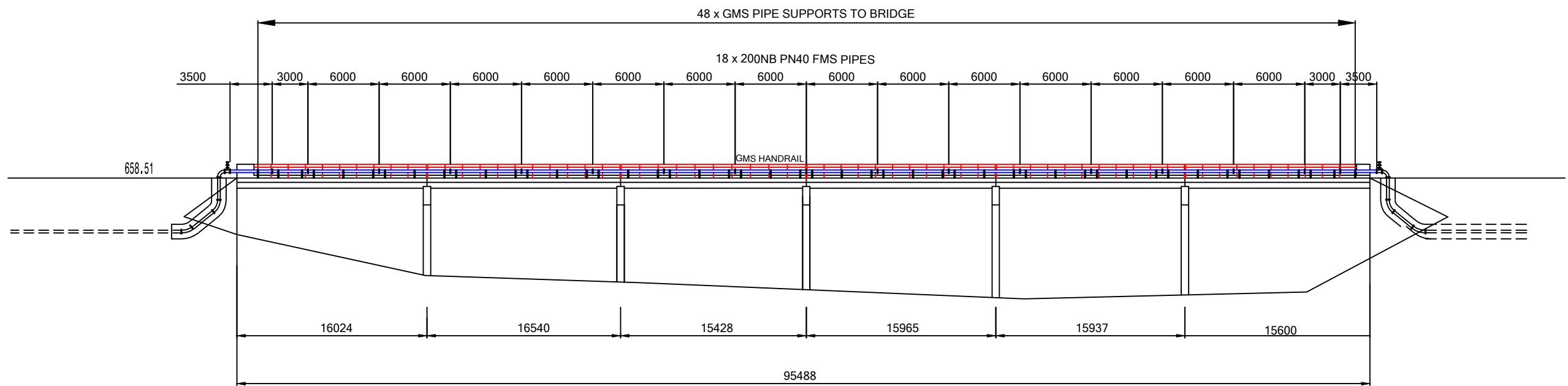
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REVISION

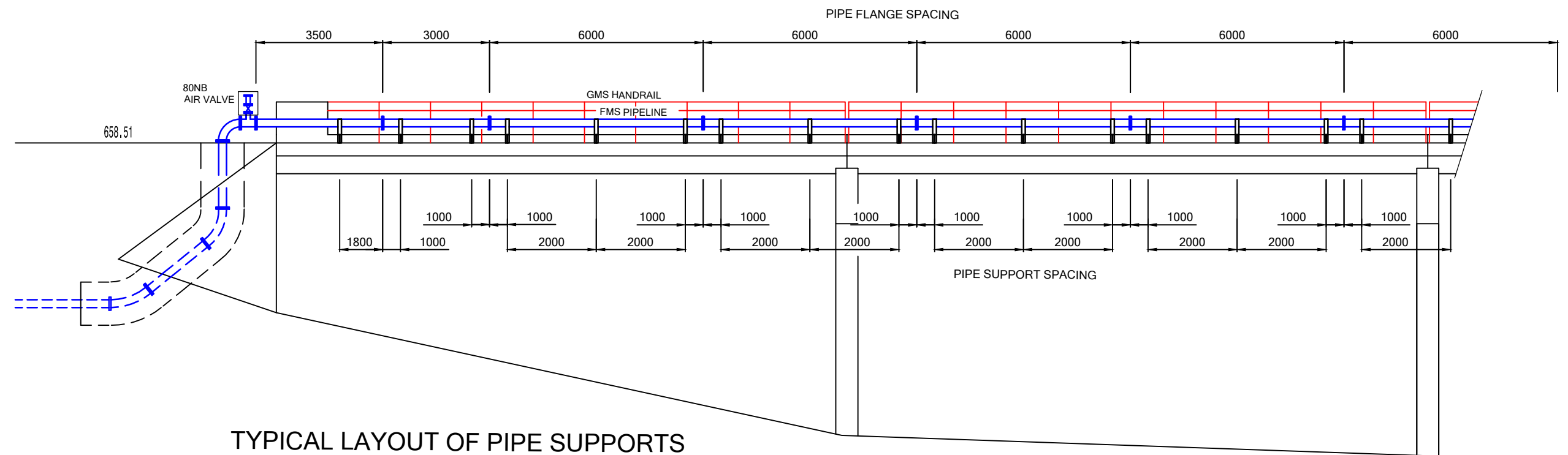
DRAWING No.

MTBWS PH4G1.1/14







ELEVATION



TYPICAL LAYOUT OF PIPE SUPPORTS

CHAINAGE 0+00 67919.77 2719448.52 2+83.23 66033.40 2720547.66 2+16.27 66030.84 2720580.60 2+26.23 66027.30 2720589.91 2+20.10 65946.24 2720637.24 2+45.91 65921.47 2720629.98 2+88.65 65797.33 2720700.43 2+63.44 65734.80 2720741.46	<div></div>	<div>APPROVED</div>	DESIGN CONSULTANT <div>SEKHUKUNE DISTRICT MUNICIPALITY</div> <div> PRIVATE BAG X 8611 GROBLERSDAL 0470</div>	DRAWING TITLE <div>LAYOUT OF PIPE SUPPORTS</div>	PROJECT <div>CONTRACT NO: SK8/3/1-36/22/23</div> <div>ALVERTON</div> <div>BULK WATER SUPPLY</div> <div>PHASE 4G1.1</div>	DESIGN CONSULTANT <div>TUBATSE CONSULTING ENGINEERS</div> <div>CIVIL, STRUCTURAL AND PROJECT MANAGERS</div> <div> P.O. BOX 708 TEL 013 231 7642 STEELPOORT CELL 082 871 3744 1133 FAX 013 231 7642 tubatcon@lantic.net</div>	DRAWN BB	CHECKED JVR	DATE JUNE 2020
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							APPROVED		DATE
							DRAWING No.		MTBWS PH4G1.1/16

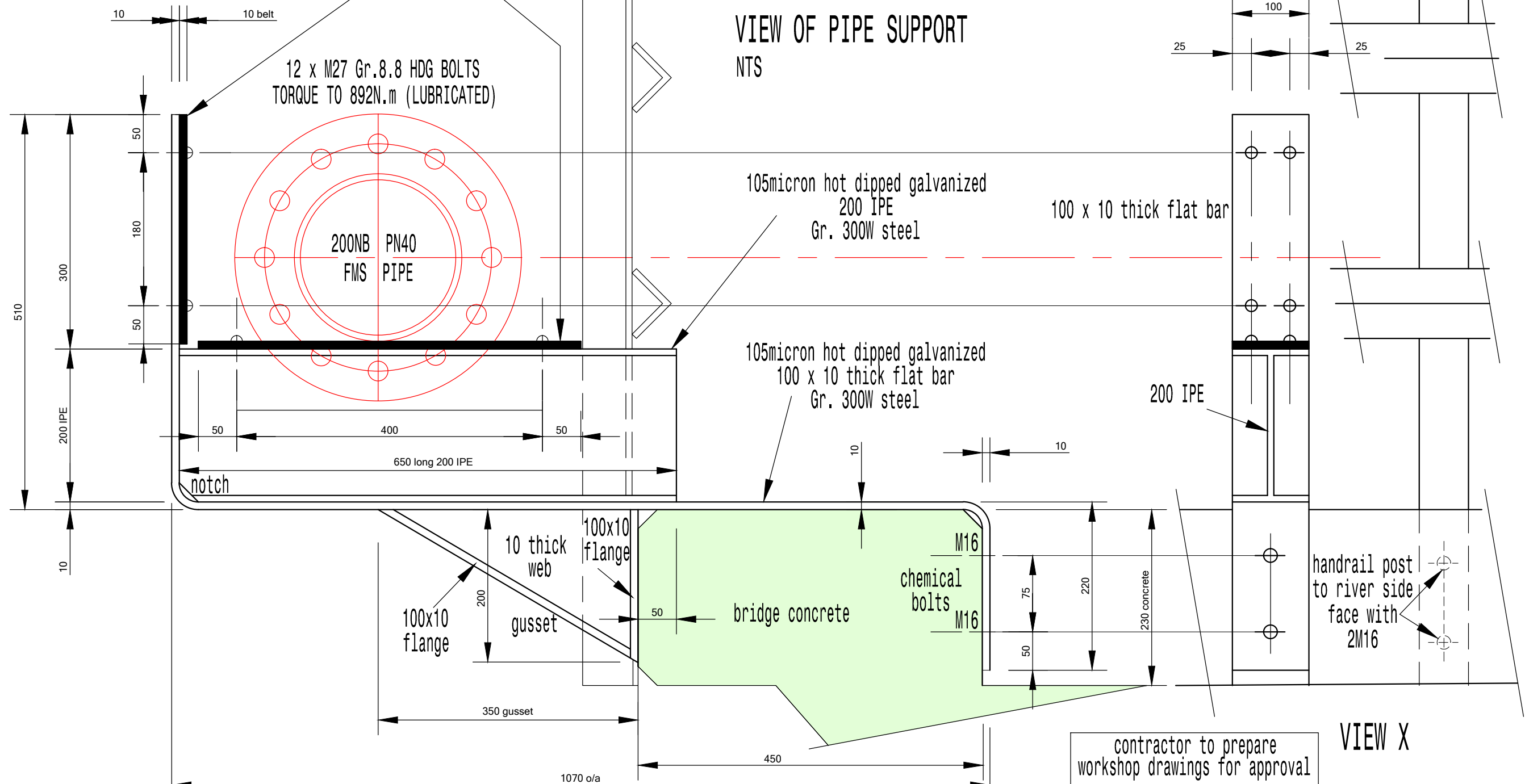
new 280 and 500 long x 100 wide conveyor belt,
10 thick, cleaned and profiled, with Vigro
SC 022 adhesive to galve cleaned and profiled
hot dipped galvanized surface. Each bolted to
support steel with 4 x M10 x 35 zinc plated
cup square bolts 50 from ends

EXISTING GALVANIZED HANDRAIL

X

EXISTING GALVANIZED HANDRAIL

SECTION THROUGH BRIDGE DECK AND PIPE VIEW OF PIPE SUPPORT NTS



APPROVED

DESIGN CONSULTANT

SEKHUKUNE DISTRICT MUNICIPALITY



PRIVATE BAG X 8611
GROBLERSDAL
0470

DRAWING TITLE

PIPE SUPPORT DETAIL

PROJECT

CONTRACT NO: SK8/3/1-36/22/23
ALVERTON
BULK WATER SUPPLY
PHASE 4G1.1

DESIGN CONSULTANT

TUBATSE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND PROJECT MANAGERS



P.O. BOX 708 TEL 013 231 7642
STEELPOORT CELL 082 871 3744
1133 FAX 013 231 7642
tubatcon@lantic.net

DRAWN

BB

CHECKED

JVR

DATE

JUNE 2020

DESIGN

JVR

CHECKED

JVR

SCALE

HOR 1 : 2500

VERT 1 : 500

APPROVED

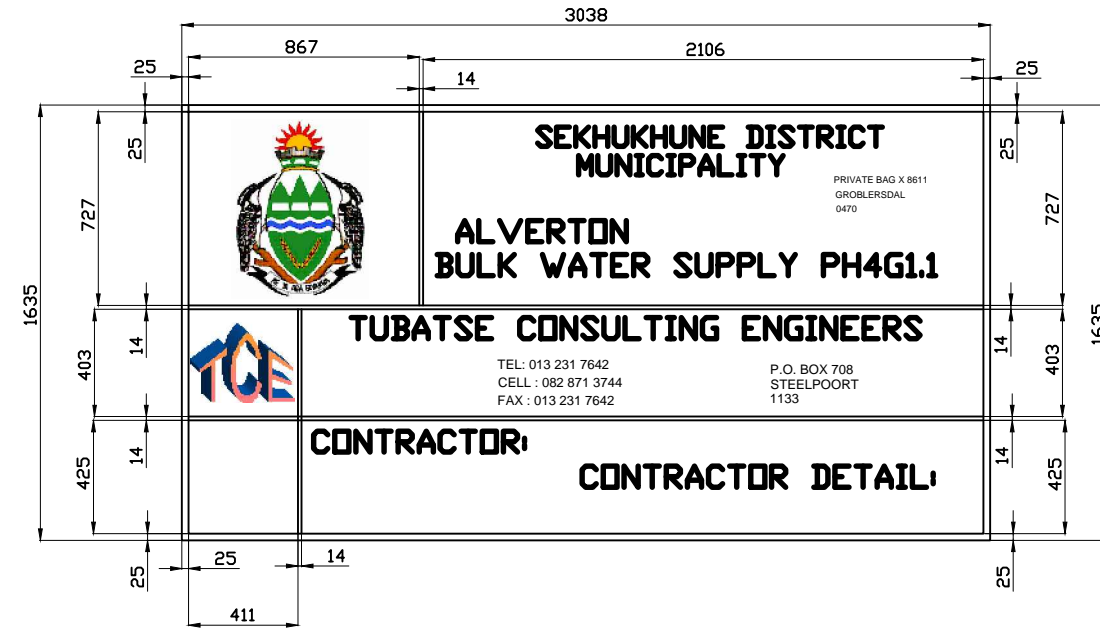
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REVISION

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DRAWING No.

MTBWS PH4G1.1/17

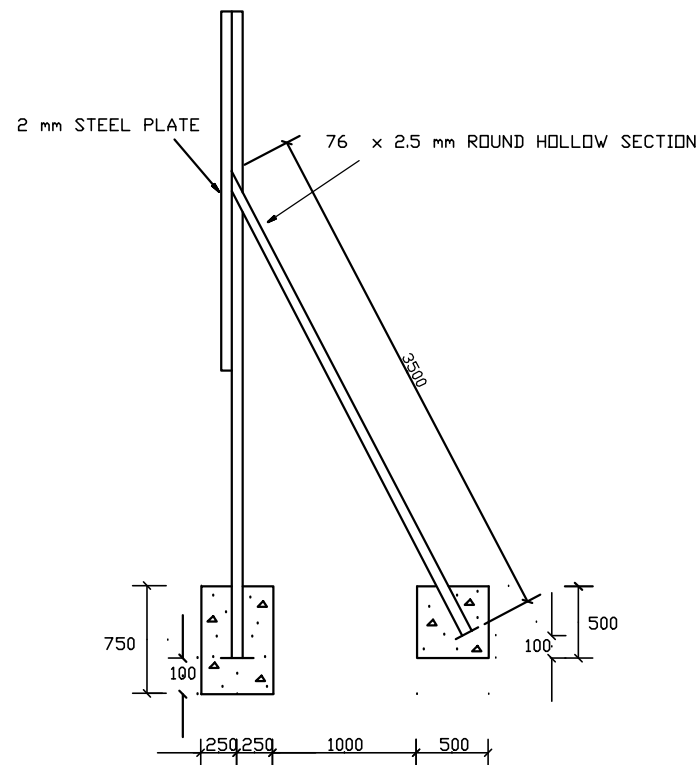


FRONT ELEVATION

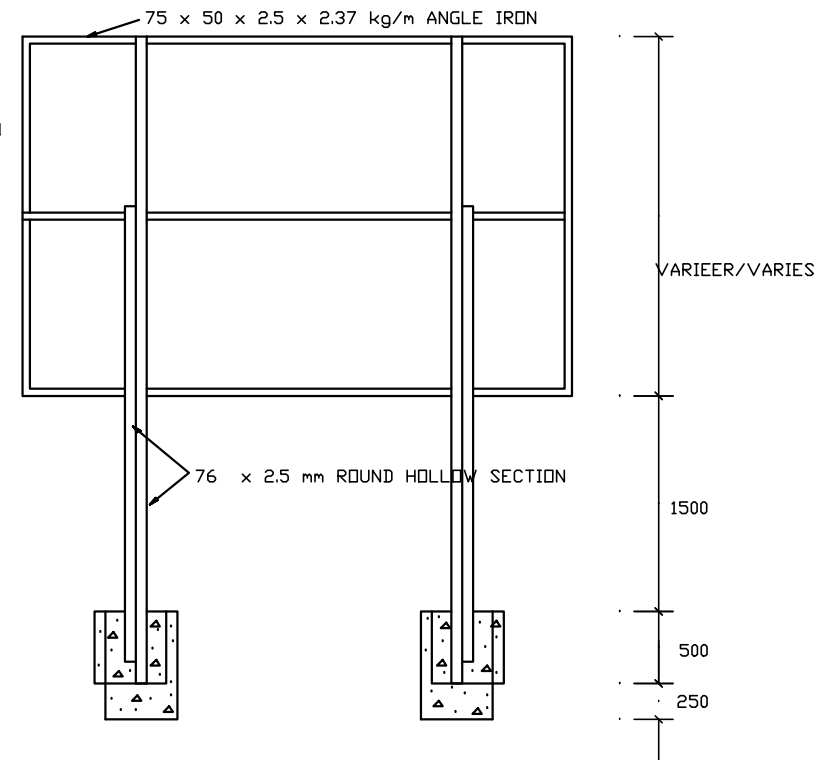
RULES

1. TYPEFACE TO BE USED SHALL BE HELVETICA MEDIUM.
 2. SIZE OF LETTERING AND DIMENSIONS ARE INDICATED ON THE DIAGRAM AND SHALL BE STRICTLY ADHERED TO.
 3. HEIGHT OF THE BOARD DEPENDS ON NUMBER OF PROFESSIONAL SERVICE DISPLAYED.
 - NOTE ALL PROFESSIONAL SERVICES ARE TO BE SHOWN.
 4. PROJECT NAME AND OWNER SHALL BE WHITE LETTERING ON MIDDLE BLUE BACKGROUND SURROUNDING BORDER SHALL BE IN MIDDLE BLUE.
 5. PROFESSIONAL CRESTS AND COMPANY NAMES SHALL BE IN BLACK ON WHITE.
 6. THE BOARD SHALL CONFORM TO THE DIAGRAM SUBJECT TO RULE4.
- NOTA: PAINT COLOURS ARE BASED ON
 PLASCON-EVANS.WHITE VLO 1: TEQUILLA VLO 10
 <“VELVAGLO” POLYURETHANE VELVET ENAMEL> BLACK
 REF.266, MIDDLE BLUE REF. 290 (ACRYLIC ROAD SIGN PAINTS)

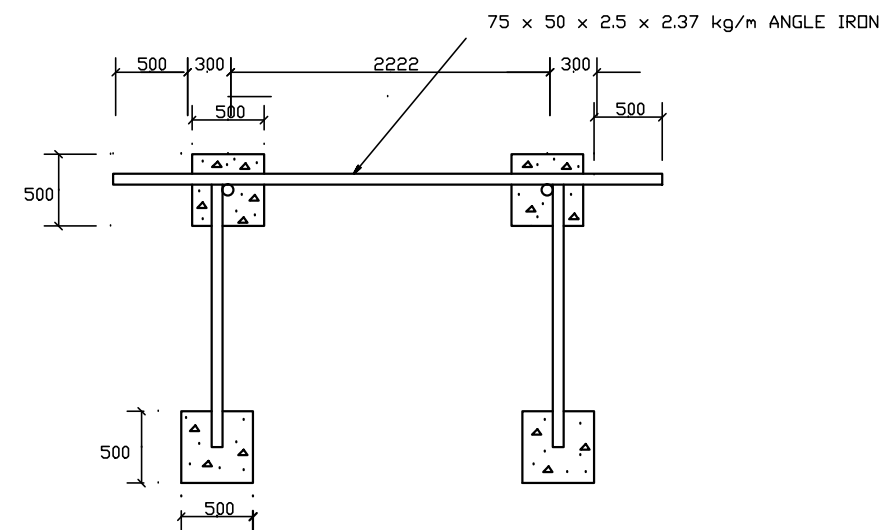
ALL EMBLEMS SHOULD BE IN COLOUR



SIDE ELEVATION

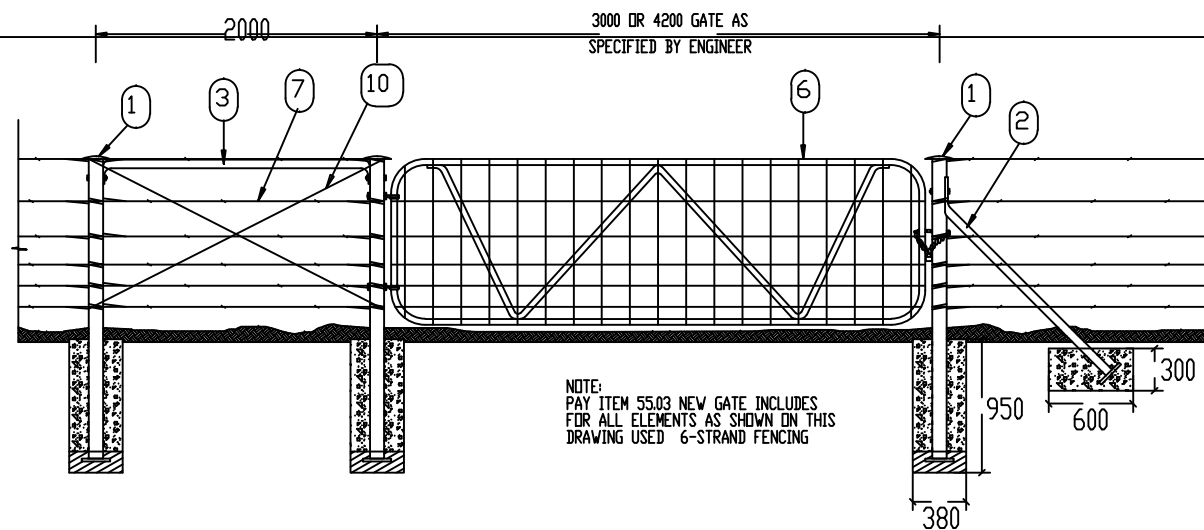


BACK ELEVATION

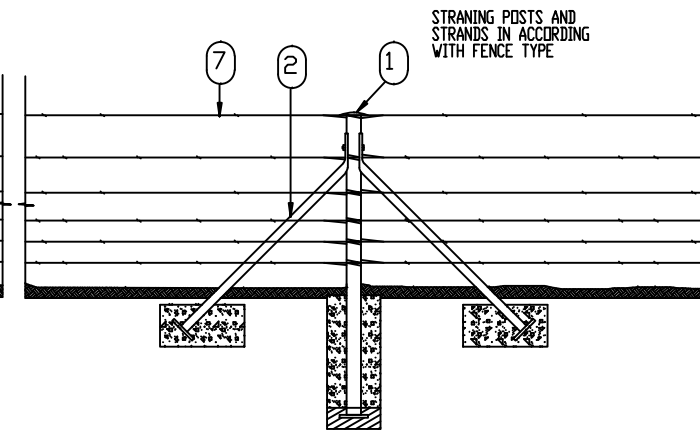


TOP ELEVATION

REVISION		
DATE	DESCRIPTION	APPROVED
CLIENT: SEKHUKHUNE DISTRICT MUNICIPALITY		
 PRIVATE BAG X 8611 GROBLERSDAL 0470		
PROJECT: MODIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1 ALVERTON BWS NO. SK8/3/1-36/22/23		
DRAWING TITLE: NAMEBOARD		
DESIGN CONSULTANT TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS  P.O. BOX 708 STEELPOORT 1133 TEL: 013 231 7642 CELL: 082 871 3744 FAX: 013 231 7642 e-mail: tubatse@tce.co.za		
DRAWN CFG	CHECKED JVR	DATE JUNE 2020
DESIGN JVR	CHECKED JVR	SCALE AS SHOWN
APPROVED		DATE
		REVISION
DRAWING NO.		MTBWS PH4G1.1/18



