

BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

	ICULARS OF THE BIDDER
NAME OF THE BIDDING OR TENDERING COMPANY	
POSTAL ADDRESS	
	POSTAL CODE
STREET ADDRESS (PHYICAL ADDRESS)	
	POSTAL CODE
E-MAIL ADDRESS	
TELEPHONE NUMBER (TELKOM LINE)	
CIDB CRS NUMBER	
CELLPHONE NUMBER	
ALTERNATE CELLPHONE NO.	
CENTRAL SUPPLIER DATABASE NUMBER OF THE BIDDING COMPANY	
	•
THE TENDER	1
Part T1: Tendering procedures	
Employer Witness 1	Witness 2 Contractor Witness 1 Witness 2



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- 1. Bid documents available at a non-refundable amount of R 3 000-00 per bid document are available on the e-tender website and must be downloaded.
- 2. There will be no compulsory briefing session.
- 3. Sealed bid documents marked: "RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5" must be placed in the bid box in the foyer of the Municipal offices, Missionary Mpheni House, Beyers Naude Drive, Rustenburg not later than 22nd October 2024 @ 11H00, where after the bids will be opened in public at the Municipal offices.
- 4. The bid will be evaluated as follows: Administrative evaluation (document completion and attachment of mandatory documents), Functionality (minimum qualifying score 70 out of 100), CIDB grading 7CE or higher and 80/20 Preference Point system (price = 80 & Specific goal = 20)
- 5. Please note that no bid documents given to couriers will not be signed for by Rustenburg Local Municipality.
- 6. The Council will not be responsible for bids not received or received late by mail. Bids will remain valid for 90 days (Ninety).
- 7. All bids will be adjudicated based on the prescribed criterion as stipulated in the document.
- 8. An updated record of payment of rates, taxes and services to the relevant Municipality must be attached. Failure to do so will invalidate the bid submitted.
- 9. No bids will be considered from any person(s) in the service of the state (as defined in Regulation 1 of Local Government: Municipal Supply Chain Management Regulations).
- 10. Objections or complaints must be submitted in writing to the Municipal Manager at the address stated, and must contain the following:
 - (a) reasons and/or grounds for the objection or complaint.
 - (b) the way in which the objector or complainant's rights have been affected; and
 - (c) the remedy sought by the objector or complainant.
- 11. Any objection or complaint must reach the Municipal Manager with a 14-day period after award has been made. Late objections or complaints will not be entertained.
- 12. All bids must be submitted on the official forms provided and a successful bidder will be required to fill and sign a written Contract Form (MBD 7).

RUSTENBURG LOCAL MUNICIPALITY, P.O. BOX 16, MISSIONARY MPHENI HOUSE

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DOCUMENT COMPLETION INSTRUCTION AND RETURNABLE DOCUMENTS SCHEDULE

CENTRAL SUPPLIER DATABASE REGISTRATION (CSD)

- ✓ Bidders must be registered on CSD and provide their registration number on the tender/ quotation document
- ✓ Bidders must submit both a hard copy document and an electronic tender document in the form of a clearly marked USB. (Bidders will be disqualified for not submitting a USB with scanned bid documentation

COMPLETION OF THE DOCUMENT

<u>PLEASE READ AND FOLLOW INSTRUCTIONS BELOW ON HOW TO COMPLETE DIFFERENT</u> FORMS IN THE DOCUMENT AND FILL THEM AS INSTRUCTED

- ✓ The tender documents must be completed in full i.e. Compulsory Questionnaire, MBD 1, Pricing Schedule, MBD 4, MBD 5, MBD 6.1, MBD 7.2, MBD 8, MBD 9, Section 38 and the Form of Offer, including all witness signatures on all the above stated forms.
- ✓ NB! FAILURE TO ADHERE TO THE BELOW MENTIONED POINTS WILL INVALIDATE THE TENDER AND RESULT IN DISQUALIFICATION
 - COMPULSORY QUESTIONAIRE must be fully completed and signed
 In a case of Joint Venture separate COMPULSORY QUESTIONAIRE forms must be completed and submitted.
 - MBD 1 must be fully completed and signed
 - PRICING SCHEDULE must be fully completed and signed
 - MBD 4 -only tick the appropriate answer. Please be informed that whether you scratch out, tick or circle, your answer will be where the pen ink is reflecting.
 In a case of Joint Venture or multi- directors, full details of all Directors must be provided on the table on MBD 4.
 - MBD 5 -only tick the appropriate answer. Please be informed that whether you scratch out, tick or circle, your answer will be where the pen ink is reflecting.
 - In a case of Joint Venture separate MBD 5 forms must be completed and submitted. (complete if applicable)
 - MBD 6.1 must be fully completed.
 - MBD 8 only tick the appropriate answer box, whether you scratch out, tick or circle, your answer
 will be where the pen ink is reflecting
 - MBD 9 must be fully completed and signed

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- SECTION 38 only tick the appropriate answer box, whether you scratch out, tick or circle, your
 answer will be where the pen ink is reflecting. Must be fully completed and signed, including
 signatures of witnesses.
- Note that should you answer "NO" to any of the declaration questions on section 38 form, then supporting documents MUST be attached
- SIGNATORY AUTHORISATION complete and sign the form
- The document must not be dismantled; page numbers must be sequential

THE FOLLOWING MANDATORY DOCUMENTS MUST BE SUBMITTED TOGETHER WITH THE BID DOCUMENT

- ✓ Deposit slip with tender reference number as stipulated in the tender document.
- ✓ Full CSD report
- ✓ Bidders must submit both a hard copy document and an electronic tender document in the form of a clearly marked USB. (Bidders will be disqualified for not submitting a USB with scanned bid documentation
 - FOR ALL DOCUMENTS THAT WILL NEED CERTIFICATION (AND AFFIDAVITS WHERE APPLICABLE) BIDDERS ARE REQUESTED NOT TO SUBMIT COPIES OF CERTIFIED COPIES.

MUNICIPAL RATES AND TAXES STATEMENTS OF THE DIRECTORS

- Current municipal rates and taxes statement (from previous billable month) for each directors' address must be attached; or
- ✓ Valid lease agreement of the director/s with all critical contractual obligations or,
- ✓ An original letter from tribal authority not older than three (3) months if the director/s are residing in a tribal land, or
- ✓ If the rates and taxes account is not in the names of the director/s the attached municipal rates and taxes statement must be submitted together with an original affidavit from the property owner whose names are appearing on the municipal rates and taxes statement to confirm that the director resides in their property.

MUNICIPAL RATES AND TAXES STATEMENTS OF THE COMPANY

- Current municipal rates and taxes statement (from previous billable month) for the company's' address must be attached: or
- ✓ Valid lease agreement of the company (showing all critical contractual obligations, or

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- ✓ An original letter from a tribal authority not older than three (3) months if the company is operating from a tribal, or
- ✓ If the rates and taxes account is not in the names of the company, the attached municipal rates taxes statement must be submitted together with an original affidavit from the property owner whose names are reflecting on the municipal rates and taxes statement to confirm that the company operates from their property.

NB!!

- ✓ FOR PROCUREMENT EXPECTED TO BE LESS THAN 10 MILLION, AWARDS WILL NOT BE MADE
 TO BIDDERS OWING MUNICIPAL RATES AND TAXES FOR OVER 90 DAYS AT THE TIME OF
 TENDER CLOSURE
- ✓ FOR PROCUREMENT EXPECTED TO BE MORE THAN 10 MILLION, AWARDS WILL NOT BE MADE
 TO BIDDERS OWING MUNICIPAL RATES AND TAXES FOR OVER 30 DAYS AT THE TIME OF
 TENDER CLOSURE
- ✓ Required CIDB Grading Certificate where applicable
- ✓ Signatory resolution Please attach a copy of Signatory resolution where instructed
- ✓ If the submission is from a Joint Venture, then a JV agreement must be attached

VERIFICATION OF DOCUMENTS AND INFORMATION.

- ✓ Tax compliance status will be verified using CSD number. (For a bidder to be considered for final award, their status must reflect "tax compliance" before final award is made)
- ✓ CIDB Grading will be verified
- ✓ Sworn Affidavits will be accepted only if its originals submitted.

INSTRUCTION ON THE SUBMISSION OF TENDER DOCUMENTS

- ✓ A tender document must be in a sealed document that has on the outside the bid number and bid description. Both the bid number and the bid description must be on the envelope for the document to be acceptable.
- ✓ If the bid number and description are not clearly marked on the envelope, the bid will be received
- ✓ The tender document must be in the tender box before the specified closing time and date.
- ✓ Bidders who arrive when the tender box is open are late.
- ✓ Failure to comply with the above will lead to the bid not being opened.

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ADDITIONAL TENDERING CONDITIONS

- 1. The document must be completed in full as per the guide provided under administrative evaluation document completion.
- 2. All mandatory documents must be attached as per the guide under administrative evaluation attachment of mandatory documents.
- 3. The document must not be dismantled; page numbers must be sequential.
- 4. Bidders must be registered on CSD.
- 5. For all documents that will need certification (and affidavits where applicable) bidders must not submit copies/ copies of certified copies.
- 6. Only black pen ink must be used when completing the tender document.
- 7. Electronic signatures are not allowed.
- 8. Bidders are not allowed to use correction pens. In a case where a wrong answer is ticked, a straight line must be made across the wrong answer, then initial next to the mistake and a correct answer must be ticked or provided in writing.

NB! FAILURE TO ADHERE TO THE ABOVE INSTRUCTIONS WILL RENDER THE TENDER INVALID AND RESULT IN DISQUALIFICATION

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RUSTENBURG LOCAL MUNICIPALITY

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T2.2	Returnable Schedules	Yellow						
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- **T1.1** Tender Notice and Invitation to Tender
- T1.2 Tender Data

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MBD 1

T1.1 Tender Notice and Invitation to Tenders

NB! THE BID DOCUMENTS SHOULD BE RETURNED PACKAGED IN THE MANNER IN WHICH THEY APPEAR IN THE TABLE OF CONTENTS FOR EASE OF REFERENCE.

PART A

INVITATION TO BID							
YOU ARE HEREBY	INVITED TO BID FOR REQ	UIREMENTS OF THE RU	STENBURG LO	CAL MUNICIPA	LITY		
		CLOSING					
BID NUMBER:	RLM/OMM/0123/2024/25	DATE:	22 October 2		CLOSIN		11H00
D. T. O. D. I. D. I. O. I.	APPOINTMENT OF A CON		EPLACEMENT C	OF A BULK AND	RETICULA	ATION WATE	ER
DESCRIPTION	PIPELINE IN MERITING 4	AND 5					
THE CHOOSCELL	BIDDER WILL BE REQUIRE	ED TO EILL IN AND CICA	A WOITTEN CO	NITDACT EODI	/ /MDD7\		
	CUMENTS MAY BE DEPOS			DIVINACI FONI	vi (IVIDD <i>I</i>).		
DID INEOI ONOL DO	OOMENTO WAT DE DET OO	TILD IN THE DID BOX OF	TOATED AT.				
RUSTENBURG LOC	CAL MUNICIPALITY						
MISSIONARY MPHI	ENI HOUSE						
CNR BEYERS NAU	DE AND NELSON MANDEL	.A DRIVE, RUSTENBURG					
		•					
CIDB GRADING - 7							
SUPPLIER INFORM	ATION						
NAME OF BIDDER							
POSTAL ADDRESS							
STREET ADDRESS							
TELEPHONE NUME	BER	CODE		NUN	IBER		
CELLPHONE NUME	BER			1			
FACSIMILE NUMBE	R .	CODE		NUN	IBER		
E-MAIL ADDRESS							
VAT REGISTRATIO	N NUMBER			T			
TAX COMPLIANCE	STATUS	TCS PIN:		OR	CSD No:		
Com Entrol				1 011	1		

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ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐Yes ☐No [IF YES ENCLOSE PROOF]	BASED SU	A FOREIGN IPPLIER FOR IS /SERVICES IFFERED?	☐Yes ☐No [IF YES, ANSWER PART B:3]
TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID	PRICE	R
SIGNATURE OF BIDDER		DATE		
CAPACITY UNDER WHICH THIS BID IS SIGNED				
BIDDING PROCEDURE ENQUIRIES MAY BE D	IRECTED TO:		TECHNICAL INF TO:	ORMATION MAY BE DIRECTED
DEPARTMENT	SCM		PROJECT MANA	AGEMENT UNIT
CONTACT PERSON	Ms.O Serole		PMU Technicia	ın
TELEPHONE NUMBER	014 590 3123		014 590 3607	<u> </u>
E-MAIL ADDRESS	oserole@rustenburg.gov	/.za	bngobeni@ruster	nburg.gov.za

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PART B TERMS AND CONDITIONS FOR BIDDING

1.	BID SUBMISSION:					
1.1.		LATE BIDS WILL NOT BE ACCEPTED FOR				
1.2.	ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED, COMPLETED WITH A	A BLACK PEN				
1.3.	1.3. THIS BID IS SUBJECT TO THE RLM SUPPLY CHAIN MANAGEMENT POLICY, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.					
2.	TAX COMPLIANCE REQUIREMENTS					
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.					
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.	ER (PIN) ISSUED BY SARS TO ENABLE THE				
2.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROU					
2.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.					
2.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.					
2.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACERTIFICATE / PIN / CSD NUMBER.	CH PARTY MUST SUBMIT A SEPARATE TCS				
2.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPL BE PROVIDED.	IER DATABASE (CSD), A CSD NUMBER MUST				
3.	QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
3.1.	IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO				
	DOES THE ENTITY HAVE A BRANCH IN THE RSA?	NO				
-	DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO				
	DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO				
-	IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐ YES ☐ NO				
IF TH PIN (HE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTEF CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PE	R FOR A TAX COMPLIANCE STATUS SYSTEM ER 2.3 ABOVE.				
N	O BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.					
S	IGNATURE OF BIDDER:					
С	APACITY UNDER WHICH THIS BID IS SIGNED:					
ח	ATE:					
,						
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	Employer Witness 1 Witness 2 Contractor	Witness 1 Witness 2				



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T1.2 Tender Data

Clause

The conditions of tender are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of tenderers as an Annexure to this Tender Data.

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.

number	Tender Data
F.1.1	The employer The employer is The Rustenburg Local Municipality.
F.1.3.2	Replace the contents of the clause with the following:
	The Standard Conditions of Tender, the Tender Data, List of Returnable Documents and Returnable Schedules which are required for the tender evaluation purposes, shall form part of the Contract arising from the invitation to tender.
F.2.1	Eligibility

Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a CE class of construction work, are eligible to submit tenders.

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 7CE or higher; and 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 7CE or higher class of construction work.

Tenderers faced with the above scenario and who fail to meet the combined designation grading will not be considered for the tender.

F.2.1. Eliqibility

Only those tenderers who have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.

F.2.2 Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the employer.

F.2.7 Clarification Meeting

There will be a compulsory briefing session on the 13 September 2023 from 10:00. Should there be any addendum it will be published on either/or of the following websites E-Tender, CIBD and Municipal website.

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Clause number	Tender Data
F.2.10.5	Pricing and tender offer Add the following to the clause:
	A digital copy of the Bill of Quantities can be obtained from Mr. B. Ngobeni Email: bngobeni@rustenburg.gov.za upon sufficient notice.
F.2.11	Alterations to documents Add the following to the clause:

To correct errors made, draw a line through the incorrect entry and write the correct entry above in black ink and place the full signatures of the authorised signatories next to the correct entry.

F.2.12 Alternative tender offers

If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.

Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.

The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.

Failure to properly comply with this clause, thereby preventing the Employer and/or the Engineer to properly assess the full implications of the alternative tender, is likely to disqualify the alternative offered from further consideration.

No submission by the Contractor after award for additional payment or time for completion of Works relating to the alternative offer will be considered, the tendered rates submitted shall be considered to reflect the full and final cost implications of the alternative offer.

F.2.13 Submitting a tender offer

Add the following to the clause:

No claim will be entertained for faults in the tender price resulting from any discrepancies, omissions or indistinct figures.

F.2.13.2 Replace the contents of the clause with the following:

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	RETICULATION W	ATER PIPELINE IN MERITIN	NG 4 AND 5					
Clause number	Tender Data							
	Return all volumes of the t volume in their entirety by w		mpletion of the relevant sections of each					
	All volumes are to be left int	tact in its original format and no pages shal	l be removed or re-arranged.					
F.2.13.3	Parts of each tender offer co	Parts of each tender offer communicated on paper shall be submitted as an original.						
F.2.13.4	Add the following to the clau	use:						
	Only authorised signatories	may sign the original tender offer where re	equired in terms of 2.13.3.					
F.2.13.5 F2.15.1	The employer's address for package are:	delivery of tender offers and identification	details to be shown on each tender offer					
	c/	oyer of Missionary Mpheni House, to Beyers Naude and Nelson Mandela Drivi ustenburg.	е,					
	Physical address: Mission c/o Beye Rustenb	ers Naude and Nelson Mandela Drive,						
		LK AND RETICULATION WATER PIPELI	ITMENT OF A CONTRACTOR FOR THE NE IN MERITING 4 AND 5 and the closing					
	The name and address of the	ne tenderer shall be entered on the back of	the envelope.					
F.2.13.9	Add the following to the clau	use:						
	of or in connection with the		nary used by the Tenderer for the purpose act, which are in conflict with the conditions d.					
F.2.14	Information and data to be	e completed in all respects						
	Add the following to the clau	use:						
	The Tenderer is required to	enter information in the following sections	of the document:					
	Section T2.2 Section C1.1 Section C1.2 Section C2.2	Returnable Schedules Section Form of Offer and Acceptance Section Contract Data (Part 2) Section Bill of Quantities						
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T1.2

Tender Data

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Clause
number

Tender Data

The above sections shall be signed by the Tenderer (and witnesses where required). Individual pages should only be initialled by the successful Tenderer and by the witnesses after acceptance by the Employer of the Tender Offer.

The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer.

The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.

Accept that the Employer shall in the evaluation of tender offers take due account of the Tenderer's past performance in the execution of similar engineering works of comparable magnitude, and the degree to which he possesses the necessary technical, financial and other resources to enable him to complete the Works successfully within the contract period. Satisfy the Employer and the Engineer as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, and furnish details in section T2.2.2 of contracts of a similar nature and magnitude which they have successfully executed in the past. Accept that the Employer is restricted in accordance with clause 4.(4) of the Construction Regulations 2003, to only appoint a contractor whom he is satisfied has the necessary competencies and resources to carry out the work safely. Accept that submitting inferior and inadequate information relating to health and safety shall be regarded as justifiable and compelling reasons not to accept the Tender Offer of the Tenderer scoring the highest number of tender evaluation points.

F.2.15.1 Closing Time

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

F.2.15.2 Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.

F.2.16.1 **Tender offer validity**

The tender offer validity period is 90 days.

F.2.16.1 Add the following to the clause:

If the tender validity expires on a Saturday, Sunday or public holiday, the tender shall remain valid and open for acceptance until the closure of business on the following working day.

F.2.18 **Provide other material**

The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.

Add the following to the clause:

Accept that if requested, the Tenderer shall within 14 days of the date upon which he is requested to do so, submit a full report from his banker as to his financial standing. The Employer may, in its discretion, and subject to the provisions of Section 4(1)(d) of the State Tender Board Act 86 of 1968, condone any failure to comply with the foregoing condition.

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Clause number	Tender Data
F.2.20.	Submit security , bonds and policies

Accept that the Employer, reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of each of the individual members of any joint venture that is constituted for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such venture; and affirmation of the letter of intent referred to below.

The tenderer is required to submit with his tender a letter of intent from an approved financial institution undertaking to provide the Construction Guarantee in the format included in Part C1.3 of this procurement document; and such guarantee with be put in place upon appointment.

F.2.22 Return of other tender documents

Return all retained tender documents prior to the closing time for the submission of Tender Offers.

F.2.23 Certificates

The tenderer is required to submit with his tender:

- 1. a Certificate of Contractor Registration issued by the Construction Industry Development Board
- 2. a copy of the CSD summary report
- 3. Copies of legal registration documents of the company/close corporation/partnership including certified copies of identity documents of directors.
- 4. Bank Rating Letter
- 5. Documents and Schedules listed in Part T2.

Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

F.3.4 Opening of tender submissions

Tenders will be opened immediately after the closing time for tender

F.3.5 **Two-envelope system**

A two-envelope procedure will not be followed.

F.3.11 Evaluation of Tenders

The procedure for the evaluation of responsive tenders is Method 4 (Functionality, 80/20 Preferential Point System).

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POINTS AWARDED FOR FUNCTIONALITY

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference.

FUNCTIONALITY

For a bidder to qualify it is a requirement to score a minimum of 70 out of a maximum of 100 points for functionality.

Value: 0 = unmeasurable: Values: 1 = Poor: 3 = Good: 5 = Excellent

va	lue: 0 = unmeasurable; Values: 1 = Poor; 3 =	G000; 5 = EXC	ellent	1		
ITEM	CRITERIA	WEIGHT	VALUE	SCORE	VERIFICATION METHOD	
1. Con	npany Experience	50				
	Total capital cost of bulk and reticulation water pipeline project completed in the past 6 years			Attach appointment letters with corresponding completion certificates on Client's letter head. Sho the bidder be appointed through subcontracting, th main contractor's appointment, completion certific and appointment letter of the sub-contracting and completion certificate should be attached.		
	R 1 000 000 – R 9 000 000 (Value = 1)					
	R 9 000 001– R 19 000 000 (Value = 3)					
	Above R 19 000 001 (Value = 5)					
	Personnel Please attach organogram sperience in years					
2.1 Proje	ect Manager	10		SAQA Accredited Qualification: Minimum NQF level 6 or above in Civil Engineering (Detailed CV with Relevant experience on construction of bulk water pipelines and reservoirs with traceable references.		
	1-5 years (Value = 1)					
	6-10 years (Value = 3)					
	11 years and above (Value = 5)					
2.2 Site Agent 10			SAQA Accredited Qualification: Minimum NQF level 6 or above in Civil Engineering (Detailed CV with Relevant experience on construction of bulk water pipelines and reservoirs with traceable references).			

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RETICULATION	WATER PIH	PELINE IN M	ERITING	6 4 AND 5	
1-5 years (Value = 1)					
6-10 years (Value 3)					
11 years and above (Value = 5)					
2.3 Health and Safety Officer	10	5 (E pi	SAQA Accredited Qualification: Minimum NQF let 5 or above in Occupational Health & Safety (Detailed CV with Relevant experience in bulk wa pipeline and reservoirs as an Occupational Health Safety Officer with traceable references.)		
1-5 years (Value = 01)					
6-10 years (Value = 3)					
11 years and above (Value = 5)					
3. SAQA Accredited NQF Level 5 Qualification	10	of	(Manage Labour – Intensive Construction Projects) Any of the above-mentioned personnel, Project Manager or Site Agent)		
NQF level less than 5 or no attachment (Value = 0)					
NQF level 5 (Value = 5)					
4. Financial Capacity	10				
4.1 Bank Rating Letter		A	ttach confir	mation letter from the bank	
R0 – R433 000,00 (Value = 1)					
R434 000,00 – R1,32 million (Value = 3)					
R1,333 million and above (Value = 5)					
TOTA L	100				
NB! For item 2.1, 2.2, and 2.3	on the funct	tionality, pleas	e attach a	an organogram indicating the	
positions of personnel.		• • •			

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EVALUATION ON TENDER PRICE

The following formula will be used to calculate the points for price.

$$Ps = x[1 - \frac{Pt - Pmin}{Pmin}]$$

where:

Ps = points scored for comparative price of tender under consideration
Pt = comparative price of tender under consideration
Pmin = comparative price of lowest acceptable tender
X = points assigned to price

NB: The lowest acceptable price will be based on the attached market analysis.

The following specific goals will be utilized for awarding of tenders. They can be applicable individually or wholly in awarding of points. The points will be allocated on merit per tender in line with the specification.

Ownership	Points	Means of Verification			
Rustenburg Jurisdiction	4	Proof of address as envisaged on the list of			
Rural /Township Businesses	4	mandatory documents and a full Central Supplier			
Black People	2	Database full report will be used for verification and allocation of points.			
Persons with Disability	2	anocation of points.			
Youth	4				
Women	2				
SMME's	2				

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Annex: Standard Conditions of Tender

(As published in Annexure F of the CIDB Standard for Uniformity for construction Procurement, Board Notice 136 Government Gazette
No 38960 of 10 July 2015)

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 fulfil 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

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iii) incompatibility or contradictory interests exist between an employee and the organisation which employes that employee.

- **b) comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration:
- **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;
- 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) **functionality** means the measurement according to the predetermined norms of a service or commodity designed to be practical and useful, working or operating, taking into account quality, reliability, viability and durability of a service and technical capacity and ability of a tenderer.

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 Cancellation and Re-Invitation of Tenders

- F1.5.1 An organ of state may, prior to the award of the tender, cancel a tender if-
- (a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or
- (b) funds are no longer available to cover the total envisaged expenditure; or
- (c) no acceptable tenders are received.
- F1.5.2 The decision to cancel a tender must be published in the cidb website and in the government Tender Bulletin for the media in which the original tender invitation was advertised.

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.

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- **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

F2.2.1 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.

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F2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

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.
- **F2.10.2** 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.

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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.

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.2.12.3 An alternative tender offer may only be considered in the event that the main tender offer is the winning tender.

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.

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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.

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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 and policies

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.

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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, number of points claimed for its BBBEE status level 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 functionality 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 functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

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.

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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 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.

F3.9.2 The employer must correct the arithmetical errors in the following manner:

- a) Where there is a discrepancy between the amounts in words and amounts in figures, the amount in words shall govern.
- b) 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.
- c) 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.

Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of the arithmetical error in the manner described above.

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: Price and Preference

In the case of a price and preference:

- 1) Score tender evaluation points for price
- 2) Score points for BBBEE contribution
- 3) Add the points scored for price and BBBEE.

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F.3.11.3 Method 2: Functionality, Price and Preference

In the case of a functionality, price and preference:

- 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data
- 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.
- 3) Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points system prescribed in paragraphs 4 and 5 below.

The 80/20 preference point system for acquisition of services, works or goods up to Rand value of R50 million

4) (a)(i) The following formula must be used to calculate the points for price in respect of tenders(including price quotation) with a rand value equal to, or above R 30 000 and up to Rand value of R 50 000 000 (all applicable taxes included):

$$Ps = 80 \left(1 - \frac{Pt - P \min}{P \min} \right)$$

Where

Ps = Points scored for comparative price of tender or offer under consideration;

Pt = Comparative price of tender or offer under consideration; and

Pmin = Comparative price of lowest acceptable tender or offer.