FENCING DETAIL AT GATE



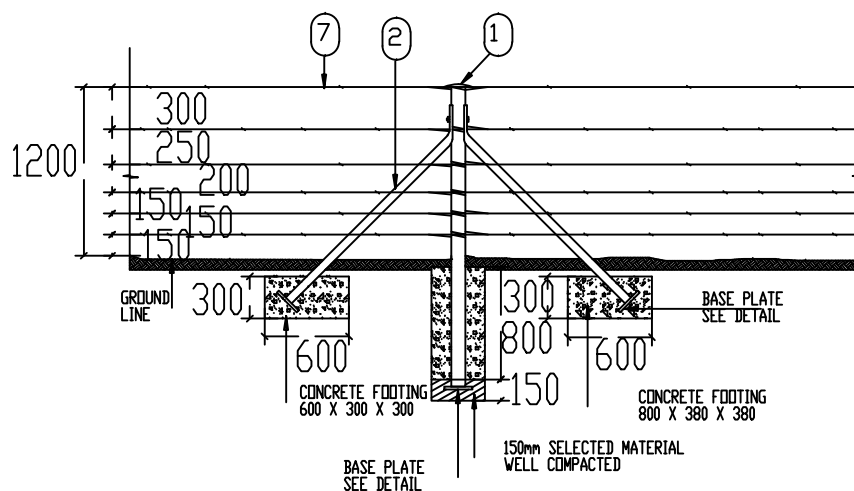
FENCING DETAIL AT WINGWALL

NOTES:

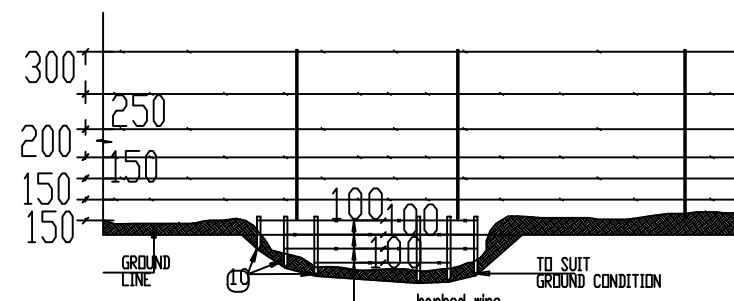
1. ALL DETAILS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION OR FABRICATION COMMENCING.
2. ONLY WRITTEN DIMENSIONS MUST BE USED.
3. GATES, GATE POSTS & STAYS, ETC SHALL BE PAINTED WITH 2 COATS OF ALUMINUM PAINT, BASE PLATES AND PORTIONS OF BELOW THE GROUND MUST BE WELL TARRED OR SIMILAR APPROVED.

ITEM:

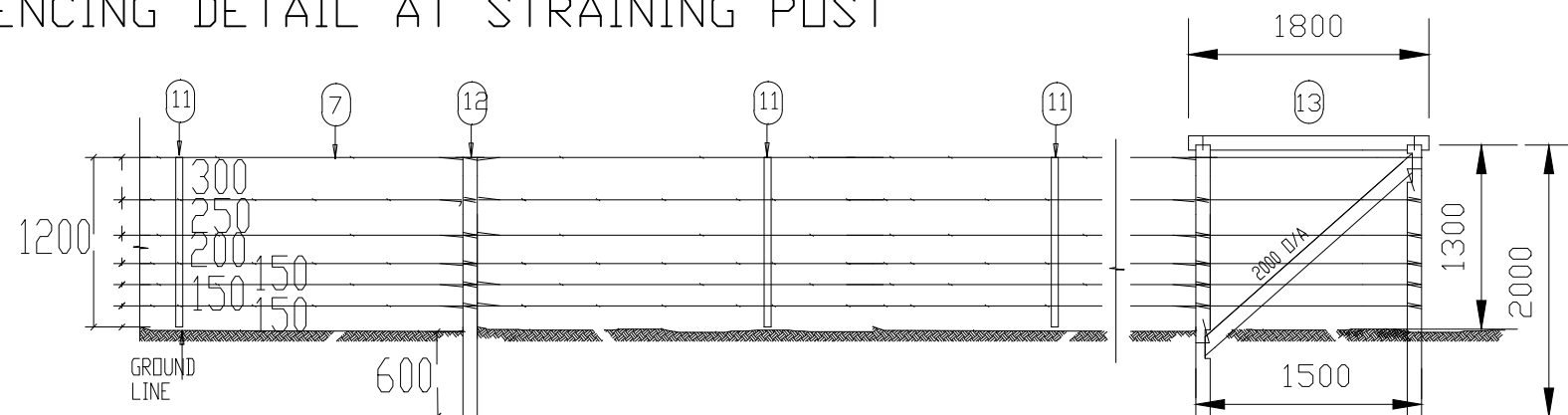
1. STRAINING POSTS:
2.13m X 101.6mm X 2.95mm STEEL POST WITH PRESSED STEEL CUB AND FOOT PLATE
2. STAY:
1.69m X 60mm WITH FOOT PLATE FOR: 6 STRANDS
2.13m X 60mm WITH FOOT PLATE FOR: 9 STRANDS
3. SUPPORT:
2.40m X 60mm BENT AND FLATTENED AS SHOWN
4. DROPPERS:
1.2m X 0.56kg/m RIDGEBACK PATTERN FOR: 6 STRANDS
1.4m X 0.56kg/m RIDGEBACK PATTERN FOR: 9 STRANDS
5. STANDARD:
1.85m X 2.5kg/m "Y" SECTION FOR 6 & 9 STRANDS
6. GATE:
GOVERNMENT PATTERN FARM GATE MANUFACTURED FROM 42.86mm X 2.64mm STEEL TUBING INCLUDING HINGES, WASHERS, BOLTS AND LOCKING CHAIN ATTACHED TO GATE FULLY GALVANISED.
7. BARBED WIRE:
HIGHT-TENSILE-GRADE SINGLE-STRAND 3.15 X 2.5mm OVAL-SHAPED WIRE, WITH 2.81mm EQUIVALENT DIAMETER AND FULLY GALVANISED.
8. TYING WIRE:
2.5mm MILD-STEEL FOR TYING TO POSTS, DROPPERS AND STANDARDS.
9. BOLTS FOR STAYS:
12mm MIN. FULLY GALVANISED (INCLUDING NUTS AND WASHERS).
10. STRAINING WIRE:
4.0mm AND FULLY GALVANISED
11. 50mm dia SABS TREATED TIMBER POST DROPPER, 1200 LONG AT 2M SPACING, SAWN GROOVED FOR TYING WIRE.
12. 100mm dia SABS TREATED TIMBER POLE DROPPER, 1800 LONG AT 20m SPACING, SAWN GROOVED FOR TYING WIRE, INCLUDING 600mm DEEP BY 600mm DIAMETER EXCAVATION, BACKFILL AND COMPACTION.
13. STRAINING POST OF 100mm DIA SABS TREATED TIMBER POLES, NOTCHED AND TIED AS SHOWN. USE DOUBLE 4mm TIE WIRE THROUGH 12-16mm DRILLED HOLES. 700mm DEEP BY 600mm DIAMETER EXCAVATION, STRAINING POSTS AT ALL CORNERS, END/START OF FENCE AND IN LINE AT 100m MAXIMUM APART



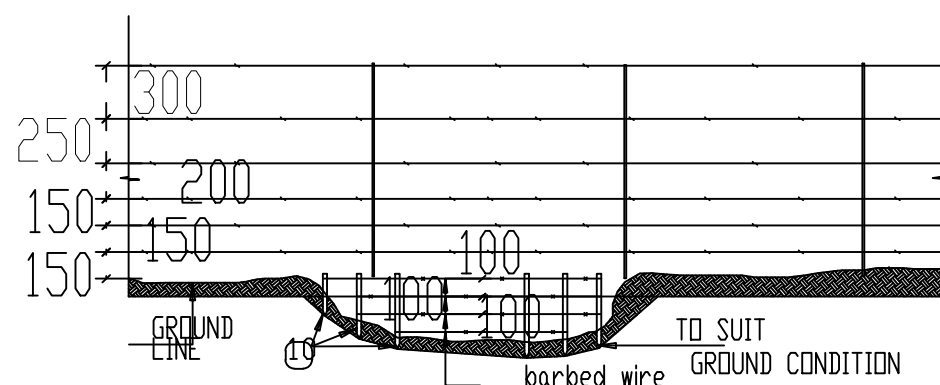
FENCING DETAIL AT STRAINING POST



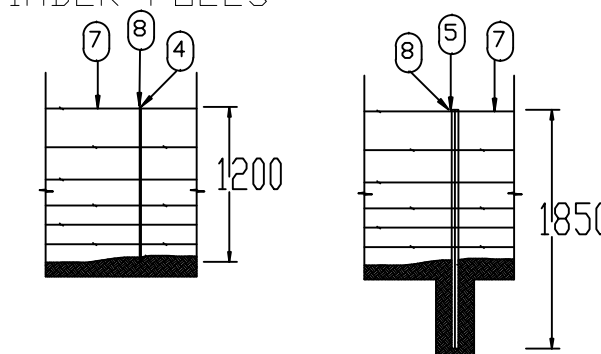
STANDARD AND DROPPER DETAIL AT CHANNELS AND TRENCHES



FENCING DETAIL USING SABS APPROVED TREATED TIMBER POLES





AT CHANNELS AND TRENCHES



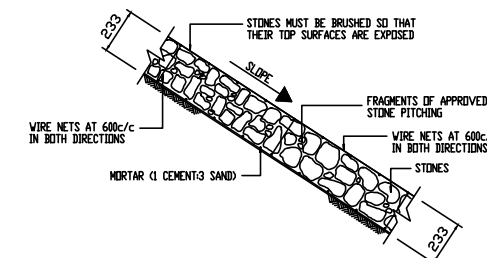
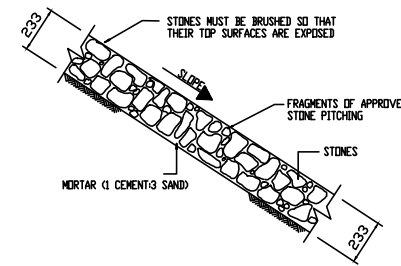
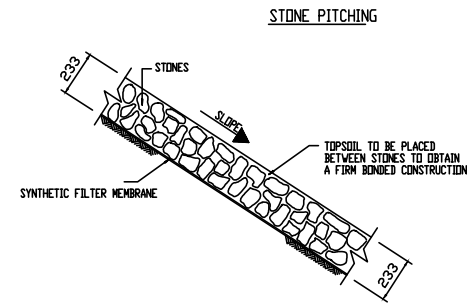
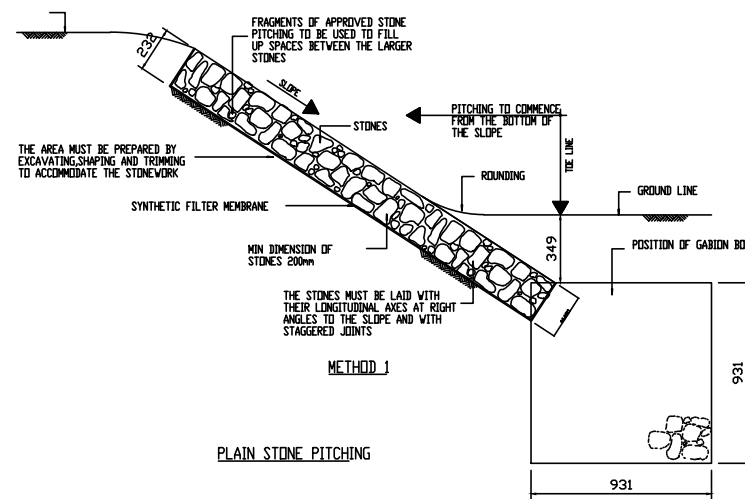
DROPPERS & STANDARDS

NOTES:

1. ALL POSTS ARE TO BE SEALED BY WELDING A STEEL CAP OVER THE OPENING AT THE TOP.
2. 3kg/m I SECTION STANDARDS MAY BE USED INSTEAD OF 2.5kg/m Y SECTION STANDARDS.
3. CONCRETE MUST HAVE BEVELLED EDGES (CONCRETE CLASS 20/38).
4. BOUNDARY BEACONS CONSISTING OF HALVED IRON STANDARDS IN CONCRETE OR WITHOUT CONCRETE MAY NOT BE TAMPERED WITH.
5. BOUNDARY BEACONS CONSISTING OF WOODEN PEGS IN CONCRETE OR WITHOUT CONCRETE MAY BE REPLACED BY A CORNER POST AND TWO STRAINING POSTS.
6. CADASTRAL BEACONS MAY NOT BE TAMPERED WITH UNDER ANY CIRCUMSTANCES.
7. ALL TUBULAR POST TO BE FULLY GALVANISED IN ACCORDANCE WITH S.A.B.S. 763 FOR CLASS B1 ARTICLES.
8. ROLLED STEEL SECTION SHALL BE PROVIDED WITH A PROTECTIVE COATING OF TAR OR OTHER APPROVED MATERIAL.
9. MAXIMUM SPACING OF:
Straining posts = 180m c/c
Standards = 15m c/c
Droppers = 3m c/c

CLIENT: SEKHUKUNE DISRTICT MUNICIPALITY		
 <p>PRIVATE BAG X 8611 GROBLERSDAL 0470</p>		
PROJECT: CONTRACT: SK8/3/1-36/2022/23 MODIHOEK/TUBATSE BULK WATER SUPPLY PHASE 4G1.1		
DRAWING TITLE: CATTLE FENCING DETAIL		
DESIGN CONSULTANT: TUBATSE CONSULTING ENGINEERS CIVIL, STRUCTURAL AND PROJECT MANAGERS		
 <p>P.O. BOX 708 STEELPOORT 1133 TEL: 013 231 7106 CELL: 082 871 3744 FAX: 013 231 7642 e-mail: tubatcon@tantic.net</p>		
DRAWN	CHECKED	DATE
JVR	JVR	AUG. 2014
DESIGN	CHECKED	SCALE
JVR	JVR	AS SHOWN
APPROVED	DATE	REVISION
		0
DRAWING NO.		MTBWS PH4G1.1/19

GROUND LINE



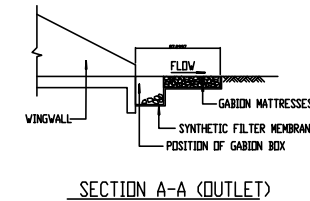
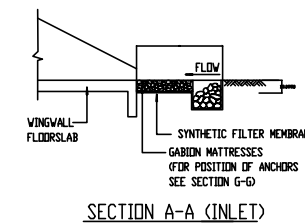
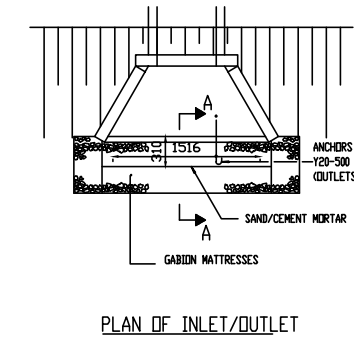
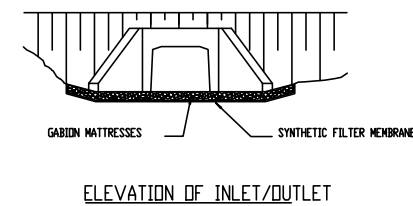
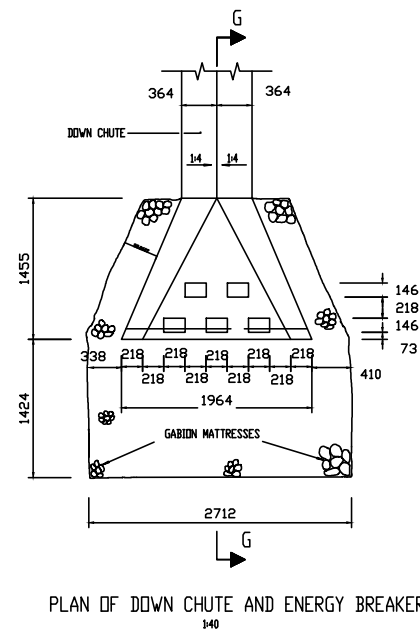
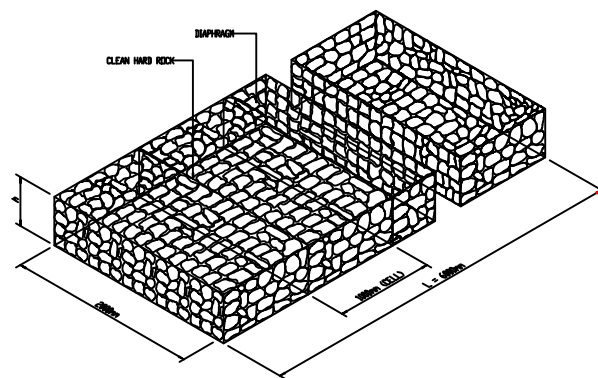
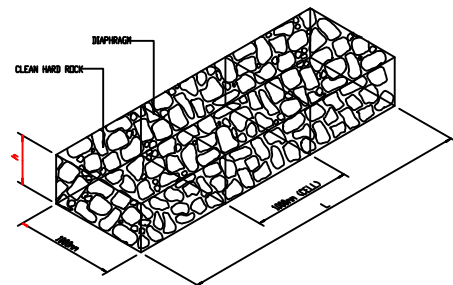
- ## METHOD 2

- NOTES:**
- THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTIONS:
1. NO SMALL STONES SHALL BE USED TO FILL THE SPACES BETWEEN THE LARGER STONES.
 2. TOPSOIL SHALL BE INTRODUCED BETWEEN INDIVIDUAL STONES SIMULTANEOUSLY WITH PLACING OF STONES.
 3. ROOTED GRASS OR GRASS TUFTS SHALL THEN BE PLACED IN THE TOPSOIL.

- NOTES:
- THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTION:
1. THE SPACES BETWEEN THE STONES SHALL BE FILLED WITH MORTAR.

- NOTES:**
- THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTIONS.
1. PITCHING IN ACCORDANCE WITH GROUTED STONE PITCHING.
 2. CONSTRUCTION SHALL BE AS FOLLOWS:
 - a) PLACING OF BOTTOM WIRE NET.
 - b) ATTACHING OF WIRE TIES TO BOTTOM MESH.
 - c) PITCHING.
 - d) PLACING THE TOP WIRE NET AND FASTENING WIRE TIES.
 - e) GROUTING.

GABIONS



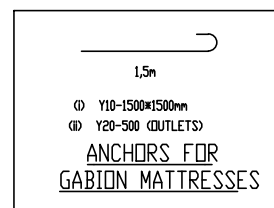
DETAIL OF GABION MATTRESSES AND BOXES AT INLETS AND OUTLETS

BOXES

STANDARD SIZES OF BOXES	
LENGTH	1000mm, 2000mm, 3000mm, 4000mm
WIDTH	1000mm
DEPTH	500mm, 1000mm
DIAPHRAGM SPACING	1000mm

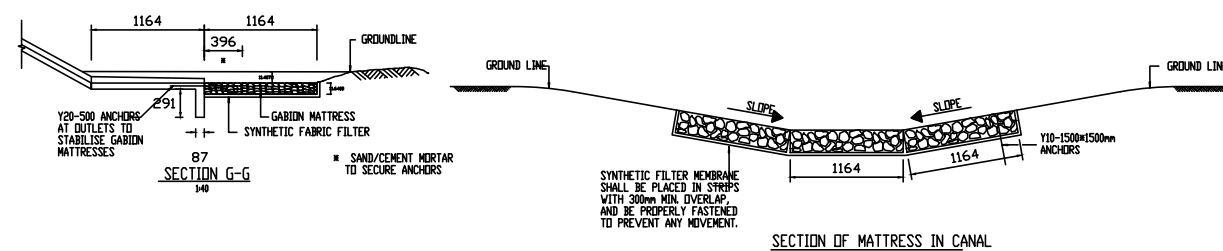
MESH SIZE AND WIRE DIAMETER FOR CAGES		
DEPTH OF GABION	MESH SIZE (mm)	WIRE DIA. (mm)
500mm AND OVER	80 x 100	2,7
200mm TO 300mm	80 x 100	2,5

ROCK USED FOR THE FILLING OF CAGES		
DEPTH OF CAGES	ROCK SIZE (DIMENSIONS)	
	MIN. (mm)	MAKS. (mm)
230	100	125
300	100	200
500	100	250
1000	100	300



MATTRESSES

STANDARD SIZES	
LENGTH	6000mm
WIDTH	2000mm
DEPTH	170mm, 230mm, 300mm



STONE PITCHING AND GABION PROTECTION

REVISION.			
	DATE.	DESCRIPTION.	APPROVED.

CLIENT: **SEKHUKUNE DISTRICT MUNICIPALITY**



PROJECT:

MOOIHOEK/TUBATSE BULK WATER SUPPLY
PHASE 4G1.1
ALVERTON BWS
CONTRACT NO. SK8/3/1-36/22/23

DRAWING TITLE:

GABIONS AND STONE PITCHING

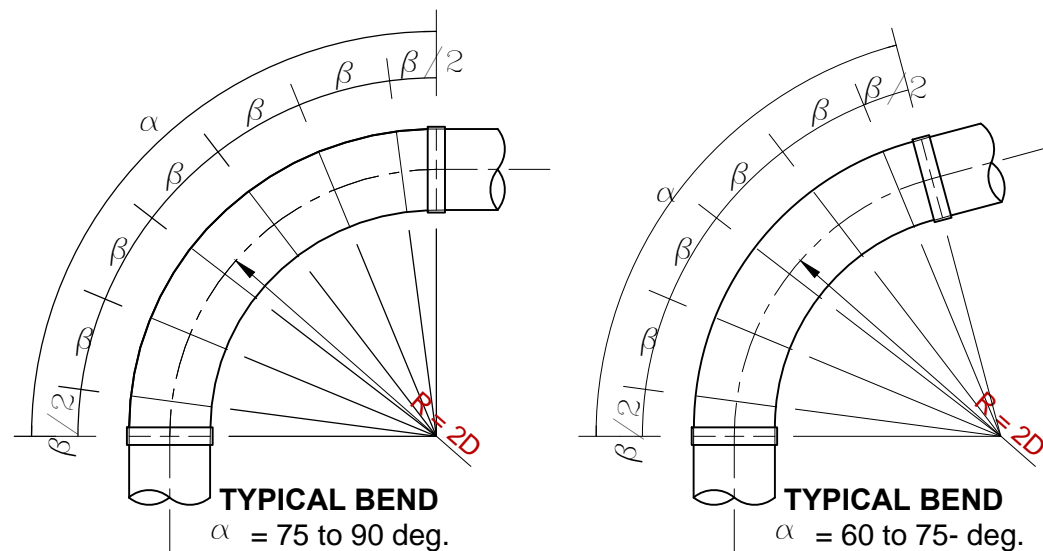
DESIGN CONSULTANT

TUBATSE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND PROJECT MANAGERS

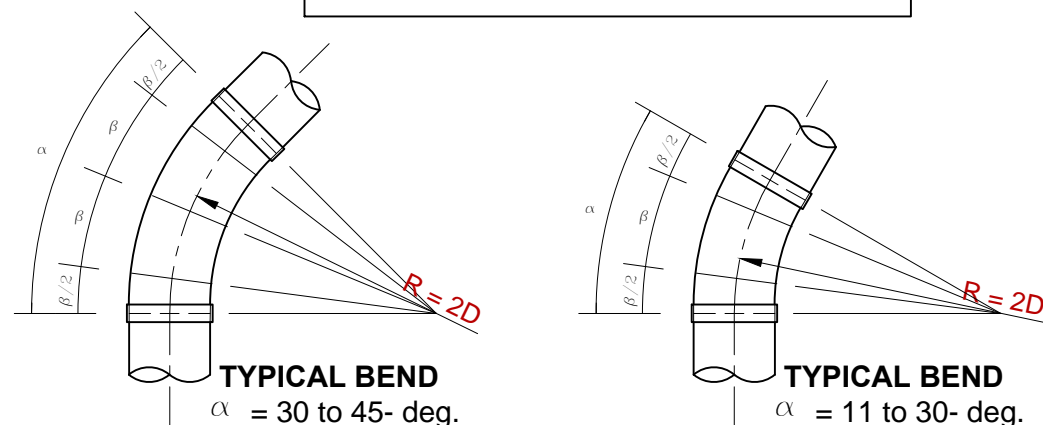
TCE

P.O. BOX 708
STEELPOORT
1133
TEL: 013 231 7106
CELL : 082 871 3744
FAX : 013 231 7842
e-mail tubatcon@iantic.net

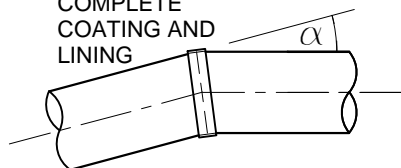
DRAWN CFG	CHECKED JVR	DATE JUNE 2020			
DESIGN JVR	CHECKED JVR	SCALE AS SHOWN			
APPROVED		DATE			
		REVISION			
		0			
DRAWING NO.		MTBWS PH4G1.1/20			



NOTE: 80mm WIDE X 8mm THICK GRADE 300WA STEEL SLEEVE TO BEND ENDS FOR PIPES OF DIA LESS THAN 600mm
PIPE SECTIONS OF BENDS BUTT WELDED WITH ROOT WELDING FROM INSIDE. 8mm PIPE WALL THICKNESS

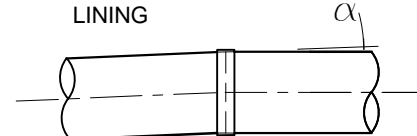


MITRE BOTH ENDS TO $\alpha/2$ REPAIR AND COMPLETE COATING AND LINING



TYPICAL BEND
 $\alpha = 2+ \text{ to } 11\text{- deg.}$

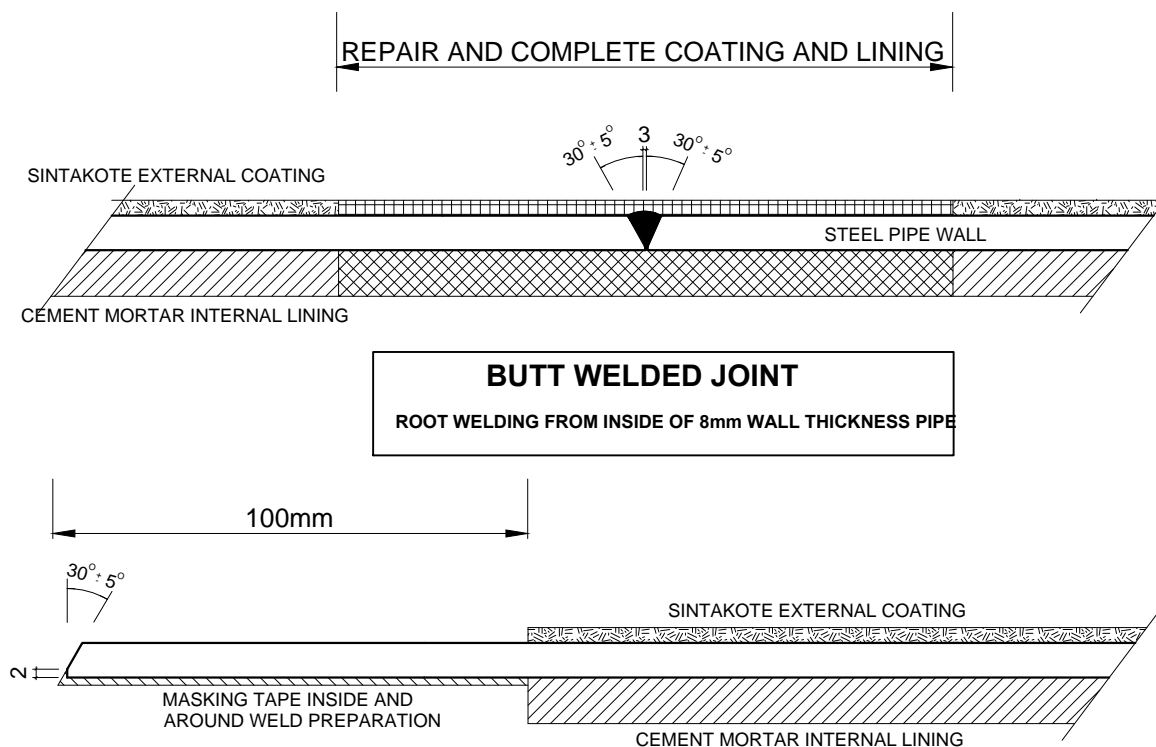
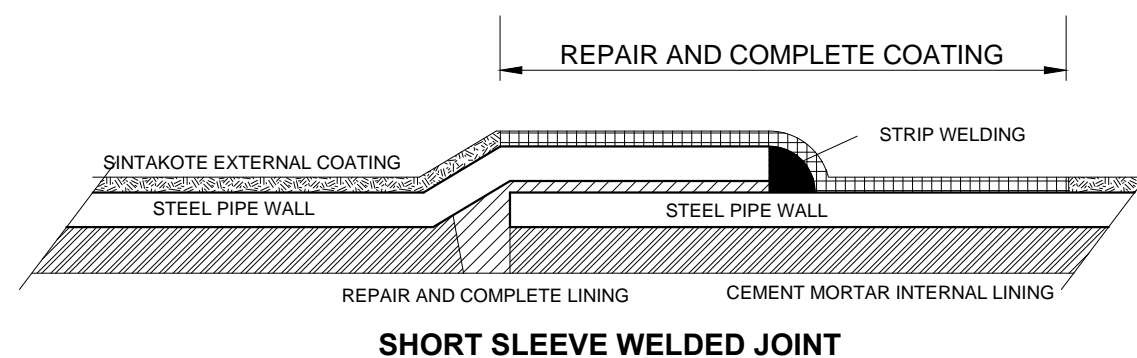
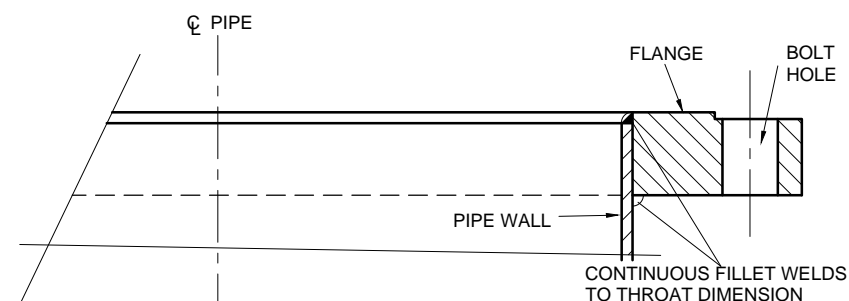
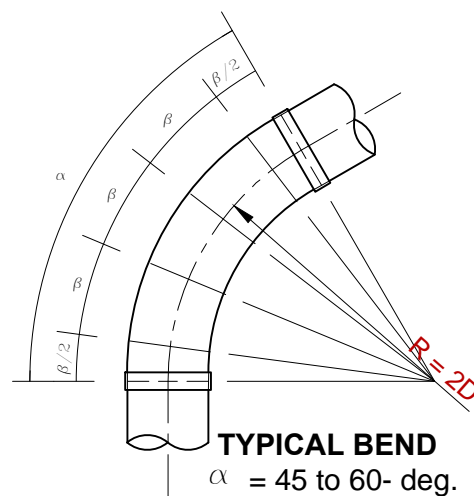
MITRE ONE END ONLY REPAIR AND COMPLETE COATING AND LINING



TYPICAL BEND
 $\alpha = 0+ \text{ to } 2 \text{ deg.}$

NOTE: 80mm WIDE X 8mm THICK GRADE 300WA STEEL SLEEVE TO PIPES OF DIA LESS THAN 600mm

PIPE BEND DETAIL



WELDING PREPARATION FOR PLAIN ENDED PIPES

PIPE WELD DETAIL

NOTE:
FOR THE REPAIR OF SMALL BLEMISHES AND DAMAGE TO THE LINING USE DENSO MELT STICKS OR DENSO CPT1000 WRAPPING
FOR THE REPAIR OF LINING AT WELDED JOINTS USE: DENSO CPT1000 WRAPPING
FOR THE REPAIR OR COVER OF LARGE AREAS (WRAPPERS, ETC.) USE DENSO THEM (5MM) WRAPPING
ALL ACCORDING TO THE MANUFACTURER'S PRESCRIPTIONS AND SPECIFICATIONS

SEKHUKHUNE DISTRICT MUNICIPALITY



PRIVATE BAG X8611
GROBLERSDAL
0470

TUBATSE CONSULTING ENGINEERS



P.O. BOX 708: STEELPOORT 1133
TEL./FAX :013 2317642 0828713744
E-mail: jvrtubatcon@lantic.net

OPGEMEET/SURVEYED	NAGETREK/TRACED
SAAMGESTEL/COMPILED	AANGEPAS/ADAPTED
ONTWERP/DESIGNED	jvr NAGESIEN/CHECKED
GETEKEN/DRAWN	jvr GOEDGEKEUR/APPROVED

GOEDGEKEURING / APPROVAL

HOOF TITEL
MAIN TITLE

**MOOIHOEK / TUBATSE BULK WATER SUPPLY
PHASE 4G1.1
ALVERTON BWS**

DEEL TITEL
SUB TITLE

PIPE BENDS AND WELDING

PROJEK NO.
PROJECT NO.

CONTRACT SK8/3/1-36/22-23

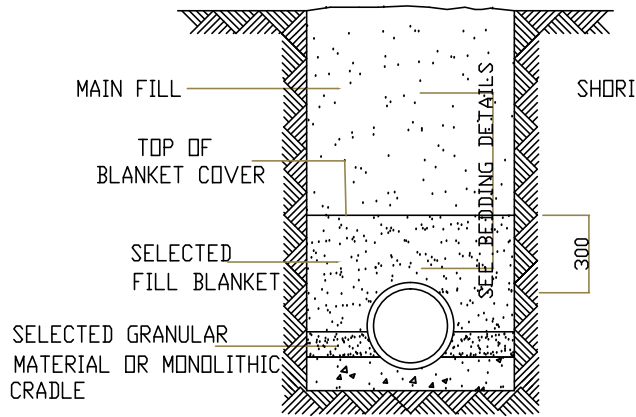
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SKAAL: NTS DATE: JUNE 2020
SCALE: DATUM:

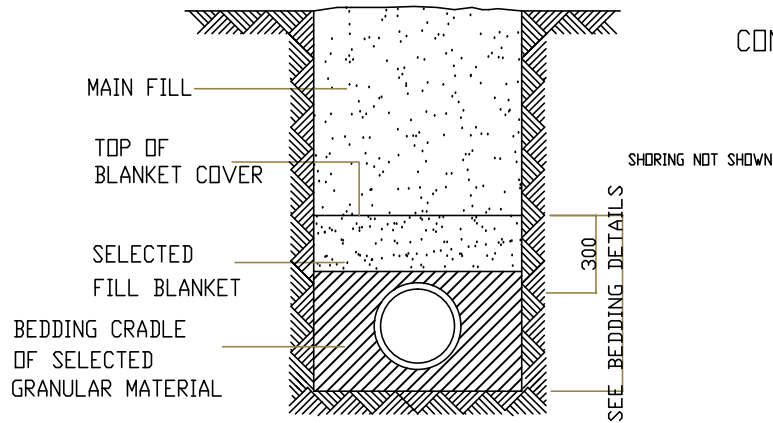
TEKENING NR. HERSIEN
MTBWS PH4G1.1/21 REV.

DRAWING NO.

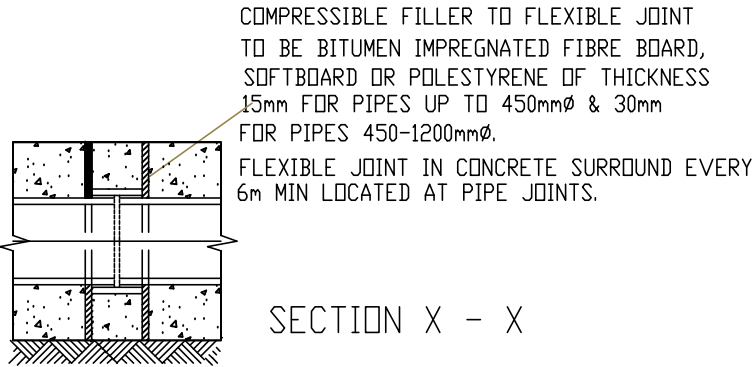
TRENCH DETAILS



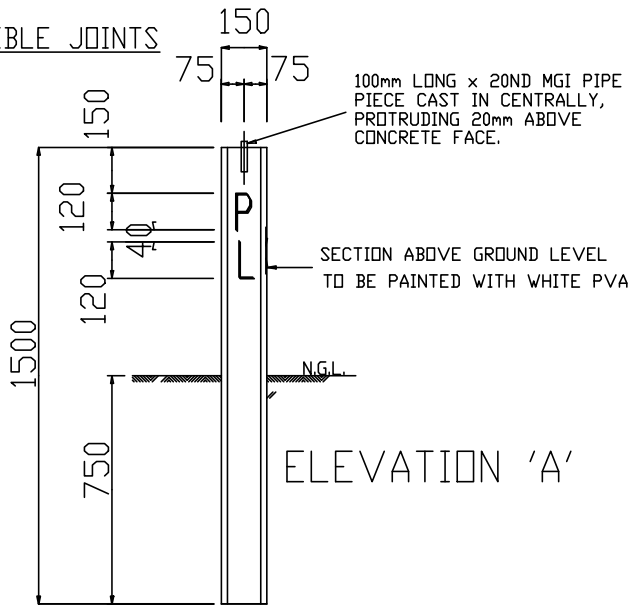
BACK FILLING OVER RIGID PIPELINE



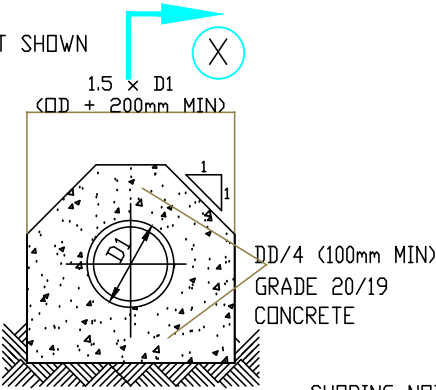
BACKFILLING OVER FLEXIBLE PIPELINE



CONCRETE ENCASEMENT AT FLEXIBLE JOINTS

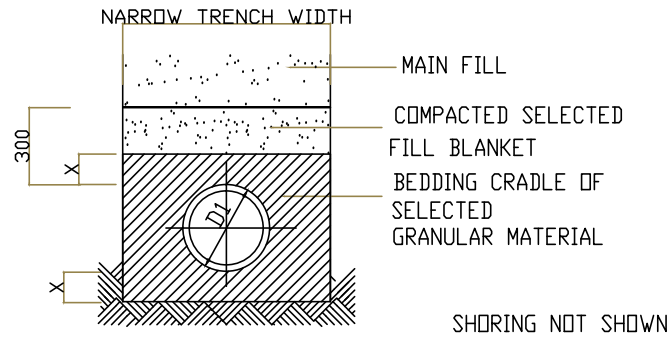


ELEVATION 'A'