- (4)(a)(ii) An employer of state may apply the formula in paragraph (i) for price quotations with a value less than R30 000, if and when appropriate:
- 4)(b) Subject to subparagraph(4)(c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below:

(B-BBEE status level of contributor	Number of points
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- (4)(c) A maximum of 20 points may be allocated in accordance with subparagraph (4)(b)
- (4)(d) The points scored by tender in respect of B-BBEE contribution contemplated in contemplated in subparagraph (4) (b) must be added to the points scored for price as calculated in accordance with subparagraph (4)(a).
- (4)(e) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scores the highest total number of points.

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The 90/10 preference points system for acquisition of services, works or goods with a Rand value above R 50 million

(5)(a) The following formula must be used to calculate the points for price in respect of tenders with a Rand value above R50 000 000 (all applicable taxes included):

Where

90/10

$$Ps = 90 \left(1 - \frac{Pt - P\min}{P\min} \right)$$

Ps = Points scored for comparative price of tender or offer under consideration;

Pt = Comparative price of tender or offer under consideration; and

Pmin = Comparative price of lowest acceptable tender or offer.

(5)(b) Subject to subparagraph(5)(c), points must be awarded to a tender for attaining the B- BBEE status level of contributor in accordance with the table below:

B-BBEE status level of contributor	Number of points
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

(5)(c) A maximum of 10 points may be allocated in accordance with subparagraph (5)(b).

(5)(d) The points scored by tender in respect of B-BBEE contribution contemplated in contemplated in subparagraph (5) (b) must be added to the points scored for price as calculated in accordance with subparagraph (5)(a).

(5)(e) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scores the highest total number of points.

F.3.11.6 Decimal places

Score price, preference and functionality, as relevant, to two decimal places.

F.3.11.7 Scoring Price

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

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NFO = $W1 \times A$

where: NFO is the number of tender evaluation points awarded for price.

W1 is the maximum possible number of tender evaluation points awarded for price 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*	Option 2*			
1	Highest price or discount	A = (1 + (P - Pm))	A = P / Pm			
		Pm				
2	Lowest price or percentage	A = (1 - (P - Pm))	A = Pm / P			
	commission / fee	Pm				
* Pm 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 functionality

Score each of the criteria and sub criteria 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:

 $NQ = W2 \times SO / MS$

where: SO is the score for quality allocated to the submission under consideration;
MS is the maximum possible score for quality in respect of a submission; and
W2 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 risk and only if the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) 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,
- c) has the legal capacity to enter into the contract,

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- d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, 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,
- e) complies with the legal requirements, if any, stated in the tender data, and
- f) 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.

F3.19 Transparency in the procurement process

- F3.19.1 The cidb prescripts require that tenders must be advertised and be registered on the cidb i.Tender system.
- F3.19.2 The employer must adopt a transparency model that incorporates the disclosure and accountability as transparency requirements in the procurement process.

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F3.19.3 The transparency model must identify the criteria for selection of projects, project information template and the threshold value of the projects to be disclosed in the public domain at various intervals of delivery of infrastructure projects.

F3.19.4 The client must publish the information on a quarterly basis which contains the following information:	
Procurement method and evaluation process Contract type Contract status Number of firms tendering Cost estimate Contract title Contract firm(s) Contract price Contract start date and duration Contract evaluation reports	
F3.19.5 The employer must establish a Consultative Forum which will conduct a random audit in the impleme requirements in the procurement process.	ntation of the transparency
F3.19.6 Consultative Forum must be an independent structure from the bid committees.	
F3.19.7 The information must be published on the employer's website.	
F3.19.8 Records of such disclosed information must be retained for audit purpose	
THE TENDER 33 Part T1: Tendering procedures	T1.2 Tender Data



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THE TENDER PART T2: RETURNABLE DOCUMENTS

T2.1 List of Returnable Documents

T2.2 Returnable Documents

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T2.1 List of returnable documents

- 1. Tenderers will be required to submit the following with within seven days of receipt of the Employer's written request for same:
 - (a) Certified copy of a Workmen's Compensation Certificate, Act 4 of 2002,
 - (b) Certified copy of Unemployment Insurance Certificate, Act 4 of 2002,
 - (c) Curriculum vitae of the person who prepares the Contractor's Health and Safety Plan, and
 - (d) Curriculum vitae of the Health and Safety Officer the successful tenderer intends appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993).
 - (e) Curriculum Vitae of all supervisory staff.
 - (f) Insurance
 - (g) Guarantee
- 2. The returnable schedules included in Section T2.2 will be used to evaluate tenders received. These schedules will also form part of the Contract.

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T2.2 Returnable schedules

1. Returnable Schedules required only for tender evaluation purposes

T2.2.1	Record of Addenda to Tender Documents
T2.2.2	Compulsory Enterprise Questionnaire
T2.2.3	Certificate of authority for joint ventures (where applicable)
T2.2.4	Schedule of Proposed Subcontractors
T2.2.5	Schedule of Plant and Equipment
T2.2.6	Schedule of the Tenderer's Experience
T2.2.7	Financial References
T2.2.8	Proposed Amendments and Qualifications
T2.2.9	Supervisory and Safety Personnel
T2.2.10	Labour Utilisation
T2.2.11	Compliance with OHSA (Act 85 of 1993)
T2.2.12	Site Inspection Certificate
T2.2.13	Authority of Signatory
T2.2.14	General Conditions of Contract
T2.2.15	MBD Pricing Schedule
T2.2.16	MBD 4 Declaration of Interest
T2.2.17	MBD 5 Declaration of Procurement above R 10 million
T2.2.18	MBD 6.1 Preference Points Claim Form in terms of PPR 2011
T2.2.19	MBD 6.2 Declaration certificate for local production and content for designated sectors
T2.2.20	MBD 8 Past Supply Chain Management Practices
T2.2.21	MBD 9 Certificate of Independent Bid Determination
T2.2.22	Section 38 – Declaration Form
T2.2.23	Confirmation of Outstanding Municipal Rates and Taxes

THE TENDER
Part T2: Returnable Documents

Employer Witness 1 Witness 2 Contractor Witness 1 Witness 2



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T2.2.1: Record of Addenda to tender documents

	Date		Title or Details			
		s if more space is red	quilou.			
	Signed			Date		
				Position		
	Signed			Position		
	Signed			Position		
	Signed			Position		
	Signed			Position		
	Signed			Position		
	Signed			Position		
	Signed			Position		
HE.	Signed Name Tenderer			Position		
'HE '	Signed Name Tenderer			Position _		



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T2.2.2: Compulsory Enterprise Questionnaire

The following particulars must be furnishe must be completed and submitted.	d. In the case of a joint venture, separate	enterprise question	nnaires in respec	ct of each partner
Section 1: Name of enterprise:				
Section 2: VAT registration number, i	f any:			
Section 3: CIDB registration number,	if any:			
Section 4: Particulars of sole propriet	ors and partners in partnerships			
Name*	Identity number*	Personal incon	ne tax number*	
* Complete only if sole proprietor or partnership	and attach separate page if more than 3 partn	ers		
Section 5: Particulars of companies a	nd close corporations			
Company registration number				
Close corporation number				
Tax reference number				
the following: a member of any municipal council a member of any provincial legislatur a member of the National National Council of Province a member of the board of municipal entity an official of any municipality or mun	Assembly or the public entity public entity public entity public entity public entity public entity	of any provincial de or constitutional ir nance Managemer of an accounting a iblic entity of Parliament or a	nstitution within nt Act, 1999 (Act nuthority of any	the meaning of 1 of 1999) national or
Name of sole proprietor, partner,	Name of institution muhic office ha	and an armon of		of service
director, manager, principal shareholder or stakeholder	Name of institution, public office, bo state and position hel		current	priate column) Within last 12 months
THE TENDER Part T2: Returnable Documents	38			•
Employer Witness 1	Witness 2 C	ontractor	Witness 1	Witness 2



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nsert separate page if necessary		
Section 7: Record of spouses, childre	n and parents in the service of the state	
	h a cross, if any spouse, child or parent of a sole proprietor older in a company or close corporation is currently or has be	
 a member of any municipal council a member of any provincial legislatu a member of the National Assembly National Council of Province a member of the board of dir municipal entity an official of any municipality entity 	or the Public Finance Management Act, 1 a member of an accounting authority provincial public entity an employee of Parliament or a provi	tion within the meaning of the 1999 (Act 1 of 1999) y of any national or
Name of spouse, child or parent	Name of institution, public office, board or organ	Status of service
• • •	o state and position held	(tick appropriate column)
		cu rent Within last 12 months
nsert separate page if necessary		
authorizes the Employer to obtain a ta in order;) confirms that the neither the name of partly exercises, or may exercise, co the Prevention and Combating of Cor i) confirms that no partner, member, direc appears, has within the last five years of confirms that I / we are not associated, relationship with any of the tenderers conflict of interest;	ne is duly authorised to do so on behalf of the enterprise: x clearance certificate from the South African Revenue Se the enterprise or the name of any partner, manager, director over the enterprise appears on the Register of Tenderupt Activities Act of 2004; stor, or other person, who wholly or partly exercises, or may be been convicted of fraud or corruption. linked or involved with any other tendering entities submitted or those responsible for compiling the scope of work that estionnaire are within my personal knowledge and are to the scope of the scope of the scope of the scope of the second are to the scope of the s	ctor or other person, who wholly or er Defaulters established in terms of exercise, control over the enterprise ting tender offers and have no other could cause or be interpreted as a
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Faralana		National Action
Employer Witness 1	Witness 2 Contractor	Witness 1 Witness 2



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Signed		Date		
Name		Position		
Enterprise name				
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Employer Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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T2.2.3: Certificate of Authority for Joint Ventures

Signature Name Name Designation Signature Name Designation Signature Name Designation Signature Name Designation Designation	the capacity of lead partner, to sig	ADDRESS			ULY AUTHORISED SI	
Name Designation Signature Name Designation Signature Name Designation Signature Name Designation Signature Designation	partner	7.227.200				
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T2.2.4: Schedule of Proposed Subcontractors

We notify you that it is our intention to employ the following Subcontractors for work in this contract.

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

1			1
8	lame and address of proposed Subcontractor	Nature and extent of work	Previous experience with Subcontractor.
•			
•			
•			
			I
	Signed	Date	
	Namo	Position	
	Tenderer		

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Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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T2.2.5: Schedule of Plant and Equipment

The following are lists of ma acquire or hire for this contra	or items of relevant equipment that I/we presently own or lease and will have available for this contract or will act if my/our tender is accepted.
(a) Details of major e	equipment that is owned by and immediately available for this contract.
Quantity	Description, size, capacity, etc.
Attach additional page	es if more space is required.
(b) Details of major equ	ipment that will be hired or acquired for this contract if my/our tender is acceptable.
Quantity	Description, size, capacity, etc.
_	
Attach additional pages if more	space is required.
Signed	Date
Name	Position
 Tenderer	
Tenderer	
THE TENDER Part T2: Returnable D	43 Pocuments



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Employer, contact person and elephone number.	Description of contract	Value of work inclusive of VAT (Rand)	Date completed
Signed	Date	e	
Name	Position	-	
Tenderer			
·			
HE TENDER art T2: Returnable Docume	44 ents		



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T2.2.7: Financial References

(a) <u>FINANCIAL STATEMENTS</u>

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

(b) <u>DETAILS OF COMPANY'S BANK</u>

I/We hereby authorise the Employer/Engineer to approach all or any of the following banks for a reference:

DESCRIPTION OF BANK DETAIL	BANK DETAIL APPLICABLE TO COMPANY HEAD OFFICE	BANK DETAIL APPLICABLE TO THE SITE OF THE WORKS
Name of bank		
Branch name		
Branch code		
Street address		
Postal address		
Name of manager		
Telephone number	()	()
Fax number	()	()
Account number		

	-					
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Employer	Witness 1	Witness 2	Contract	or Witne	iss 1	Witness 2



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Signed			Date	
Name		Pos	sition	
Tenderer				
HE TENDER art T2: Returnal	ble Documents		46	



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T2.2.8: Proposed amendments and qualifications

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

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

Page	Clause or item	Proposal
O: 1	•	
Signed		Date
Name		Position
Tenderer		
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Employer	Witness 1	Witness 2 Contractor Witness 1 Witness 2

T2.2.9: Supervisory and Safety Personnel

PREVIOUS EXPERIENCE ON WORKS OF A SIMILAR NATURE DURING THE LAST FIVE YEARS

Name	% Time on Site	Position (Current)	Service (Years)	Name of Project And year executed	Value of Works	Position Occupied
Contracts Manager						
Contractor's Site Agent	100%					
Contractor's Foremen						
Construction Health and Safety Officer	100%					
Contractors Surveyor						

Tenderers shall indicate	the percentage of working time	these persons will be engag	jed on site. Tenderers are re	quired to provide copies	of curriculum vitas of all su	pervisory and safety personnel.	
Signed			Date				
Name			Position				
Tenderer							
•••							
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THE TENDER Part T2: Returns	able Documents						T2.2 Returnable Schedules
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2		

T2.2.10: Labour Utilisation

Labour Categories - Definitions

NOTE: These definitions serve as a guideline to complete the following table and will in no respect alter the Project Specifications or Standardised Specifications

1. General Foreman / Foreman

An employee who gives out work to and directly co-ordinates and supervises employees. His duties encompass any one or more of the following activities:

- a) Supervision.
- b) Maintaining discipline.
- c) Ensuring safety on the workplace.
- d) Being responsible to the Contractor for efficiency and production for his portion of the works; and
- e) Performing skilled work, whether in an instructional capacity or otherwise.

2. Charge hand

An employee engaged in any one or more of the following activities:

- a) Being primarily employed in a supervisory capacity, but who may also be doing the work of an artisan.
- b) Giving out work to other employees under his control and supervision.
- c) Ensuring safety on the workplace.
- d) Maintaining discipline; and
- e) Being directly responsible to a general foreman or foreman or the Contractor or the Contractor's representative for efficiency and production for his portion of the works.

3. Artisan

An employee who has successfully completed all prescribed courses at a practical institutional training center for a particular trade and who has successfully completed the on-site period of training as prescribed and who has successfully passed the prescribed trade tests.

4. Team Leader

An employee engaged in any one or more of the following activities:

- a) Being employed in a supervisory capacity, but who may also be doing the work of a skilled person.
- b) Giving out work to other employees under his control and supervision.
- c) Maintaining discipline.
- d) Being directly responsible to a Charge hand or a foreman or a general foreman or the employer's authorised representative for efficiency and production for his portion of the works.

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5. Skilled Employee

An employee engaged in an ancillary trade or an assistant artisan.

6. Semi-Skilled Employee

An employee with any specified skills, an apprentice or a trainee-artisan.

7. Unskilled Employee

THE TENDER Part T2: Returnable	e Documents				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

An employee engaged on any task or operation not specified above.

8. Imported Employee Personnel permanently employed by Contractor.

9. Local Employee
Temporary workforce employed through Labour Desk.

MAN DAYS

Categories	a) No. of Ma	in Days	
	b) Imported	c) Local	d) HDI (Y/N)
Contracts Manager			
2. Site Agent			
Foreman/Supervisors (specify type)			
3.1			
3.2			
3.3			
Safety Inspectors (specify type)			
4.1			
4.2			
5. Charge hands			

				50	
THE TENDER Part T2: Returnab	le Documents				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

		<u> </u>				1	
Categorie	es	a) N	o. of Man Days				
		b) In	nported	c) Lo	ocal	d)	HDI (Y/N)
6. Artisans							
7. Operators/Drivers							
8. Clerks/ Storeman							
9. Team Leader							
10. Skilled Labour							
11. Semi-skilled Labour							
12. Unskilled Labour							
		,					_
Signed			Date				
Name			Position –				
			-				
Tenderer							
					51		
THE TENDER					01		
Part T2: Returnable Do	cuments						
Employer	Witness 1	Witness 2	Con	ntractor	Witness 1	L	/itness 2

T2.2.11: Occupational Health and Safety Act: Statement by Tendering Entity

l,				duly authorised				
to represent			(company name)					
and exclusive respo	ensibility for compliance by act, No. 85 of 1993 (as an	y myself and all pers	ons who perform work f	or me with the provision				
I confirm that all em	ployees who perform wor to themselves and others	k on the site shall be	properly trained to do t	his in a manner which	is safe and without risk pervised in the interest			
Signed		Dat	e					
Name		Pos	ition					
Tenderer _								
				52				
THE TENDER Part T2: Return	able Documents			52				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2			

T2.2.12: Site Inspection Certificate

As required by Clause 2.7 of the Tender Data, I/v clarification meeting on the date certified below.	ve certify that I/we	have visited the site o	of the Works and atte	nded the site visit and
I/we further certify that I am / we are satisfied with visit and clarification meeting.	n the description o	of the Work and the exp	planations given by th	e Engineer at the site
Signature of Tenderer		Date		
Site Visit				
This will certify that				
representing				
attended a Site Inspection for this Contract on			20	
(signed)				
For the Engineer				
THE TENDER			53	
Part T2: Returnable Documents				
Employer Witness 1	Witness 2	Contractor	Witness 1	Witness 2

T2.2.13: Authority of Signatory

With refere	ence to Claus	e 2.13.4 of the Te	nder Data,	I/we herew	ith cer	tify that this tend	er is s	ubmitted by: (Ma	rk app	olicable block)
a company	y, and attach l	nereto a certified o	copy of the	required re	solutio	on of the Board o	f Direc	ctors		
a partnersl	hip, and attac	h hereto a certifie	d copy of th	ne required	resolu	ition by all partne	ers			
a close cor	rporation, and	attach hereto a c	ertified cop	y of the rec	quired	resolution of the	Board	of Officials		
a one-man this tender		d attach hereto ce	ertified pro	of that I am	the so	ole owner of the l	ousine	ss submitting		
a joint vent	ture, and atta	ch hereto								
	an notarially co	ertified copy of the	original do	ocument und	der wh	ich the joint vent	ure wa	s constituted;		
		orisation by the paracts on behalf of			of the	undersigned to	submit	t tenders and		
	Signed					Date				
	Name					Position				
Т	enderer									
								54		
THE TE	NDER							J -1		
		Documents							_	
Empl	loyer	Witness 1	W	itness 2	ı L	Contractor		Witness 1	<u> </u>	Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

SPECIAL CONDITIONS OF CONTRACT

Termination by Employer and Appointment of a completion Service Provider (Contractor)

In an event where the successful Service Provider (Contractor) has failed to execute the contract as per the conditions of the contract, thus resulting in termination of the contract as per *Clauses 9.2.1.1, 9.2.1.2, 9.2.1.3 (1)(2)(3)(4)(5)(6)(7)(8),* of the **General Conditions of Contract 2015, Third Edition.** Then, the Employer (Rustenburg Local Municipality) reserves the right to appoint the second highest scoring bidder in the same tender for completion of the contract.

Any incurred losses and damages will be claimed against the terminated Service Provider (Contractor).

T2.2.16:

THE TENDER
Part T2: Returnable Documents

Employer Witness 1 Witness 2 Contractor Witness 1 Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

MBD 4: DECLARATION OF INTEREST

No bid will be accepted from persons in the service of the state.

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 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.

In order to give effect to the above, the following questionnaire must be completed and submitted with the bid. 3.1 Full Name of bidder or his or her representative: 3.2 Identity Number: 3.3 Position occupied in the Company (director, trustee, hareholder²): 3.4 Company Registration Number: 3.5 Tax Reference Number: 3.6 VAT Registration Number: 3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below. 3.8 Are you presently in the service of the state? [TICK APPLICABLE BOX] YES / NO 3.8.1 If yes, furnish particulars. ¹MSCM Regulations: "in the service of the state" means to be -(a) a member of any municipal council. (i) any provincial legislature; or (ii) the national Assembly or the national Council of provinces. (iii) (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. ² Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company. 53 THE TENDER Part T2: Returnable Documents



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

3.9 for the	Have you been in the service of the state e past twelve months?	[TICK APPLICABLE BOX]	☐ YES / ☐ NO
3.9.1 l	f yes, furnish particulars		
3.10 the ev	Do you have any relationship (family, friend, other) with pe service of the state and who may be involved with valuation and or adjudication of this bid?	rsons in the [TICK APPLICABLE BOX]	☐ YES / ☐ NO
3.10.1	If yes, furnish particulars		
3.11	Are you, aware of any relationship (family, friend, other)		any persons in the service
	state whomay be involved with the lation and or adjudication of this bid?	[TICK APPLICABLE BOX]	☐ YES / ☐ NO
3.11.1	If yes, furnish particulars		
	Are any of the company's directors, trustees, managers,prin keholders in service of the state?	ciple shareholders [TICK APPLICABLE BOX]	☐ YES / ☐ NO
3.12.1	If yes, furnish particulars	······	
truste in ser	Are any spouse, child or parent of the company's directors es, managers, principle shareholders or stakeholders vice of the state? If yes, furnish particulars	[TICK APPLICABLE BOX]	☐ YES /☐ NO
intere	Do you or any of the directors, trustees, managers, principle st in any other related companies or business whether		
or no	t they are bidding for this contract.	[TICK APPLICABLE BOX]	☐ YES /☐ NO
		54	
	TENDER T2: Returnable Documents		
	Faralana A. Mitana A. Mitana A.	Contractor	With the Co
l	Employer Witness 1 Witness 2	Contractor Witness 1	Witness 2



3.14.1 If yes, furnish particulars.....

RUSTENBURG LOCAL MUNICIPALITY

RETICULATION WATER PIPELINE IN MERITING 4 AND 5

BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND

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THE TENDER Part T2: Returnable	e Documents				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

4. Full details of directors / trustees / members / shareholders.

Full	Identity Number	Personal	State
Name		Reference Tax	Employee Number
		Number	
Signature		Date	
Capacity		Name of Bidder	
		5	6
THE TENDER		<u> </u>	-
Part T2: Returnable Documents			
Employer Witness 1	Witness 2	Contractor Witness	S 1 Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

T2.2.17:

MBD 5

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 questionnaire:

1	Are you by law required to prepare annual financial statements for auditing? [TICK APPLICABLE BOX] *YES / NO
1.1	If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.
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? [TICK APPLICABLE BOX] *YES / NO
2.1	If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for
2.2	more than three months or other service provider in respect of which payment is overdue for more than 30 days. If yes, provide particulars.
3	Has any contract 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?
	[TICK APPLICABLE BOX]
3.1	If yes, furnish particulars
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	E TENDER t T2: Returnable Documents

Witness 1

Employer

Witness 2

Contractor

Witness 1

Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

l.	Will any portion of goods or services be sourced from municipality / municipal entity is expected to be transfer	outside the Republic, ar rred out of the Republic?	nd, if so, what portion of payment from [TICK APPLICABLE BOX]
1.1	If yes, furnish particulars		[TICK AFFEIGABLE BOX] [TEOT
	CERT	TIFICATION	
, THE	UNDERSIGNED (FULL NAME)		
TRUE ACCE	IFY THAT THE INFORMATION FURNISHED ON THIS DE AND CORRECT. EPT THAT, IN ADDITION TO CANCELLATION OF A CON E TAKEN AGAINST ME SHOULD THIS DECLARATION F	TRACT, ACTION	
 Nam	ne/s and Surname of Bidder		 Signature
	ition in the Firm/Company		Date
			58
	TENDER T2: Returnable Documents		
E	Employer Witness 1 Witness 2	Contractor	Witness 1 Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

T2.2.18:

MBD 6.1 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

- **1.1** The following preference point systems are applicable to invitations to tender:
 - the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
 - the 80/20 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
- 1.2 To be completed by the organ of state

The applicable preference point system for this tender is the 80/20 preference point system.

- 1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:
 - (a) Price; and
 - (b) Specific Goals.
 - 1.4 To be completed by the organ of state:

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Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	100

- 1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.
- 1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) "tender" means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) "price" means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) "rand value" means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) "tender for income-generating contracts" means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) "the Act" means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

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THE TENDER Part T2: Returnab	ole Documents				
	NAS:	NATI:		NAT:	NAT:
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

- 3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES
- 3.1. POINTS AWARDED FOR PRICE
- 3.1.1 THE 80/20 PREFERENCE POINT SYSTEMS

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

80/20

$$Ps = 80\left(1 - \frac{Pt - Pmin}{Pmin}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

- 3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT
- 3.2.1. POINTS AWARDED FOR PRICE

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

90/10

$$Ps = 90 \left(1 + \frac{Pt - P \max \square}{Pmax} \right)$$

Where

THE TENDER

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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Part T2: Returnable Documents

Employer Witness 1 Witness 2 Contractor Witness 1 Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 80/20 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—
 - (a) an invitation for tender for income-generating contracts, that either the 80/20 or 80/20 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or
 - (b) any other invitation for tender, that either the 80/20 or 80/20 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system, then the organ of state must indicate the points allocated for specific goals for both the 80/20 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

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Employer	Witness	Witness 2	Contractor	Witness	Witness 2
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Ownership	Points	Points	Points claimed	Points claimed
Rustenburg Jurisdiction	2	4		
Rural /Township Businesses	2	4		
Black People	1	2		
Persons with Disability	1	2		
Youth	2	4		
Women	1	2		
SMME's	1	2		
Total	10	20		

Proof of address as envisaged on the list of mandatory documents and a full Central Supplier Database full report will be used for verification and allocation of points.

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THE TENDER Part T2: Returnab	le Documents				
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DECLARATION WITH REGARD TO COMPANY/FIRM

Witness 1

Employer

Witness 2

4.3.	Nai	me of co	ompany/firm											
4.4.	Coi	mpany i	registration num	ber:										
4.5.	TY	PE OF	COMPANY/ FIF	RM [TICK APPLICA	BLE	BOX]							
4.6.		One Clos Pub Pers (Pty Non Stat ne unde	e-person busine se corporation lic Company sonal Liability C) Limited I-Profit Compan se Owned Comp rsigned, who is	omp y oany duly					•					
	and	d I ackn	owledge that:											
	i)	The in	formation furnis	hed	is true and corre	ect;								
	ii)	The poor	-	clai	med are in acco	rdar	ice with the G	Genera	al (Conditions as ir	ndica	ated in	paragra	ph 1
	iii)	the co		vent of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, tractor may be required to furnish documentary proof to the satisfaction of the organ of state that ms are correct;										
	iv)		•		een claimed or one or claimed or one or claimed or clai					•			s of cont	tract
		(a)	disqualify the	e per	son from the ter	nderi	ng process;							
		(b)	recover cost	s, los	sses or damage	s it h	as incurred o	r suffe	ere	d as a result of	that	perso	n's	
		(c)			act and claim an ourable arrange						sult	of havi	ing	
		(d)	shareholders business fro	and m ai	the tenderer or d directors who a ny organ of stat hear the other s	acted e for	on a fraudule a period no	ent ba t exce	sis eed	, be restricted f ling 10 years,	rom	obtaini	ing	
		_								64				
THE T		-	Documents											
									Ī					

Witness 1

Contractor

Witness 2



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND **RETICULATION WATER PIPELINE IN MERITING 4 AND 5**

(e) forward the matter for criminal prosecution, if deemed necessary.

	GNATURE(S) OF TENDERER(S)	
SURNAME AND NAME: DATE:		
ADDRESS:		
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Witness 1

Witness 2

Contractor

Witness 1



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

CONTRACT FORM - RENDERING OF SERVICES

MDB 7.2

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SERVICE PROVIDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SERVICE PROVIDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

I hereby	undertake	to render service						of the institution)
				proposals	specificat at the price/s	ions sti quoted. My off	pulated fer/s remair	in Bid n binding upon me closing date of the
The follow Bidding do Invitation of Tax comp Pricing so Filled in ta Preferenc Procurem Declaration Declaration Certificate Special Co	ocuments, to bid; liance statu hedule(s); ask directive e claims for ent Regulat on of interes on of bidder' e of Indepen onditions of Conditions o	Broad Based Bla ions 2022; t; s past SCM prac dent Bid Determ	ack Econo					: of the Preferential
THE TEI	NDER					6	6	
Part T2:	Returnable	e Documents				_	 1 1	
Empl	over	Witness 1	L W	/itness 2	Contractor	Witnes	s 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the services specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

MBD 7.2

THE TENDER

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Part T2: Returnable Documents										
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2					



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

CONTRACT FORM - RENDERING OF SERVICES

PART 2 (TO BE FILLED IN BY THE PURCHASER)

•	very instructions is forth	· ·	th the terms and condition	and of the contract w
indertake to make payment for the so (thirty) days after receipt of an invo		ordance wi	ur the terms and condition	ons of the contract, v
DESCRIPTION OF SERVICE	PRICE (ALL APPLICABLE TAXES INCLUDED)	COMPLETION DATE		MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)
I confirm that I am duly autho	urized to sign this contra	ct.		
i commini maci ami duly admo	nizeu lu sign lins contra	(a)		
	G		WITNESSES	
GNED AT	·		WITNESSES	
	ON			
GNED AT	ON		1	
ME (PRINT)	ON		1 2	



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

MBD 8: DECLARATION OF ABUSE OF SUPPLY CHAIN MANAGEMENT SYSTEM

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Standard Bidding Document must form part of all bids invited.
- It serves as a declaration to be used by institutions 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 disregarded if that bidder, or any of its directors have
 - a. abused the institution's supply chain management system.
 - b. committed fraud or any other improper conduct in relation to such system; or
 - c. failed to perform on any previous contract.
- In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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THE TENDER Part T2: Returnat	ole Documents						
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2		



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

Item	RETICULATION WATER PIPELINE IN MERITING 4 AND 5 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?	Yes	No
	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 audi alteram partem		
	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.		
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 (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes	No 🗆
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 outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes	No
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes	No
4.4.1	If so, furnish particulars:		

CERTIFICATION

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Part T2: Returnable Documents										
Employer		Witness 1		Witness 2		Contractor		Witness 1		Witness 2

THE TENDER



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

HE UNDERSIGNED (FULL NAME) INISHED ON THIS DECLARATION FORM IS TRUE A DNTRACT, ACTION MAY BE TAKEN AGAINST MES	AND CORRECT. I ACCEPT THAT, IN ADDITION SHOULD THIS DECLARATION PROVE TO BE F	HAT THE INFORMA TO CANCELLATIO ALSE.
Name/s and surname of Bidder	Signature	
Position In the Firm/Company	Date	
E TEMPER	71	
IE TENDER Int T2: Returnable Documents		_



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
- 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 *pe se* prohibition meaning that it cannot be justified under any grounds.
- 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.
 - 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

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THE TENDER Part T2: Returnal	ole Documents				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

I, the un	idersigned, in subr	nitting the accompanying bid:	
		(Bid Number and Description)	
in respo	nse to the invitatio	n for the bid made by:	
		(Name of Municipality / Municipal Entity)	
do here	by make the follow	ing 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	t the accompanying bid will be disqualified if this Certificate is found not to be true and complete in eve	ry
	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 wh	ose signature appears on the accompanying bid has been authorized by the bidder to determine the tern	ns
	of, and to sign, t	ne bid, on behalf of the bidder;	
5.	For the purpose	s of this Certificate and the accompanying bid, I understand that the word "competitor" shall include a	ny
	individual or orga	anization, 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 bidd	lei
		73	
THE	ΓENDER		
	72: Returnable D	ocuments	
F	mployer	Witness 1 Witness 2 Contractor Witness 1 Witness 2	



BID NO: RLM/OMM/0123/2024/25

- 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.

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

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THE TENDER Part T2: Returnal	ble Documents				
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



T2.2.22:

RUSTENBURG LOCAL MUNICIPALITY

BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

SECTION 38: DECLARATION FORM

SHOULD	S IN PLACE IN RESPECT OF THE CONTRACTUAL ISSUES LISTED IN THE TABLE BE YES. ATTACH SUPPORTING INFORMATION IF ANY OF THE ANSWERS IS NO.	BELOW; TH	IE ANS
Note that	the Municipality's Procurement Section will verify the statements.		
certify the fo	llowing: CONTRACTUAL ISSUES	YES	NO
1.	In terms of Section 38 (1) (c) that the Bidder or any of the Directors is not listed as a persprohibited from doing business with the Public Sector		INO
2.	In terms of Section 38 (1)(d) (i) that the Bidder or any of the Directors does not owe ra and taxes or Municipal service charges to any Municipality that is in any arrears for me than three (3) months. Copies of the latest Municipal service charges statement of Bidder and the Directors must be attached to the tender/bid document	ore	
3.	In terms of Section 38 (1) (d) (ii) that the Bidder or any of the Directors has not failed perform satisfactorily on a previous/previous contract/s with the Municipality or any orgon of state		
4.	In terms of Section 38 (i) (9) that the Bidder or any of the Directors has not been convict for fraud or corruption during the past five (5) years	ted	
5.	In terms of Section 38 (i) (9) (iv) that the Bidder or any of the Directors has not been list in the Register Of Tender Defaulters in terms of Section 29 of the Prevention and Combat of Corrupt Activities Act, (Act No. 12 of 2004)		
	URE OF BIDDER DATE		
	IE AND SURNAME OF BIDDER IN BLOCK LETTERS		
COMPANY	/ NAME:		
PHYSICAL	ADDRESS:		
TELEPHO	NE NUMBER:		
EMAIL AD	DDRESS:		
WITNESS	1: WITNESS 2:		
	75		
TENDER	rnable Documents		



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

THE CONTRACT PART C1: AGREEMENTS AND CONTRACT DATA

C1.1 Form of Offer and Acceptance

C1.2 Contract Data

C1.3 Pro Forma Guarantee

THE CONTRACT Part C1: Agreeme	nt and Contract Da		76		
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C1.1 Form of Offer and Acceptance Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

BID No. RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

The tenderer, identified in the offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the tenderer, deemed to be duly authorized, 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 OFFER	RED TOTA	AL OF THE PRIC	ES INCLUSIVE	OF VALUE	ADDED TAX IS:		
						Rand (in words); I	R
	(iı	n figures)					
one copy of	this docun		er before the end	of the perio	d of validity stated	l in the tender data, w	ceptance and returning hereupon the tendere
Signature					Date		
Name							
Capacity							
for the tend (Name and address of organization Name and signature							
Acceptan	ce						
							e tenderer's offer. Ir conditions of contract
THE CONT Part C1: A		nt and Contract	Data	77		Form of Offer a	C1.1 nd Acceptance



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

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:

Signature

Part C1:	Agreements	and contract	data, (which i	ncludes the	his agreement	١

Pricing data Part C2: Part C3: Scope of work. Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer (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 fulfill 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.

Signature			Date		
Name					
Capacity					
for the Employer	Rustenburg Local Municipality Missionary Mpheni House c/o Beyers Naude & Nelson Mar Rustenburg	ndela Drive			
Name and signature of witness Schedule o	f Deviations		Date		
THE CONTR Part C1: Agr	ACT reement and Contract Data	78		Form of Offer and A	C1.1 cceptance
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

Notes:

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

1 Subject									
Details									
2 Subject									
Details									
3 Subject									
Details									
4 Subject									
Details									
5 Subject									
Details									
THE COI	NTRACT				79				C1.1
		and Contra	ct Data		79		Form of O	ffer and A	
Emplo	oyer	Witness 1		Witness 2		Contractor	Witne	ess 1	Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

or the tende	erer						
Signature					Date		
Name							
Capacity							
(Name and address of organization)							
. ga <u>-</u> a							
Name and signature							
of witness							
or the Empl	oyer						
Signature				Date			
Name							
Capacity							
Rustenburg L Missionary M c/o Beyers Na Rustenburg	pheni Hou)rive				
Name and signature of witness					Date		
THE CONTI Part C1: Ag		and Contract	: Data	80		Form of Offer and	C1.1 I Acceptance
Employer		Witness 1	Witness	2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

THE CONTRACT Part C1: Agreement and Contract Data			31	Form of Offer and	C1.1 Acceptance
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C1.2 Contract Data

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works (2015) 3rd Edition, published by the South African Institution of Civil Engineering, is applicable to this Contract.

The General Conditions of Contract are not bound into this document but are available at the Contractor's expense. Each party to the contract shall purchase its own copy of the GC 2015, available from

South African Institution of Civil Engineering

Private Bag X200 Halfway House, 1685 South Africa

Tel: 27(0) 11 805 5947 /48 /53

THE CONTRACT

Each item of data below is cross-referenced to the clause in the conditions of contract to which it applies.

In terms of clause 1.1.1.8 of the General Conditions of Contract for Construction Works (2015) 3rd Edition, published by the South African Institution of Civil Engineering), the following Contact Data apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data Provided by the Employer

Clause	Contract Data
Clause	Contract Data
1.1.1.5	Replace the contents of Clause 1.1.1.5 with the following:
	The "Commencement Date" means the date on which the contactor receives a written instruction from the Employer to commence with the Works. The instruction to commence with the works will not be issued later than 28 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.
1.1.1.13	The Defects Liability Period for the Works shall be 365 days.
1.1.1.14	Add the following to the end of this definition:
	This clause shall apply <i>mutatis mutandis</i> to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing.
	The time for achieving practical completion 450 Days .
1.1.1.15	The Employer is Rustenburg Local Municipality.
1.1.1.16	The Employers Agent means any Director, Associate or Professional Engineer appointed generally or specifically by the management of the Employer to fulfil the functions of the Employers Agent in terms of the Conditions of Contract. The Employers Agent may also be referred to as the Engineer.
1.1.1.26	The pricing strategy is Re-measurement Contract.
1.2.1	Add the following to the clause:

Part C1: Agreeme	ent and Contract Da	ata		C	Contact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2

Q O

C1 2



BID NO: RLM/OMM/0123/2024/25

AND	RETICUL	LATION WATER PIPELINE IN MERITING 4 AND 5					
Clause		Contract Data					
	1.2.1.3	Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise.					
	1.2.1.4	Posted to the Contractor's address and delivered by the postal authorities.					
	1.2.1.5	Delivered by a courier service and signed for by the recipient or his representative.					
1.2.1.2	The address	of the Employer is:					
	Rustenburg C/o Beyers I	Local Municipality Naudé & Nelson Mandela Drive					
	P O Box 550 Rustenburg 0300						
	Tel: +27 (14 Fax: +27 (14						
1.3.6	Add the follo	wing to this Clause:					
	Works shall been entere- information	The copyright in all documents, drawings and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the dictates of the Contract that has been entered into by the Engineer and the Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organisation without the prior approval of the Employer to this effect.					
3.2.3	Add the follo	wing to this Clause:					
		er is, in terms of his appointment by the Employer for the design and administration of the Works the Contract, required to obtain the specific approval of the Employer for the execution of the ties:					
	3.1.3.1	The issuing of an order to suspend the progress of the Works, the extra cost resulting from which order is to be borne by the Employer in terms of Clause 5.11 or the effect of which is liable to give rise to a claim by the Contractor for an extension of time under Clause 5.12 of these conditions.					
	3.1.3.2	The issuing of an instruction or order to vary the nature or quantity of the Works in terms of Clause 6.3, the estimated effect of which will be to increase the Contract Price by an amount exceeding R50 000, the evaluation of all variation orders in terms of Clause 6.4 and the adjustment of the sum(s) tendered for General Items in terms of Clause 6.11.					
	3.1.3.3	The approval of any claim submitted by the Contractor in terms of Clause 10.1.					
4.1.2	Add the follo	wing to the clause:					
		ctor shall provide the following to the Engineer for retention by the Employer or his assignee in I works designed by the Contractor:					
	4.1.2.1	a Certificate of Stability of the Works signed by a registered Professional Engineer confirming that all such works have been designed in accordance with the appropriate codes of practice.					
	4.1.2.2	proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s).					
	4.1.2.3	design calculations should the Engineer request a copy thereof.					
THE CONTRACT		92 C1 2					

	4.1.2.3 ues	ign calculations should the t	ingineer request a copy ti	lereor.	
THE CONTRACT Part C1: Agreeme	ent and Contract	83 Data	3	С	C1.2 ontact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

Clause	Contract Data
J.2000	4.1.2.4 engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Engineer to compare the design with the specified requirements and to record any comments he may have with respect thereto.
	4.1.2.5 "As-Built" drawings in DXF electronic format after completion of the Works.
	The Contractor shall be responsible for the design of the Temporary Works.
4.3.3	Add the following new clause:
	The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2003 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993).
	Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan.
	The Contractor shall submit an approved Health and Safety Plan to the Engineer within 14 days from the date that the Agreement made in terms of the Form of Offer and Acceptance comes into effect.
4.3.4	Add the following new clause:
	Contractor's liability as mandatory
	Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract, it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act.
4.3.5	Add the following new clause:
	Contractor to notify Employer
	The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.
4.3.6	Add the following new clause:
	Contractor's Designer
	The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract.

THE CONTRACT Part C1: Agreement and Contract Data			84				C1.2 Contact Data	
	Me	Maria de				Mr.		Mr.
Employer	Witness 1	Witness 2		Contractor		Witness 1		Witness 2



BID NO: RLM/OMM/0123/2024/25

Clause	Contract Data
4.3.7	Add the following new clause:
	The Ministerial Determination 4, Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No 949 of 22 October 2010, as appended to these Contract Data as Annexure A, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.
4.10.3	Add the following new clause:
	The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work.
5.3.1	Add the following:
	The documentation required before commencement with Works Execution are:
	 Health and Safety Plan (Refer to Clause 4.3) Initial Programme (Refer to Clause 5.6) A detailed cash flow forecast (Refer to Clause 5.6.2.6) Security (Refer to Clause 6.2) Insurance (Refer to Clause 8.6)
5.3.2	Add the following: The time to submit the documentation required (Refer to Clause 5.3.1) before commencement with Works execution is 14 days.
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Scope or Works and/or Site information.
5.6.1	Add the following to the clause:
	In this regard the Contractor shall have regard for the phases and sub-phases (if applicable) for the Development, which shall also be the order in which the Permanent Works shall be constructed, unless otherwise agreed between the parties and committed to writing. If phased construction is applicable, the phases and sub-phases will be described in the Specifications and/or will be indicated on the Phasing Plan which forms part of the Drawings.
5.7.1	Delete the last paragraph of the clause and replace with the following:
	No such instruction by the Engineer to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation, and cites the amount of such compensation or the basis upon which it is to be determined.
5.8.1	The non-working days are Sundays.
	Special non-working days shall be all South African Statutory holidays and the official building holidays (which commences on 16 December and ends on 10 January).
5.12.3	Delete the contents of the clause and insert the following:
	If an extension of time is granted, other than an extension resulting from abnormal rainfall in terms of Clause 5.12.5, the Contractor shall be paid such additional time-related General Items as are appropriate having

THE CONTRACT Part C1: Agreeme	nt and Contract [85 Data	5	C	C1.2 Contact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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Clause	D RETICULATION WATER PIPELINE IN MERITING 4 AND 5 Contract Data							
Ciause	regard to any other compensation which may already have been granted in respect of the circur concerned.							
5.12.5	Add the following ne	w clause:						
	Extension of time due to Abnormal Rainfall							
	Extension of time for completion of the Contract shall be allowed in the event of abnormal rainfall in accordance with the following formula:							
	V =	$(N_w - N_n) + (R_w - R_n)/20$						
	Where:							
	V =	Extension of time in calendar days for the calendar month under consideration						
	Nw =	Actual number of days during the calendar month under						
		consideration on which a rainfall of 10mm and more is recorded						
	R _w =	Actual total rainfall in mm recorded during the calendar month under consideration						
	Nn =	Average number of days, derived from rainfall records, on which						
		a rainfall of 10mm and more was recorded during the relevant						
		calendar month as per the data tabulated hereinafter						
	Rn =	Average total rainfall in mm for the relevant calendar month,						
		derived from rainfall records, as tabulated hereinafter						
	rata values shall be exceed the corresponding time to be granted	n of time due to abnormal rainfall has to be calculated for portion of a calendar month, prose used. Should V be negative for any particular month, and should its absolute value and only value of N_n , then V shall be taken as being equal to minus N_n . The total extensioned shall be the algebraic sum of all the monthly extensions, provided that if this total is the for completion shall not be reduced due to subnormal rainfall.						
	Rainfall records for the period of construction shall be taken on Site. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Engineer or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Engineer's Representative. Access to the measuring gauge(s) shall at all times be under the Engineer's control.							
	The rainfall records applicable to this Contract are those recorded at Weather Station Rustenburg 0511/5234. The following values of N_n and R_n shall apply:							

THE CONTRACT Part C1: Agreeme	nt and Contract I	Oata	6	Co	C1.2 ontact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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	RETICUL	ATION WATER P		IERITING 4 A	ND 5				
Clause	Contract Data								
					•				
		Month	R _n (mm)	N _n (days)					
		January	130,1	4					
		February	94,2	3					
		March	75,1	2					
		April	60,3	2					
		May	9,8	0					
		June	5,9	0					
		July	1,6	0					
		August	7,2	0					
		September	18,8	0					
		October	57,5	2					
		November	89,4	3					
		December	105,8	3					
		TOTAL	655,7	19					
			· ·		J				
		nt to the total for time-related ime for completion granted in		ral items will be applica	ble for any automatic				
5.13.	Delete the co	ntents of the clause and inse	rt the following:						
	5.13.1	If the Contractor fails by t portion thereof that is ident of Clause 5.14.2 to receiv Contractor shall be liable t every day which shall elap portion of the Works and th portion.	ified in the Scope of W we a Certificate of Pr o the Employer for the se between the Due C	forks to the extent which actical Completion for a sum(s) stated below a completion Date for the	n entitles him in terms the Works, then the as (a) penalty(ies) for Works or the specific				
		The penalty for delay shall	be: R3000-00 per cale	endar day.					
	5.13.2	If before the issue of a Cert specific portion thereof tha has been:	ificate of Practical Con	npletion for the whole of					
	5.13.2.1	certified as complete in terr	ms of a Certificate of P	ractical Completion; or					
	5.13.2.2	occupied or used by the lemployed by the Contractor		employees or other co	ontractors (not being				
		then the appropriate penalt	•		•				
	5.13.3 The imposition of penalties in terms of Clause 5.13.1 shall not relieve the Contractor obligation to complete the Works, nor from any of his obligations and liabilities Contract.								
	5.13.4	All penalties for which the accumulative. The Employed the amounts of all such pedue to the Contractor.	er may, without prejud	ce to any other metho	d of recovery, deduct				

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	AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5 Clause Contract Data								
- Cidase	5.13.5 The imposition of any penalties in terms of Clause 5.13.1 shall not limit the right of the Engineer								
	of the Employer to act in terms of Clause 9.2.								
5.13.6	Add the following new Clause:								
	If the Contractor shall, without the prior written permission of the Engineer, in respect of any portions of the Works which are prescribed in the Scope of Work to be executed using labour intensive construction methods, or for which the maximum size and capacity of mechanical plant and equipment is restricted in terms of the Contract:								
	fail to execute such portions of the Works, or any parts thereof, utilising labour-intensive construction methods strictly in accordance with the provisions of the Contract; or								
	utilise in the execution of such portions of the Works, or any parts thereof, mechanical plant or equipment which is in conflict with the terms of the Contract; or								
	utilise in the execution of such portions of the Work, workers drawn from sources other than those allowed in terms of the Contract.								
	then the Contractor shall be liable to the Employer for the percentage stated below of the value of the Works so executed in conflict with the provisions of the relevant Scope of Work, as a penalty for non-compliance.								
	The penalty for non-compliance is: 15% of the value of Works specified.								
	The imposition of penalties in terms of this clause shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.								
5.16.3	The Latent defect period is 10 years after the issue of the Final Approval Certificate in terms of Clause 15.6.1								
6.1.1	Add the following to the clause:								
	Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.								
6.2.1	Add the following to this Clause:								
	The amount of the Surety will be 10% of the Contract Price (including Value Added Tax) at the time that the Agreement comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Permanent Works. The Pro Forma Form of Guarantee bound into the General Conditions of Contract is replaced by the Form of Guarantee (Deed of Surety ship) which is included in Part C1.3 of this document.								
	This approval or otherwise shall be based upon legal opinion to be provided by the Engineer.								
6.8.2	The application of a Contract Price Adjustment factor will apply to this Contract. "Refer to Contract Price Adjustment Schedule for details".								
6.8.3	Price Adjustments for variations in the cost of special materials will be allowed. "The Contractor will be required to provide full details in Part 2 of the Contract Data".								
6.8.4	In line 8 delete the words "between the Employer and the Contractor".								

THE CONTRACT Part C1: Agreement and Contract Data				88			Con	C1.2 tact Data
Employer	Witness 1		Witness 2		Contractor	Witness 1		Witness 2



BID NO: RLM/OMM/0123/2024/25

Clause	Contract Data
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	The percentage retention is 10%. The Limit of Retention Money is 5% of the Contract Price at the time of the Agreement made in terms of the Form of Offer and Acceptance coming into effect.
6.10.4	In line 4 delete the word "said" and insert the word "correct".
6.10.9	Replace the first sentence of the clause with the following:
	Within 14 days after the date of final approval as stated in the Final Approval Certificate, the Contractor shall deliver to the Engineer a final statement claiming final statement of all moneys due to him for additional work ordered by the Engineer after the Certificate of Completion date (save in respect of matters in dispute, in terms of Clause 58, and not yet resolved) plus the remainder of retention monies (subject to Clause 49.5.1) retained by the Employer.
6.11.1.3	Delete "15 %" and replace it with "25%".
8.6.1.3	The limit of indemnity for liability insurance is R5 000 000 per event, the number of events being unlimited.
9.2.4	Add the following new Clause: In an event where the successful Service Provider (Contractor) has failed to execute the contract as per the conditions of the contract, thus resulting in termination of the contract as per Clauses 9.2.1.1, 9.2.1.2, 9.2.1.3 (1)(2)(3)(4)(5)(6)(7)(8), of the General Conditions of Contract 2015, Third Edition. Then, the Employer (Rustenburg Local Municipality) reserves the right to appoint the second highest scoring bidder in the same tender for completion of the contract.
	Any incurred losses and damages will be claimed against the terminated Service Provider (Contractor).
10.5.3	The number of Adjudication Board Members to be appointed is 1 (One).

	CONTRACT PRICE ADJUSTMENT SCHEDULE										
Clause	Contract Data										
1.1	The application of a Contract Price Adjustment factor will apply to this Contract. The price adjustment formula provided in the General Conditions of Contract will apply, together with the following coefficients and the definition of the relevant indices indicated below;										
	X=0,10 a=0.15 b=0.20 c=0.55 d=0.1										
1.2	Replace the definitions of the relevant indices with the following: "L" is the "Labour Index" and shall be the "Consumer Price Index" as published in the Consumer Price Index Statistical Release P0141 (Table A – Consumer Price Index and percentage change according to Rustenburg of Statistics South Africa.										
	"P" is the "Plant Index" and shall be the "Civil Engineering Plant" index as published in the Production Pr Index Statistical Release P014 (Table 12 – Price Index for selected materials) of Statistics South Africa.										

THE CONTRACT Part C1: Agreeme	ent and Contract	Data	89		C1.2 Contact Data
Employor	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

	"M" is the "Materials Index" and shall be the "Civil Engineering" index as published in the Production Price Index Statistical Release P0142.1 (Table 11 – Production Price for materials used in certain industries) of Statistics South Africa.
	"F" is the "Fuel Index" and shall be the "Diesel fuel – Coast and Witwatersrand" index as published in the Production Price Index Statistical Release P0142.1 (Table 12 - Production Price Index for selected materials) of Statistics South Africa.
1.3	The base month shall be the month prior to the closing date of this tender.

THE CONTRACT Part C1: Agreement and Contract Data				90		Con	C1.2 tact Data	

yer Witness 1 Witness 2 Contractor



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

Part 2: Data provided by the Contractor

Clause		Contract Data				
1.1.1.9	The name of the Contractor is:					
1.2.1.2	The address of the Contractor is:					
6.2.1	The security to be provided by the Contra	actor shall be one of the following:				
	Тур	Contractor's choice. Indicate "Yes" or "No"				
	Cash deposit of 10% of the Contract Su	um (Incl. VAT).				
	Performance guarantee of 10 % of the 0	Contract Sum (Incl. VAT).				
	Retention of 10% of the value of the Wo	orks (Incl. VAT).				
	Cash deposit of 5% of the Contract Suithe Works (Incl. VAT).	m (Incl. VAT) plus retention of 5% of the value of				
	Performance guarantee of 5% of the Covalue of the Works (Incl. VAT).					
6.8.3	The variation in cost of special materials is:					
	Special Material	Method	Price for Base Month			
		,				

		END OF SEC	TION		
HE CONTRACT art C1: Agreemen	t and Contract Dat	91 t a			C1.2 Contact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C1.3. Pro forma Performance guarantee

Contract No RLM/OMM/0123/2024/25

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:		
Physical address:		
"Employer" means:		
"Contractor" means:		
"Engineer" means:		
"Works" means:		
"Site" means:		
"Contract" means:	The agreement made in terms of the Form of Offer and Accordance or additions to the Contract as may be agreed in writing bet	
"Contract Sum" means:	The accepted amount inclusive of tax of R	
Amount in Words "Guaranteed Sum" means: Amount in Words	The maximum aggregate amount of	
"Expiry Date" means:		
CONTRACT DETAILS		
Engineer issues: Interim Payr defined in the Contract.	nent Certificates, Final Payment Certificate and the Certificate	Completion of the Works as
THE CONTRACT Part C1: Agreement and	92 Contract Data	C1.2 Contact Data
Employer W	/itness 1 Witness 2 Contractor	Witness 1 Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

PERFORMANCE GUARANTEE

- 1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum
- 2. The Guarantor's period of liability shall be from and including the date of issue of this performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
- 3. The Guarantor hereby acknowledges that:
- 3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
- 3.2 its obligation under this Performance Guarantee is restricted to the payment of money.
- 4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
- 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum Certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
- 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
- 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
- 5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the Full outstanding balance upon receipts of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
- 5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
- 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the performance Guarantee is called up in terms of 5; and
- the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in term 1.
- 7. Where the Guarantor has made payment in term 5, the Employer shall upon the date of issue of the final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
- 8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Employer.
- 9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
- 10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 11. The Guarantor chooses the physical address as stated above for the services of all notices for all purposes in connection herewith.