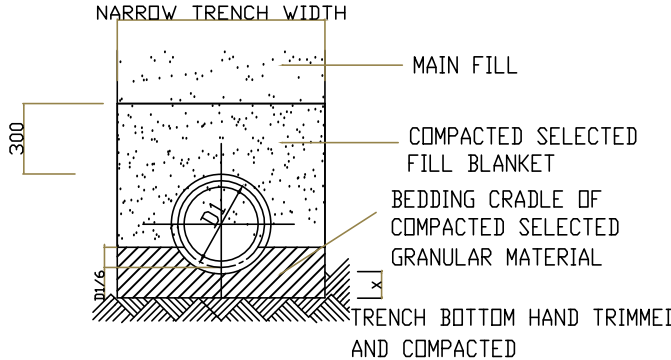


CONCRETE ENCASEMENT

SPECIAL BEDDING

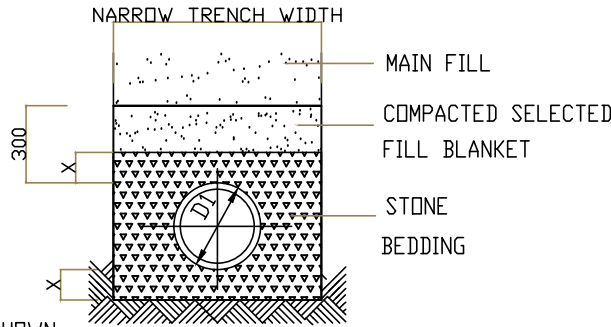


BEDDING FOR FLEXIBLE PIPES



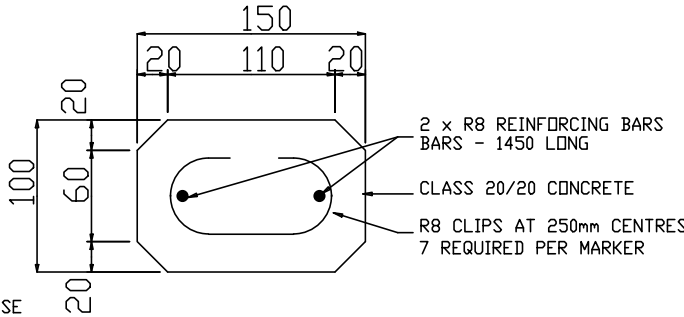
CLASS C

STONE BEDDING



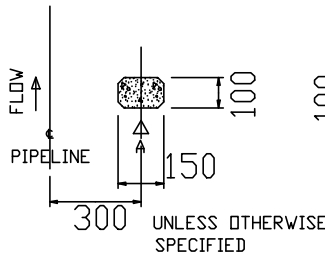
SHORING NOT SHOWN

BEDDING FOR RIGID PIPES

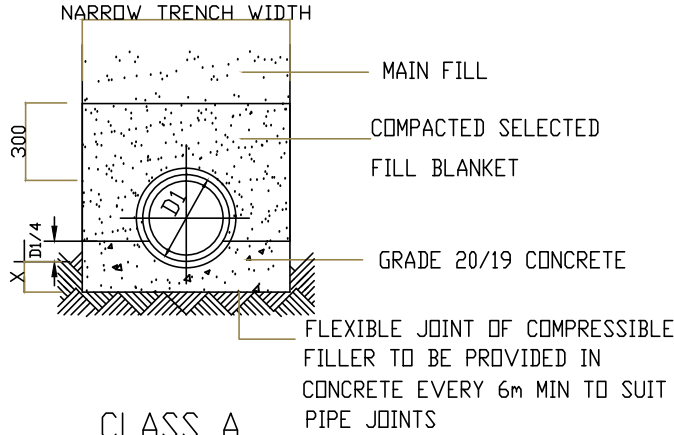


PIPE LINE MARKER

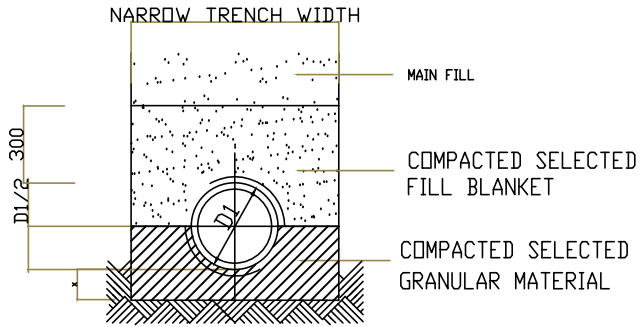
PLAN



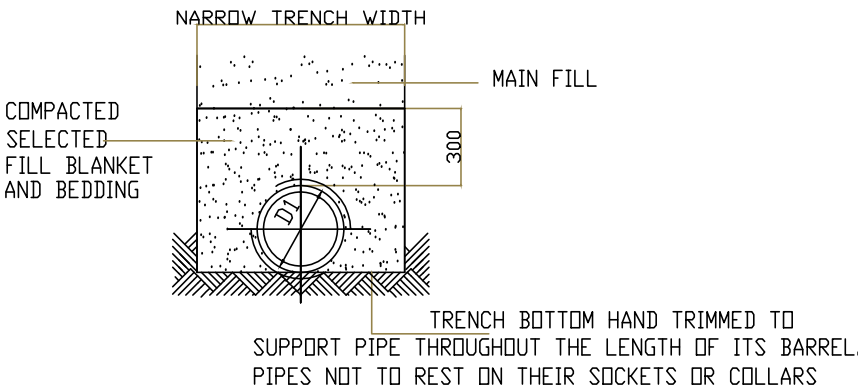
UNLESS OTHERWISE SPECIFIED



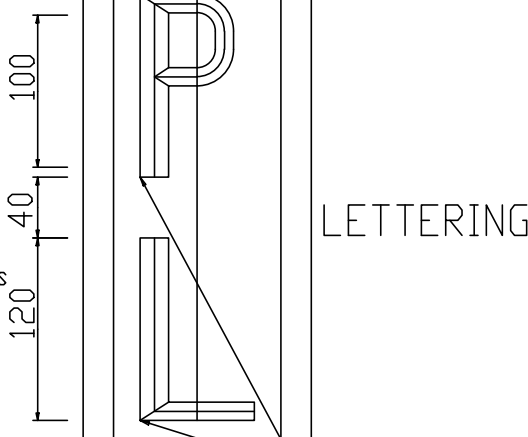
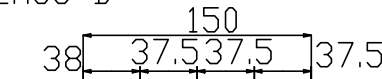
CLASS A



CLASS B



CLASS D



LETTERING FORMED FEMALE IN CONCRETE AND PAINTED WITH BLACK ENAMEL PAINT. LETTERING TO BE 10mm WIDE x 10mm DEEP.

NOTES:-

1. DIMENSIONS, X = D1/4, BUT MIN 100mm IN SOIL OR 50mm IN ROCK AND A MAX OF 300mm FOR CLASS A AND CONCRETE ENCASED BEDDING.
2. SELECTED FILL MATERIAL SHALL BE MATERIAL THAT HAS A PI NOT EXCEEDING 6 AND IS FREE FROM VEGETATION, CLAY LUMPS AND STONES OF DIAMETER EXCEEDING 30mm.
3. SELECTED GRANULAR MATERIAL SHALL BE MATERIAL OF A GRANULAR, NON-COHESIVE NATURE THAT IS SEPARATELY GRADED BETWEEN 0.8 AND 18mm, IS FREE DRAINING AND HAS A COMPACTIBILITY FACTOR NOT EXCEEDING 0.4 AS DETERMINED BY TEST SPECIFIED IN SABS 0120: PART 3, SECTION LB 4.2.
4. SELECTED FILL AND GRANULAR MATERIAL TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm, EXCEPT FOR FLEXIBLE PIPES WHERE LAYERS NOT EXCEEDING 100mm ARE REQUIRED.
5. STONE BEDDING TO BE CLEAN CRUSHED ROCK SIZE GRADING 13mm MIN, 19mm MAX.
6. D1 STANDS FOR OUTSIDE DIAMETER.
7. MAIN FILL, FILL BLANKET AND BEDDING TO BE COMPACTED TO 90% MOD AASHTO IN LAYERS NOT LESS THAN 300mm DEEP.
8. MARKER POSTS TO BE PLACED EVERY 200m ALONG THE PIPELINE ROUTE.

DATE	DESCRIPTION	APPROVED

CLIENT:
SEKHUKUNE DISTRICT MUNICIPALITY



PRIVATE BAG X 8611
GROBLERSDAL
0470

PROJECT:
CONTRACT SK8/3/1-36/22/23
MOOIHOEK/TUBATSE
BULK WATER SUPPLY
PHASE 4G1.1

DRAWING TITLE:
BEDDING AND
MARKER DETAILS

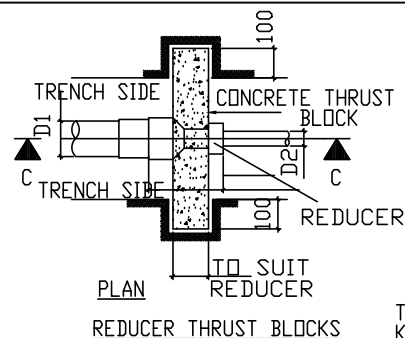
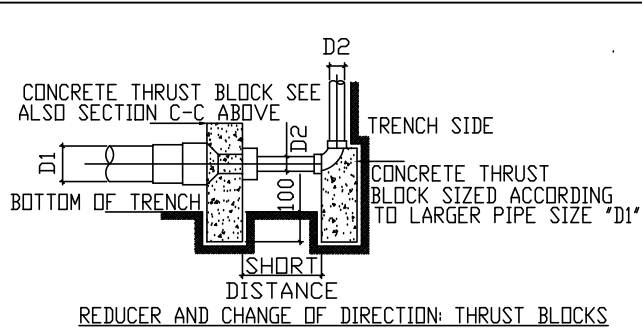
DESIGN CONSULTANT:
TUBATSE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND PROJECT MANAGERS



P.O. BOX 708
STEELPOORT
1133
TEL: 013 231 7106
CELL: 082 871 3744
e-mail: tubatcon@iatic.net

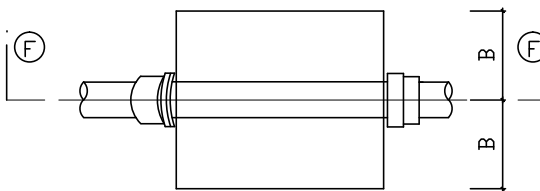
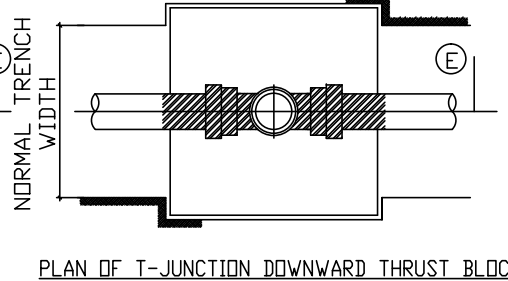
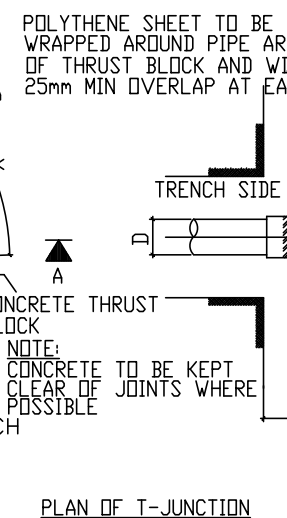
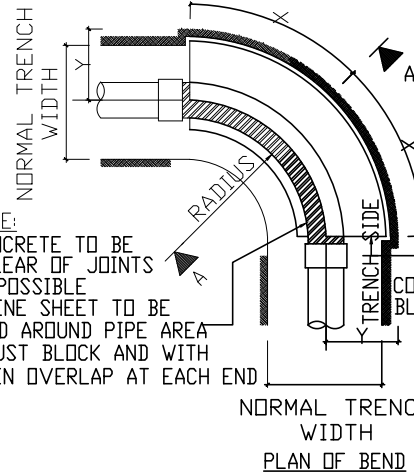
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CFG	JVR	FEB. 2015
DESIGN	CHECKED	SCALE
JVR	JVR	AS SHOWN
APPROVED	DATE	REVISION
		0

DRAWING NO.	MTBWS PH4G1.1/22
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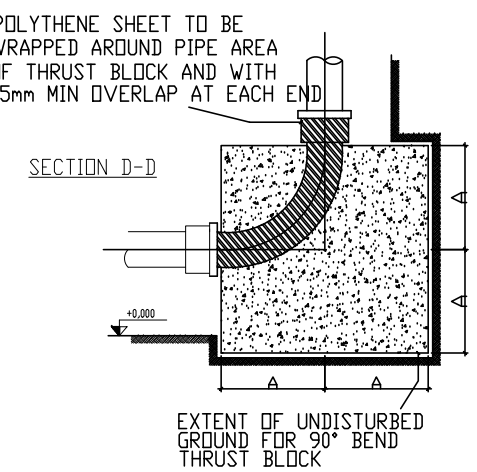
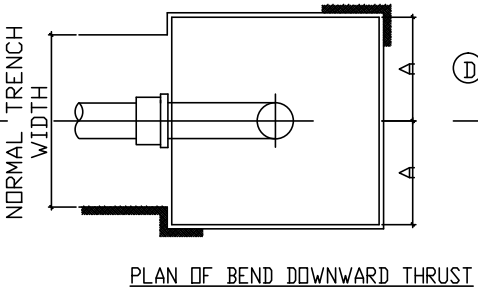
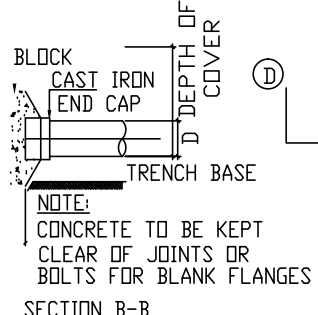
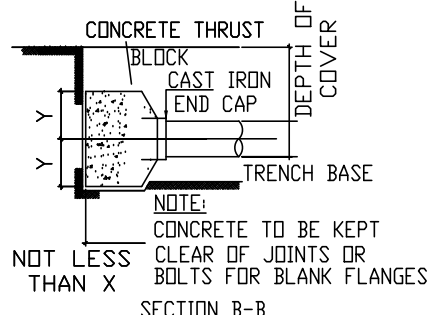
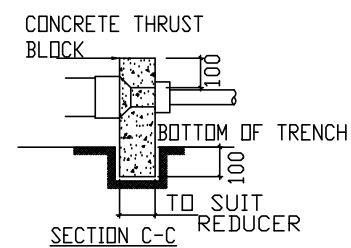
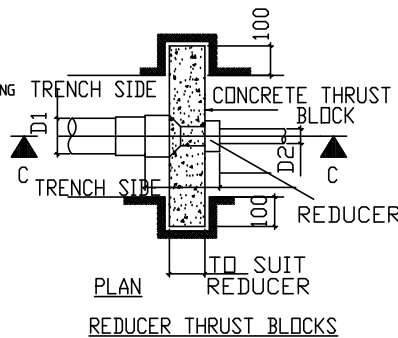
NOTE:

THE CONCRETE TO BE KEPT CLEAR OF JOINTS WHERE POSSIBLE POLYTHENE SHEET TO BE WRAPPED AROUND PIPE AREA OF THRUST BLOCK AND WITH 25mm MIN OVERLAP AT EACH END

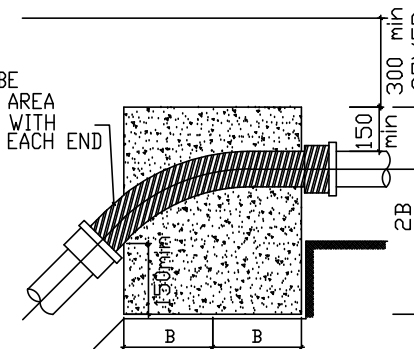


APPLICATION LIMITED TO THE FOLLOWING PIPE SIZE REDUCTIONS

LARGER SIZE (mm)	SMALLER SIZE (mm)
50	25
63	32
75	40
90	50
100	63
110	75
125	90
140	100
150	110
160	125
175	140
200	150
225	160
250	175
315	250

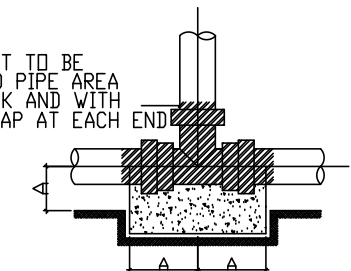


POLYTHENE SHEET TO BE WRAPPED AROUND PIPE AREA OF THRUST BLOCK AND WITH 25mm MIN OVERLAP AT EACH END



SECTION F-F BEND

POLYTHENE SHEET TO BE WRAPPED AROUND PIPE AREA OF THRUST BLOCK AND WITH 25mm MIN OVERLAP AT EACH END



SECTION E-E "T-JUNCTION"

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 900kPa/PIPE CLASS 12

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 1350kPa/PIPE CLASS 18

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 1800kPa/PIPE CLASS 24

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 900kPa/PIPE CLASS 12

PIPE OD (mm)	DOWNWARD THRUST BLOCK				UPWARD THRUST BLOCK			
	ANGLE OF BEND		T-JUNCTION		ANGLE OF BEND		T-JUNCTION	
	11,25°	22,5°	45°	90°	11,25°	22,5°	45°	90°
	A	A	A	A	B	B	B	B
50	150	150	175	200	150	225	250	275
63	150	150	175	225	150	225	250	300
75	150	150	175	250	175	250	275	350
90	150	150	175	275	175	250	300	400
110	150	150	175	300	200	275	350	425
125	150	150	175	325	225	300	375	475
140	150	150	200	350	250	300	400	525
160	150	175	225	400	275	350	425	550
200	150	200	275	450	325	375	500	625
250	200	250	325	525	400	450	575	725
315	225	300	400	525	500	525	650	850
450	275	300	400	525	500	525	650	850

PIPE OD (mm)	DOWNWARD THRUST BLOCK				UPWARD THRUST BLOCK			
	ANGLE OF BEND		T-JUNCTION		ANGLE OF BEND		T-JUNCTION	
	11,25°	22,5°	45°	90°	11,25°	22,5°	45°	90°
	A	A	A	A	B	B	B	B
50	150	150	175	225	150	225	250	300
63	150	150	175	250	175	250	275	350
75	150	150	175	275	175	250	300	375
90	150	150	175	300	200	275	325	425
110	150	150	175	350	225	300	375	475
125	150	150	200	375	250	325	400	525
140	150	175	225	400	275	350	425	550
160	150	200	250	450	325	375	475	600
200	175	250	325	500	375	425	550	700
250	225	300	400	600	475	500	625	825
315	275	375	475	700	575	575	725	950
450	375	425	550	775	675	675	875	1100

PIPE OD (mm)	DOWNWARD THRUST BLOCK				UPWARD THRUST BLOCK			
	ANGLE OF BEND		T-JUNCTION		ANGLE OF BEND		T-JUNCTION	
	11,25°	22,5°	45°	90°	11,25°	22,5°	45°	90°
	A	A	A	A	B	B	B	B
50	150	150	175	250	150	225	275	325
63	150	150	175	275	175	250	300	375
75	150	150	175	300	200	275	325	400
90	150	150	175	325	225	275	350	450
110	150	150	200	375	250	325	400	525
125	150	175	225	400	275	350	425	575
140	150	200	250	425	300	375	475	600
160	150	225	275	475	350	400	500	650
200	200	275	350	550	425	450	600	750
250	250	325	425	650	525	525	675	875
315	300	400	550	750	650	625	800	1025
450	425	500	650	825	775	725	950	1200

PIPE OD (mm)	DOWNWARD THRUST BLOCK				UPWARD THRUST BLOCK			
	ANGLE OF BEND		T-JUNCTION		ANGLE OF BEND		T-JUNCTION	
	11,25°	22,5°	45°	90°	11,25°	22,5°	45°	90°
	A	A	A	A	B	B	B	B
50	150	150	150	250	175	250	225	350
63	150	150	150	275	175	250	300	400
75	150	150	175	300	200	275	325	425
90	150	150	200	350	225	300	375	500
110	150	175	225	400	275	350	425	550
125	150	200	250	425	300	375	475	600
140	150	200	275	475	350	400	500	650
160	175	225	325	500	375	425	550	700
200	225	300	375	600	475	500	625	800
250	250	350	475	700	575	575	725	950
315	325	450	600	800	725	650	850	1100
450	375	525	750	950	850	775	1100	1250

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 900kPa/PIPE CLASS 12

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 1350kPa/PIPE CLASS 18

THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 1800kPa/PIPE CLASS 24

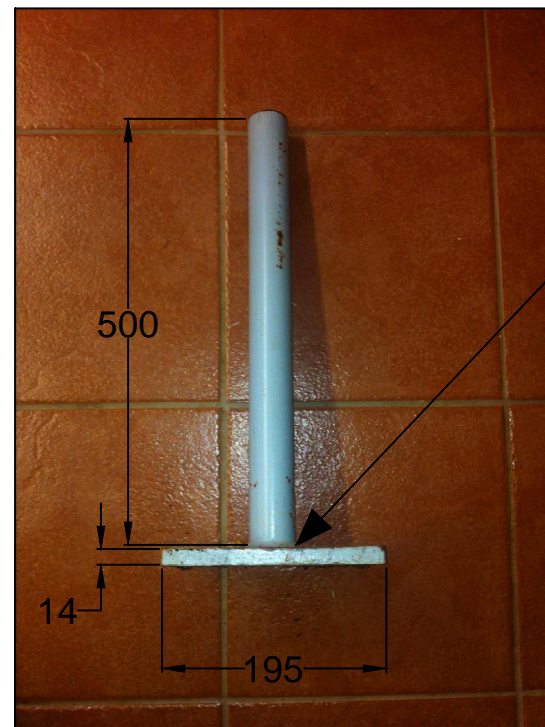
THRUST BLOCKS:BENDS AND T-JUNCTIONS
MAX. TEST PRESSURE 2400kPa/PIPE CLASS 30

PIPE D (mm)	ANGLE OF BEND								T-JUNCTION OR END CAP		
	11,25°		22,5°		45°		90°				
	X	Y	X	Y	X	Y	X	Y	X	Y	
50	75	75	75	75	100	100	225	100	125	100	
63	75	75	100	100	150	125	275	125	150	150	
75	75	75	100	125	175	150	325	150	175	175	
90	100	100	125	125	200	175	400	175	200	200	
110	100	125	175	150	250	200	475	200	250	250	
125	125	125	175	175	275	225	525	225	275	275	
140	150	125	200	200	300	250	600	250	325	300	
160	175	150	225	225	350	275	675	275	350	350	
200	200	175	275	250	425	350	825	325	425	425	
250	250	225	325	325	525	400	1000	375	525	500	
315	300	275	400	400	650	500	1250	475	725	550	
450	400	300	600	400	1200	400	1500	550	1500	400	