THE CONTRACT Part C1: Agreeme	nt and Contract D	93 ata	3	•	C1.2 Contact Data
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

- 12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor after it has expired.
- 13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's court.

Signed at
Date
Guarantor's signatory (1)
Capacity
Guarantor's signatory (2)
Capacity
Witness signatory (1)
Witness signatory (2)



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

CONTRACT **PART C2: PRICING DATA**

Pricing Instructions C2.1 Bill of Quantities C2.2

C2.1 PRICING INSTRUCTIONS THE CONTRACT Part C2: Pricing Data



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C1.2

Contact Data

Employer Witness 1

Witness 2

BoQ MERITING 4 & 5

### Accordance of the Companies of the C	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.1. Contractual Requirements: 1.1.1 Fixed charge contractual requirements. 1.1.2 Value related contractual requirements. 1.2 Facilities for Engineer: 1.2.1 Name board No 2 1.3 Facilities for Engineer: 1.3.1 Offices and storage sheds Sum 1 1.3.2 Ablution and latrine facilities Sum 1 1.3.3 Water supplies, electric power and communications Sum 1 1.4 Sum Stated Provisionally by Engineer 1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational Health and Safety Act spring safety for the Occupational Health and Safety Act contractual Regulations Occupational health and Safety act Equipment. Fire Extinguishers, Signage, COVID-19 Equipment and PPE, etc. 1.4.1.1 Interest of the Occupational Health and Safety act Interest Safety File and Journal, First Ald Box and Equipment Interest Safety File and Journal, First Ald Box and Equipment Interest Safety File and Journal, First Ald Box and Equipment Interest Safety File and Journal, First Ald Box and Equipment Interest Safety File and Journal, First Ald Box and Equipment Interest Safety File and Journal, First Ald Medical Kits for Labourers Month 10 1.2 Facilities for Contractor: 1.4.1 Time related Obligations: 2.3.1 First Ald Medical Kits for Labourers Month 10	A.1	FIXED CHARGE AND VALUE RELATED ITEMS:				
1.1.1 Fixed charge contractual requirements. Value related contractual requirements. 1.2 Facilities for Engineer: 1.2.1 Name board No 2 1.3 Facilities for Engineer: 1.3.1 Offices and storage sheds 1.3.2 Ablution and latrine facilities Sum 1 1.3.3 Water supplies, electric power and communications 1.4 Sum Stated Provisionally by Engineer Contractor's initial obligations or respect of the Occupational Health and Safety actincularing annoys others Safety File and Journal, First Aid Box and Engineer, Act contractual Regulations Occupational, First Aid Box and Engineer, File Extinguishers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SAINS 1200 A, SAINS 1200 AB and the Project Specifications.) 2.1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1.2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 Water supplies, electric power and communications Month 10 Water supplies, electric power and communications Month 10 2.3 Other Time Related Obligations: First Aid/Medical Kits for Labourers Month 10						
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1.3.1 Offices and storage sheds 1.3.2 Ablution and latrine facilities 1.3.3 Water supplies, electric power and communications 1.4 Sum Stated Provisionally by Engineer 1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety act Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. 1.4.2 TIME RELATED ITEMS: (As specifications.) 2.1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1.2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 1.2.2 Ablution and latrine facilities Water supplies, electric power and communications Month 10 2.3 Other Time Related Obligations: Eirst Aid/Medical Kits for Labourers Month 10 Coccupational Health and Safety Month 10	1.2.1	Name board	No	2		
1.3.2 Ablution and latrine facilities 1.3.3 Water supplies, electric power and communications 1.4 Sum Stated Provisionally by Engineer 1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational, health and Safety act Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2.1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1.2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 2.3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	1,3	Facilities for Engineer:				
1.3.3 Water supplies, electric power and communications 1.4 Sum Stated Provisionaly by Engineer 1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational, health and Safety act Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2.1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1.2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 1.2.3 Water supplies, electric power and communications Month 10 2.3 Other Time Related Obligations: Eirst Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	1.3.1	Offices and storage sheds	Sum	1		
1.4.1 Sum Stated Provisionaly by Engineer 1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational, health and Safety act Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2,1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1,2.1 Offices and storage sheds 1,2.2 Ablution and latrine facilities Month 10 1,2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2,3.1 First Aid/Medical Kits for Labourers Month 10 Cocupational Health and Safety Month 10	1.3.2	Ablution and latrine facilities	Sum	1		
1.4.1 Occupation Health and Safety Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational, health and Safety act-Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2,1 Contractual Requirements: 2,1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1,2.1 Offices and storage sheds Month 10 1,2.2 Ablution and latrine facilities Month 10 2,3 Other Time Related Obligations: 2,3 Other Time Related Obligations: Month 10 2,3.2 Occupational Health and Safety Month 10	1.3.3	Water supplies, electric power and communications	Sum	1		
Contractor's initial obligations in respect of the Occupational Health and Safety Act contractual Regulations Occupational, health and Safety act Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and PPE, etc. A.2 TIME RELATED ITEMS: (As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2,1 Contractual Requirements: 2,1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1,2.1 Offices and storage sheds Month 10 1,2.2 Ablution and latrine facilities Month 10 1,2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: Month 10 2,3.1 First Aid/Medical Kits for Labourers Month 10 2,3.2 Occupational Health and Safety Month 10	1,4	Sum Stated Provisionaly by Engineer				
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(As specified in SANS 1200 A, SANS 1200 AB and the Project Specifications.) 2,1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 1.2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	1.4.1.1	Safety Act contractual Regulations Occupational, health and Safety act- Including amongst others Safety File and Journal, First Aid Box and Equipment, Fire Extingushers, Signage, COVID-19 Equipment and		1		
Specifications.) 2,1 Contractual Requirements: 2.1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 1.2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	A.2	TIME RELATED ITEMS:				
2.1.1 Time related contractual requirements. Month 10 1,2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 1.2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month						
1,2 Facilities for Contractor: 1.2.1 Offices and storage sheds Month 10 1.2.2 Ablution and latrine facilities Month 10 1.2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	2,1	Contractual Requirements:				
1.2.1 Offices and storage sheds 1.2.2 Ablution and latrine facilities 1.2.3 Water supplies, electric power and communications 1.2.4 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers 1.2.3 Month 1.2.4 Month 1.2.5 Month 1.2.6 Month 1.2.7 Month 1.2.8 Month 1.2.9 Occupational Health and Safety 1.2.9 Month 1.	2.1.1	Time related contractual requirements.	Month	10		
1.2.2 Ablution and latrine facilities 1.2.3 Water supplies, electric power and communications Month Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 Month 10 Month 10 Month 10 Month 10	1,2	Facilities for Contractor:				
1.2.3 Water supplies, electric power and communications Month 10 2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	1.2.1	Offices and storage sheds	Month	10		
2,3 Other Time Related Obligations: 2.3.1 First Aid/Medical Kits for Labourers Month Occupational Health and Safety Month 10	1.2.2	Ablution and latrine facilities	Month	10		
2.3.1 First Aid/Medical Kits for Labourers Month 10 2.3.2 Occupational Health and Safety Month 10	1.2.3	Water supplies, electric power and communications	Month	10		
2.3.2 Occupational Health and Safety Month 10	2,3	Other Time Related Obligations:				
	2.3.1	First Aid/Medical Kits for Labourers	Month	10		
	2.3.2	Occupational Health and Safety	Month	10		
Carried forward		Carried forward				

MERITI	NG 4 AND 5 SECTION 1 : PRELIMINARY AND GENERAL Brought forward						
A.3	PROVISIONAL SUMS:						
	(As specified in SANS 1200 A and the Project Specifications.)						
3,1	Community Liaison Officer:						
3.1.1	Provision for the employment of 1 x CLO at R7000 pm	Prov. Sum	1	R	70 000,00	R	70 000,
3.1.2	Overheads, charges and profit on item 3.1.1.	%	70 000	1	70 000,00		70 000,
3,3	Basic Skills and Construction Training:						
3.3.1	Provision of accredited training for 60 local labourers	Prov. Sum	1	R	500 000,00	R	500 000
3.3.2	Payment of labourers during training at R191 per perosn per day for	Prov. Sum	1	R	57 300,00	R	57 300
3.3.3	max. 5 days Overheads, charges and profit on item 3.3.1. and 3.3.2	%	557 300		0. 000,00		0. 000
0.0.0	Overheads, dialiges and profit of item 6.5.1. and 6.5.2	70	337 300				
3,4	Student Training						
3.4.1	Stipend for 2 x Engineering Students' in-service training at R4500 per month	Months	10	R	9 000,00	R	90 000
3.4.2	Overheads, charges and profit on 3.4.1 above	%	90 000				
3,5	EPWP Overalls						
3.5.1	Provision of overalls for 60 local labourers with EPWP logo	Sum	1				
A.4	DAYWORK:						
	(As specified in SANS 1200 A and the Project Specifications.)						
4,1	Labour - Normal Working Hours: [Provisional]						
4.1.1	Skilled Labour (Artisan).	hr	1				Rate O
4.1.2	Semi-skilled Labour.	hr	1				Rate O
4.1.3	Unskilled Labour.	hr	1				Rate O
4.1.4	Foreman.	hr	1				Rate C
5,2	Plant - Heavy Equipment: [Provisional]						
	(Plant shall not be more than 3 years old or have more than 3000 hrs logged. Operator to be qualified and competency certified.)						
5.2.1	Excavator - Size Cat 225.	hr	1				Rate C
	Carried forward	1					

	Brought forward			
5.2.2	Excavator - TLB.	hr	1	Rate O
5.2.3	Grader 140G or similar.	hr	1	Rate O
5.2.4	Front end loader - bucket capacity ≤ 1.5 m³.	hr	1	Rate O
5.2.5	Front end loader - bucket capacity ≤ 1.5 m³.	hr	1	Rate C
5.2.6	Tip truck - 5 m ³ capacity.	hr	1	Rate C
5.2.7	Tip truck - 10 m ³ capacity.	hr	1	Rate C
5.2.8	Vibratory compaction roller - 13.5 ton.	hr	1	Rate C
5.2.9	Transport cost per any unit of plant to deliver to site and remove from site for items 5.2.1 to 5.2.9	Sum	1	Rate 0
5,3	Plant - Small Equipment: [Provisional]			
5.3.1	Pedestrian roller - BW90 or similar.	hr	1	Rate C
5.3.2	Vibratory plate compactor.	hr	1	Rate C
5.3.3	Vibratory rammer.	hr	1	Rate C
5.3.4	Transport cost per any unit of plant to deliver to site and remove from site for items 5.3.1 to 5.3.4	Sum	1	Rate 0
AL CAF	RRIED TO SUMMARY:			

RUSTENBURG LOCAL MUNICIPALITY MERITING 4 AND 5 - SECTION 2 : SITE CLEARENCE

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2	1200 C	SCHEDULE 2 : SITE CLEARANCE				
2.1	8.2.1	Clear and grub	m²	22 500,00		
2.2	8.2.2	Remove and grub large tress and tree stumps of girth				
2.2.1		a) over 1m and up to and including 2m	No.	Rate Only		
2.2.2		b) Removal of man-made surfaces	m²	11 250,00		
		Carried forward				

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3	1200 DB	SCHEDULE 3: PIPE TRENCING				
3,1	8.3.2	EXCAVATION				
3.1.1	PSDB 8.3.2	a) Excavate in all materials for trenches, compact, and dispose of surplus/ unsuitable material				
3.1.1.1		i) Over 0,5m up to 1,0m deep	m³	20600		
3.1.1.2		ii) Over 1,0m up to 2,0m deep	m³	2060		
3.1.2	PSDB 8.3.2	a) Excavate in all materials for backfill, compact, and dispose of surplus/ unsuitable material.				
3.1.2.1		i) Over 0,5m up to 1,0m deep	m³	18540		
3.1.2.2		ii) Over 1,0m up to 2,0m deep	m³	1854		
3.1.3	8.3.2	b) Extra over item for				
3.1.3.1		i) Intermediate excavation	m³	1133		
3.1.3.2		ii) Hard Rock excavation	m³	Rate only		
3.1.4	8.3.2	c) Excavate and dispose of unsuitable material from trench bottom	m³	Rate only		
3,2	8.3.3	EXCAVATION ANCILLARIES				
3.2.1	8.3.3.1	Make-up deficiency in backfill material (Provisional)				
3.2.1.1	PSDB 8.3.3.1	c) by importing material from off-site source selected by the contractor	m³	3000		
3.2.2	PSDB 8.3.5	EXISTING SERVICES THAT INTERSECT OR ADJOIN A PIPE TRENCH				
3.2.2.1		Services that intersect a trench				
3.2.2.1.1		a) Expose by hand services that intersect undergroud services (i.e water, electrical, telcom cables, etc)	m³	1500		
3.2.2.1.1.1		i) Water mains up to 200 mm diam.	m	10000		
3.2.2.1.1.2		ii) Water mains over 200 mm diam.	m	5000		
3.2.2.1.2	PSDB 8.3.5	b) Services that adjoin a trench				
3.2.2.1.2.1		1) Cables	m	1000		
		Carried forward				
<u> </u>		22.1104 101 11414				

RUSTENBURG LOCAL MUNICIPALITY MERITING 4 AND 5 - SECTION 4 : PIPE BEDDING

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4	1200 LB	SCHEDULE 4. BEDDING (PIPES)				
4,1	8.2.1	Provision of Bedding trench excavation within 0,5 km (Sub-clause 3.4.1)				
4.1.1		a) Selected granular material for bedding	m³	220		
4,2	8.2.2.1	From commercial sources (Provisional)				
4.2.1		a) Pipe Bedding on soft material	m^3	330		
4.2.2		b) Selected fill material	m ³	21 670		
4,3		Encasing of pipes in concrete (20MPa)	m³	40		
	Carried forward					

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5	1200 GA	SCHEDULE 8: CONCRETE (SMALL WORKS)				
5,1	8.2	NOTE:Chambers to be constructed as per the relevant drawing FORMWORK				
5.1.1	8.2.1	Rough				
5.1.1.1		a) Vertical to chamber floor	m²	140		
5.1.1.2		b) Vertical plane walls	m²	140		
5.1.2	8.2.2	Smooth				
5.1.2.1		a) Vertical to wall and roof	m²	210		
5.1.3	8.2.3	Narrow widths (up to 300 mm)				
5.1.3.1	0.2.0	(a) 25mm x 25mm chamfer	m	340		
5.1.4	8.2.4	Box out holes/form voids:		0.10		
5.1.4.1	0.2.4	(a) Small, circular, up to and including 0,35m diameter, regardless of depth	No.	195		
5.1.4.2		(b) Small, other than circular of area up to and including 0,1 m ²	No.	165		
5.1.4.3		(c) Large, circular, of diameter over 0.35m and up to and including 0.7m	No.	155		
5.1.4.4		(d) Large, other than circular, of area over 0,1 m ² and up to and including 0,5 m ²	No.	160		
5,2	8.3	REINFORCEMENT				
5.2.1	8.3.1	Mild steel bars				
5.2.1.1		(i) R 10	t	1,7		
5.2.2	8.3.2	High-tensile steel bars				
5.2.2.1		(i) Y10	t	Rate Only		Rate Only
5.2.2.2		(ii) Y12	t	Rate Only		Rate Only
5.2.2.3		(iii) Y16	t	Rate Only		Rate Only
5.2.3	8.3.2	High-tensile welded mesh of:				
		(i) Ref 395	m²	135		
5,3	8,4	CONCRETE				
5.3.1	8.4.2	Strength concrete, Class 15/19 concrete, blinding layer 75mm thick	m²	27		
5.3.2	8.4.3	Concrete Grade 30/19	m³	Rate Only		Rate Only
5.3.3	8.4.4	Concrete Grade 25/19	m³	70		
		Carried forward				

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		PIPELINE				
6	1200 L	PRESSURE PIPE AND PIPE FITTINGS				
		All the rates shall comply with the specifications and drawings and shall include the following: All labour, materials, welds, stubs, plant, reinforcement, lining and coating as specified, factory testing, delivery to site, off-loading adjacent to laying position, placing pipes and specials on sandbags or similar approved protective supports, all as schedules below:				
6,1	8.2.1	Supply, lay, and bed pipes complete with couplings				
6.1.1		i)Pipes				
6.1.2		a) 450mm diameter PN25 HDPE pipes complete with spigot and socket joints to SABS Standarts	m	600		
		b) 160mm diameter uPVC class 16 pipes complete with spigot and socket joints to SABS Standarts	m	2300		
		c) 110mm diameter uPVC class 16 pipes complete with spigot and socket joints to SABS Standarts	m	1800		
		d) 90mm diameter uPVC class 16 pipes complete with spigot and socket joints to SABS Standarts	m	1015		
		d) 75mm diameter uPVC class 16 pipes complete with spigot and socket joints to SABS Standarts	m	6500		
		e) 32mm diameter PN25 HDPE pipes complete with spigot and socket joints to SABS Standarts	m	2000		
		FITTINGS AND SPECIALS FOR FIXING INTO				
6,2	8.2.2	PIPES Fittings to be suitable for coupling directly onto pipes according the drawings				
6.2.1		a) 160NB Coupling sleeve	No.	rate only		rate only
6.2.2		b) 160NB Shurjoint grooved coupling	No.	rate only		rate only
6,3		Bends: Supply and install bends complete with couplings or flanged fittings)on site for HDPE Pipes				
		450mm Diameter				
6.3.1		a) Bend 450/11.25º	No.	2		
		160mm diameter				
6.3.4		d) Bend 160/11º	No.	8		
		a) Bend 160/22.5º	No.	5		
		b) Bend 160/45º	No.	1		
		c) Bend 160/90°	No.	2		
		110mm diameter				
		d) Bend 110/11º	No.	3		
		a) Bend 110/22.5º	No.	3		
		b) Bend 110/45°	No.	2		
		c) Bend 110/90°	No.	2		
		90mm diameter	N.	40		
		a) Bend 90/22.5° b) Bend 90/45°	No.	16 7		
		c) Bend 90/90°	No.	3		
		75mm diameter	No.	3		
		a) Bend 110/11°	No.	13		
		b) Bend 90/22.5°	No.	10		
		c) Bend 90/45°	No.	11		
		d) Bend 90/90°	No.	13		
		32mm diameter				
		a) Bend 32/22.5º	No.	2		
		b) Bend 32/45°	No.	2		
		c) Bend 32/90°	No.	2		
		Carried forward				

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Brought forward						
6,4		Pipe Reducers				
6.4.1		a) 160mm x 110mm	No.	42		
		b) 110mm x 90mm	No.	15		
		c) 90mm x 75mm	No.	5		
6.4.2		d) 450mm x 160mm	No.	3		
		e) 75mm to 35mm	No.	35		
		f) 110mm x 75mm	No.	15		
		g) 160mm x 75	No.	10		
		T's				
		450mm	No.	3		
		160mm	No.	3		
		110mm	No.	3		
		90mm	No.	2		
		75mm	No.	10		
		32mm	No.	Rate only		Rate only
	Carried forward					

6.5.4 6.6.6 6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	S DESCRIPTION	UNIT	QTY	RATE	AMOUNT							
6.6 6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Brought forward											
6,6 6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	AIR RELEASE VALVE											
6.6 6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Supplying, installing, cutting in and testing flanged valves for uPVC pipes											
6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Ø160mm PN16 Gate Valve	No.	15									
6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Ø110mm PN16 Gate Valve	No.	15									
6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6.7 PSL 8.2.1 6.7.1	Ø90mm PN16 Gate Valve	No.	12									
6.6.1 6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6.7 PSL 8.2.1 6.7.1	Ø75mm PN16 Gate Valve	No.	47									
6.6.2 6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	ISOLATION VALVE											
6.6.3 6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Supplying, installing, cutting in and testing flanged isolation valves for uPVC pipes as shown on detailed drawings											
6.6.4 6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Ø160mm Flanged Adapter	No.	20									
6.6.5 6.6.6 6,7 PSL 8.2.1 6.7.1	Ø160mm Double flanged puddle pipe 1000mm long with puddle flange 670mm from the flanged end face	No.	20									
6.6.6 6,7 PSL 8.2.1 6.7.1	Ø160x50mm Galvanized Flanged Tee	No.	10									
6.7.1 PSL 8.2.1	Ø50mm Galvanized Flanged Pipe	No.	10									
6.7.1	Ø50mm PN16 Gate Valve	No.	10									
	2.17 VALVE CHAMBERS Valve Chambers (including excavations, materials, plant, labour and incidentals) consisting of 230 mm Facebrick walls of 1,5 m x 1,5 m x 1.5 m high interior dimensions, with 100 mm thick reinforced concrete floor slab and 150mm thick reinforced concrete roof slab with 600x600mm chequer plate lockable manhole cover with steel frame as per drawings.	No.	75									
6.7.3	Provision of lockable manhole covers	No.	75									
	Surface Finish Surface finishes to concrete work, to specifications in: Rubbed surface finish on exposed external concrete surface	No.	75									
	Installation of Water Meters to a potion of the households	N0.	1200									
	TOTAL CARRIED TO SUMMARY											

RUSTENBURG LOCAL MUNICIPALITY MERITING 4 AND 5 - SECTION 7 : ACCESS ROADS

ITEM	SANS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7		SCHEDULE 7: ACCESS				
7,1	1200 ME	PAVEMENT LAYERS				
7.1.1	8.3.1	SELECTED LAYER (G7 MATERIAL)	m³	500		
7.1.2	8.3.2	SUB-BASE : 150mm THICK G5 COMPACTED TO 95% MOD AASHTO DENSITY	m³	500		
7.1.3	8.3.3	BASE: 150mm THICK CEMENT STABILIZED (C4) COMPACTED TO 98% MOD AASHTO DENSITY	m³	500		
	SANS 1200 MM					
7,3	8.5.1	PAVEMENT BRICKS				
7.3.1		(c) 80mm Pavement bricks (SABS Approved)	m²	3100		
7,4	8.5.2	KERBS				
7.4.1		Figure 8c Kerbing	m	1030		
	<u> </u>	TOTAL CARRIED TO SUMMARY	<u> </u>	<u> </u>		

RUSTENBURG LOCAL MUNICIPALITY MERITING 4 AND 5 - SUMMARY

SUMMARY OF SCHEDULES

SCHEDULE 1: PRELIMINARY AND GENERAL	R	
SCHEDULE 2: SITE CLEARENCE	R	
SCHEDULE 3: PIPE TRENCHING	R	
SCHEDULE 4: BEDDING (PIPES)	R	
SCHEDULE 5: CONCRETE WORKS	R	
SCHEDULE 6: PIPE LINE	R	
SCHEDULE 7: ROAD CROSSING	R	
SUB TOTAL - A	R	
5% CONTINGENCIES	R	
SUB TOTAL - B	R	
15% VAT	R	
TENDER SUM (Incl VAT)	R	



- 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.
- 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 Bidder 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 Engineer 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.

- Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. 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 Quantities [1]. Should any requirement of the measurement and payment clause of the appropriate Standardized 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 Standardized, 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.
- 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 Bid is based.
- The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and <u>not</u> the quantities given in the schedule of quantities, will be used to determine payments to the contractor.
- 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.

1] The standard syster	m of measurement o	of civil engineering quantities	published by the South A	frican Institution of Civi	Engineers.	
THE CONTRACT		96		C1.2		
Part C2: Pricing Data	1			C	ontact Data	
	1					
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2	



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

The Bidder 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 bidded rates shall apply should work under these items actually be required.

Should the Bidder group a number of items together and bid one sum for such group of items, the single bidded 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. The bidded 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.

The quantities of work as measured and accepted and certified for payment in accordance with the Conditions of Contract, and <u>not</u> 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.

9 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 Bidder bids to do the work

Amount : The quantity of an item multiplied by the bidded rate of the (same) item

Sum : An amount bidded 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

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 = metre m = kilometre km = kilometre-pass km-pass m² = square metre m²-pass square metre-pass = hectare ha m^3 cubic metre

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Part C2: Pricing Data		Contact Data

Employer	 Witness 1	Witness 2	Contractor	Witness 1	 Witness 2



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m³-km cubic metre-kilometre

kW kilowatt = kN= kilonewton kilogram kg t ton (1 000 kg) per cent % MNmeganewton meganewton-metre MN-m PC Sum Prime Cost Sum Prov Sum **Provisional Sum**

- 11. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the Standardised Specifications.
- All prices and rates entered in the Bill of Quantities must be excluding Value Added Tax (VAT). VAT will be added 12. last on the summary page of the Bill of Quantities.

THE CONTRACT Part C2: Pricing D	ata		98	C1.2 Contact Data		
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2	

Employer Witness 1 Witness 2 Contractor Witness 1



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C2.2 BILL OF QUANTITIES

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Employer	Witness 1		Witness 2		Contractor		Witness 1	_	Witness 2



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CONTRACT PART C3: SCOPE OF WORKS

C3: Scope of Work

1. DESCRIPTION OF THE WORKS

1.1 Employer's objectives

Meriting 5 is a fully reticulated, however the area is affected by continued pipe failure i.e. pipe burst and leaks through the entire reticulation system. As a result, Rustenburg Local Municipality has identified the need to replace the existing class 9 Upvc water pipes in Meriting 4 and 5 Townships. The municipality is intending to replace existing class 9 Upvc pipes with class 16 Upvc pipes.

1.2 Overview of the works

This contract consist of the construction of upvc pipeline in MERITING 4 AND 5.

1.3 Extent of the works

The work will comprise of the following:

- Medium Pressure Pipes (450mmø HDPE Pipes) Rand Water Bulk line
- Medium Pressure Pipes (160mmø, 110mmø, 90mmø, 75mmø uPVC pipes and 32mmø HDPE pipes) Reticulation
- Partial re-construction of segments of the road where it will be damaged during trenching.
- · Installation of water meters.
- Installation of al pipe fittings (Valves and bends).
- Construction of valve chambers.
- Minimum depth of cover to main pipelines is 1000 mm, Road/Railway crossings is 1 200 mm. Additional protection to pipes under roads, pipe sleeves.

1.4 Location of the works

MERITING 4 AND 5 is a township at Rustenburg in the Nort-West Province. The township is located along the Z543 road, 12km north-east of Rustenburg town (GPS: 25°35'7.24"S and 27°14'55.48"E). The area falls under Rustenburg Local Municipality's Ward 38.

The site shall not only include the works area for the construction of the new services but shall be extended in the broader sense to take account of all areas occupied by the Contractor, be it deliberate or unintentional, in the execution of the contract.

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The location of the site camp and site access to be proposed by the successful tenderer and agreed by the Employer and Engineer/Agent.

The limits of the project are as shown on the locality plan bound into the book of drawings to be received together with this document. The site shall not only include the works area but shall be extended in the broader sense to take account of all areas occupied by the Contractor, be it deliberate or unintentional, in the execution of the contract.

Choosing a location for the site camp shall be the responsibility of the successful tenderer assisted by the municipality.

1.5 Delivery of materials and equipment

It is the responsibility of the Contractor to take delivery, off-load, store and move into their permanent position all equipment and materials covered under this contract. The Contractor shall, at its own expense, be responsible for the delivery to the Site of imported plant and equipment, materials and Contractor's plant and equipment in connection with the execution of the works, including but not limited to securing of permits and customs clearances, and payment of handling costs, storage costs, releasing costs, transportation costs, and duties, taxes, imposts, excise and charges of any kind that may be imposed by the South African Government, or any of its agencies and political subdivisions relating to the supply and delivery to the Site of the imported plant and equipment, materials and Contractor's plant and equipment.

2. Temporary Works

The Contractor shall, as relevant:

- 1. Clear site and surroundings to create accessible working areas as required
- 2. Provide temporary drainage works, temporary pumps and other equipment as may be necessary for the protection, draining and dewatering of the works.
- 3. Construct and maintain haulage, temporary access and construction roads with their required storm water systems, subject to the approval of the Employer, and permit the Employer, other Contractors, statutory bodies or any other person who might require legitimate access to or through the site for the purpose of executing legitimate business, free and unhindered usage of such roads. Where suitable, the primary haulage roads will be graded and re- gravelled where necessary towards the end of the contract to form a future maintenance road.
- 4. Temporary water connections, Contractor's offices, storage sheds, latrines, barricading of Works shall be in an approved position and subject to the approval of all authorities concerned.
- 5. Safety and security of the Contractors' temporary works shall be at the Contractors' discretion, but always in accordance with stipulated Occupational Health and Safety requirements.
- 6. The camp shall be adequately guarded during and outside working hours
- 7. The temporary works include:
 - The works required to locate, verify and protect existing services within the works area.

The works must:

 Be such to ensure no or limited interruption to the operation of the all existing services, and must further ensure limited interruption to vehicular and pedestrian traffic; and

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Employer	Witness 1		Witness 2		Contractor	Witness 1		Witness 2



BID NO: RLM/OMM/0123/2024/25 A CONTRACTOR FOR THE REPLACEMENT OF

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

- Be such that existing storm water flow shall not be impeded during survey and construction activities.
- 8. Protection of excavations

Further, the Contractor shall note that no stockpiling of materials, plant, excavated material or any other construction related infrastructure shall be allowed in locations that may interfere with the operations of the Employer and the public in general.

3. Procurement

3.1 Preferential procurement procedures

The works shall be executed in accordance with the conditions pertaining to preferences granted in accordance with the preferencing schedule.

3.2 Labour and Personnel

3.2.1 Contractors Personnel

The Contractor shall limit the utilisation of his permanently employed personnel to that of key personnel only on the Works, as defined below, and shall execute and complete the Works utilising a temporary workforce employed directly by the Contractor and/or by his sub-contractors, using the assistance of the Labour Desk(s), from the various communities that are established in proximity to the Works or which will be consumers from the Scheme.

Without derogating from the Contractor's obligations to complete the Works within the specified time for completion, the numbers in each category of the Contractor's key personnel, as stated by the Contractor in the Returnable Schedules, will be strictly controlled during the contract period and any increase in numbers will be subject to the prior approval of the Employer.

Key personnel means all contracts managers, site agents, site clerks, materials and survey technicians, quantity surveyors, trainers, supervisors, foremen, skilled plant operators, brick layers, welders, shutter hands and the like, and all other personnel in the permanent employ of the Contractor or his sub-contractors who possess special skills, and/or who play key roles within the Contractor's or his subcontractor's operations.

The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, authorise in writing that the Contractor may utilise in the execution of the Works, workers not being his key personnel but who are in his permanent employ. Without limiting the generality of application of this sub-clause, circumstances which may be considered by the Engineer to warrant authorization of the use of the Contractor's permanent employees other than key personnel, include:

- a) The unavailability from local sources of sufficient numbers of temporary workers and/or sub-contractors to execute the Works provided always that the Contractor has satisfied the Engineer that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient temporary workers and subcontractors from local sources.
- b) The unavailability within the temporary worker pool and/or from subcontractor sources available to the Contractor in terms of the Contract, of sufficient skills necessary to execute the Works or specific portions thereof, in situations where the completion period allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of suitable training as contemplated in the Contract;

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c) Any other circumstances which the Engineer may deem as constituting a warrant.

3.2.2 Temporary Workforce

The Contractor shall employ labour from the local communities through the Labour Desk(s). Accordingly, the workforce that is employed on Site shall consist of local residents, except for approved key staff in the permanent employ of the Contractor, to the maximum extent that is compatible with the requirements of clause C3.2.1.

The Labour Desk(s) shall assist in identifying available local labour and, where available, semi-skilled labour as well as local sub-contractors. The Labour Desks shall also assist and advise regarding conditions of employment, disputes and disciplinary procedures. The function of the Labour Desk(s) shall however in no way diminish the responsibilities of the Contractor or sub-contractor.

The Contractor and its sub-contractor shall adhere to the statutory minimum wage rates, they are however at liberty to negotiate additional incentive payments based on performance.

A contract of employment or subcontract should be signed between the Contractor and each of his employees or subcontractors, as the case may be. Likewise contracts of employment must be entered into between each such sub-contractor, and each of the specific subcontractor's employees. Employment and subcontract agreements shall make clear reference to at least the following conditions:

- The minimum agreed wage rate per hour in respect of labourers;
- The agreed pay rate per unit of production where applicable;
- UIF and WCA payments;
- Minimum working hours per day:
- Start and end times of a daily shift;
- Lunch break times;
- Company Policy regarding :

Rain time

Sickness and absenteeism

Disciplinary matters

Grievances

- Method and frequency of payment;
- Work clothes and safety equipment to be issued.

3.2.3 Local Content and Labour-Intensive Construction

The promotion of the use of local content is required in the execution of this project. This will be achieved by the use of local labour and local sub-contractors in the construction of works equivalent to thirty percent (30%) of the total cost of works are to be constructed. The following limits apply:

• Construction by subcontractors may constitute a maximum of 25% of the total local content works.

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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

Construction using labour intensive construction methods and employing locally (within Meriting and its surrounds)
 labour must make up 75% the total local content works.

Labour Intensive Construction shall mean the economically efficient employment of as great a portion of labour as is technically feasible to produce a standard of construction as demanded by the Specifications with completion by the Due Completion Date, thus the effective substitution of labour for equipment.

Appropriate portions of the Works included in the Contract shall be executed using labour intensive construction methods. These portions of the Works shall be constructed and supplemented only to the extent necessary and unavoidable by the Contractors key personnel, unless otherwise instructed by the Engineer.

The portions of the Works to be executed using labour intensive construction methods are:

- clearing and grubbing of the Site;
- exposing existing services;
- pipe laying
- Mixing, transporting, placing and finishing of small concrete works
- dismantling and re-erection of fences; and
- cleaning and tidying up of the Site.

In respect of those portions of works which are not listed above, the construction methods adopted and plant utilised shall be at the discretion of the Contractor, provided always that the construction methods adopted and plant utilised by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

3.2.4 Subcontracting

- 3.2.4.1 The Contractor shall sub-let to sub-contractors' appropriate portions of the works. A sub-contract agreement shall be signed between the contractor and each of its sub-contractors.
- 3.2.4.2 The Contractor shall be responsible for all work carried out by sub-contractors on his behalf. The Engineer will not liaise directly with any such sub-contractor, nor will be become involved in any problems and/or disputes related to payments, programming, workmanship, etc, unless provided for in the Conditions of Contract. Such problems and/or disputes shall remain the sole concern of the Contractor and his sub-contractors.
- 3.2.4.3 The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, and provided always that the Contractor has complied fully and in all respects with the provisions of the Contract pertaining to subletting to local sub-contractors or has utilised his best endeavours to comply therewith, authorise in writing that the Contractor may employ local residents with the sole intent of executing on-the-job training of such local residents to suitable levels of skill.

Without limiting the generality of application of this clause, circumstances which may be considered by the Engineer to warrant such authorization include:

- a) non-receipt of valid or acceptable tenders/quotations from local sub-contractors;
- b) serious default or failure of appointed local sub-contractors;

The Engineer shall not grant such authority in cases where it may reasonably be concluded on the available evidence that the invitation of further tenders/quotations in accordance with the terms of the Contract is likely to result in the successful completion of the portions of the Works concerned by sub-contractors.

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Employer	Witness 1	Witness 2		Contractor		Witness 1	_	Witness 2	



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Should the Contractor, after suitable due endeavour, be unable to identify sub-contractors for portions of the Works as specified, then the Contractor shall be permitted to undertake the Works in question with his own workforce as provided for above.

The Engineer shall monitor progress achieved with subcontractor training, and successful completion of this training shall be subject to his approval or instruction. The Contractor shall tender rates for the training of sub-contractors and labour.

3.2.4.4 The Contractor shall approach the Labour Desk that is established for purposes of the Contract for assistance and advice regarding conditions of employment, minimum wages, disputes and disciplinary procedures in respect of local subcontractors.

3.2.5 Sub-contractor

To qualify as a sub-contractor the following requirements shall be applicable:

- Registration with the CIDB in the min class of CE registration applicable for a particular amount of work
- Submit an original valid Tax Clearance Certificate (in terms of the Preferential Procurement Regulations, 2011 published in Government Gazette No. 34350 dated 8 June 2011),
- Submit a valid VAT Registration Certificate (if VAT number is not included in tax clearance certificate),
- Submit a valid Workmen's Compensation Certificate, Act 4 of 2002,
- Submit a valid Unemployment Insurance Certificate, Act 4 of 2002,
- Submit a Certificate of Incorporation (if a Company),
- Submit a Founding Statement (if a Closed Corporation),
- Submit a Partnership Agreement (if a Partnership),
- Submit an Identity Document (if a One-man concern),
- Submit a Joint Venture Agreement (if a Joint Venture),
- Submit monthly proof of SARS PAYE in respect of all labourers
 Submit a Curriculum vitae of the person who prepares the Health and Safety Plan,
- Curriculum vitae of the Health and Safety Officer to be appointing in accordance with the Occupational Health and Safety Act (Act 85 of 1993).
- Provide all work clothes, safety equipment and tools required for the execution of the Works
- The minimum amount of liability insurance cover required will be R 1 000 00.00 per event, the number of events being unlimited.
- Payment of all amounts due to the local sub-contractor by the Contractor shall be subject to a the same retention conditions as applicable the Contractor.
- The sub-contractor shall deliver to the Contractor a performance guarantee of an insurance company
 or a bank to be jointly and severally bound with the sub-contractor for an amount equal to the same
 guarantee conditions as applicable to the Contractor
- Submit payments certificates to the Contractor at a frequency of once a month with payment made by the Contractor within seven days after the Employer paid the Contractor.
- The Contractor and its sub-contractor shall enter into a SAFCEC (or similar) sub-contract agreement.

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Employer	Witness 1	Witness 2		Contractor		Witness 1	_	Witness 2	



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

4 STANDARD SPECIFICATIONS

The Standard specifications on which this contract is based are the standardized specifications for Civil Engineering Construction (SABS 1200) of the South African Bureau of Standard (SABS).

The following SABS 1200 Standard Specifications for Civil Engineering Construction shall form part of this contract and are available at the expense of the Contractor from the SA Bureau of Standards, Private Bag X191 Pretoria, 0001:

- A General
- C Site Clearance
- DB Earthworks (Pipe trenches)
- LB Bedding (Pipes)
- L Medium-pressure pipe lines
- MJ Segmented Paving
- MK Kerbing

4.2 Variations and Additional Clauses to the Standard and Particular Specifications

The following variations and additions to the Standard and Particular Specifications will be applicable to this Contract.

The various documents listed in Section 4.1 shall be treated as mutually explanatory. However, should any requirements of Section 4.1 conflict with any requirement in the Standardized Specifications or with any requirement of the Particular Specifications, then the requirements of Section 4.2 shall prevail.

The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work, and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Engineer to order suspension of the Works without additional remuneration in terms of Clause 5.11 of the Conditions of Contract (2010), or for him to recommend termination to the Employer in terms of Clause 9.2 thereof.

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Employer	Witness 1	-	Witness 2		Contractor		Witness 1	•	Witness 2



PORTIO	N 2:	VARIATIONS AND	ADDITIONAL	CLAUSES
PSA	GENERA	L		

PSA1 QUALITY (Clause 3.1)

All material used in the Works shall, where such mark has been awarded for a specific type of material, bear the SABS mark. Alternatively, the Contractor shall furnish the Engineer with certificates of compliance of materials, which bear the official mark of the appropriate standard.

PSA2 PLANT (Clause 4.3)

Except where the use of plant is essential in order to meet the specified requirements by the Due Completion Date, the Contractor shall use only hand tools and equipment in the construction of those portion(s) of the Works that are required in terms of the Scope of Works to be constructed using labour intensive construction methods.

PSA3 TESTING (Clause 7)

- PSA3.1 All test results obtained by the Contractor in the course of his process control of the Works shall be submitted to the Engineer or his Representative prior to requesting inspection of the relevant portions of the Works. Any request for inspection shall be submitted on the prescribed forms that are appended as annexures to the Scope of Works.
- PSA3.2 The Contractor shall make suitable arrangements for process control prior to commencement with the Works. Should he intend using site personnel for this purpose he shall ensure that suitably trained and competent personnel take charge of the necessary test work, and that the necessary equipment is at their disposal prior to commencement of the Works. Failure to comply with these requirements shall be just cause for the Engineer to order suspension of the Works without additional remuneration, or for him to recommend termination to the Employer in terms of the General Conditions of Contract
- PSA3.3 The Contractor shall deliver to the Engineer, for his consideration, quality assurance programmes (as obtained from all the Contractor's proposed suppliers of pipes, valves and specials) prior to the Contractor's appointment of any suppliers.

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Employor	Witness 1	Witness 2		Contractor		Witness 1		Witness 2	



PSA4 PAYMENT (Clause 8.2)

Monthly Progress Payment Certificates shall be submitted to the Engineer's Representative on Site not later than the 20th of each month (or as agreed between the Contractor and the Engineer).

All quantity calculations and certificates submitted by the Contractor for checking shall be in accordance with the standard forms that are appended as annexures to the Scope of Works.

PSA5 ADJUSTMENT OF PRELIMINARY AND GENERAL ITEMS DUE TO RAIN

Should the period for completion be automatically extended due to abnormal weather conditions occurring during execution of the Contract as provided for in the Conditions of Contract, no adjustment to the total for time-related preliminary and general items will be applicable.

PSA6 ADJUSTMENT OF PRELIMINARY AND GENERAL TIME-RELATED ITEMS

An approved extension of time will qualify the Contractor to receive additional payment for each relevant time related item at a unit rate based on the sum originally tendered for such item, and which shall be fair and reasonable as contemplated in the General Conditions of Contract.

PSA7 HEALTH AND SAFETY

The maintenance of safe work practice at all times and in all sections of the execution of the works is embedded in the day to day site activities of all the Contractor's management, staff and workforce on the contract.

However, the introduction of the Construction Regulations in 2003 requires from the Employer to ensure that the Contractor has made adequate provision for the execution of the works within the specifications of said regulations. The following items have been identified as critical towards ensuring the minimum standards of safe work practice:

It must be noted that the lists below are not exhaustive and that many items have been traditionally priced by the Contractor as an integral part of his Preliminary and General items or as part of the overhead costs of other items. The tender document, although not detailed with regards the Construction Regulations, requires that the Contractor ensures adherence to the Occupational Health and Safety Act (Act 85 of 1993) the Construction Regulations, 2003.

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RUSTENBURG LOCAL MUNICIPALITY BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK

	AND RETICULATION WATER P	IPELINE IN MER	RITING 4 AND 5
Add the	following new Clause (Clause 8.3.5):	Uni	t
Complia	nce with the Occupational Health and Safety Act		
(Act 85 c	of 1993) and its regulations and with the Employer's		
Health a	nd Safety Specification.	Su	m
The fixed	d charge item shall include but shall not be limited to th	e following:	
•	Preparation of Health and Safety Plan,		
•	Establishment of Health and Safety File,		
•	Health and Safety Training		
•	Personal Protective Clothing and Equipment		
•	Fences, Signs and Barricades		
•	Establishment of Safety Administration		
•	Other Health and Safety Fixed-charge Obligations		
PSA7.2	Time-related Items		
Add the	following new Clause (Clause 8.4.6):	U	nit
Complia	nce with the Occupational Health and Safety Act.	Sı	ım
(Act 85 c	of 1993) and its regulations and with the Employer's		
Health a	nd Safety Specification.		
The time	related item shall include but shall not be limited to the	e following:	
• supervis	The employment cost of all health and safety personr ors and issuers required in terms of the Contractor's H		health and safety officers, inspectors,
•	Updating the Health and Safety Plan as needed,		
•	Carrying out of periodic own audits and follow-up aud	lits,	
•	Compiling ongoing risk assessments and risk assess	ment reports as required	by the Works,
•	Convening of regular safety meetings with the Safety	Representatives,	
•	Accompanying and supporting the Employer or his Sa	afety Agent during ad ho	c audits,
	CONTRACT 3: Scope of Works	149	C1.2 Contact Data



APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

- Compilation of monthly safety reports and statistics for the Employer or his Safety Agent,
- Implementation and maintenance of Training
- Maintenance of personal protective clothing and equipment
- Maintenance of fences, signs and barricades
- Implementation and maintenance of safety administration
- Other Health and Safety Time-related Obligations

PSA8 ENVIRONMENTAL MANAGEMENT PLAN

The Contractor shall comply with all the conditions of the Record of Decision and the Environmental Management Plan bound into Annexure B (Section C4.5.3).

PSA8.1 Fixed-Charge Items

Add the following Clause (Clause 8.3.6):

Compliance with Environmental Management Plan and Record of Decision

Sum

The sum tendered shall cover all costs, overheads, profits and charges incurred in complying with all the conditions of the Environmental Management Plan and Record of Decision bound into Section C3.5.3.

PSA8.2 Time-related Items

Add the following Clause (Clause 8.4.7):

Compliance with Environmental Management Plan and Record of Decision

Sum

The sum tendered shall cover all costs, overheads, profits and charges incurred in complying with all the conditions of the Environmental Management Plan and Record of Decision bound into Section C3.5.3.

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PSA8.4.8 Management of Local Subcontractors

The sum shall cover the costs of on-site supervision and such local administration as the Contractor considers necessary for the proper completion of the Works, and shall cover the cost of the salaries, wages and allowances paid to the contractors employees, which include but not limited to skilled and unskilled general workers, and other supervisory staff, and the transport incurred thereof. This sum shall also include all overheads, charges and profit.

PSA9 SUMS STATED PROVISIONALLY (Clause 8.5)

PSA9.1 Contingencies

A Provisional Sum shall be included in the Summary of Schedules for contingencies. No percentage mark up will be applicable to any payments made using contingency money other than the mark up included in prices for variations determined in terms of the Conditions of Contract.

PSA9.2 Contract Price Adjustment

A Provisional Sum shall be included for Contract Price Adjustment in the Summary of Schedules to make provision for contract price adjustment in terms of the Conditions of Contract. The value of the Provisional Sum shall be based on the percentage of the subtotal value as specified in the Summary of Schedules. No percentage mark up will be applicable to any payments made in this regard.

PSA9.3 Salary for Labour Desk Officer and Community Liaison Officer

A Provisional Sum has been included in Schedule 2 for a salary to be paid to the Labour Desk Officer and Community Liaison Officer.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the amount to be paid. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.4 Artisans and Skills Training

A Provisional Sum has been included in Schedule 2 for payments to be made to specialists for the training of unskilled or semiskilled persons in industry accredited management and generic skills. Payment to the Contractor will be based on invoices certified by the Engineer and issued by training specialists to the Contractor for work undertaken in terms of this item.

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In addition to the above amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.5 Telephone Calls and Rental

A Provisional Sum has been included in Schedule 2 for telephone calls and facsimile transmissions for the Engineer's Representative. The Engineer's representative will provide his own telephone for the contract. Payment will be based on call and rental costs, but excluding any deposits and installation costs which shall be priced under the preliminary and general items.

In addition to the above amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.6 Acceptance Control Testing

A Provisional Sum has been included in Schedule 2 for acceptance control testing ordered by the Engineer to be undertaken by a commercial laboratory. Payment will be based on the actual invoicing by the laboratory to the Contractor.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.7 Office Consumables for Engineer's Site Facility

A Provisional Sum has been included in Schedule 2 for the appointment and payment of office consumables for Engineer's site facility.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the amount to be paid. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.8 Electronic eq	uipment for Engine	eer's office			
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A Provisional Sum has been included in Schedule 2 for the appointment and payment of a specialist sub-contractor for electronic equipment for Engineer's site office.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the amount to be paid. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.9 Relocation of Existing Services

A Provisional Sum has been included in Schedule 2 for the relocation of existing services by specialists if and when required and ordered by the Engineer.

The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract

PSA9.10 Specialized Services

A Provisional Sum has been included in Schedule 2 for the appointment and payment for specialized services if and when required. These may include all work required by the following specialists:

- Landscaping and hydroseeding;
- CCTV;
- Geotechnical surveys and inspections;
- Land Surveyor; and
- Acceptance control testing of pipework, coatings and linings.
- Social Facilitation

In addition to the abovementioned amounts, provision is made in Schedule 2 for a mark-up on the amount to be paid. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract. The specialist shall be approved in writing by the Employers Agent.

PSA9.11 Allowance for Project Steering Committee

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A Provisional Sum has been included in Schedule 2 for allowance to be paid to the Project Steering Committee members for attending monthly meetings for the duration of the contract.

In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the amount to be paid. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in the Conditions of Contract.

PSA9.13 Handling of Sewage in Existing Sewers

A Provisional Sum has been included in Schedule 2 for accommodating sewage in existing sewers only when such sewers are temporarily taken out of service. This amount excludes payments for accommodating sewage when connecting the new network to existing sewers, which activity has been measured elsewhere.

PSA10 PRIME COST ITEMS (Clause 8.6)

PSA10.1 Materials for Dayworks

A Provisional Sum has been included in Schedule 2 for materials to be used during the execution of dayworks. In addition to the abovementioned amount, provision is made in Schedule 2 for a mark-up on the materials used during the execution of the dayworks by the Contractor. Payment made shall be regarded as full compensation for overheads, charges and profit on the materials that are used when executing dayworks.

PSAB ENGINEER'S OFFICE

PSAB1 NAME BOARDS (Clause 3.1)

Two name boards conforming to the standard requirements of the South African Association of Consulting Engineers and as shown on drawing 9765.01.A04 must be provided and erected at points to be designated by the Engineer during the duration of the Contract for this purpose.

PSAB2 OFFICE BUILDING (Clause 3.2)

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One office facility shall be provided and furnished for the Engineer's Representative and maintained for the duration of the contract. The office facility shall be furnished as per SABS 1200 AB, save as amended below:

The office shall consist of a room with a floor area of at least 20 m² and a ceiling height of at least 2,5 m.

one trestle table. 2 m long x 1 m wide x 0.9 m high, with a smooth top:

All offices and other facilities shall be weatherproof with wooden boarded floors that are at least 150 mm above the ground, shall be provided with ceilings, with a door with a secure lock, and each with two opening windows of glazed area at least 3 m². Each facility shall be well ventilated and shall be so insulated as to provide comfortable working conditions.

The internal finishings of the office shall include:

(a)

	\ /	, , , , , , , , , , , , , , , , , , , ,
	(b)	one desk having a top of size at least 1,5 m x 0,9 m and at least one lockable drawer;
	(c)	one high stool;
	(d)	four chairs;
	(e)	one white board mounted to the wall and a set of white board markers;
	(f)	a lockable upright steel cabinet with three shelves and a steel filing cabinet with four drawers;
	(g)	racks for hanging contract drawings;
	(h)	an acceptable blind on each window;
	(i)	a wash hand basin;
	(j)	one 15 amp plug point;
	(k)	suitable electrical lighting;
°C; and	(I)	an acceptable model air conditioner, capable of maintaining the room temperature between 16 °C and 22
	(m)	provision, as detailed in the Project Specifications, for a toilet for the exclusive use of the Engineer.

Upon completion of the Works, ownership of all buildings, furnishings and equipment specified herein shall revert to the Contractor who shall remove same from Site.

PSAB3 TELEPHONE (Clause 5.4)

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Employer	Witness 1		Witness 2		Contractor	Witness 1		Witness 2



One cellular telephone of an approved type, shall be provided for the exclusive use of the Engineer's Representative for the duration of the Contract.

The Contractor shall make all arrangements necessary for the provision of the cell phone, and shall pay all necessary deposits and installation costs that may be applicable. A prime cost item has been allowed in Schedule 2 to cover all call and rental costs that are associated with the provision of this facility for the Engineer's Representative.

PSAB4 TESTING

PSAB4.1 General

No laboratory building or fittings are required by the Engineer. The Engineer will arrange separately with a commercial laboratory of designate specialists to carry out all acceptance control testing, excepting for density control test and moisture content determinations. The Contractor shall remain responsible to carry out the process control testing required by the Standardised, Particular and Project Specifications.

PSAB4.2 Laboratory Equipment

The Contractor shall supply the following equipment for the duration of the Contract.

A Troxler nuclear system complete with accessories and stored in a suitable transit case as supplied by the manufacturer. A detailed description of each unit and principles of operation should be given in the manual for the nuclear instrument.