PIPE D (mm)	ANGLE OF BEND								T-JUNCTION OR END CAP	
	11,25°		22,5°		45°		90°			
	X	Y	X	Y	X	Y	X	Y	X	Y
50	75	75	100	75	125	125	250	125	150	175
63	75	75	125	100	150	150	300	150	175	175
75	100	100	125	125	175	175	350	175	200	200
90	125	100	150	150	225	200	425	200	250	225
110	150	125	200	175	250	250	500	250	300	275
125	150	150	225	200	300	275	575	275	325	325
140	175	150	225	225	325	300	625	300	375	350
160	200	175	275	250	375	350	725	350	425	400
200	225	225	325	300	450	425	875	400	500	500
250	275	275	400	375	600	475	1100	500	675	550
315	350	325	475	475	775	550	1325	600	925	600
450	500	400	900	400	1200	600	1500	800	1500	550

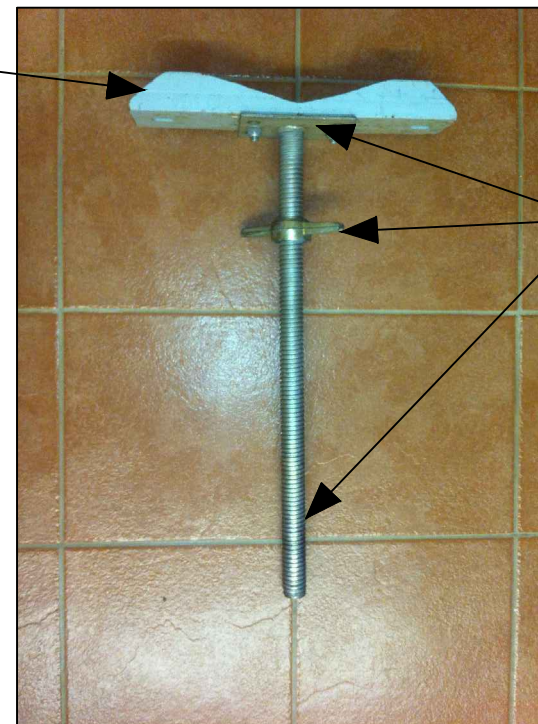
PIPE D (mm)	ANGLE OF BEND								T-JUNCTION OR END CAP	
	11,25°		22,5°		45°		90°			
	X	Y	X	Y	X	Y	X	Y	X	Y
50	75	75	100	100	150	125	275	150	150	150
63	75	100	125	125	175	175	325	175	200	175
75	100	100	150	150	200	200	375	200	225	225
90	125	125	175	175	250	225	450	250	275	250
110	150	150	200	200	300	275	525	275	325	325
125	175	150	225	225	325	325	625	325	375	350
140	200	175	250	250	350	350	675	350	400	400
160	225	200	300	275	400	400	775	400	450	450
200	250	250	350	350	500	475	925	475	625	500
250	325	300	450	400	700	500	1150	575	825	550
315	375	375	575	475	975	550	1625	600	1150	600
450	500	500	900	500	1500	600	2000	800	1500	750

Front View



6mm Fillet Weld to Connect Tube with Base Plate

Front View



4

35

33.5

67

430

20

2 x M14 Bolts, Nuts and Washers to Connect Channel with Scaffold Jack

2 x Ø14 Slots, Right Through

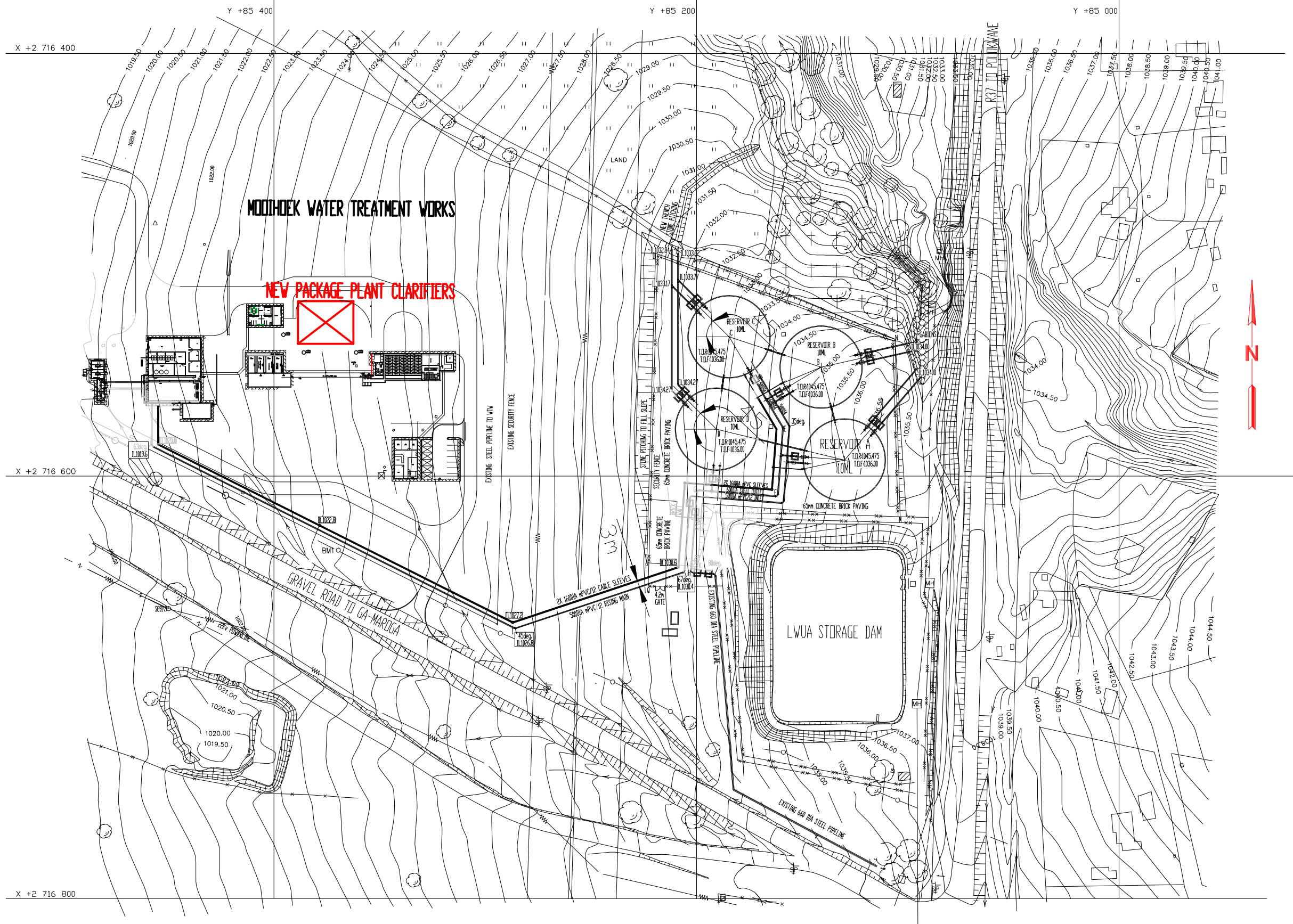
38 Hollow r/o, 610
Scaffold Jack
Complete with Base
and Winged Nut



2 x M14 Bolts, Nuts
and Washers to
Connect Channel with
Scaffold Jack

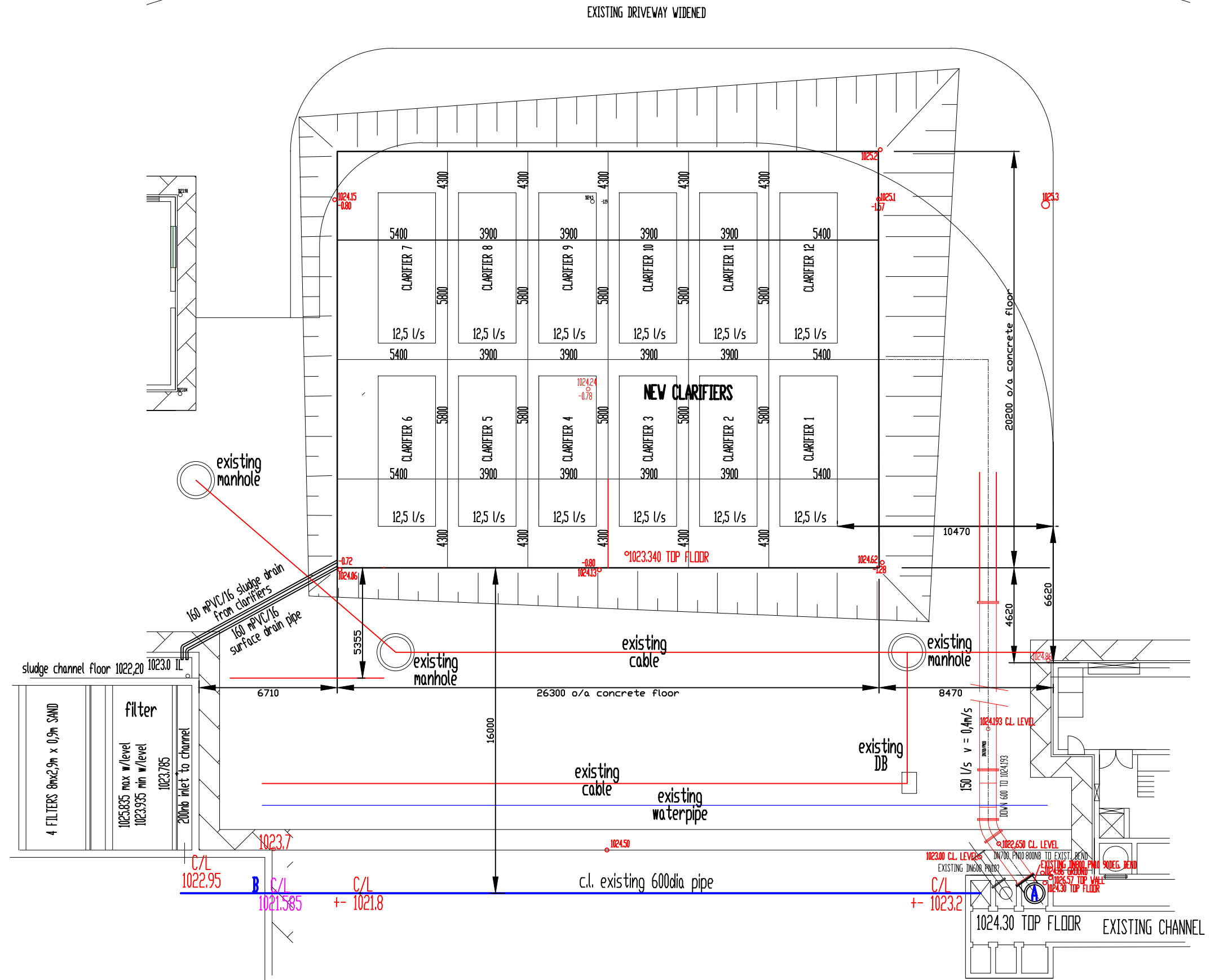
2 x Ø14 Slots, Right Through



6mm thick x 100 x 250 conveyor belt between support and supported fitting or pipe

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DATE			APPROVED	CLIENT	DRAWING TITLE		PROJECT	DESIGN CONSULTANT	DRAWN	CHECKED	DATE
				SEKHUKHUNE DISTRICT MUNICIPALITY	SITE PLAN		MOOIHOEK/TUBATSE BWS	TUBATSE CONSULTING ENGINEERS	BB	JVR	JUNE 2021
					MOOIHOEK WTW		PHASE 4G1.1		DESIGN	JVR	SCALE
				PRIVATE BAG X 8611 GROBLERSDAL 0470			SK8/3/1-36/22/23	P.O. BOX 708 STEELPOORT 1133 TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 jvrtubatcon@lantic.net	APPROVED		DATE
									REVISION		
									0		
									DRAWING No.		MTBWS PH4G1.1/25



	DATE	DESCRIPTION	APPROVED	CLIENT SEKHUKHUNE DISTRICT MUNICIPALITY  PRIVATE BAG X 8611 GROBLERSDAL 0470	DRAWING TITLE CLARIFIERS LAYOUT PLAN	PROJECT MOOIHOEK/TUBATSE BWS PHASE 4G1.1 SK8/3/1-36/20/21	DESIGN CONSULTANT TUBATSE CONSULTING ENGINEERS  P.O. BOX 708 STEELPOORT 1133 TEL 013 231 7642 CELL 082 871 3744 FAX 013 231 7642 jvrtubatcon@lantic.net	DRAWN BB	CHECKED JVR	DATE JUNE 2020
								DESIGN JVR	CHECKED JVR	SCALE NTS
								APPROVED	DATE	REVISION 7 4 21
								DRAWING No.		MTBWS PH4G1.1/29

APPENDIX A

OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION FOR CIVIL ENGINEERING WORKS

INDEX

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1. Introduction

In terms of the Construction Regulation 5 (1) (b) of the Occupational Health and Safety Act. No. 85 of 1993, the Client is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective tenderer.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the Sekhukhune District Municipality achieve an acceptable level of OH&S performance. This document forms an integral part of the Contract and Principal and other Contractors should make it part of any Contracts that they may have with Contractors and/or Suppliers.

Compliance with this document does not absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the health & safety of his employees and those of his Mandatories.

2. Scope

Development of a Health & Safety Specification that addresses all aspects of occupational health and safety as affected by the contract work.

The specification will provide the requirements that Principal Contractors and other Contractors will have to comply with in order to reduce the risks associated with the contract work that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable.

3. Definitions

The most important definitions in the Act and Regulations pertaining to this specification document are hereby extracted.

- i. "Agent" means any competent person who acts as a representative for a client;
- ii. "Client" shall mean any person for whom construction work is performed;
- iii. "Construction Work" is defined as any work in connection with:
 - (a) the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
 - (b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation; or the moving of earth, clearing of land, the making of excavation, piling, system or any similar civil engineering structure or any similar type of work;
- iv. "Contractor" means an employer who performs construction work;
- v. "Health and Safety File" shall mean a file, or other record in permanent form, containing the information required as contemplated in the regulations;
- vi. "Health and Safety Plan" means a site, activity or project specific documented plan in accordance with the client's health and safety specification;
- vii. "Health and Safety Specification" means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;

- viii. "Principal Contractor" means an employer by the client to perform construction work;
- ix. "Risk Assessment" shall mean a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.
- x. "Risk" shall mean the probability that injury or damage will occur,
- xi. "Medical Surveillance" shall mean a planned programme or periodic examination (which may include clinical examinations, biological monitoring or medical tests) of employees by an occupational health practitioner or, in prescribed cases, by an occupational medicine practitioner;
- xii. "Occupational Health Practitioner" means an occupational medicine practitioner or a person who holds a qualification in occupational health recognized as such by the South African Medical and Dental Council as referred to in the Medical, Dental and Supplementary Health Service Professions Act 1974 (Act NO. 56 of 1974), who holds a qualification in occupational medicine or an equivalent qualification which qualification or equivalent is recognized as such by the South African Medical and Dental Council referred to in the said Act.
- xiii. "designer" means—
 - (a) a competent person who—
 - (i) prepares a design;
 - (ii) checks and approves a design; or
 - (iii) arranges for any person at work under his or her control to prepare a design (including an employee of that person where he or she is the employer);
 - (iv) designs temporary work, including its components,
 - (b) an architect or engineer contributing to, or having overall responsibility for a design;
 - (c) a building services engineer designing details for fixed plant;
 - (d) a surveyor specifying articles or drawing up specifications;
 - (e) a contractor carrying out design work as part of a design and building project;
 - (f) an interior designer, shop-fitter or landscape architect;

4. Occupational Health & Safety Management

Structure and Organization of OH&S Responsibilities

Overall Supervision and Responsibility for OH&S

- The Client and/or its Agent on its behalf to ensure that the Principal Contractor, appointed in terms of Construction Regulation 5 (1)(k), implements and maintains the agreed and approved H&S Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any one or more of his/her duties under the Act and Regulations.
- The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that the Employer (as defined in the Act) complies with the Act. The pro forma Legal Compliance Audit may be used for this purpose by the Principal Contractor or his/her appointed contractor.
- All OH&S Act (85/1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the Principal Contractor to become part of site records (Health & safety File)
- A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and

safety compliance. In the absence of the construction manager an alternate must be appointed by the principal contractor

- The Construction Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8 to regularly, in writing, report to their principals on matters of health and safety per routine and ad hoc inspections and on any deviations as soon as observed, regardless of whether the observation was made during any routine or ad hoc inspection and to ensure that the reports are made available to the Principal Contractor to become part of site records (Health & Safety File).
- All Health and Safety Representatives (SHE-Reps) shall act and report as per Section 18 of the Act.

Further (Specific) Supervision Responsibilities for OH&S

Several appointments or designations of responsible and/or competent people in specific areas of construction work are required by the Act and Regulations. The following competent appointments, where applicable, in terms of the Construction Regulations are required to ensure compliance to the Act, Regulations and Safety Standards.

Required appointments as per the Construction Regulations:

Item	Regulation	Appointment	Responsible Person
1	5(1)(k)	Principal contractor for each phase or project	Client
2	7(c)(v)	Contractor	Principal Contractor
3	8(1)	Construction manager	Principal Contractor
4	5(1)(k)	Contractor	Contractor
5	8(7)	Construction supervisor	Contractor
6	8(8)	Construction supervisor sub-ordinates	Contractor
7	8(5)	Construction Safety Officer	Contractor
8	9(1)	Person to carry out risk assessment	Contractor
9	9(3)	Trainer/Instructor	Contractor
10	10(1)(a)	Fall protection planner	Contractor
11	12(a)	Temporary works supervisor	Contractor
12	12(3)(e)+(f)	Temporary works examiner	Contractor
13	13(1)(a)	Excavation supervisor	Contractor
14	13(2)(bb)	Professional engineer or technologist	Contractor
15	13(2)(k)	Explosives expert	Contractor
16	14(1)	Supervisor demolition work	Contractor
17	14(2)+(3)	Demolition expert	Contractor
18	14(11)	Explosives expert	Contractor
19	16(2)	Scaffold supervisor	Contractor
20	17(1)	Suspended platform expert	Contractor
21	17(2)(c)	Compliance plan developer	Contractor
22	17(8)(c)	Suspended platform supervisor	Contractor
23	17(13)	Outrigger expert	Contractor
24	19(8)(a)	Material hoist inspector	Contractor
25	20(1)	Bulk mixing plant supervisor	Contractor
26	20(2)	Bulk mixing plant operator	Contractor
27	22(e)	Tower crane operator	Contractor
28	23(1)(d)(i)	Construction vehicle and mobile plant operator	Contractor
29	23(1)(b)	Construction vehicle and mobile plant Inspector	Contractor
30	24(d)	Temporary electrical installations inspector	Contractor
31	24(c)	Temporary electrical installations controller	Contractor

32	28(a)	Stacking and storage supervisor	Contractor
33	29(h)	Fire equipment inspector	Contractor

This list may be used as a reference or tool to determine which components of the Act and Regulations would be applicable to a particular site. As was intended under paragraph 3 & 4 of the Chapter "Preamble" above; this list must not be assumed to be exclusive or comprehensive.

Communication & Liaison

OH&S Liaison between the Employer, the Principal Contractor, the other Contractor, the Designer and other concerned parties shall be through the H&S Committee as per the procedures determined by the H&S Committee.

In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing. As and when the need arises.

Consultation with the workforce on OH&S matters will be through their Supervisors and H&S Representatives (SHE-Reps)

The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and/or its Agent on its behalf and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

5. Interpretation

- (i) The Occupational Health and Safety Act and all its Regulations, with the exception of the Construction Regulations, distinguish between the roles, responsibilities and functions of employers and employees respectively. It views consultants and contractors as employees of the "owner" of a construction or operational project, the "owner" being regarded as the employer. Only if formally agreed to by way of the written agreement in this regard between the "owner(s)" and consultant and/or between the "owner(s)" and the contractor(s), will these assumptions be relinquished in favor of the position agreed upon between the relevant parties.
- (ii) The position taken by the Construction Regulations is that the "owner", in terms of its instructions, operates (has to operate) in the role of client as per relevant definition. The contractors working for the "client" are seen to be in two categories, i.e. the Principal Contractor and Contractors. The Principal Contractor has to take full responsibility for the health and safety on the site of the relevant project/contract. This includes monitoring health and safety conditions and overseeing administrative measures required by the Construction Regulations from all contractors on the project site. (Ordinary/sub) Contractors are required to operate under the scrutiny and control (in terms of all health and safety measures which are covered in the Construction Regulations) of the Principal Contractor. Where, for the work the Principal Contractor will have to execute himself, practical health and safety measures are applicable, he will also be subject to the relevant requirements with which (ordinary/sub) Contractors have to comply. The Principal Contractor will, however, not have to actually fulfill such requirements in respect of any of the work/functions of any (ordinary/sub) Contractors on the site for which he has been appointed as Principal Contractor. However, he has to monitor/oversee such processes, ensuring

that the requirements are complied with and that the required appointments/evaluations/inspections/assessments and tests are done and that the records are duly generated and kept as prescribed in the Construction Regulations. This has to feature clearly in the Principal Contractor's Health and Safety Plan.

Responsibilities

6.1 Client

6.1.1 The Client or his appointed Agent on his behalf will appoint each Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Contract Documents.

6.1.1 The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the Health and Safety Plan .

6.1.2 The Client or his appointed Agent on his behalf, will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Contractor is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every month.

6.1.3 The Client or his appointed Agent on his behalf, will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:

- have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
- have failed to implement or maintain their health and safety plan;
- have executed construction work which is not in accordance with their health and safety plan; or
- act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

6.2 Designer

The designer of a structure must —

6.2.1 take reasonable steps to ensure that the applicable safety standards incorporated into these Regulations under section 44 of the Act are complied with;

6.2.2 take into consideration the health and safety specification submitted by the client;

6.2.3 before the contract is put out to tender, make available to the client all relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;

6.2.4 inform the client in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;

- 6.2.5 subject to the provisions of paragraphs (a) and (c), ensure that the following information is included in a report and made available to the client:
 - 6.2.5.1 geotechnical -science technical report where appropriate;
 - 6.2.5.2 the loading that the structure is designed to withstand;
- 6.2.6 not include anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials;
- 6.2.7 take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
- 6.2.8 when mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design, provided that if the designer is not so mandated, the client's appointed agent in this regard shall be responsible to carry out such inspections;
- 6.2.9 when mandated by the client as contemplated in sub-regulation (h), stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects, and if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work;
- 6.2.10 when mandated as contemplated in sub-regulation (h) in his or her final inspection of the completed structure in accordance with the National Building Regulations include the health and safety aspects of the structure as far as reasonably practicable declare the structure safe for use, and issue a completion certificate to the client and copy to the contractor; and
- 6.2.11 ensure that during the design stage, cognisance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.
The designer of temporary works must ensure that —
- 6.2.12 all temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- 6.2.13 the designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and where uncertainty exists the contractor must be consulted;
- 6.2.14 all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- 6.2.15 the loads caused by the temporary works and any imposed loads are clearly indicated in the design
- 6.3 Principal Contractor
 - 6.3.1 The Principal Contactor shall accept the appointment under the terms and Conditions of Contract. The Principal Contractor shall sign and agree to

those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 4 of the Construction Regulations. The Principal Contractor shall submit the notification in the appropriate format prior to commencement of work and inform the Client or Agent accordingly.

- 6.3.2 The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with. The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.
- 6.3.3 The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented Health and Safety Plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.

The Health and Safety Plan shall be approved by the Client or his agent before any work commences and shall be submitted to the client or his agent not later than 14 (fourteen) days after an official letter of appointment has been received by the Contractor.
- 6.3.4 The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement with the works.
- 6.3.5 The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a tenderer's offer is based.)
- 6.3.6 The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.
- 6.3.7 The Principal Contractor shall ensure that a copy of his Health and Safety Plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.
- 6.3.8 The Principal Contractor shall ensure that a Health and Safety File, which shall include all documentation required in terms of the provisions of this Specification, the Act and all applicable Regulations, is opened and kept on site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.
- 6.3.9 The Principal Contractor shall, throughout execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the

Construction Regulations are complied with as if they were the Principal Contractor.

- 6.3.10 The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.

7. Health and Safety File

The Principal Contractor must, in terms of Construction Regulation 7(b), keep a Health & Safety File on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

IMPORTANT:

The Health and Safety File will remain the property of the Client and/or its Agent on its behalf throughout the period of the project and shall be consolidated and handed over to the Client and/or its Agent on its behalf at the time of completion of the project.

8. OH&S goals and objectives and arrangements for monitoring and reviewing OH&S performance

The Principal Contractor is required to maintain an acceptable (Zero tolerance will be an acceptable norm) disabling incident frequency rate (DIFR) and report on this to the Client and/or Agent on its behalf on a monthly basis.

9. Identification of Hazards and development of Risk Assessments, Standard Working Procedures (SWP) and Method Statements

The Principal Contractor is required to develop Risk Assessments, Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project (see Item 11 "Project/Site Specific Requirements")

- Before commencing work the Contractor shall cause a risk assessment to be performed by a competent person appointed in writing and this shall form part of the health and safety plan. The risk assessment shall be reviewed on a monthly basis, or when significant changes to the project will influence the current risk assessment.
- A copy of the risk assessment shall be made available on site at all times for inspection, and a copy sent to the client for its perusal.
- The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions, which contribute to the risk of injury to persons or damage to property.
- The Contractor shall inspect all work, materials and equipment continuously to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.
- During the period of this contract, the Contractor shall be responsible for

the safe storage of all materials and equipment required for execution of the contract, and for disposal of all non-usable waste material in an orderly manner.

- All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.
- Any flammable material, such as paint, diesel, fuel and oil, shall be stored in lockable non-combustible structures, which shall be clearly marked to indicate the hazardous nature of the materials stored within. The flammable materials stores shall be located in safe areas away from hazardous surroundings and adequate and suitable fire-fighting equipment shall be provided within easy reach of the material stores.

Medical surveillance:

1. A Contractor shall ensure that an employee is under medical surveillance if:
 - (a) The exposure of the employee to any substance hazardous to his or her health is such that an identifiable disease or adverse effect to his or her health may be related to the exposure, there is a reasonable likelihood that the disease or effect may occur under the particular conditions of his or her work and there are techniques to diagnose indications of the disease or the effect as far as is reasonably practicable; or
 - (b) The occupational health practitioner recommends that the relevant employee should be under medical surveillance in which case the employer may call on an occupational medicine practitioner to ratify the appropriateness of such recommendation.
2. In order to comply with the provisions of sub-regulation (1) the Contractor shall, as far as is reasonably practicable, ensure:
 - (a) That an initial health evaluation is carried out by an occupational health practitioner immediately before or within 14 days after a person commences employment, where any exposure exists or may exist, which comprises:
 - i. An evaluation of the employees medical and occupational history;
 - ii. A physical examination; and
 - iii. Any other essential examination, which in the opinion of the occupational health practitioner is desirable in order to enable the practitioner to do a proper evaluation.
 - (b) That subsequent to the initial health evaluation contemplated in paragraph (a) the relevant employee undergoes examinations as contemplated in paragraph (a)(ii) and (iii), at intervals not exceeding two years, or at intervals specified by an occupational medical practitioner.

3. The Contractor shall record and investigate the incident contemplated in sub-regulation (3) in compliance with regulation 8 of the General Administrative Regulations. The identifications of hazards is over and above the hazards identification programme and those hazards identified during the drafting of the Health and Safety Plan.

10. Arrangements for monitoring and reviewing

10.1 Monthly Audit by Client and/or its Agent on its behalf

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor. Audit to comply with Construction Regulation (5)(1)(o) to ensure that the Principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan.

10.2 Other audits and inspections by client and/or its agent on its behalf

The Client and/or its Agent on its behalf reserves the right to conduct any other ad-hoc audits and inspections as it and/or its Agent on its behalf deem necessary. A representative of the Principal Contractor and the relevant Health and Safety

Representative(s) (SHE-Reps) must accompany the Client and/or its Agent on its behalf on all Audits and Inspections and may conduct their own audit/inspection at the same time.

10.3 Incident Reports – Section 24 Cases

10.3.1 The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:

- Dies
 - Becomes unconscious
 - Loses a limb or part of a limb
 - Is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed
- OR where:
- A major incident occurred
 - The health or safety of any person was endangered
 - Where a dangerous substance was spilled
 - The uncontrolled release of any substance under pressure took place
 - Machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
 - Machinery ran out of control.

to the Provincial Director of the Department of Labor within seven days and at the same time the Client and/or its Agent on its behalf.

Refer in this regard to Section 24 of the Act & General Administrative Regulation 8 & 9

10.4 Review

The Principal Contractor is to review the Hazard Identification, Risk Assessments and Standard Work Processes at each Production Planning and Progress Report meeting as the construction work develops and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client and/or its Agent on its behalf, other Contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated in the above paragraph.

10.5 Site Rules and other Restrictions

10.5.1 Site OH&S Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction.

When required for a site by law, visitors and non-employees upon entering the site shall be issued with the proper Personal Protective Equipment (PPE) as and when necessary.

10.5.2 Security and or Emergency Contingency Arrangements

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site.

The Principal Contractor must develop a set of Security rules and procedures and maintain throughout the construction period.

If not already tasked to the H&S Officer appointed in terms of Construction Regulation 8(5), the Principal Contractor must appoint a competent Emergency Controller who must develop contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing program for the plans e/g January: trench collapse, February: flooding etc. and practiced/tested with all persons on site at the time, participating.

10.6 Training (Internal and External)

The contents and syllabi of all training required by the Act and Regulations including any other related or relevant training as required must be included in the Principal Contractor's Health and Safety Plan File.

Records of all training shall be kept on the safety file for further reference and evaluation by the client's assessor and or auditor.

10.6.1 General Induction Training

All employees of the Principal and other Contractors must be in possession of proof of General Induction training provided by the approved training provider.

10.6.2 Site Specific Induction Training

All employees of the Principal and other Contractors must be in possession of Site Specific Occupational Health and Safety Induction or other qualifying training.

10.6.3 Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations must be in possession of valid proof of training as follows:

- General Induction (Section 8 of the Act)
- Site/Job specific Induction (also visitors)(Section 8&9 of the Act)
- Site/Project Manager
- Construction Supervisor
- OH&S Representatives (Section 18(3) of the Act)
- Training of the Appointees indicated in 10.6.1 & 10.6.2 above
- Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction Regulation 29)
- First Aid Level 1 (General Safety Regulations 3)
- Emergency, Security and Fire Coordinator

10.7 Accident and Incident Investigation

The Principal Contractor is responsible to oversee the investigation of all accident/incidents where employees and non-employees were injured to the extent that he/she/they had to receive first aid or be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

The results of the investigation to be entered into the Accident/Incident Register listed above. (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar incidents in future.

The Principal Contractor is responsible for the investigations of all road traffic accidents relating to the construction site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

Notwithstanding the requirements of Section 24 of the Act, ALL incidents shall be investigated and reported on in writing, irrespective of whether such incident gave rise to injury or damage.

All incidents shall be reported to the client within 24hours.

10.8 H&S Representatives (SHE-Reps-‘safety, health & environment’) and

H&S Committees

10.8.1 Designation of H&S Representatives (‘SHE-Reps)

Where the Principal Contractor employs more than 20 persons (including the employees of other Contractors (sub-contractors) he has to appoint one H&S Representative for every 50 employees or part thereof. (Section 17 of the Act and General Administrative Regulation 6 & 7)

H&S Representatives have to be designated in writing and the designation shall be in accordance with the Collective Agreement as concluded between the parties as is required in terms of General Administration Regulation 6.

10.8.2 Duties and Functions of the H&S Representatives

The Principal Contractor must ensure that the designated H&S Representatives conduct at least a weekly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor, after which these reports shall be consolidated for submission to the Health and Safety Committee.

H&S Representatives must be included in and be part of accident/incident investigations.

H&S Representatives shall be members of at least one H&S Committee and must attend all meetings of that H&S Committee.

10.8.3 Establishment of H&S Committee(s)

The Principal Contractor must establish H&S Committees consisting of designated H&S Representatives together with a number of Employers Representatives appointed as per Section 19(3) that are not allowed to exceed the number of H&S Representatives on the committee. The persons nominated by the employer on a H&S Committee must be designated in writing for such period as may be determined by him. The H&S Committee shall co-opt advisory (temporary) members and determine the procedures of the meetings including the chairmanship.

The H&S Committee must meet minimum monthly and consider, at least, the following Agenda for the first meeting. Thereafter the H&S Committee shall determine its own procedures as per the previous paragraph.

Agenda

- 1) Opening and determining of chairmanship (only when necessary)
- 2) Minutes of Previous Minutes
- 3) Observations
- 4) Program and safety considerations
- 5) Hygiene
- 6) Housekeeping improvement
- 7) Incidents & Accidents/Injuries
- 8) Registers (extend as required):
 - H&S Rep. Inspections
 - Matters of First Aid
 - Scaffolding
 - Ladders
 - Portable Electric Equipment
 - Fire Equipment
 - Power Hand tools
 - Incident Report Investigation
 - Personal Protective Equipment
- 9) Safety performance Evaluations

- 10) Education & Safety promotion program
- 11) First Aid Officials and training in First Aid
- 12) Demarcation of work -/hazardous-/safe areas/walkways
- 13) Posters and signage
- 14) Environmental preservation and conservation
- 15) Specific training programmes
- 16) General
- 17) Date of Next Meeting
- 18) Closing

11. Project/Site specific requirements

The following list is an example of specific activities and considerations that may be encountered on a project. The Principal contractor must select the applicable and extend with items particular to the project under consideration and Site Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor:

- Clearing & Grubbing of the Area/Site
- Site Establishment including:
 - Office/s
 - Secure/Safe Storage and storage areas for materials, plant & equipment
 - Ablution facilities
 - Sheltered dining area
 - Vehicle access to the site
- Dealing with existing Structures.
- Location of existing Services
- Installation & Maintenance of Temporary Construction Electrical Supply, Lighting and Equipment
- Accommodation of traffic
- Adjacent Land uses/Surrounding property exposures
- Boundary & Access control/Public Liability Exposures (Remember: the Employer is also responsible for the OH&WS of non-employees affected by his/her work activities)
- Health risks arising from neighboring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning, allergies etc.
- Exposure to Noise
- Exposure to Vibration
- Protection against dehydration and heat exhaustion
- Protection from wet & cold conditions
- Dealing with HIV/Aids and other diseases as per specific programme provided by the client and/or its Agent on its behalf.
- Use of Portable Electrical Equipment including:
 - Angle grinder
 - Electrical Drilling machine
 - Skill saw
- Welding including:
 - Arc Welding
 - Gas welding
 - Flame cutting
 - Use of LP Gas torches and appliances
 - Formwork
 - Scaffolding

- Steel reinforcement
- Concrete
- Excavations
- Work in trenches
- Loading & Offloading of Trucks
- Aggregate/Sand and other Materials Delivery and or Removal
- Manual and Mechanical Handling
- Lifting and Lowering Operations
- Driving & Operation of Construction Vehicles and Mobile Plant including:
 - Vibratory Rollers and others
 - Plate Compactor
 - Front End Loader
 - Mobile Cranes and the ancillary lifting tackle
 - Parking of Vehicles & Mobile Plant
 - Towing of Vehicles & Mobile Plant
- Use and Storage of Flammable Liquids and other Hazardous Substances – the client and/or its Agent on its behalf to be informed of this prior to commencing of the project
- Gabion work
- As discovered by the Principal Contractor's hazard identification exercise
- As discovered from any inspections and audits conducted by the Client and/or its Agent on its behalf or by the Principal Contractor or any other Contractor on site
- As discovered from any accident/incident investigation.

12. Outlined Data, References and information on certain and/or specific Obligatory Requirements to ensure compliance

Administrative & Legal Requirements

OHS Act Section/ Regulation	Subject	Requirements
Construction Regulation 4	Notice of carrying out Construction work	Department of Labour notified Copy of Notice available on Site prior to commencement of work
General Admin. Regulation 4	Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations on site. Readily available for perusal by employees.
COID Act Section 80	Registration with Compensation Insurer	Written proof of registration/Letter of good standing available on Site
Construction Regulation 5 & 7 (1)	H&S Specification & Programme	H&S Spec received from Client and/or its Agent on its behalf OH&S programme developed & Updated regularly
Section 8(2)(d) Construction Regulation 9	Hazard Identification & Risk Assessment	Hazard Identification carried out/Recorded Risk Assessment and-Plan drawn up/Updated RA Plan available on Site Employees/Sub-Contractors informed/trained

Section 16 (2)	Assigned duties	Responsibility of complying with the OH&S Act
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13. Records and Registers

In accordance with the Construction Regulations the Contractor is bound to keep records and registers related to health and safety on site for periodic inspection by inspectors, the Engineer, the Employer, trade union officials and sub-contractors and employees. The following records and registers must be kept on site and shall be available for inspection at all times:

- a) A copy of the OHS Act 1993 Construction Regulations 2014:
- b) A copy of the Client's Health and Safety Specification:
- c) A copy of the Contractor's Health and Safety Plan (Regulation 7)
- d) A copy of the Notification of Construction Work (Regulation 4)
- e) A Health and Safety File in terms of Regulation 7(1)(b) with inputs by the Construction Safety Officer (Regulation 8(5))
- f) A copy of the risk assessment described in Regulation 9:
- g) A full protection plan and the corresponding records of evaluation and training of employees working from elevated positions as described in Regulations 10;
- h) Drawings pertaining to the design of structures [Regulation 11(1)(c)] and temporary work structures [Regulation 12(3)(b)]
- i) Pronouncement of the safety of excavations must be recorded in a register to be kept on site [Regulation 13(2)(h)];
- j) A copy of the certificate of the system design for suspended platforms [Regulation 17(3)]
- k) A notice must be affixed around the base towers of material hoists to indicate the maximum mass load, which may be carried at any one time by material hoists [Regulation 19(5)]
- l) Maintenance records of material hoists and inspection results must be kept in a record book to be kept on site [Regulation 19(8)(c)]
- m) A record of any repairs to or maintenance of a bulk mixing plant must be kept on site [Regulation 20 (8)]
- n) A warning notice must be displayed in a conspicuous manner when and wherever an explosive actuated fastening device is used [Regulation 21]
- o) A register for recording of findings by the competent person appointed to inspect construction vehicles and mobile plant [Regulation 23 (1)(k)]

14. Primary Contractor responsibilities

(a) First Aid (General Safety Regulation 3)

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by General Safety Regulation 3 of the OHS Act.

The Contingency Plan of the Principal Contractor must include the arrangements for speedily and timeously transporting injured/ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor must have firm arrangements with his other Contractors in place regarding the responsibility of the other Contractors injured/ill employees.

(b) Fall Protection [Working in Elevated Positions (Construction Regulation 10)]

A pre-emptive Risk Assessment will be required for any work to be carried out above two meters from the ground or any floor level and will be classified as "Work in Elevated Positions"

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing a single belt with lanyard that will be worn to prevent the person falling from the platform, ladder or other device utilized. This safety belt will be, as far as is possible, secured to point away from the edge over which the person might fall and the lanyard must be of such a length that the person will not be able to move over the edge.

Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribe in SANS 10085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the requirement in (b) is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device OR the person must be attached to an approved fall arrest system.

Where the requirements are not practicable, a suitable catch net must be erected.

Workers working in elevated positions must be trained to do this safely and without risk to health

Where work on roof is carried out, the Risk Assessment must take into account the possibility of persons falling through fragile material, skylights and openings in the roof.

(c) Structures (Construction Regulation 11)

The Principal Contractor must ensure that:

- Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it
- No structure is overloaded to the extent where it becomes unsafe
- He/she has received from the designer the following information:
 - Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work
 - A geo-scientific report (where applicable)
 - The loading the structure is designed to bear
 - All drawings pertaining to the design are on site and available for inspection

(d) Temporary work (Construction Regulation 12)

- Temporary work must be carried out under the supervision of a competent person designated in writing
- TEMPORARY WORK structures must be so designed, erected, supported, braced and maintained that it will be able to support any vertical or lateral loads that may be applied
- No load to be imposed onto the structure that the structure is not designed to carry. TEMPORARY WORK must be erected in accordance with the structural design drawings for that TEMPORARY WORK and, if there is any

uncertainty, the designer must be consulted before proceeding with the erection/use of the TEMPORARY WORK.

- All drawings pertaining to the TEMPORARY WORK must be kept available on site
- All equipment used in the erection of TEMPORARY WORK must be checked by a competent person before use
- The foundation or base upon which TEMPORARY WORK is erected must be able to bear the weight and keep the structure stable
- Employees erecting TEMPORARY WORK must be trained in the safe work procedures for the erection, moving and dismantling of TEMPORARY WORK
- Safe access (and emergency escape) must be provided for workers
- A competent person must inspect TEMPORARY WORK structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the TEMPORARY WORK is stripped. The results of all inspections must be recorded in a register kept on site
- The TEMPORARY WORK must be left in place until the concrete has reached sufficient strength to bear its own weight plus any additional weight that may be imposed upon it and not until the designated competent person has authorized its stripping in writing
- Any damaged TEMPORARY WORK must be repaired/rectified immediately
- Deck panels must be secured against displacement
- The slipping of persons on release agents on deck panels prevented
- Persons health must be protected against the use of solvents, oils or other similar substances

(e) Excavations (Construction Regulation 13)

Where excavations will exceed 1.5 m in depth the Contractor will be required to submit a Method Statement to the Employer's Agent for approval before commencing with the excavation and **the Employer's Agent** will issue a permit to proceed once the Risk Assessment and Method Statement are approved.