PSAB5 SURVEY ASSISTANTS (Clause 5.5)

One suitably educated Survey Assistant shall be made available for the sole use of the Engineer's Representative for the duration of the Contract. The assistant may also be required to fulfil the function of Community Liaison Officer during the Contract should the Engineer consider this arrangement to be in the interests of the Employer. The Survey Assistants may therefore have to be appointed from the local communities. Transport shall be supplied for the Survey Assistant/Community Liaison Officer by the Contractor for the duration of the Contract should he be requested to do so. In such event payment will be made at scheduled dayworks rates.

PSAB6 SURVEY EQUIPMENT

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Automatic surveyor's level complete with tripod and leather carry

(a)

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

The survey equipment listed below shall be made available and be maintained in good condition for the exclusive use of the Engineer or his Representative for the duration of the Contract. Payment will be made as provided for in the Time Related Items included in Schedule 1.

		case such as Zeiss N1-2 or equivalent 1 No
	(b)	20-second tachometer with optical plumbob complete with tripod and leather carry case such as Sokkisha TM20C or equivalent. 1 No.
	(c)	Nylon-coated steel surveyor's tape 100m long and 10mm wide 1 No.
	(d)	5m long steel tape 1 No.
	(e)	5m long three-piece telescopic survey staves (metric double-face) complete with angle bracket level 2 No
	(f)	Survey books: Level 3 No.
	(g)	2kg hammer with rubber handle 1 No.
	(h)	Steel pegs, 300mm long and 12mm dia 120 No.
	(i)	Aluminium tags, 100mm long, 15mm wide and 2mm thick 120 No.
	(j)	Reverse polar notation pocket calculator (Hp32SII or similar) 1 No
	(k)	Change point 2 No
	(I)	Measuring wheel 1 No
	(m)	Tripod holders for ranging rods (heavy duty) 2 No.
	ONTRA	CT 157 C1.2 e of Works Contact Data
Er	nployer	Witness 1 Witness 2 Contractor Witness 1 Witness 2



APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK

	(n) AN	D RETICULATION WATE Optical square (Sokkisha or Wild), col		IN MERITING 4 AND 5
		telescopic aluminium rod and bubble	1 No.	
	(o)	"Rabone" steel tape 10 meters long a	nd 13mm wide	1 No.
	(p)	Triangular change plate with chain	2 No.	
	(q)	100m long 50 kg strength fish line	1 No.	
	(r)	One metre long spirit level 1 No.		
	(s)	Three metre aluminium straight edge	1 No.	
PSAB7	CARPO	RTS		
floor sha		tractor shall provide and maintain two c of crushed aggregate to alleviate dusty		roof roofing for the duration of the Contract. The ons.
section o	of the Star	dard Specifications.		
GENERI Scope	C LABOL	IR-INTENSIVE SPECIFICATION		
This spe	cification e	establishes general requirements for ac	ctivities, which are to	be executed by hand involving the following:
a)		having a depth of less than 1.5 metres	3	
b) c)	removal	and reinstatement of fences		
0)	cicai and	z grub		
Precede	nce			
		cation is in conflict with any other standar of this Contract, the requirements of this		referred to in the Scope of Works to this Contract prevail.
THE C	cavateable CONTRAC 3: Scope		158	C1.2 Contact Data

Employer



Hand excavateable material is material:

a)	granular materials:								
i) or	whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dens, or dense;								
ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;									
b)	cohesive materials:								
i) or	whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff;								
ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;									
Note									
1) A bou	lder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.								
	A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a ght of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of one angle of 60° with respect to the horizontal) into the material being used.								
Table 10	7. 1: Consistency of materials when profiled								
GRANULAR MATERIALS COHESIVE MATERIALS									
CONSIS	TENCY DESCRIPTION CONSISTENCY DESCRIPTION								
Very loos	se Crumbles very easily when scraped with a geological pick								
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	molecular Witness 1 Witness 2 Contractor Witness 1 Witness 2								



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Very soft Geological pick head can easily be pushed in as far as the shaft of the handle

Loose Small resistance to penetration by sharp end of a geological pick

Soft Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40mm; can be moulded by fingers with some pressure

Medium dense Considerable resistance to penetration by sharp end of a geological pick

Firm Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade

Dense Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation

Stiff Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers

Very dense High resistance to repeated blows of a geological pick

Very stiff Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point

Trench excavation

All hand excavateable material in trenches having a depth of less than 1.0 m shall be excavated by hand. The contractor however has the option of using machine excavation in line with his program of works

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers.

- a) to 93% Proctor density.
- b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
- c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand. The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5
Clearing and grubbing
Grass and small bushes shall be cleared by hand.
Shaping
All shaping shall be undertaken by hand.
Loading
All loading shall be done by hand, regardless of the method of haulage.
Haul
Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.
Offloading
All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilized for haulage.
Spreading
All material shall be spread by hand.
Compaction
Small areas may be compacted by hand provided that the specified compaction is achieved.
Grassing
All grassing shall be undertaking by sprigging, sodding, or seeding by hand.
Stone pitching and rubble concrete masonry
All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.
Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m. Grout shall be mixed and placed by hand.

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Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry unit and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that eight workers can conveniently and simultaneously acquire a proper hand hold on them."

C3.5 MANAGEMENT

C3.5.1 Management of the Works

C3.5.1.1 Applicable Specifications

Series SABS 1200 of the Standardized Specification for Civil Engineering Construction Series, including the variations and additions thereto included in section C3.4.2 of this document shall be applicable to this contract.

C3.5.1.3 Construction Programme

The Contractor shall supply within the period stated in the Contract Data a suitable and realistic construction programme that is based on the construction drawings issued by the Engineer, for consideration by the Engineer. This programme shall show the proposed scheduling and methods of execution of the Works, as well as the resources that will be allocated to each item or phase of the Works. Quantities proposed for execution during each month must be shown. In addition, the anticipated cash flow for the Contract, based upon these quantities, shall be shown following the prescribed format.

The Contractor will be expected to progress with the Works in accordance with the approved programme and shall not deviate from the order of execution shown in the programme without the prior approval of the Engineer or his Representative. Should such approval be given an adjusted programme shall be produced within seven (7) days and submitted to the Engineer for evaluation.

Progress in advance of the programme on certain portions or phases of the Works shall not be considered adequate reason for poor progress on another portion or phase.

C3.5.1.4 Drawings, Operation and Maintenance Manuals

All information in the possession of the Contractor that is required by the Engineer's Representative in order to complete the As-Built drawings and to prepare a completion report for the Employer must be submitted to the Engineer's Representative before a Certificate of Practical Completion will be issued for the Works. Similarly, the Contractor will be required to submit full details of all pipes, valves, meters and specials in a suitable loose bound format, including any special operational and

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maintenance procedures related thereto, for incorporation in the overall operation and maintenance manual for the Scheme prior to the issue of a Certificate of Completion for the Works.

Only figured dimensions on the Drawings may be used in the interpretation thereof, and the Drawings shall not be scaled unless the Contractor is so instructed by the Engineer in writing. The Engineer will upon written request provide any dimensions that may have been omitted from the drawings.

C3.5.1.5 Site Administration

An index to the Engineer's standard site administration forms as well as examples of some of the administration forms is appended as in Part C4.6. Acceptance control, record keeping, and payment certificates shall be done in accordance with the Engineer's standard system except if the Engineer approves that the Contractor's standard system may be used.

C3.5.1.6 Daily Site Diary

The daily site diary in accordance with the pro forma appended in Annexure A shall be kept up to date by the Contractor's Representative and will be signed on a daily basis by the Engineer's Representative.

C3.5.1.7 Information in Respect of Plant

Information relating to plant on Site shall be recorded in the daily site diary. In addition, the Contractor shall deliver to the Engineer, on a monthly basis, a detailed summary of construction plant kept on the Site, full particulars given for each day of the month. Distinction shall be made between plant in working order and plant out-of-order. Such inventory shall be submitted by the first day of the month following the month to be reported.

C3.5.1.8 Information in Respect of Employees

Information relating to labour and management on Site shall be recorded in the daily site diary in addition, the Contractor shall deliver to the Engineer, on a monthly basis, a detailed summary of supervisory staff, labour employed (own and local labour) by category, and sub-contractors (both local and imported) for each day of the month. Such return shall be submitted by the first day of the month following the month to be reported.

C3.5.1.9 Rainfall Records

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Rainfall records for the period of construction shall be taken on Site and recorded in the daily site diary. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Engineer or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Engineer's Representative. Access to the measuring gauge(s) shall at all times be under the Engineer's control.

C3.5.1.10 Site Instructions

Site instructions by the Engineer, addressed to the Contractor at his office on the Site, will be numbered consecutively and will be deemed to have been received by the Contractor's representative unless a break in the sequence of numbers is brought to the notice of the Engineer in writing immediately.

C3.5.1.11 Site Meetings

The Contractor and his authorised representative shall attend all meetings held on the Site with the Employer and the professional team at dates and times to be determined by the Engineer. Such meetings will be held to evaluate the progress of the Contract, and to discuss matters pertaining to the Contract which any of the parties represented may wish to raise. It is not the intention to discuss day-to-day technical matters at such meetings.

C3.5.1.12 Payment Certificates

Monthly Progress Payment Certificates shall be submitted to the Engineer's representative on Site not later than the 20th of each month (or as agreed between the Contractor and the Engineer).

All quality calculations and certificates submitted by the Contractor for checking shall be in accordance with the standard forms that are appended as annexure to the Scope of Works.

C3.5.1.13 Environmental Management Plan

The Contractor shall comply with all the conditions of the Record of Decision and the Environmental Management Plan appended in this document (if any).

C3.5.1.14 Community Liaison and Community Relations

In all dealings with communities through which the Works are to be executed, and in all dealings with workers employed from within such communities, the Contractor shall take due cognizance of the character, culture and circumstances of the specific

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community, and shall at all times use his best endeavours to avoid the development of disputes and rather to foster a spirit of co-operation and harmony towards the project.

The Contractor shall at all times, keep the Engineer fully informed regarding all matters affecting or negotiated between the Contractor and the community, and he shall attend all liaison meetings as may be arranged by the Engineer and/or the Employer. All matters concerning the community shall be discussed and where possible, resolved at such meetings.

Where any resolution during such negotiations or at such meetings shall be contrary to the terms and provisions of the Contract, the Contractor shall not give effect thereto without a prior written instruction from the Engineer. Where the Contractor is of the opinion that any instruction of the Engineer issued in terms of this clause will result in the incurring of additional costs which were not provided for in his tendered rates and prices and/or that a delay in the progress of the Works will result, he shall be entitled to submit a claim in terms of Clause 48 of the Contract Data, provided always that the period of twenty-eight (28) days referred to in Clause 48 shall be reduced to three (3) normal working days in respect of all claims submitted in terms of this clause.

C3.5.1.15 Workmanship and Quality Control

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

The cost of the Contractor's supervision and process control, including all testing carried out by the Contractor, will be deemed to be included in the rates tendered for the various items of work. The Contractor's attention is drawn to the provisions of the various Standardised Specifications regarding the minimum frequency of process control testing that is to be executed. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control of the quality of the Works at all times.

Upon completion and submission of each portion of the Works to the Engineer for examination, the Contractor shall furnish the Engineer with the results of relevant tests, measurements and levels, thereby indicating compliance with the Specifications. The Engineer will not examine or inspect any portion of work submitted for approval unless the request for inspection and approval is accompanied by relevant tests, measurements and levels indicating compliance.

C3.5.1.16 Features Requiring Special Attention

C3.5.1.16.1 Built-up Areas

The Contractor's attention is drawn to the fact that the Works will be constructed inside built-up areas. The Contractor shall exercise all necessary precautions and take all necessary steps to ensure the safety and convenience of the public. In addition, the Contractor shall provide access for traffic over and through the works, and for residents to their places of abode, all as described in the Scope of Work. Allowance must be made by the Contractor in his programming for delays resulting from the aforesaid.

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The Contractor shall give residents a minimum of 72 hours written notice of his intent to close access to residential stands. The Contractor shall acquire written confirmation from all owners that they are aware of any intended closures of access. No traffic access to a residential stand shall be closed for longer than 48 hours.

C3.5.1.16.3 Care of the Site

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

C3.5.1.16.4 Control of Water

The Contractor shall at all times and in all respects be responsible for the handling of storm water from higher-laying areas above the Works, and for the handling of any sub-surface water that may affect the Works.

C3.5.1.16.5 Survey and Setting Out

The Engineer has established survey beacons on site from which the Contractor can set out the Works. The position and coordinates of the permanent survey beacons have been shown on the drawings. The Contractor shall be responsible for the protection of all these survey beacons and reference points from handing over of the beacons to the Contractor to completion of the Works. Property beacons and trigonometrically survey beacons that are disturbed or destroyed during the course of the contract shall be replaced at the Contractor's cost by a registered land surveyor who shall verify such replacement The Contractor's attention is drawn to the requirements of SABS 1200 A (General), Clause 5.1, in this respect.

The Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works from the beacons established above and for the provision of all necessary instruments, appliances and labour in connection therewith. Such setting out shall be executed by a registered surveyor. No separate payment shall be made in respect of setting out, such work being deemed as included in the rates tendered for construction of the Works.

The checking of any setting-out or of any line or level by the Engineer shall not relieve the Contractor of his responsibility for the correctness thereof.

If at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Engineer, shall at his own expense rectify such error to the satisfaction of the Engineer, but if such error is based on incorrect data supplied in writing by the Engineer shall, in respect of cost of such rectification, be entitled to make a claim in accordance with Clause 48 of the Contract Data.

C3.5.1.17 Notices, Signs, Barricades and Advertisements

Notices, signs and barricades (required in terms of Clause 34 of the Conditions of Contract) as well as advertisements may only be erected where approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

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Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2	



The Engineer shall have the right to have any sign, notice or advertisement moved to another location, or to have it removed from the Site of the Works, should it in any way prove to be unsatisfactory, inconvenient or dangerous to the general public.

C3.5.1.18 Unauthorized persons

The Contractor shall keep unauthorized persons from the works at all times under no circumstances may any person except guards be allowed to sleep on the building site.

C4.3 Site Administration Forms

All site administration documents will be handed over at the site handover meeting.

C4.4 Environmental Specification

Attached to this document

C4.5 Geotechnical Report

Attached to this document

C4.6 Drawings

Attached to this Document

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CONTRACT PART C4: SITE INFORMATION

C4.1: Location of the Works C4.2: OHS Specifications

C4.3: Site Administration Forms C4.4: Environmental Specifications

C4.5: Geotechnical Report C4.6: Tender Drawings

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C4.1 Location of the Works

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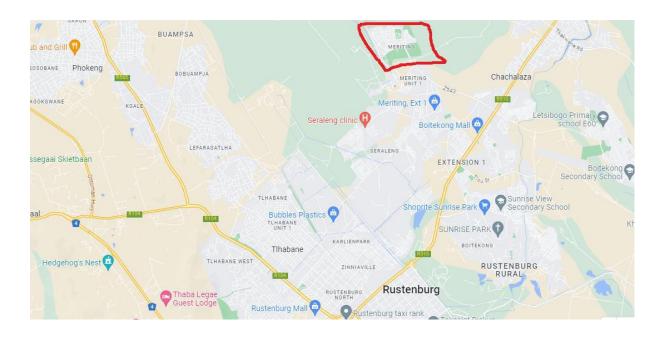


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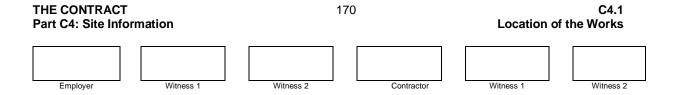
The project site is located in the Rustenburg Local Municipality, Meriting Township.

AREA	LATITUDE	LONGITUDE	
MERITING 4 AND 5	25°35'7.24"S	27°14'55.48"E	

Figure 0-1 Location of Project Site









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C4.2: OHS SPECIFICATIONS

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RUSTENBURG LOCAL MUNICIPALITY

OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

PROJECT NUMBER:	
-----------------	--

DESIGNATION	NAME AND SURNAME	CONTACT DETAILS
Project Coordinator	L MOKOKA RLM	Imokoka@rustenburg.gov.za 014 590 3390
Designing Engineers	Hlayeleni Consulting Engineers Stanley Nxumalo	info@hlayeleni.co.za 015 297 7434
Principal Contractor		
Construction Health and Safety Agent	Basumi Engineering & SHEG Solutions Frank Matlala	071 765 2401 basumisafety@gmail.com

Site address	Meriting 4 and 5, Rustenburg
Project commencement date	
Anticipated completion date	
Time frame for compiling Safety File	7 Days
Project value	

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In this document the following expressions shall bear the meanings assigned to them below:

- **1.1 Client** means any person for whom construction work is being performed and/or undertaken [i.e. Rustenburg Local Municipality (RLM) for purposes of this specification];
- **1.2 Construction Regulations** means the Occupational Health and Safety Act's, No. 85 of 1993, new Construction Regulations that came into effect on 01 March 2014;
- **1.3 Occupational health and safety plan** means a sufficiently documented plan to the standards of the Client, which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;
- **1.4 Occupational health and safety specification** means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working, visiting, passing, staying and/or working close to the construction site and/or other applicable areas such as site camp;
- 1.5 OHS Act means the Occupational Health and Safety Act, No. 85 of 1993, as amended; and
- **1.6 Principal Contractor** means an employer, as defined by Section 1 of the OHS Act who performs construction work and is appointed by the Client to be in overall control and management of the construction site and works.

2. Introduction

In terms of Construction Regulation 5(1)(b) of the OHS Act, the Client is required to compile an occupational health and safety specification for any intended project and provide such specification to prospective tenderers/bidders.

This specification has as objective to ensure that the principal contractor entering into a contract with the Client achieves and maintain an acceptable level of occupational health and safety performance and compliance. This document forms an integral part of the contract between the Client and the principal contractor and the principal- and other contractors should make it part of any contract/s that they may have with other contractors and/or suppliers as far as this project is concerned.

Compliance with this document does not absolve the principal contractor from complying with any other minimum legal requirements and the principal contractor remains responsible for

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the health and safety of his employees, those of his mandataries as well as any persons coming on site or on adjacent properties as far as it relates to the construction activities.

3. Scope

To develop a project specific occupational health and safety specification that addresses the reasonable and foreseeable risks, exposures and aspects of occupational health and safety as affected by THE REPLACEMENT OF A BULK AND **RETICULATION WATER PIPELINE IN MERITING 4 AND 5.** The specification will provide the requirements that the principal contractor and other contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work and that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

Any contractor interested in submitting a bid in response to the Client's formal tender for any construction project, has to prepare and include a draft occupational health and safety plan based on this specification and the OHS Act in its tender submission. The Client will evaluate this plan as part of its formal tender adjudication processes to ensure compliance with Construction Regulation 5 that stipulates that the Client may only appoint a contractor who has the necessary competencies and resources to carry of the work appointed for safely.

3.1 Scope of Works

The Meriting township (within Rustenburg Local Municipality) has an water reticulation system that is failing. The municipality intends to construct a new class 16 upvc pipeline to replace the existing one..

The work will comprise of the following:

- Medium Pressure Pipes (450mmø HDPE Pipes) Rand Water Bulk line
- Medium Pressure Pipes (160mmø, 110mmø, 90mmø, 75mmø uPVC pipes and 32mmø HDPE pipes) Reticulation
- Partial re-construction of segments of the road where it will be damaged during trenching.
- Installation of water meters.
- Installation of al pipe fittings (Valves and bends).
- · Construction of valve chambers.

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• Minimum depth of cover to main pipelines is 1000 mm, Road/Railway crossings is 1 200 mm. Additional protection to pipes under roads, pipe sleeves.

4. General occupational health and safety provisions

4.1 Hazard identification and risk assessment (Construction Regulation 9)

4.1.1 Potential risks and hazards

- Heavy plant and machinery
- Manholes
- Reticulation pipes
- Sand and dump rock heaps
- Alcohol and drugs
- Excavations and trenches
- Dust
- Theft of material
- Infections /HIV AIDS/Corona Virus (COVID-19 SARS2 VIRUS)
- Infections from sewer
- Trips and falls
- · Manual work and lifting
- Fire, heat and open flames
- Use of jackhammer
- Noise and vibrations
- Portable electrical tools
- Hand tools (spades, hummers, screwdrivers, and saws etc.)
- Material hoist / cranes
- Confined spaces
- Use and storage of flammable liquids / hazardous chemical substances.
- Poor Housekeeping
- Stacking and storage practices
- Electrical machinery
- Cement
- Grinding and cutting
- Welfare facilities on sites
- Explosives
- Spoils and fumes
- · Pipes and pipe jacking
- · Violence/ social upheavals
- Traffic movement

NB: It is shall be pointed out to the Principal Contractor that the list may not be totally comprehensive and it is the duty of each Principal Contractor to continually ensure that all the hazards are identified, before and during the project, and the necessary activity-

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based risk assessments are carried out. These risk assessments shall form part of the Safety Plan which will be passed on for scrutiny and approval by The Client Safety Agent.

4.1.2 Development of risk assessments

Every principal contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 7(1)(a).

The risk assessments shall include, at least:

- The identification of the current as well as emerging risks and hazards to which persons may be exposed to;
- The analysis and evaluation of the risks and hazards identified.
- A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified. The method statements / safe work procedures must be signed by the engineer. No work procedure will be allowed without approval by the engineer.
- A plan to monitor the application of the SWPs; and
- A plan to review the risk assessments as the work progresses and changes are introduced, or incidents occurred which requires the re-evaluation of the processes/risk mitigation.

Based on the risk assessments, the principal contractor must develop a set of site-specific occupational health and safety rules that will be applied to regulate the occupational health and safety aspects of the construction.

The risk assessments, together with the site-specific occupational health and safety rules, must be submitted to the Client before mobilisation on site commences.

The principal contractor is required to conduct a baseline risk assessment and the aforesaid risk assessments must be incorporated into the baseline risk assessment. The baseline risk assessment must further include the SWPs and the applicable method statements based on the risk assessments.

Hazard identification and risk assessments must be undertaken whilst SWPs must be developed for all out-of-scope work.

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4.1.3 Review of risk assessments

The principal contractor is to review the hazards identified, the risk assessments and the SWPs at each production planning and progress report meeting as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes.

It is also proposed that should an incident occur the SWPs and all other applicable processes be re-evaluated to ensure that the mitigation measures are still applicable and appropriate and if not a revision of the risk assessments be undertaken.

The principal contractor must provide the Client, other contractors and all other concerned or affected parties with copies of any changes, alterations or amendments as soon as possible but within 14 calendar days of such changes.

4.2 Legal Requirements

All Contractors entering into a contract with the Client shall, as a minimum, comply with the

- OHS Act and a current, up-to-date copy of the OHS Act and its Regulations
 - o Construction Regulations of 2014 (CR 2014)
 - Hazardous Biological Agents Regulations 2001 COVID 19 (HBA 2001 COVID 19) as amended, must be available on site at all times; and
- Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993 (COID Act) as amended. The principal contractor shall be required to submit a letter of registration and "good-standing" from the Compensation Commissioner or compensation insurer before being awarded the contract. A current, up-to-date copy of the COID Act must be available on site at all times.
- National Environmental Management Act 1998 (Act 107 of 1998).
- National Road Traffic Act (93 of 1996)
- Hazardous Substances Act 15 of 1973
- National Water Act 1998 (Act 36 of 1998).

4.3 Structure and responsibilities

4.3.1 Overall supervision and responsibility for occupational health and safety

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- a. The principal contractor [appointed in terms of Construction Regulation 5(1)(k)] is responsible to implement and maintain the occupational health and safety plan approved by the Client.
- b. The Chief Executive Officer (in terms of Section 16(1) of the OHS Act) of the principal contractor is to ensure that the Employer (as defined in the OHS Act) complies with the OHS Act.
- c. The principal contractor's Chief Executive Officer may appoint any person reporting to him/her as Designated Person in terms of Section 16(2) of the OHS Act. Such Designated Person is responsible to assist the Chief Executive Officer to ensure that the Employer complies with the requirements of the OHS Act.
- d. The construction manager, assistant construction manager, construction supervisor and assistant construction supervisor(s) appointed in terms of Construction Regulation 8 are responsible for supervising the construction work and in specific to ensure that all work undertaken comply with the requirements of the OHS Act, its Regulations and the Client's specifications.

4.3.2 Operational responsibilities for occupational health and safety

The principal contractor shall appoint designated competent employees and/or other competent persons as outlined in the following list to assist with the operational responsibilities for occupational health and safety. This list is only the minimum requirement and is therefore in no way exhaustive.

Appointment description	Appointment required in terms of
Company CEO	OHS 16.1
Person to assist CEO	OHS 16.2
Construction manager	Construction Regulation 8(1)
Construction assistant supervisor	Construction Regulation 8(2)
Occupational health and safety officer	Construction Regulation 8(5)
Construction supervisor	Construction Regulation 8(7)
Construction vehicle, mobile plant and machinery supervisor	Construction Regulation 23
Drivers of construction vehicles and operators of plant	Construction Regulation 23
Emergency, security and fire coordinator	Construction Regulation 29

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Excavation supervisor	Construction Regulation 13
First-aiders	General Safety Regulation 3
Fire-fighting equipment inspector	Construction Regulation 29
Hazardous chemical substances supervisor	Hazardous Chemicals Substances Regulations 10
Incident investigator	General Administrative Regulation 9
Lifting machines and equipment inspector	Construction Regulation 22
Occupational health and safety committee	OHS ACT Section 19
Occupational health and safety representatives	OHS ACT Section 17
Person responsible for machinery	Driven Machinery Regulation 18
Risk assessor	Construction Regulation 9(1)
Stacking and storage supervisor	Construction Regulation 28
Traffic management supervisor	OHS ACT Section 9(1)
Traffic safety officer	OHS ACT Section 9(1)

These appointments must be in writing by 61.2 and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with the appointees.

Copies of appointments must be submitted to the Client together with concise CVs of the appointees as part of the principal contractor's health and safety plan and if appointed copies of the appointments included in the occupational health and safety file. Proof of competency must be submitted and included in the safety file. All appointments must be approved by the Client and any changes of appointees or appointments must be communicated to the Client and agreed upon before being implemented.

The principal contractor must, furthermore, provide the Client with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

4.3.3 Designation of occupational health and safety representatives (Section 17 of the OHS Act)

Where the principal contractor employs more than 20 persons [including the employees of other contractors (sub-contractors) and its supervisors] he has to appoint one occupational health and safety representative for every 50 employees or part thereof. General Administrative Regulation 6 requires that the election,



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appointment and subsequent designation of the occupational health and safety representatives be executed in consultation with employee representatives or employees. (Section 17 of the OHS Act as well as General Administrative Regulation 6 and 7 refer).