- Excavation work must be carried out under the supervision of a competent person who has been appointed in writing
- Before excavation work begins the stability of the ground must be evaluated Whilst excavation work is being performed, the contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgment of material
- No person may be required or permitted to work in an excavation that has not been adequately shored or braced or where
 - The excavation is in stable material or where
 - The sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane
- The shoring or bracing may not be left out unless written permission has been obtained from the appointed competent person and shoring and bracing must be designed and constructed to safely support the sides of the excavation
- Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavator
- No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the trench unless suitable shoring has been installed to be able to carry the additional load
- Any neighboring building, structure or road that may be affected or endangered by the excavation must be protected from damage or collapse

- Every excavation must be provided with means of access that must be within 6 meters of any worker within the excavation
- The location and nature of any existing services such as water, electricity, gas etc. must be established before any excavation is commenced with
- Every excavation including the shoring and bracing or any other method to prevent collapse must be inspected by the appointed competent person as follows:
 - Daily before work commences
 - After every blasting operation
 - After an unexpected collapse of the excavation
 - After substantial damage to any supports
 - After rain

The results of any inspections must be recorded in a register kept on site

- Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced to at least 1.20 meter high and as close to the excavation as practicable and provided with warning lights or visible boundary indicators after dark or when visibility is poor. The stringing of danger tape only attached to, and between poles, shall not be allowed. Fences shall comprise at least 3 rows of barbed or smooth fence wire at 450mm spacing and 300mm from the ground to 1.2m high droppers at 3m max spacing and 1.8m long tension posts at 18m max. spacing embedded 600mm in the ground. Tension posts at ends of line shall be adequately restrained to the ground. Red safety net, 900high, shall be attached continuously to the three rows of wire
- Upon entering an excavation the requirements of General Safety Regulation 5 must be observed
 - any confined space may only be entered after the air quality has been tested to ensure that it is safe to breath and does not contain any flammable mixture or
 - the confined space has been purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes and
 - the safe atmosphere must be maintained or
 - employees have to be using breathing apparatus and wearing a safety harness with a rope with the free end of the rope being attended to by a person outside the confined space, furthermore,
 - an additional person trained in resuscitation must be in full-time attendance immediately outside the confined space and
 - additional breathing and rescue apparatus must be kept immediately outside the confined space for rescue purposes
 - the employer must ensure that all employees have left the confined space after the completion of work

where flammable gas is present in a confined space no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

(f) Demolition Work (Construction Regulation 14)

- Demolition work to be carried out under the supervision of a competent person who has been appointed in writing
- A detailed structural engineering survey of the structure to be demolished to be carried out and a method statement on the procedure to be followed in demolishing the structure to be developed by a competent person, before any demolition may be commence
- As demolishing progresses the structural integrity of the structure to be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature collapse
- Steps must be taken to ensure that where a structure is being demolished:

- No floor, roof or any other part of the structure is overloaded with debris or material that would make it unsafe
- Precautions are taken to prevent the collapse of the structure when any frame or support is cut or removed
- Shoring or propping is applied where necessary
- No person must be required or allowed to work under unsupported overhanging material
- THE STABILITY OF AN ADJACENT BUILDING, STRUCTURE OR ROAD MUST BE MAINTAINED AT ALL TIMES
- The location and nature of any existing services such as water, electricity, gas etc. must be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for workers
- Every stairwell in a building being demolished must be adequately illuminated
- Convenient and safe means of access must be provided
- A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on persons, must be fenced or barricaded
- No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded
- Waste and debris may only be disposed of from a height in a chute with the following design:
 - Adequately constructed and rigidly fastened
 - If inclined > 45 degrees enclosed on all four sides
 - Fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute
 - Discharged into a container or a barricaded area
 - Demolition equipment may only be used on floors or slabs that are able to support it
- Asbestos related work must be conducted to the requirements of the asbestos regulations promulgated under the OHS Act and in particular asbestos Regulation 21:
 - Demolition of asbestos may only be carried out by a registered (with the Department of Labour) Asbestos Contractor
 - All asbestos materials likely to become airborne must be identified
 - A Plan of Work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA) (approved by the Department of Labour) 30 days prior to commencement of demolishing work unless the Plan was drawn up by an AAIA and a signed (by all parties) copy must be submitted to the Department of Labour 14 days before commencement of the demolishing

During demolition work:

- All asbestos containing material must be disposed of safely. Workers must be issued with appropriate PPE and the proper use thereof enforced
- After the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed
- No person is allowed to:
 - Use compressed air or permit the use of compressed air to remove asbestos dust from any surface or person
 - Smoke, eat, drink or keep food or beverages in an area not specifically designated for this
 - Apply asbestos by spraying

Lead related work must be conducted to the requirements of the Lead regulations promulgated under the OHS Act

Where demolition work will involve the use of explosives a methods statement must be developed by a competent person in accordance with applicable explosives legislation

(g) Tunneling (Construction Regulation 15)

- To be performed in accordance with the Tunneling Regulations as published under the Mines Health & Safety Act (29 of 1996)
- No person shall enter a *tunnel that has a height dimension less than 800 mm

*Definition of Tunneling: "the construction of a tunnel beneath the natural surface of the earth for the purpose other than the searching for or winning of a mineral

(h) Access Scaffolding (Construction Regulation 16)

Access Scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 14 and SA Bureau of Standards Code of Practice, SANS 085 entitled: "The Design, Erection, Use & Inspection of Access Scaffolding.

Detailed consideration must be given to all scaffolding to endure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in as sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly.

Scaffolding may only be erected, altered or dismantled by a person who has adequate training and experience in this type of work or under the supervision of such a person.

(i) Suspended Platforms & Rope access work (Construction Regulation 17 &18)

The Contractor to design, erect, use and maintain suspended platforms in accordance with the requirements of Construction Regulation 17.

Rope access work is to be erected, used maintained and inspected in accordance with the requirements of Construction Regulation 18.

(j) Bulk Mixing Plants (Construction Regulation 20)

The Contractor to erect, operate and maintain Batch Plants in accordance with the requirements of Construction Regulation 18.

(k) Explosive Actuated Fastening Device (Construction Regulation 21)

Every Explosive Actuated Fastening Device (EAFD) must be:

- Provided with a guard around the muzzle to confine flying fragments or particles
- A firing mechanism that will prevent the EAFD from firing unless it is pushed against the surface and at right angle (where the EAFD is fitted with an intermediate piston between the charge and the nail this requirement is waived)

The Contactor must ensure that:

- Only the correct type of cartridge is used
- The EAFD is cleaned, inspected and cleaned daily before use by an appointed competent person who keeps register with the findings of his inspection and the details of cleaning, service and repairs
- The safety devices are in good working order before the EAFD is use
- When the EAFD is not being used it is stored in an unloaded condition together with the cartridges in a safe/secure place inaccessible to unauthorized persons
- A warning notice is displayed at the point where the EAFD is in use
- The issue and return of cartridges must be by issue/returns register signed by both issuer and user and empty cartridges cases must be returned with unspent cartridges
- Users/operators of the EAFD have received the necessary training and has been authorized as competent to use/operate the EAFD
- Users/operators must wear the prescribed PPE whilst using/operating the tool

(I) Cranes & Lifting Equipment (Construction Regulation 22)

Cranes and Lifting equipment must be designed and constructed in a accordance with generally accepted technical standards and operated, used, inspected and maintained in accordance with the requirements of Driven Machinery Regulation 8 of the OHS Act:

- To be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, a table should be used by the driver/operator
- Each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit
- Fitted with a brake or other device capable of holding the MML. This brake or device to automatically prevent the downward movement of the load when the lifting power is interrupted
- Fitted with a load limiting device that automatically arrest the lift when
- The load reaches its highest safer position or
- When the mass of the load is greater than the MML
- Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
 - chains-4 (four)
 - steel wire ropes-5 (five)
 - fiber ropes-10 (ten)
- every hook or load attaching device must be designed such or fitted with a device that will prevent the load from slipping off or disconnecting
- every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 month after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML
- in addition all ropes, chains, hooks or other attaching devices, sheaves, breaks and safety
- devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person
- all maintenance, repairs, alterations and inspection results must be recorded in a log book
- and each lifting machine must have its own log book

- no person may be lifted by a lifting machine not designed for lifting persons unless in a
- cradle approved by the inspector of the Department of Labour
- every jib crane with an MML of 5 000kg or more at minimum jib radius must be provided with a load indicator or a load lifting limiting device

Lifting Tackle:

- to be manufactured of sound material, well constructed and free from patent defects
- to be clearly and conspicuously marked with ID number and MML
- factor of safety:

- Natural fiber ropes	- 10(ten)
- Man-made fiber ropes & woven webbing -	06(six)
- Steel wire ropes-single rope	- 08(eight)
- Steel wire rope-combination slings	- 05(five)
- Mild Steel chains	- 04(four)
- steel wire ropes must be discarded (not used any further for lifting purposes) when excessive wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded.

Operator

- Every lifting machine operator must be trained specifically for the type of lifting machine that he/she is operating
- Operators of Jib cranes with a MML of 2 000kg or more must be in possession of a certificate of training issued by an accredited (by The Department of Labour) training provider.

Construction Regulation 22:

Where tower cranes (TC) are used:

- account must be taken of the effects of wind force on the structure
- account must be taken of the bearing capacity of the ground on which the TC is to be erected
- the bases for the TC and tracks for rail mounted TC's must be firm and level and must be erected at a safe distance from excavations
- clear space must be provided and maintained for erection, operation, maintenance and dismantling
- TC operators must be competent to carry out the work safely

TC operators must be in possession of a valid medical certificate testifying that the holder is physically and psychologically fit to work on a TC.

All lifting operations where the lift will exceed 2000 kg must be planned by a competent person and the plan submitted to the employer for approval and permission to carry out the lift.

(m) Construction Vehicles & Mobile Plant (Construction Regulation 23)

Construction Vehicles and Mobile Plant will be inspected by the client prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHS Act and Regulations.

Construction Vehicles and Mobile Plant (CV&MP) to be:

- of acceptable design and construction
- maintained in good working order
- used in accordance with their design and intention for which they were designed
- operated/driven by trained, competent and authorized operators/drivers. No unauthorized persons to be allowed to drive VC&MP
- operators and drivers of CV&MP must be in possession of a valid medical certificate declaring the operator/driver physically and psychologically fit to operate or drive CV&MP
- provided with safe and suitable means of access
- fitted with adequate signaling devices to make movement safe including reversing
- excavations and other openings must be provided with sufficient barriers to prevent CV&MP from falling into same
- provided with roll-over protection
- inspected daily before start-up by the driver/operator/user and the findings recorded in a register/log book
- CV&MP to be fitted with two head and two tail lights whilst operating under poor visibility conditions
- no loose tools, material etc. is allowed in the driver/operators compartment/cabin nor in the compartment in which any other persons are transported
- CV&MP used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported

No person may ride on a CV&MP except for in a safe place provided for the purpose

The construction site must be organized to facilitate the movement of CV&MP and that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

CV&MP left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights reflectors or barricades to prevent moving traffic to come into contact with the parked CV&MP.

In addition CV&MP left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

Workers employed adjacent or on public roads must wear reflective safety vests.

All CV&MP inspection records must be kept in the OH&S File

(n) Electrical Installations (Construction Regulation 24)

The installation of temporary electricity for Construction shall be in accordance with the Construction Regulation 24 and the Electrical Installation Regulations.

The Contractor must ensure that:

- Existing services are located and marked before construction commences and during the progress thereof
- Where the abovementioned is not possible, workers with jackhammers etc. are protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etc.

- Electrical installations and –machinery are sufficiently robust to withstand working conditions on site
- Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the OH&S File
- Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the OH&S File
- All temporary electrical installations must be controlled by a competent person appointed in writing

Electrical & Mechanical Lock-Out

An electrical and mechanical lock-out procedure must be developed by the Principal Contractor and submitted to the client for approval before construction commences. This lock-out procedure to be adhered to by all Contractors on site.

(o) Use & Storage of Flammables (Construction Regulation 24)

The Contractor to ensure that:

- No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapors being present unless adequate precautions are taken
- No flammable is used or applied e.g. in spray painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation
- The workplace is effectively ventilated. Where this cannot be achieved:
 - employees must wear suitable respiratory equipment
 - no smoking or other sources of ignition is allowed in the area
 - the area is conspicuously demarcated as “flammable”
- Flammables stored on a construction site are stored in a well – ventilated, reasonably fire – resistant container, cage or room that is kept locked with access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practiced e.g. proper housekeeping
- Flammables stored in a permanent flammables store are stored so that no fire or explosion is caused i.e:
 - stored in a locked well- ventilated reasonably fire resistant container, cage or room conspicuously demarcated as “Flammable Store – No Smoking or Naked Lights “
 - the flammable store to be constructed of two-hour fire retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall
 - Adequate and suitable fire fighting equipment installed around the flammables store and marked with the prescribed signs
 - All electrical switches and fittings to be of a flameproof design
 - Any work done with tools in a flammables store or work areas to be of a non-sparking nature
 - No Class A combustibles such as paper, cardboard, wood, plastic, straw etc. to be stored together with Flammables
 - The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored
 - A sign indicating the capacity of the store to be displayed on the door
 - Only one day's quantity of Flammable is to be kept in the workplace
 - Containers (including empty containers) to be kept closed to prevent fumes/vapors from escaping and accumulating in low lying areas

- Metal containers to be bonded to earth whilst decanting to prevent build-up of static
- Welding and other flammable gases to be stored segregated as to type of gas and empty and full cylinders

(p) Working on or Near Water (Construction Regulation 26)

The Principal Contractor must ensure that, where construction work is being carried over or in close proximity to water:

- Measures are in place to prevent workers from falling into the water and drowning. These measure to include the availability of lifejackets
- Measures are in place to rescue any worker/ that has fallen into the water

(q) Housekeeping (Construction Regulation 27)

The Contractor to ensure that:

- Housekeeping is continuously implemented
- Materials & equipment are properly stored
- Scrap, waste and debris are removed regularly
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to free flow of pedestrian and vehicular traffic
- Waste & debris not to be removed by throwing from heights but by chute or crane
- Where practicable, construction sites are fenced off to prevent entry of unauthorized persons
- Catch platforms or – nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects
- An unimpeded work space is maintained for every employee
- Every workplace is kept clean, orderly and free of tools etc. that are not required for the work being done.
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials
- The walls and roof of every indoors workplace is sound lead-free
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fence, boarded over or provided with protection to prevent persons from falling.

(r) Stacking & Storage (Construction Regulation 28)

The Contractor/Employer must ensure that:

- A competent person is appointed in writing to supervise all stacking and storage on a construction site
- Adequate storage areas are provided and demarcated
- The storage areas are kept neat and under control
- The base of any stack is level and capable of sustaining the weight exerted on it by the stack
- The items in the lower layers can support the weight exerted by the top layers.
- Cartons and other containers that may become unstable due to wet conditions are kept dry
- Pallets and containers are in good condition and no material is allowed to spill out

- The height of any stack does not exceed 3X the base unless stepped back at least half the depth of a single container at least every fifth tier.
- The approval of an inspector has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead off the stack and no items may overhang)
- The articles that make up a single tier are consistently of the same size shape and mass
- Structures for supporting stacks are structurally sound and able to support the mass of the stack
- No articles are removed from the bottom of the stack first but from top tier first
- Anybody climbing onto a stack can do it safely and that the stack is sufficiently stable to support him/her
- Stacks that are in danger of collapsing are broken down and restacked
- Stability of stacks are not threatened by vehicles or other moving plant and machinery
- Stacks are built in a header and stretcher fashion and that corners are securely bonded
- Stepped back at least half the depth of a single container at least every fifth tier
- Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations

(s) Fire Prevention and Protection (Construction Regulation 29)

The Principal Contractor must ensure that:

- The risk of fire is avoided
- Sufficient & suitable storage of flammables is provided
- Sources of ignition is obviated wherever flammable or highly combustible material is present in the workplace e.g.:
 - notice prohibiting smoking is displayed and enforced
 - welding and flame cutting is only allowed under controlled conditions that includes written hot work permits
 - only spark-free hand and power tools are used
 - no grinding, cutting and shaping of ferrous metals are allowed using electrically driven power tools that produces sparks
 - flameproof switches & fittings are to be used in the flammable atmosphere
 - Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles
 - Adequate ventilation is maintained
 - Adequate and suitable fixed and portable fire appliances is provided and maintained in good working order.
 - Maintenance must include:
 - Regular inspection by a competent person appointed in writing and keeping a register
 - Annual inspection and service by an accredited service provider .
- All employees are instructed in the use of the Fire equipment and know how to attempt to extinguish a fire
- A sufficient number of employees are appointed and trained to act as Emergency Team to deal with fires and other emergencies
- Employees are informed re. Emergency evacuation procedures and escape routes
- Emergency escape routes are kept clear at all times
- After evacuation assembly point are demarcated

- Evacuation is practiced to ensure that all is evacuated timeously
 - Roll-call is held after evacuation to account for all personnel and ensure that no-one has been left behind.
 - A clearly audible to all persons on site siren or alarm is fitted
- (t) Eating, Changing, Washing & Toilet Facilities (Construction Regulation 30 & Facilities Regulations)

The following will be the minimum requirement:

Toilets

The provision of Toilets is required in terms of the National Building Regulations and Construction Regulation 30.

Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of 1 toilet per 30 workers.

Changing Rooms

Some form of screened off changing facility must be provided separately for each sex.

Eating Facility

Some form of shelter from the sun, wind and rain must be provided.

(u) Personal & Other Protective Equipment (Section 8/15/23 of the OHS Act)

The Contactor is required to identify the hazards in the workplace and deal with them. He must either remove them or, where impracticable take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal Protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered.

Where it is not possible to create an absolutely safe and healthy workplace the Contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the said equipment be maintained by the Contractor, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s

Employees do not have the right to refuse to use/wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating or discharging the employee.

The Contractor may not charge any fee for protective equipment prescribed by him/her but may charge for equipment under the following conditions:

- Where the employee requests additional issue in excess of what is prescribed
- Where the employee has patently abused or neglected the equipment leading to early failure
- Where the employee has lost the equipment.

All employees shall, as a minimum, be required to wear the following PPE on any projects :

- Protective overalls
- Protective footwear
- Protective headwear
- Eye/face protection
- Lung protection

(v) Portable Electrical Tools & Equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a plug point and is moved around for use in the workplace i.e drills, saws, grindstones, portable lights, etc. In addition electrical appliances such as fridges, hotplates, heaters, etc. must be inspected and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing
- Inspection results must be recorded in a register
- Only competent authorized persons are allowed to use portable electrical tools and equipment
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment

Portable Electrical Tools

- Must be maintained in good condition at all times to prevent an electrical shock to the user
- The main source must incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such
- All equipment must be fitted with a switch to allow for safe & easy starting and stopping

Portable Lights

- Must be fitted with a robust non-hygroscopic non-conducting handle
- Live metal parts/parts which may become live must be protected against contact
- The lamp must be protected by a strong guard
- The cable lead-in must withstand rough handling
- It is suggested that a register be kept for each piece of equipment and findings of regular inspections must be entered
- Inspections must concentrate on plug, cord, switch and any obvious faults
- When used in wet/damp/metal container conditions, it must be protected as for portable
- electrical tools, above

(w) Pubic Health & Safety (Section 9 of the OHS Act)

The Principal Contractor will be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimize the dangers. This includes:

- Non- employees entering the site for whatever reason
- The surrounding community
- Passers by to the site

Appropriate signage must be posted to this effect and all employees on site must be instructed on ensuring that non- employees are protected at all times.

All non-employees entering the site must receive induction into the hazards and risks and the control measures for these.

(x) Hazardous Chemical Substances

The Contractor /Employer must ensure that:

- Employees receive the necessary information & training to be able to use and store HCS safely
- Employees obey lawful instructions regarding:
 - the wearing and use of protective equipment
 - the use and storage of HCS
 - the prevention of the release of HCS
 - the wearing of exposure monitoring and measuring equipment
 - the cleaning up and disposal of materials containing HCS
 - housekeeping, personal hygiene and the protection of the environment
 - the Risk Assessments required in terms of Construction Regulation 7 include employee exposure to HCS and that the necessary to protect
 - persons from being detrimentally affected by HCS present or used in the workplace, are taken
 - suppliers provide the necessary information in the form of a Material Safety Data Sheet (MSDS) regarding an HCS required to ensure the safe use and storage of that HCS
 - an up-to-date list is kept on site of HCS's stored and used together with the MSDS's of the said HCS's
- HCS containers are clearly marked as to the contents and main hazardous category e.g "Flammable" or "Corrosive" and the reference number of the HCS on the list indicated above
- HCS e.g Asbestos dust is not cleared by the use of compressed air but is vacuumed
- No person eats or drinks in a HCS workplace
HCS waste is disposed of safely in terms of hazardous waste disposal requirements.

“HEALTH AND SAFETY FILE”

MANAGED ON BEHALF OF

(THE “CLIENT”)

PROJECT:

**(full name AND site address of project)
(and full or proper description of project)**

This document serves as a guide to Principle Contractors and Contractors (and their agents) to assist them in complying with the requirements of the Act and more specifically the Construction Regulations and to ensure a most comprehensive Health and Safety File. Kindly note the following extractions from the Construction Regulations:

“Every contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and the Regulations, is opened and kept on site and made available to an inspector, client, client’s agent or principle contractor upon request. [CR 7(1)(b)]

A Principal Contractor shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in sub regulation (7) [above], include a record of all drawings, designs, materials used and other similar information concerning the completed structure. [CR 7(1)(e)]

A Principal Contractor shall ensure that in addition to the documentation required in the health and safety file as determined in the two sub regulations above, a comprehensive and updated list of all the contractors on site accountable to the Principal Contractor, the agreements between the parties and the type of work being done are included and available. [CR 7(1)(f)]”



The information, documentation and lists required to be included in the Health and Safety File as contemplated in the Construction Regulations [CR 7(1)(b)], shall be suitably and sufficiently documented in terms of the following items listed below to ensure compliance with the Act as far as is reasonably practicable.

Note: In the event that any of the items listed below may not have reference to the planning, implementation and completion of the work to be done pertaining to the project on the construction site, it must clearly be indicated as such with a proper statement e.g. ‘Not Applicable’. All other relevant references or items below shall relate to the information required as contemplated in the Act and Regulations.

IMPORTANT - This Health and Safety File shall be regarded as the property of the Client as it has to be consolidated and handed over to the Client upon completion of the project. The Principal Contractor shall ensure that this file is adequately protected against any form of damage, abuse or fraud.

Registers as follows:

- * Accident/Incident Register (Annexure 1 of the General Administrative Regulations)
- * H&S Representatives ('SHE - Reps') Inspection Register
- * Arc & Gas Welding & Flame Cutting Equipment Inspections
- * Inspection of Cranes
- * Inspection of Ladders
- * Inspection of Vessels under Pressure plus all other excluded under VUP regulations
- * Fire- fighting equipment

The H&S Representatives (SHE-Reps) will be required to submit the abovementioned registers as well as other legally required registers, also from the list below, on a monthly basis to the chairman of the H&S committee for submission to, and endorsement by the H&S Committee. Also refer to the suggested Agenda for the H&S Committee under 12.8.3

Documents as follows:

Copy of OH&S Act (updated) (General Administrative Regulation 4.)
 Proof of Registration and good standing with a COID Insurer (Construction Regulation 5(1)(j))
 Appointments – in terms of the Construction Regulations * [See references Page 4]
 Notification of Construction Work – Annexure 1 [CR 4]
 H&S Specifications [CR 5]
 H&S Plan – Principal Contractor, Contractor & Sub-contractors [CR 7(1) & (1)(d)]
 Proof of Periodic Audits [CR 5, 7 & 8]
 List of all Contractors (accountable to Principal Contractor) on site [CR 7(1)(f)]
 Contractor Agreements [CR 7(1)(v)]
 Type of work done on site [CR 7(1)(f)]
 Records of drawings, designs, materials used and similar information concerning the completed structure [CR 7(1)]
 Input by Construction Safety Officer [CR 8(5)]
 Risk Assessment [CR 9(1)]
 Copy of Risk Assessment [CR 9(2)]
 Proof of H&S Induction Training [CR 7(8)]
 Proof of training on Hazards and Work Related Procedures [CR (9(4))]

Fall Protection Plan [CR 10]
Drawings design of structure [CR 11(c)]
Records of Inspections of Structure [CR 11(d)]
Maintenance records – structure safety [CR 11(d)]
Record Excavation Inspection [CR 13(h)]
Method Statement [CR 13(k)]
Method Statement [CR 14(2)]
Method Statement [CR 14(11)]
Operational Compliance Plan [CR 17(2)(c)]
Certificates, design calculations, sketches and test results [CR 17(3)]
Examination results [CR 17(9)]

Suspended Platform Inspection and Performance Test records [CR 17(11)]
Medical Certificate of Fitness [CR 7(8)]
Proof of Training [CR 17(12)(c)]
Material Hoist Inspections [CR19(8)(c)]
Maintenance Records Material hoist [CR19(8)(d)]
Record Bulk Mixing Plant Maintenance & Repair [CR20(8)]
Register for control of cartridges/nails studs – explosive actuated fastening device [CR21(2)(g)(ii)]
Medical Certificates of Fitness [CR 22(e)]
Medical Certificates of Fitness [CR 23(1)(d)(i)]
Findings of daily inspections Construction Vehicles & Mobile Plant [CR23(1)(k)]
Record of Temporary Electrical Installation Inspections [CR22(d)]
Record of Electrical Machinery Inspections [CR24(d)]
Proof of Training [CR 29(i)]
Evacuation Plan [CR 29(l)]
H&S Rep & Committee Members details
H&S Committee Meetings' Minutes
Other appointments in terms of OHASA

The following further identified requirements in terms of the Act and other Regulations of the Act are similarly applicable as part of the contents of the 'Health and Safety File':

Details of Inspections (by DoL)
Recording and Investigation of Incidents – Annexure 1 [GAR 9(1-3)]
Action taken on all incidents [GAR 9(4)]
Certificates of Competency in First Aid [GSR 3(4)]
Record of Medical Surveillance required in terms of OHASA
Proof of compliance with Asbestos Regulation requirements
Proof of compliance with Major Hazard Installation requirements

****The Appointments to be made in writing with job descriptions as per the Construction***

Regulations may include some or all of the following:

PRINCIPAL CONTRACTORS - [CR 55(1)(k)]

CONTRACTORS – [CR 7(1)(v)]

COMPETENT PERSONS - [CR 8(1) +8 (7)+8(8)]
 - [CR 8(5)]
 - [CR 9(1) + (4)]
 - [CR 10(1)(a)]
 - [CR 12(a) + (e) + (f)]
 - [CR 13(1)(a) + (bb) + (3)(k)]
 - [CR 14(1) + (2) + (3) + (11)]
 - [CR 16(1)]
 - [CR 17(1) + (2)(c) + (8)(c) + (13)]
 - [CR 19(8)(a)]
 - [CR 20(1) + (7)]
 - [CR 21(2)(b) + (2)(g)(i)]
 - [CR 22(e)]
 - [CR 23(1)(d)(i) + (1)(k)]
 - [CR 24(d) + (e)]
 - [CR 28(a)]
 - [CR 29(h)]

DESIGNER - [CR 11(2)9(a)]

APPENDIX B

ENVIRONMENTAL MANAGEMENT PLAN

1.1 EMP: Construction phase			
Activity that causes the impact	Specific Impacts	Mitigation measures	Responsible Person
1.1.1 AIR POLLUTION AND NOISE			
Earthworks and Vegetation clearance by construction vehicles and equipment	Excessive dust	Construction areas should be dampened to prevent excessive dust formation especially during winter months. Construction should only take place during the hours between sunrise and sunset (6h00-18h00) on weekdays and Saturdays.	Contractor
Movement of vehicles	Smoke and fumes	Vehicles to be in good working condition and serviced regularly in order to reduce excessive smoke.	Contractor
	Excessive dust	Roads and construction areas to be dampened to prevent excessive dust formation Only designated roads may be used. No new routes may be constructed by the contractors. The speed of vehicles should be kept low to reduce dust.	Contractor
	Noise	Contractors should comply with provincial noise regulations. Construction machinery should be fitted with noise mufflers and be maintained properly. The speed of vehicles should be kept low to reduce generation of noise.	Contractor
Burning of waste and cleared vegetation. The use of fires for cooking and heating at the construction site.	Smoke	No solid waste or garden refuse may be burnt on the premises or surroundings. This should be taken to the municipal waste disposal facility. Solid waste should be kept in adequate bins at the construction site. No open fires should be allowed on construction sites. No wood may be collected in the area for heating and cooking purposes. Wood supplied by contractor may be used in designated areas. Cooking should preferably be done on gas or paraffin stoves.	Contractor

1.1.2 GROUNDWATER AND SURFACE WATER POLLUTION

Sanitation-seepage	Surface and ground water contamination	Existing sanitation facilities (where possible) should be used by construction workers. Care should be taken that no sanitation facilities that rely on seepage (water borne, VIP's or pit latrines) should be positioned within 100m from an existing borehole or any water course. Temporary chemical sanitation facilities or enviroloos should be made available to contractors and their employees if the existing facilities can not be used. One toilet for every 15 workers on site. Facilities must be serviced regularly by approved companies and records must be kept. Chemical toilets may not be placed nearer than 100 m from any water course.	Contractor
Solid waste in freshwater resources	Surface water pollution	Solid waste should be kept in adequate animal proof waste bins and disposed of regularly at a landfill site. Building rubble should be stockpiled on and then removed to a licensed disposal site. This should be done on a regular basis to limit the impact of littering. Waste should be sorted for recycling. Solid waste may not be burned or buried.	Contractor
Pollution by cement, paints and other construction material	Surface and ground water contamination	Care should be taken that waste cement, paint and other construction material is taken to a suitable landfill site.	Contractor
Spillage and leaks of fuel and lubricants from construction machinery	Surface and ground water contamination	Machinery to be checked and serviced regularly to prevent oil and fuel leaks. No servicing of construction machinery on site. Vehicles should only be re-fuelled at an existing filling station or drip pans to be used when refilling vehicles or machines on site. The mixing of cement, concrete, paints etc should be done at designated areas within concrete aprons or on protected plastic linings to contain any spillages into the ground or surface water. Diesel may be stored on site within a bunded area provided that the volume is less than 10 000 litres.	Contractor
Storm water management	Siltation of streams and water courses and erosion	Removal of vegetation to be limited to construction and road areas. Cleared areas to be re-vegetated or paved as soon as practicable to limit the effect of erosion and siltation. Indigenous plant species to be given preference in re-vegetation areas. Berms to limit the flow of water over cleaned areas will limit erosion and the siltation of surface streams The stockpiled topsoil and construction material should be managed in such a way that the material is not transported by wind or rainwater. This can be done by restricting the height of the stockpiles to 1.2 m. The geo-technical report recommendations must be implemented.	Contractor & engineer
Removal of topsoil and construction activities (wind erosion)	Increased turbidity and decrease in water quality	Slopes produced by removing of soil should be kept to a minimum to reduce the chances of erosion damage to the area.	Contractor and engineer

Trenching for cables, sewage and water infrastructure	Ground water pollution due to dumping of waste in trenches	Ensure strict compliance that no foreign matter is deposited in trenches. Waste should only be disposed of in designated waste bins.	Contractor
1.1.3 WATER USE			
Construction activities	Overuse of available water resources	Water use should be kept to a minimum. Ensure that pipes and taps are not leaking. Only water sources agreed on may be used for construction.	Contractor
1.1.4 ARCHAEOLOGY AND HERITAGE			
Earth moving, trenching, soil and vegetation clearance	Destruction of archaeological evidence and heritage	Care should be taken during the construction process to ensure that anything of archaeological value that is unearthed is recorded. A suitably qualified archaeologist must be notified whenever anything of importance is discovered.	Contractor
1.1.5 LOSS OF BIODIVERSITY			
Clearing of vegetation before/during construction	Loss of plant species & habitat. Loss of indigenous fauna & flora	No indigenous trees may be cut or wood be collected for firewood or any other purposes. Only removal of plants essential to construction activities to be allowed.	Contractor
Clearing of vegetation by means of herbicides to control re-growth at the development site	Loss of indigenous plant species. Eradication of exotic and/ or invasive plant species	A competent ecologist or specialist should be consulted prior to using any herbicide. Exotic and/ or invasive plant species should be eradicated as part of the construction phase as the development progresses.	Contractor
Establishment of gardens	Loss of indigenous fauna & flora	Gardens should stay natural as far as possible, which will retain the biodiversity and enhance the presence of local fauna in the area, as their habitats will not be destroyed in the process. Indigenous plants occurring in the region can be planted as far as possible. All garden refuse should be kept and composted to preserve the nutrients in it and return it to the soil. Garden refuse should not be burnt, as this causes a loss of nutrients and organic material, as well as air pollution and a fire hazard.	Contractor
Trenching for cables, sewage and water infrastructure	Loss of indigenous fauna from animals falling into trenches	Barricade nets (orange) should be erected along open trenches, or around the whole construction area, to ensure that people and animals do not fall into trenches.	Contractor

Feeding of wildlife	Making wildlife dependant on humans	No wildlife may be fed. Food should always be stored out of reach of any animals.	Contractor
Control of animals and/or insects	Loss of indigenous fauna	No insecticides should be used to control insects (e.g. termites, ants etc) without consulting a knowledgeable ecologist or specialist. No wild animals should be captured, hunted, snared, killed, or caught etc. No domesticated animals may be brought on site by the contractors.	Contractor
Veld fires in area	Destruction and/or loss of plant and animal life	Fires may only be allowed in designated places and extra care should be taken to prevent veld fires. The cleared vegetation should be composted where possible to preserve the nutrients in it and return it to the soil. This vegetation should not be burnt as it causes a loss of nutrients and organic material. It also causes air pollution and is a fire hazard. Veld fires must be prevented.	Contractor
1.1.6 SOIL POLLUTION / DEGRADATION			
Spillage and/or leaks of fuel and lubricants from construction machines and vehicles.	Soil pollution, contamination & poisoning	Construction machines and vehicles to be checked and serviced regularly to prevent oil and fuel leaks and spills. Servicing of construction machines may not take place on site.	Contractor
Excavation and trenching during pipe and cable installation	Soil erosion and loss of top soil	All trenches to be backfilled and suitably compacted; filling at surface to be higher than ground level to provide for settling / subsiding of soil over time. Trenches for pipes or cables should where possible be dug next to roads where it will have the smallest impact. Slopes and excavations formed by the removal of soil to be kept to a minimum to reduce the chances of erosion damage to the area.	Contractor
Solid waste storage and disposal	Soil pollution & nuisance	Solid waste should be kept in animal proof containers and disposed of regularly to a licensed disposal site. All building rubble should be stockpiled and removed regularly to a licensed disposal site. Building rubble stockpile not to be used for hazardous waste such as poisons, fuels, oils.	Contractor
Excavation and trenching for cables, sewage and water infrastructure	Soil pollution	Ensure that no solid or liquid waste, including building rubble, is deposited in trenches.	Contractor
Ponding of water next to structures and earthworks	Damage to structures	Efficient surface drainage systems should be installed around structures to prevent ponding of water after heavy precipitation.	Engineer & Contractor

Removal of soil cover and vegetation	Soil Erosion	<p>Removal of vegetation should be limited to construction areas.</p> <p>Slopes produced by removal of soil should be kept to a minimum to reduce the chances of erosion damage to the area.</p> <p>Clearing of the site to be done in phases as construction progresses in order to limit erosion risk. Topsoil should be stored for rehabilitation of cleared areas</p> <p>Cleared areas to be re-vegetated or paved as soon as practicable to limit the effect of erosion. Only indigenous plant species to be used in re-vegetation areas.</p>	Engineer, Contractor & architect
1.1.7 VISUAL IMPACT			
Buildings	Visual intrusion	Buildings should be constructed using materials and colours in harmony with the surrounding environment.	Architect and contractor
Security lights, construction activities and temporary construction structures	Nuisance and visual disturbance	<p>Care should be taken that only the most important and necessary lighting is used at night.</p> <p>Yellow lights to be used for exterior lighting to avoid attracting insects.</p> <p>Stationary lights should be positioned in such a way not to cause any nuisance to surrounding residents</p>	Architect and contractor
1.1.8 FIRE HAZARDS			
<p>Burning of waste or wood</p> <p>Smoking</p> <p>Construction activities</p> <p>Veld fires</p>	<p>Fire hazard (damage to structures and/or infrastructure etc)</p> <p>Injuries and/or loss of life</p>	<p>No solid waste or vegetation may be burnt on the premises or surrounding areas. No open fires should be allowed on the construction site.</p> <p>Fires for cooking should be restricted to designated areas and extra care should be taken to ensure the prevention of veld fires. Cooking should preferably be done on gas staves.</p> <p>Fire breaks must comply with the National Veld and Forest Fire Act 101 of 1998 (Chapter 4: Duty to Prepare and maintain firebreaks). Fire breaks must be made around the perimeter of the whole development. An emergency plan must be in place so that any uncontrolled fire can be combated in the most efficient manner and with the greatest speed possible. Fire equipment should be available to combat fires if necessary.</p> <p>The cleared vegetation should be composted where possible to preserve the nutrients in it and return it to the soil. This vegetation should not be burnt as it causes a loss of nutrients and organic material. It also causes air pollution and is a fire hazard.</p>	Contractor

2 ENVIRONMENTAL MONITORING PROGRAMME

2.1 Monitoring: Construction phase

Environmental Component	Monitoring frequency					Monitoring method	Action/Remedial action	Responsible person
	Once off per site	When applicable	Continuous/daily	Weekly	Quarterly			
2.1.1 NOISE AND AIR POLLUTION								
Earthworks and vegetation clearance resulting in dust from construction machines, equipment and activities						Visits to the sites where construction occurs	Follow up with contractor when it happens Dust abatement as required	Contractor
Smoke from burning vegetation and/or solid waste						Visual inspections	No burning of waste, vegetation or open fires is allowed: Fines to contractor if it occurs	Contractor
Smoke and fumes from construction vehicles, equipment and/or machines						Visual inspections	Machine maintenance program to be followed	Contractor
Noise from construction machines, equipment, or activity						Measure if necessary	Correct when necessary. Only work during daylight hours on weekdays and Saturdays.	Contractor
2.1.2 GROUND- AND SURFACE WATER								
Sanitation – toilets positioning. Possible leaks/spills						Visual inspection-	Check correct position and correct if necessary Clean up if necessary-Fines to contractors	Management

Sanitation-Chemical toilets servicing					Visual inspection. Records of contractor of the disposal at a licensed sewage purification plant.	Sewage to be removed and serviced by a certified contractor on weekly basis. Clean up if necessary-Fines to contractors	Contractor
Spillages and leaks from construction vehicles and construction activities (e.g. mixing of concrete, cement, paints etc)					Visual inspection	Correct if necessary. Stick to maintenance program. Ensure that precautionary measures are adhered to.	Contractor
Solid waste separation:(domestic, building rubble, organic & vegetation)					Visual inspection	Follow mitigation steps. Remedial action as required	Management
Storage of building rubble, domestic waste and littering on site					Visual inspection	Remedial action as and when required	Management
Disposal of building rubble, domestic waste and littering on site					Visual inspection	Remove weekly to municipal dumping site. Remedial action as required	Management
2.1.3 WATER USE							
Uncontrolled use of water during construction					Visual inspections	Fines if there is unnecessary or uncontrolled use or if pipes are leaking and not attended to	Contractor
2.1.4 ARCHAEOLOGY & HERITAGE							
Archaeological finds from earth moving and soil clearance					Visual inspection	Call in archaeologist if anything is discovered	Contractor & Archaeologist
2.1.5 BIO-DIVERSITY							
Control of fauna (insects, vermin etc) occurring on site					Visual inspection	Consult with ecologist if deemed necessary. Remedial action as required.	Contractor and Ecologist
Vegetation clearing of sites by means of herbicides					Visual inspection. Ensure invasive species are eradicated and controlled.	Consult with ecologist if deemed necessary. Remedial action as required.	Contractor and Ecologist
Increased traffic on site					Visual inspection	Remedial action as required.	Contractor
Occurrence of fires					Visual inspection. Ensure that firebreaks comply with applicable legislation. B-7	Correct if necessary	Contractor and Station Commander

Earthworks and vegetation clearing of sites						Visual inspection	Fines if there is unnecessary or uncontrolled clearing outside the footprint of the development	Contractor
Spreading of invasive plant species						Visual inspection	Follow mitigation steps. Remedial action as required	Contractor
2.1.6 LAND / SOILS								
Vehicle and construction machines fuel and oil leaks						Visual inspection	Correct if necessary. Remedial action as required. Stick to maintenance program	Contractor
Solid waste handling-storage disposal and separation						Visual inspection	Notify municipality Remedial action as required	Contractor
Removal of building rubble during and after construction						Visual inspection	Should be done at least monthly . Fines and clean up if necessary	Contractor
Erosion damage by storm water run-off and wind e.g. roads and storm water systems, exposed slopes						Visual inspection especially during rainy season	Improve storm water management if necessary and correct damages	Civil Engineer
Erosion damage by storm water run-off on trenched areas						Visual inspection especially during rainy season	Remedial action as required	Contractor
2.1.7 VISUAL								
Buildings and lights- nuisance and pollution						Visual inspection	Remedial action as required	Architect and Contractor
2.1.8 SAFETY, SECURITY AND FIRE HAZARD								
Safety of workers, public, livestock, property						Visual inspection	Fines, correct actions if necessary	Contractor
Occurrence of fires						Visual inspection. Ensure that requirements of applicable legislation are adhered to.	Fines for contractors where there is non-compliance	Contractor

4. MEASUREMENT AND PAYMENT

ITEM		UNIT
complete	Environmental Management Plan	Sum

The tendered lump sum shall include full compensation for compliance with and executing the Environmental Management Plan. Payment shall be made in monthly instalments in relation to the value of work done.