Occupational health and safety representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

4.3.4 Duties and functions of the occupational health and safety representatives (Section 18 of the OHS Act)

- a. The principal contractor must ensure that the designated occupational health and safety representatives conduct a weekly inspection of their respective areas of responsibility, using a checklist, and report thereon to the principal contractor.
- b. Occupational health and safety representatives must be included in accident and/or incident investigations.
- c. Occupational health and safety representatives must attend all occupational health and safety committee meetings.

4.3.5 Appointment of occupational health and safety committee (Section 19 of the OHS Act)

The principal contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives together with a number of management representatives that are not allowed to exceed the number of occupational health and safety representatives on the committee and a representative of the Client who shall act as the chairperson without voting rights. The members of the occupational health and safety committee must be appointed in writing and copies of the appointments included in the occupational health and safety file.

The occupational health and safety committee must meet as a minimum on a monthly basis and consider, at least, the following agenda items:

- 1. Opening and welcome.
- 2. Members present, apologies and absent.
- 3. Minutes of previous meeting.
- 4. Matters arising from the previous meeting.
- 5. Occupational health and safety representatives' reports.

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- 6. Incident and/or accident reports and investigations.
- 7. Incident, accident and/or injury statistics.
- 8. Other matters.
- 9. Endorsement of registers and other statutory documents by a duly authorised representative of the principal contractor.
- 10. Close and next meeting.

4.4 Mandatories

It is a requirement that the principal contractor, when he appoints contractors or sub-contractors in terms of Construction Regulations 7(1(c) includes an OHS Act Section 37(2) agreement (i.e. Agreement with Mandatory) in his agreement with such contractor. A copy of such agreement shall be obtainable from the client and a signed document should be included in the SHE File.

4.5 Administrative controls and the occupational health and safety file

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4.5.1 The occupational health and safety file [Construction Regulation 7(1)(b)]

As required by Construction Regulation 7(1(b), the principal contractor and other contractors will each keep an occupational health and safety file on site containing the following documents as a minimum:

- 1. Copy of the construction work permit (for applicable projects) (Construction Regulation 3)
- 2. Emergency contact numbers (that have been verified).
- 3. Contractor appointment letter from the Client.
- 4. Health and Safety policies and other policies (including HIV policy, Substance abuse policy and transport policy)
- 5. Organogram
- 6. Notification of construction work (Construction Regulation 4).
- 7. Updated copies of the OHS Act and its Regulations as well as the COID Act (General Administrative Regulation 4, as well as the COVID-19 OHS Measures in Workplaces (C19 OHS) 2020.
- 8. Proof of registration and good standing with the Compensation Commissioner or a COID Insurer [Construction Regulation 5(1)(j)].
- 9. Occupational health and safety plan agreed with the Client including the underpinning risk assessment(s) and method statements [Construction regulation 7(1)] and COVID-19 measures. The Occupational Health and Safety Plan must address the issues stated in the Health and Safety Specification and must be project specific.
- 10. Fall Protection Plan.
- 11. Waste Management Plan.
- 12. A list of contractors (sub-contractors) including copies of the agreements between the parties, proof of good standing with the Compensation Commissioner or COID Insurer, and the type of work to be undertaken by each contractor (Construction Regulation 7).
- 13. Appointment and designation forms as per paragraphs 4.3.1 and 4.3.2 above.
- 14. Medical Fitness Certificates.
- 15. Proof of Competency and Copies of valid identity documents.
- 16. Occupational Health and Safety Workplace Environment, including provision for monitoring employee exposures to noise, dust, etc.
- 17. Rules and regulations including safety procedures the Principal Contractor has in place for recurring work activities.
- 18. Personal protective equipment rules and arrangements.

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- 19. Control of dangerous and hazardous substances (Material Safety Data Sheets).
- 20. System of hazard identification and risk control, such as Risk assessments, Daily Safe Task Instructions and communication.
- 21. Audits to ensure compliance with safety plans.
- 22. Accident and incident reporting, recording, investigation and analysis, which ensure that corrective action, are taken and this action is communicated to report initiators.
- 23. Medical and first aid arrangements.
- 24. Evacuation and emergency planning.
- 25. Record keeping, including details of what is kept and for how long.
- 26. Detailed financial allocation for Health and Safety.
- 27. Safety committee meeting arrangements and minutes.
- 28. Audit arrangements.
- 29. Maintenance arrangements of machinery and equipment.
- 30. Inspection of plant, tools and equipment prior to introduction to site and regularly thereafter.
- 31. Daily site safety inspections and audits. The auditing role may be shared with other duties or provided within the resources of individual groups. The role may be rotated.
- 32. The following registers:
 - Accident and/or incident register (Annexure 1 of the General Administrative Regulations);
 - Occupational health and safety representatives' inspection register;
 - Construction vehicles and mobile plant inspections by controller;
 - COVID-19 checklists;
 - Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
 - Inspection of electrical installations (including inspection of portable electrical tools, electrical equipment and other electrical appliances);
 - First-aid box content;
 - Record of first-aid treatment;
 - Fire equipment inspections and maintenance;
 - Record of hazardous chemical substances kept and used on site;
 - Ladder inspections;
 - Machine safety inspections (including machine guards, lock-outs etcetera);
 - Inspection registers and logbooks for lifting machines and –tackle (including daily inspections by drivers/operators);
 - Inspections of stacking and storage;

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- Pressure equipment inspections; and
- Workers welfare facilities.
- All other applicable records.

The Client (RLM) will conduct an evaluation of the principal contractor's occupational health and safety file from time to time.

4.6 Notification of construction work (Construction Regulation 4)

The principal contractor must, where the contract meets the requirements laid down in Construction Regulation 4, at least 7 days before construction work is to be carried out, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure 2 in the Construction Regulations) for this purpose. A copy of the notification must be held on the occupational health and safety file and a copy must also be forwarded to the Client for record purposes.

4.7 Medical certificates of fitness (Construction Regulation 7)

As required by Construction Regulation 7(1(g), the principal contractor must ensure that all employees have a valid medical certificate of fitness specific to the construction work to be performed. These certificates must be issued by an occupational health practitioner in the form of Annexure 3 (i.e. Annexure 3 in the Construction Regulations).

4.8 Training, awareness and competence

The contents and syllabi of all training required by the OHS Act and Regulations must be included in the principal contractor's occupational health and safety plan.

4.8.1 General induction training

- All members of the contractor's site management as well as all the persons appointed as responsible for occupational health and safety
- in terms of the Construction and other Regulations will be required to attend a general induction session.
- All employees of the principal and other contractors must be in possession of proof of general induction training.

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 All subsequent and newly appointed employees must also be subjected to the induction training as soon as possible after the appointment but prior to starting working on site.

4.8.2 Site-specific induction training

- The principal contractor will be required to develop a contract work project specific induction training course based on the risk assessments for the contract work and train all employees and other contractors and their employees in this.
- All employees of the principal and other contractors must be in possession of proof that they have attended a site-specific occupational health and safety induction training at all times.

4.8.3 Other training

- 1. All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training and where applicable licenses or proof of competency.
- 2. All employees in jobs requiring training in terms of the OHS Act and Regulations must be in possession of valid proof of training.
- 3. Occupational health and safety training requirements [as required by the Construction Regulations and as indicated by the occupational health and safety specification and the risk assessment(s)] i.e.
 - a. General induction (Section 8 of the OHS Act);
 - Site and job specific induction, including visitors (Sections 8 and 9 of the OHS Act);
 - c. Site and project manager;
 - d. Construction supervisor;
 - e. Occupational health and safety representatives [Section 18 (3) of the OHS Act];
 - f. Training of the appointees indicated in paragraphs **4.3.1** and **4.3.2**;
 - g. Operators and drivers of construction vehicles and mobile plant (Construction Regulation 23);

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- h. Basic fire prevention and protection (Environmental Regulations 9 and Construction Regulation 29);
- Basic first-aid (General Safety Regulations 3);
- j. Storekeeping methods and safe stacking (Construction Regulation 28); and
- k. Emergency, security and fire coordinator.

4.8.4 Awareness and promotion

The principal contractor is required to have a promotion and awareness program in place to create an occupational health and safety culture within employees as well as sub-contractors. The following are some of the methods that may be used:

- Toolbox talks
- Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as employee "occupational health and safety circles".

4.8.5 Notices and signs

The following notices and signs are, where applicable, compulsory on the construction site as well as the contractors' yards:

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Area and/or activity where notice or sign is required	Notice or sign required in terms of
Display of notices and signs	General Safety Regulation 2B and SABS Code 1186
Entry	General Safety Regulation 2C(2)
First-aid	General Safety Regulation 3(6)
Toilets and change rooms	Facilities Regulation 2 (5) 4(2)(f)
Storage of flammable materials	General Safety Regulation 4(8)(a)(i) and (ii) [10(e) only applicable to contractor's yards]
Workplace controls for COVID 19	Disaster Management Act 2002 Sec 657
COVID 19 Guidelines	Hazardous Biological Agents Regulations 2001 COVID 19 (HBA 2001 COVID 19) as amended
Machinery	General Machinery Regulation 9 (Schedule D)
Prohibition on smoking and eating or drinking at the workplaces where high risk substances [FR5 (1)] are stored or handled	Facilities Regulation 6(b)
Non-potable water	Facilities Regulation 7(B)

4.8.6 Competence

The principal contractor shall ensure that his and other contractors' employees appointed are competent and that all training required to undertake the work safely and without risk to health of their or other persons, has been successfully completed before work commences.

The principal contractor shall ensure that follow-up and refresher training is conducted on a regular basis as well as the contract work progresses, and the work situation or requirements changes.

Records of all training must be kept on the occupational health and safety file for auditing purposes.

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4.9 Consultation, communication and liaison

The following arrangements will apply-

- Occupational health and safety liaison between the Client, the principal contractor, the other contractors, the designer and other concerned parties will be through the occupational health and safety committee. In the absence of a health and safety committee, the Client and principal contractor will agree on an alternative communication forum to be implemented.
- 2. In addition to the above, communication may be directly to the Client or his appointed Agent, verbally (followed up in writing within 14 calendar days) or in writing, as and when the need arises.
- 3. Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.
- 4. The principal contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other contractors, for example design changes agreed with the Client and the designer, instructions by the Client and/or his Agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etcetera.
- 5. The principal contractor will be required to do site safety walks with the Client and/or his Agent on a basis to be determined and agreed between the parties.
- 6. The principle and other contractors will be required to conduct toolbox talks with their employees on at least a weekly basis and records of these including the topics discussed must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file.
- 7. The principal contractor's most senior manager on site will be required to attend all the Client's occupational health and safety meetings.
- 8. The Client or his Agent and the principal contractor will agree on the dates, times and venues of the occupational health and safety meetings.

4.10 Checking, reporting and corrective actions

4.10.1 Monthly compliance assessment by Client [Construction Regulation 5(1)(0)]

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The Client will be conducting a periodic assessment to comply with Construction Regulation 5(1)(o) and to confirm that the principal contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

4.10.2 Other assessments and inspections by the Client

The Client reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include among others site safety walks.

4.10.3 Conducting an assessment

A representative of the principal contractor must accompany the Client on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection.

4.10.4 Contractor's assessments and inspections

The principal contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other contractors under his/her control.

4.10.5 Inspections by occupational health and safety representatives and other appointees

Occupational health and safety representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments for example vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

4.10.6 Recording and review of inspection results

All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

4.10.7 Reporting of inspection results

The principal contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 3: "Safety, Health and Environment Risk Management Report".

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4.11 Incident reporting and investigation

4.11.1 Reporting of accidents and incidents (Section 24 and General Administrative Regulation 8 of the OHS Act)

The principal contractor must 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 Client within two calendar days and to the Provincial Director of the Department of Labour within seven calendar days from date of incident (Section 24 of the OHS ACT and General Administrative Regulation 8), except that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Client and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

The principal contractor is required to provide the Client with copies of all statutory reports required in terms of the OHS Act within seven calendar days of the incident occurring.

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The principal contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports, including the reports contemplated in 4.11.2 (3) and (4) above, within seven calendar days of the incident occurring.

4.11.2 Accident and incident investigation (General Administrative Regulation 9)

- 1. The principal contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that he, she and/or they had to be referred for medical treatment by a doctor, hospital or clinic.
- 2. The results of the investigation to be entered into the accident and/or incident register.
- 3. The principal contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) and (c) of the OHS Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents/incidents in future.
- 4. The principal contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.
- 5. The Client reserves the right to hold its own investigation into an incident or call for an independent external investigation.

5. Operational control

5.1 Emergency preparedness, contingency planning and response

- **5.1.1** The Contractor must appoint a competent person to act as emergency controller and/or coordinator.
- **5.1.2** The principal contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place.

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5.1.3 The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

5.2 First aid (General Safety Regulation 3)

- **5.2.1** The principal contractor must provide first-aid equipment and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHS Act.
- **5.2.2** The contingency plan of the principal contractor must include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it.
- **5.2.3** The principal contractor must have firm arrangements with his contractors in place regarding the responsibility of these contractor's first-aid arrangements as well as treatment of injured and/or ill employees.

5.3 Security

- **5.3.1** The principal contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied.
- **5.3.2** The principal contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

5.4 Accommodation of traffic

- **5.4.1** Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs is of paramount importance to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/risks/vehicles.
- **5.4.2** The principal contractor shall ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn all road users of the presence of construction work as well as

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construction employees/vehicles. These signs shall be repeated and utilised, where appropriate, as actual construction work is approached.

5.4.3 The following signage is required as a minimum where construction work is undertaken in, next to or close to a public road:

- a. "Construction work ahead" sign at least 45 meters before the start of the construction work;
- b. "Lane narrows" sign 30 meters before the start of the construction work;
- c. "Keep right/left" sign 15 meters before the start of the construction work and again where the tapering begins; and
- d. Delineators and cones every 5 meters for the entire stretch of construction work.
- **5.4.4** Where construction work includes excavations in or next to a public road, warning lights or visible boundary indicators should be provided after dark or when visibility is poor.
- **5.4.5** The maintenance of all signage and especially those that is suitable after dark should be duly managed.
- **5.4.6** Where appropriate duly trained flag persons should be deployed a good distance ahead of areas where traffic is deviated or lanes closed off. These flag persons should be managed assertively to ensure that they add optimal value and should they not do so they should be retrained and if necessary replaced.
- **5.4.7** The community liaison officer (CLO) should also be sensitised on the optimal management of traffic and the risks involved and then be instructed to increase community awareness through talking to all stakeholders including the distribution of suitable information brochures.

5.5 Lifting equipment (Construction Regulation 22)

Lifting equipment must be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 18 of the OHS Act.

The Driven Machinery Regulation requires that:

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- a. Lifting equipment 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, the table of maximum loads should be used by the driver/operator;
- b. 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;
- c. Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted;
- d. Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the its maximum capacity;
- e. 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)
 - fibre ropes- 10 (ten)
- f. Every hook or load attaching device must be designed as such or fitted with a device that will prevent the load from slipping off or disconnecting;
- g. 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 months 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, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;
- h. All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and
- i. No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour.

5.6 Lifting tackle

The following requirements will apply to lifting tackle:

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- a. Manufactured of sound material, well-constructed and free from latent defects;
- b. Clearly and conspicuously marked with an identity number;
- c. Maximum mass load factor of safety:
 - Natural fibre ropes 10(ten)
 - Man-made fibre ropes and woven webbing 06(six)
 - Steel wire ropes single rope 06(six)
 - Steel wire ropes combination slings 08(eight)
 - Mild Steel chains 05(five)
 - High tensile/alloy steel chains 04(four)
- d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.

5.7 Construction vehicle and mobile plant operators

The following requirements will apply to construction vehicle and mobile plant operators:

- a. Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant.
- b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.
- c. Only employees duly authorised to do so may operate any construction vehicle and mobile plant.
- d. Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.

5.8 Construction vehicles and mobile plant (Construction Regulation 23)

Construction vehicles and mobile plant will initially during the competency evaluation process 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.

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Construction vehicles and mobile plant must be:

- a. Of acceptable design and construction;
- b. Maintained in good working order;
- c. Used in accordance with their design and intention for which they were designed;
- d. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;
- e. Provided with safe and suitable means of access;
- f. Fitted with adequate signaling devices to make movement safe including reversing;
- g. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into same:
- h. Provided with roll-over protection;
- Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency;
- j. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
- k. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

No loose tools, material etcetera is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights,

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reflectors or adequate barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.

In addition, construction vehicles and mobile plant 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.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

5.9 Use and storage of flammables (Construction Regulation 25)

The principal contractor must 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 is taken;
- Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient fire-fighting equipment installed and fire prevention methods practiced for example proper housekeeping;
- c. Only one day's quantity of flammable is to be kept in the workplace;
- d. Containers (including empty containers) to be kept closed to prevent fumes/vapors from escaping and accumulating in low lying areas; and

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e. Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.

5.10 Hazardous chemical substances

The principal contractor must ensure that:

- a. Employees receive the necessary information and training to be able to use, handle and store hazardous chemical substances safely;
- The risk assessments required in terms of Construction Regulation 9 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;
- c. Suppliers provide the necessary information in the form of material safety data sheets regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances;
- d. An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances;
- e. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the hazardous chemical substances on the list indicated above:
- f. No person eats or drinks in a hazardous chemical substances workplace; and
- g. Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.

5.11 Storage of flammable and hazardous chemicals (Hazardous Chemical Substances Regulations)

See paragraphs **5.9** and **5.10** above.

5.12 Fire prevention and protection

The principal contractor must ensure that:

a. The risk of fire is avoided;

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- b. Sufficient and suitable storage of flammables is provided;
- c. All employees are instructed in the use of the fire-fighting equipment and know how to attempt to extinguish a fire;
- d. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
- e. Employees are informed regarding emergency evacuation procedures and escape routes;
- f. Evacuation assembly points are demarcated and made known to employees;
- g. Evacuation is regularly practiced to ensure that all persons are evacuated timeously and;
- h. Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind; and
- i. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

5.13 Housekeeping (Construction Regulation 27)

The principal contractor must ensure that:

- a. Housekeeping is continuously implemented and maintained;
- b. Materials and equipment is properly stored;
- c. Scrap, waste and debris is removed off site regularly;
- d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
- e. Where practicable, construction sites are fenced off to prevent entry of unauthorised persons; and
- f. Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done.
- g. The construction side is to be curtained off as this is a residential complex.

5.14 Stacking and storage (Construction Regulation 28)

The principal contractor must ensure that:

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- a. A competent person is appointed in writing to supervise all stacking and storage on a construction site;
- b. Adequate storage areas are provided and demarcated;
- c. The storage areas are kept neat and under control;
- d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
- e. The items in the lower layers can support the weight exerted by the top layers;
- f. Cartons and other containers that may become unstable due to wet conditions are kept dry;
- g. Pallets and containers are in good condition and no material is allowed to spill out;
- h. The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour 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 or off the stack and no items may overhang);
- i. The articles that make up a single tier are consistently of the same size, shape and mass;
- j. Structures for supporting stacks are structurally sound and able to support the mass of the stack;
- k. No articles are removed from the bottom of the stack first but from the top tier first;
- I. Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her;
- m. Stacks that are in danger of collapsing are broken down and restacked;
- n. Stability of stacks are not threatened by vehicles or other moving plant and machinery;
- o. Stacks are built in a header and stretcher fashion and that corners are securely bonded; and
- p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

5.15 Eating, changing, washing and toilet facilities (Construction Regulation 30)

5.15.1 Toilets

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- a. The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 30.
- b. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees.

5.15.2 Showers

At least cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.

5.15.3 Change rooms

Some form of screened off changing facility must be provided separately for each sex/gender.

5.15.4 Eating facility

Some form of eating facility sheltered from the sun, wind and rain must be provided.

5.15.5 Living accommodation

Where the site is in a remote location and transport to home is not readily available, reasonable and suitable living accommodation must be provided after obtaining of the necessary permission from authorities and adhering to requirements such as Bylaws of the Johannesburg municipality.

5.16 Portable electrical tools and equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etcetera. In addition, electrical appliances such as fridges, hotplates, heaters, and etcetera must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.

THE CONTRACT Part C4: Site Information			202	Site Administ	C4.3 Site Administration Forms	
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2	



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APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

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 authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.
- This equipment -
- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

5.17 Public health and safety (Section 9 of the OHS Act)

The principal contractor is 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 minimise those dangers. This includes among others:

- a. Non- employees entering the site for whatever reason;
- b. The surrounding community; and
- c. Passers-by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times. All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.

5.18 Excavations (Construction Regulation 13)

All excavation work has to comply with the following:

THE CONTRACT Part C4: Site Information		203		C4.3 Site Administration Forms	
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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- **5.18.1** Excavation work must be carried out under the supervision of a competent person with at least two years' practical experience in excavation work who has been appointed in writing.
- **5.18.2** Before excavation work begins the stability of the ground must be evaluated.
- **5.18.3** Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.
- **5.18.4** No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load. Best practice requires a onemeter clearance so as to reduce the pressure on the side walls as well as risk of material falling onto persons inside the excavation.
- **5.18.5** The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation.
- **5.18.6** Every excavation, must be inspected by the appointed competent person as follows:
 - Daily before work commences
 - After an unexpected collapse of the excavation or part thereof
 - After rain
- **5.18.7** The results of any inspections must be recorded in a register kept on site in the health and safety file.
- **5.18.8** 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 off, on all sides, to at least one-meter-high and as close to the excavation perimeter as practicable. All such excavations must also be provided with warning lights or visible boundary indicators after dark or when visibility is poor.

5.18.9 Tunneling and Pipe Jacking (CR15) and SANS 1200

The contractor shall follow the relevant guides and SANS standard as prescribed. The levels set out by land surveyor and designs should be adhered

THE CONTRACT Part C4: Site Information		204		C4.3 Site Administration Forms	
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



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to by the pipe jacking contractor. The pipe jacking contractor must develop a method statement and submit it to the Safety Agent before commencing with excavations. The contractor must ensure that authorisation and notification of pipe jacking has been sorted with the relevant department. The contractor must ensure that there is a suitable and sufficient barricading around pipe jacking area.

5.19 Transportation of employees

- **5.19.1** Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.
- **5.19.**2 Regulation 247 of the National Road Traffic Act, Number 93 of 1996 (NRTA) stipulates that the principal contractor shall not allow employees to be transported in a vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of
 - a. at least 350 mm above the surface on which employees are seated; or
 - b. at least 900 mm above the surface on which employees are standing, in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.
- **5.19.3** Regulation 247 of the NRTA also stipulates that the principal contractor shall also not allow any employees to be conveyed in the goods compartment of a vehicle together with any tools or goods, except their personal effects, unless that portion in which the employees are being conveyed is separated by means of a partition, from the portion in which such goods are being conveyed.

5.20 General Personal and other protective equipment (Sections 8, 15 and 23 of the OHS Act)

The principal contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions. Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace the principal contractor is required to inform employees regarding this and issue, free of THE CONTRACT

Part C4: Site Information

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

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 principal contractor maintain the said equipment that he/she instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s in a consistent and correct manner.

Employees do not have the right to refuse to use and/or 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 valid 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 the employee.

The principal contractor may not charge any fee for protective equipment prescribed by him or her but may charge for equipment under the following conditions, following a disciplinary hearing:

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has blatantly abused or neglected the equipment leading to early failure; and

5.21 Principal contractors Administrative Controls for COVID 19 Virus

The principal contractor shall follow all the legal guidelines as per the OHS Act 1993 and CR 2014 and Disaster Management Act 2002 as amended

Administrative controls require action by the employee and employer. Typically, administrative controls are changes in work policy or procedures to reduce or minimize exposure to a hazard. Examples of administrative controls for SARS-CoV-2 include:

- Encouraging sick workers to stay at home.
- Minimizing contact among workers, clients, and customers by replacing face-

to-face meetings with virtual communications e.g. conference calls, Skype, etc.

	• Minimiz	ing the number of	workers on site	at any given time	e e.g. rotation
	or				
THE CONTRACT			206	Site Adminis	C4.3 stration Forms
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5 shift work.

Discontinuing nonessential local and international travel. Regularly check

travel advice from the Department of Health at: www.health.gov.za

- Developing emergency communications plans, including a task team for answering workers' concerns and internet-based communications, if feasible.
- Providing workers with up-to-date education and training on COVID-19
 risk

factors and protective behaviors (e.g. cough etiquette and care of PPE).

Training workers who need to use protective clothing and equipment on how to put it on, use/wear it and take it off correctly, including, in the context of their current and potential duties. Training material should be easy to understand and available in the appropriate language and literacy level for all workers.

5.21.1 Safe Work Practices

Safe work practices are types of administrative controls that include procedures for safe and proper work used to reduce the duration, frequency, or intensity of exposure to a hazard. Examples of safe work practices for SARS-CoV-2 include:

Providing resources and a work environment that promotes personal hygiene. For example, no-touch refuse bins, hand soap, alcohol-based hand rubs containing at least 70 percent alcohol, disinfectants, and disposable towels for workers to clean their hands and their work surfaces.

Requiring regular hand washing or using of alcohol-based hand rubs. Workers should always wash hands when they are visibly soiled and after removing any PPE.

DISPLAY HANDWASHING SIGNS IN RESTROOMS.

5.21.2 COVID19 Virus Personal Protective Equipment

THE CONTRACT Part C4: Site Info			207	Site Adminis	C4.3 tration Forms
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25

APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

While engineering and administrative controls are considered more effective in minimizing exposure to SARS-CoV-2, PPE may also be needed to prevent certain exposures. While correctly using PPE can help prevent some exposures, it should not take the place of other prevention strategies.

Examples of PPE include: gloves, goggles, face shields, face masks, gowns, aprons, coats, overalls, hair and shoe covers and respiratory protection, when appropriate. During an outbreak of an infectious disease, such as COVID-19, recommendations for PPE specific to occupations or job tasks may change depending on geographic location, updated risk assessments for workers, and information on PPE effectiveness in preventing the spread of COVID-19. Employers should check the NICD website regularly for updates about recommended PPE.

All types of PPE must be:

- Selected based upon the hazard to the worker.
- Properly fitted (e.g. respirators).
- Consistently and properly worn when required.
- Regularly inspected, maintained, and replaced, as necessary.
- Properly removed, cleaned, and stored or disposed of, as applicable, to avoid

contamination of self, others, or the environment.

Employers are obligated to provide their workers with PPE needed to keep them safe while performing their duties. The types of PPE required during a COVID-19 outbreak will be based on the risk of being infected with SARS-CoV-2 while working and job tasks that may lead to exposure.

Workers, including those who work within 2meters of patients known to be, or suspected of being, infected with SARS-CoV-2 and those performing aerosol-generating procedures, need to use respirators:

 Approved N95 filtering half face respirators as a minimum used in the context of a comprehensive, written respiratory protection program that includes fit-testing, training, and medical exams.

6. Health and safety policy

THE CONTRACT Part C4: Site Inf			208	Site Adminis	C4.3 stration Forms
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

The principal contractor must provide the Client, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the principal contractor's stance on and principles adopted for health and safety.

7. Cost for health and safety measures during the construction process

To enable the Client to comply with Construction Regulation 5(1)(g), all potential principal contractors submitting tenders/bids must demonstrate to the Client that sufficient provision has been made for the cost to implement and maintain the health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHS Act and its Regulations. A detailed schedule of costs must be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force the Client to reject the tender/bid in terms of Construction Regulation 5(1(h)).

8. Compensation for Injuries and Diseases

- It is the responsibility of the employers (other than a Contractor) to arrange for all persons employed on an EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1996.
- ii. A worker must report any work-related injury or occupational disease to their employer or manager.
- iii. The employer must report the accident or disease to the Compensation Commissioner.
- iv. An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

THE CONTRAC Part C4: Site Ir	_		209	Site Admi	C4.3 nistration Forms
Employer	\\/itmage 1	Mitnaga 2	Contractor	\\/:tness 1	\Mitmaga 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

9. Enquiries

For any enquiries regarding this occupational health and safety specification, please contact:

Name: Frank Matlala

Basumi Engineering and SHEG Solutions

Cell: 071 765 2401

E-mail: <u>basumisafety@gmail.com</u>

NB: At the end of the project all the folders are to be submitted to the client.

Engineer Signature:				_	
Date:					
Client Signature:				_	
Date:					
THE CONTRACT Part C4: Site Info	=		210	Site Adminis	C4.3 tration Forms
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

Compiled by		
F.O. Matlala (PrCHSA, MACHASM, SAIOSH Prof, BTech and	MSc)	
(Pr CHS Agent)		
DATE: 23 FEBRUARY 2023		
C4.3: SITE INFO	RMATION FORMS	
All site administration documents will be hande	d over at the site handover n	neeting.
THE CONTRACT Part C4: Site Information	211	C4.3 Site Administration Forms
Employer Witness 1 Witness 2	Contractor	Witness 1 Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C4.4: ENVIRONMENTAL SPECIFICATIONS

TENDER DRAWINGS		21	2		
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C4.5: GEOTECHNICAL REPORT

TENDER DRAWIN	IGS	213	3		
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25 APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN MERITING 4 AND 5

C4.6: TENDER DRAWINGS

TENDER DRAWING	S	:	214		
Employer	Witness 1	Witness 2	Contractor	Witness 1	Witness 2



BID NO: RLM/OMM/0123/2024/25
APPOINTMENT OF A CONTRACTOR FOR THE REPLACEMENT OF A BULK AND RETICULATION WATER PIPELINE IN
MERITING 4 AND 5

Witness 2

TENDER DRAWINGS 215

Employer Witness 1 Witness 2 Contractor Witness 1



PROJECT NUMBER: RLM/OMM/0099/2020/21

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

BOOK OF TENDER DRAWINGS

SEPTEMBER 2024

PREPARED FOR

RUSTENBURG LOCAL MUNICIPALITY



RUSTENBURG LOCAL MUNICIPALITY
PO BOX 16
RUSTENBURG
0300

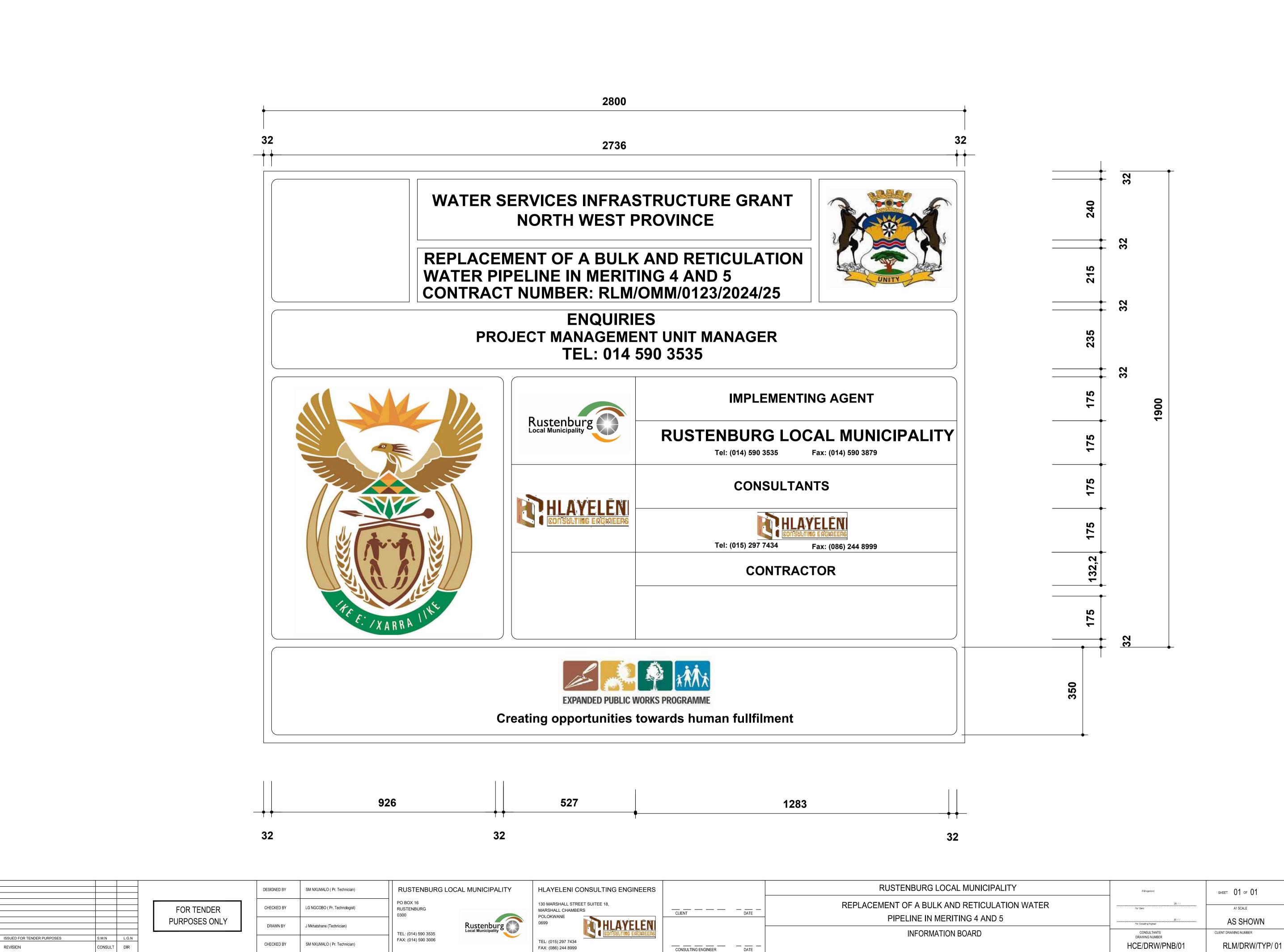
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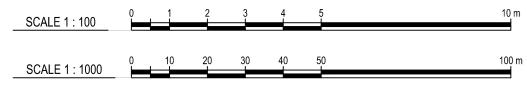




DATE

	LIST OF DRAWINGS	
DRAWING NUMBER	DESCRIPTION	
	COVER	0
HCE/DRW/LOD/00	LIST OF DRAWINGS	0
HCE/DRW/PNB/01	INFO BOARD	0
HCE/DRW/GLP/02	GENERAL LAYOUT PLAN	0
HCE/DRW/SLP/03	SITE LAYOUT PLAN	0
HCE/DRW/LS/04	LONG SECTION SHEET 1 OF 51	0
HCE/DRW/LS/05	LONG SECTION SHEET 2 OF 51	0
HCE/DRW/LS/06	LONG SECTION SHEET 3 OF 51	0
HCE/DRW/LS/07	LONG SECTION SHEET 4 OF 51	0
HCE/DRW/LS/08	LONG SECTION SHEET 5 OF 51	0
HCE/DRW/LS/09	LONG SECTION SHEET 6 OF 51	0
HCE/DRW/LS/10	LONG SECTION SHEET 7 OF 51	0
HCE/DRW/LS/11	LONG SECTION SHEET 8 OF 51	0
HCE/DRW/LS/12	LONG SECTION SHEET 9 OF 51	0
HCE/DRW/LS/13	LONG SECTION SHEET 10 OF 51	0
HCE/DRW/LS/14	LONG SECTION SHEET 11 OF 51	0
HCE/DRW/LS/15	LONG SECTION SHEET 12 OF 51	0
HCE/DRW/LS/16	LONG SECTION SHEET 13 OF 51	0
HCE/DRW/LS/17	LONG SECTION SHEET 14 OF 51	0
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HCE/DRW/LS/34	LONG SECTION SHEET 31 OF 51	0

DRAWING NUMBER	DESCRIPTION	
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HCE/DRW/LS/36	LONG SECTION SHEET 33 OF 51	0
HCE/DRW/LS/37	LONG SECTION SHEET 34 OF 51	0
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HCE/DRW/LS/53	LONG SECTION SHEET 50 OF 51	0
HCE/DRW/LS/54	LONG SECTION SHEET 51 OF 51	0
HCE/DRW/WMD/55	WATER METER TYPICAL DETAILS	0
HCE/DRW/SVC/56	SCOUR VALVE CHAMBER DETAILS SHEET 1 OF 2	0
HCE/DRW/SVC/57	SCOUR VALVE CHAMBER DETAILS SHEET 2 OF 2	0
HCE/DRW/EC/58	ERF CONNECTION PIPE DETAILS	0
HCE/DRW/NRV/59	NON RETURN VALVE AND AIR VALVE CHAMBER DETAILS SHEET 1 OF 2	0
HCE/DRW/SVC/60	NON RETURN VALVE AND AIR VALVE CHAMBER DETAILS SHEET 2 OF 2	0
HCE/DRW/IVPM/61	ISOLATION VALVE & PIPELINE MARKERS	0
HCE/DRW/TBD/62	TRENCHES AND BEDDING DETAILS	0
HCE/DRW/WABD/63	WATER ANCHOR BLOCK TYPICAL DETAILS	0
HCE/DRW/GVDC/64	GATE VALVE TYPICAL DETAILS	0
HCE/DRW/FHD/65	FIRE HYDRANT DETAILS TYPE A&B	0
HCE/DRW/CTB/66	CONCRETE ENCASING AND THRUST BLOCKS	0



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	Α	09/2024	FOR TENDER	S.M.N	L.G.N
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DESIGNED BY	SM NXUMALO (Pr. Technician)
CHECKED BY	LG NGCOBO (Pr. Technologist)
DRAWN BY	PM MAAKE (TECHNICIAN)
CHECKED BY	SM NXUMALO (Pr. Technician)

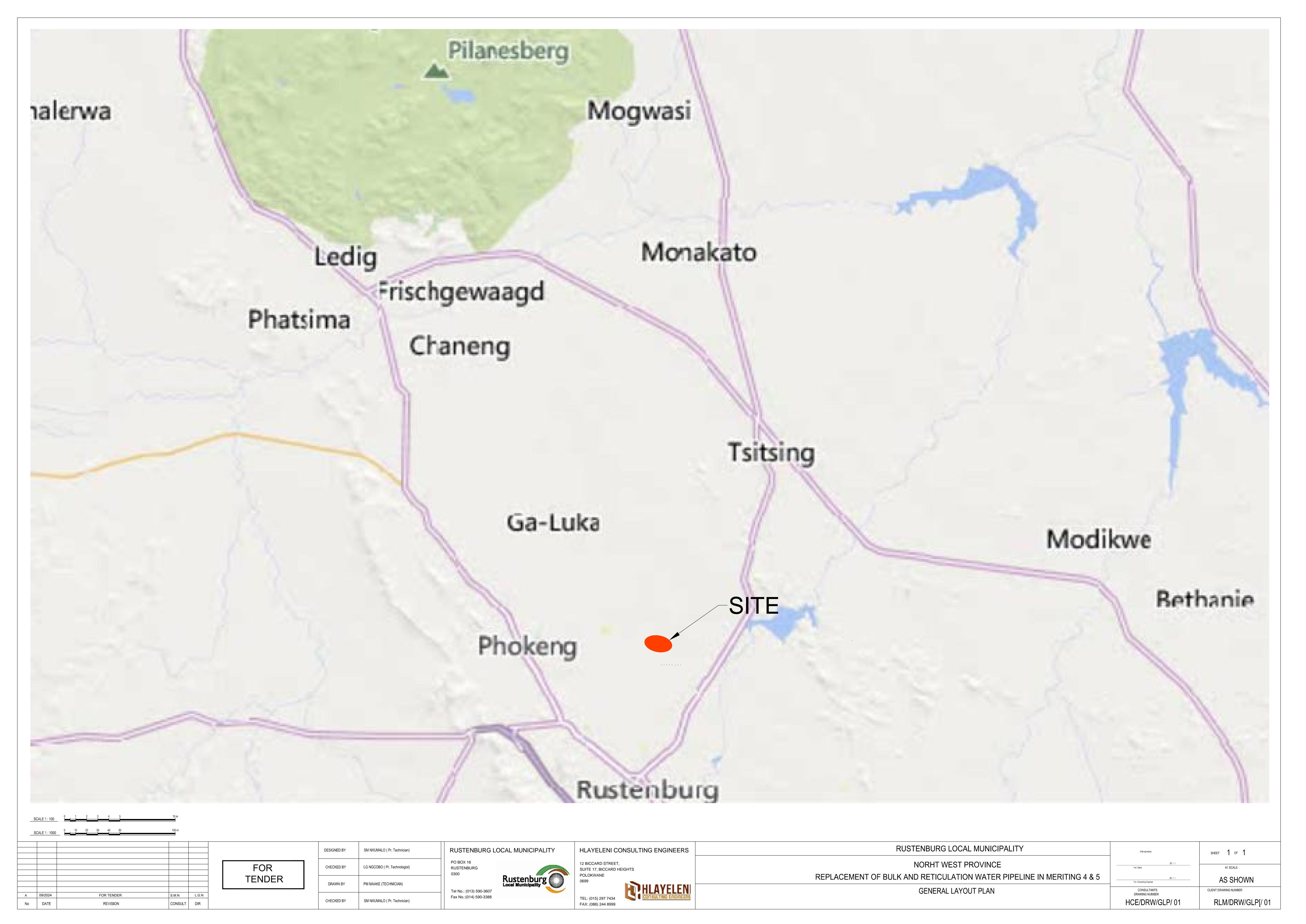
RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG

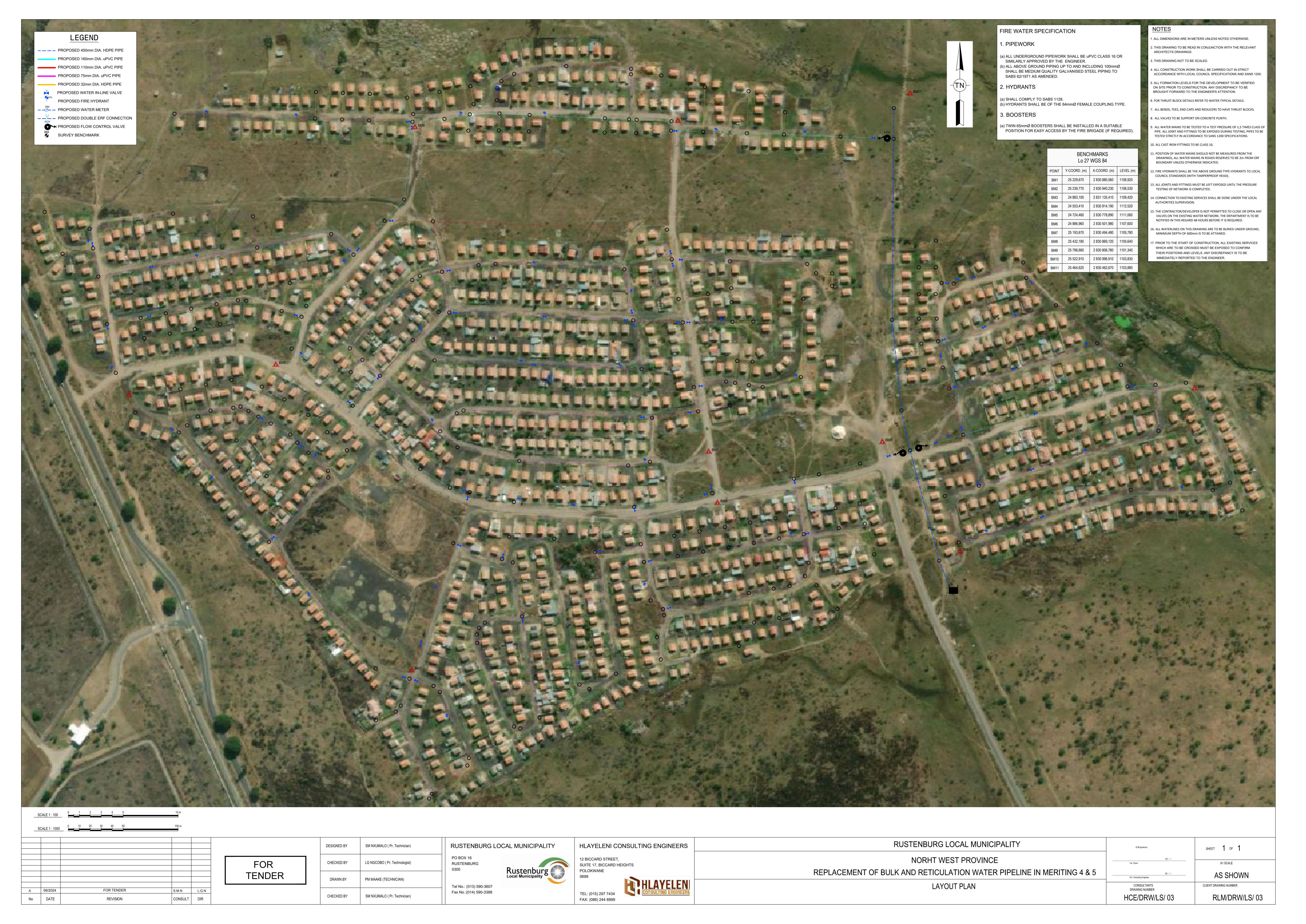


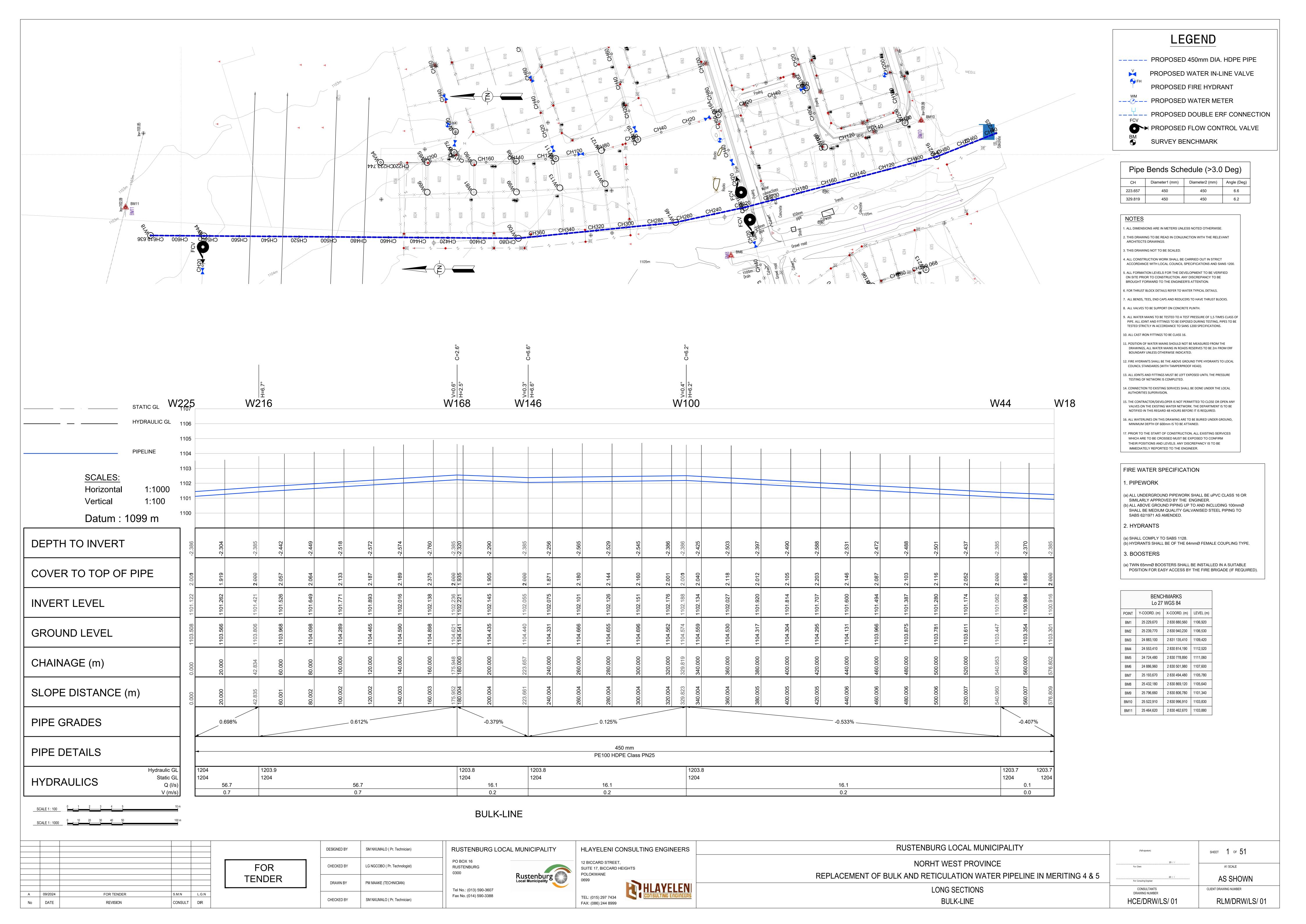
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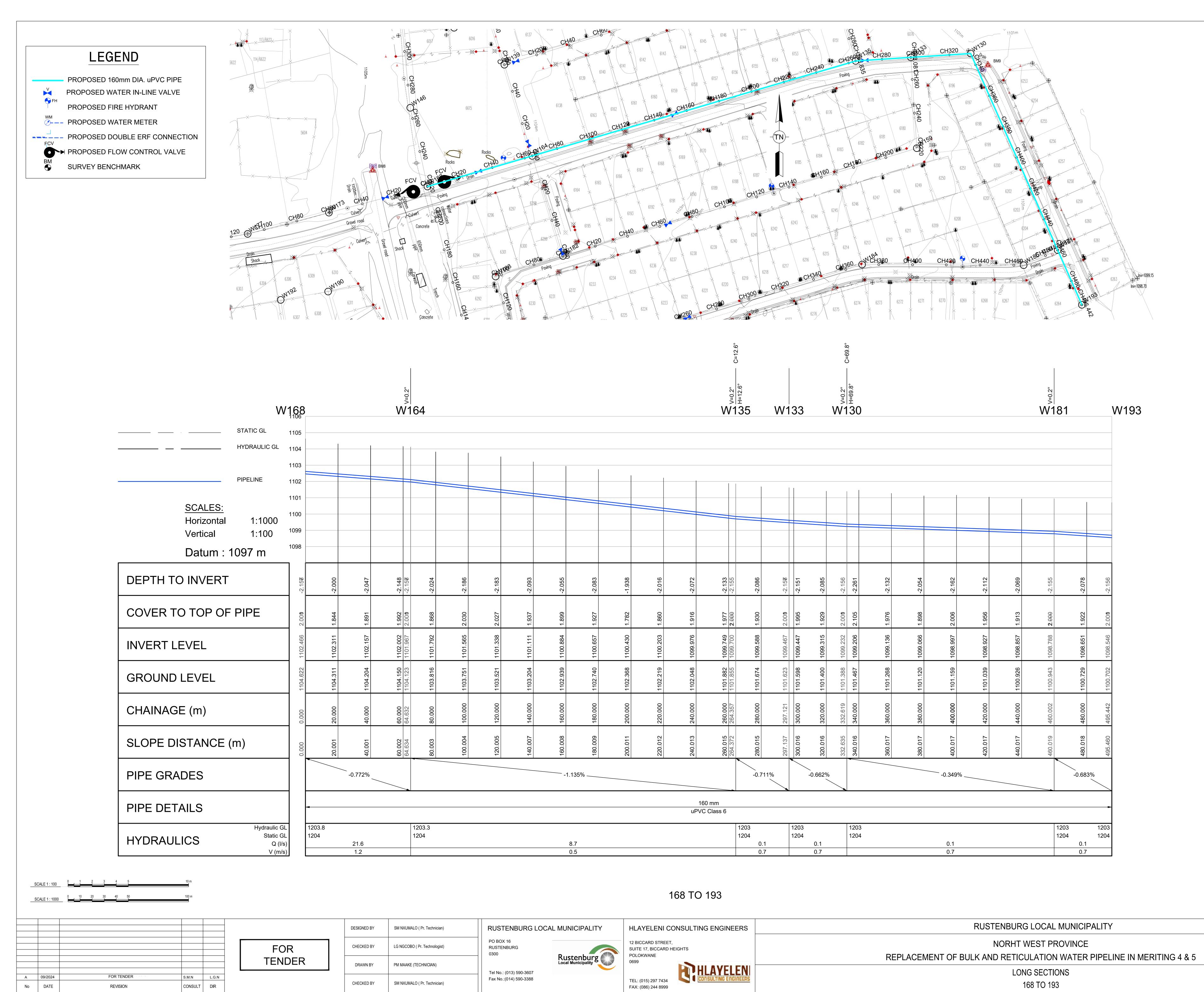
RUSTENBURG LOCAL MUNICIPALITY
NORHT WEST PROVINCE
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5
LIST OF DAWINGS

	(Full signature)	SHEET 1 OF 1
	For: Client	A1 SCALE
5	20 / / For: Consulting Engineer	AS SHOWN
	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
	HCE/DRW/LOD/ 00	RLM/DRW/LOF/ 00









 Pipe Bends Schedule (>3.0 Deg)

 CH
 Diameter1 (mm)
 Diameter2 (mm)
 Angle (Deg)

 264.357
 160
 160
 12.6

 332.619
 160
 160
 69.8

NOTES

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

. ALL BEINDS, TEES, EIND CAPS AND REDUCERS I

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES
WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.

(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

SHEET 2 OF 51

CLIENT DRAWING NUMBER

AS SHOWN

RLM/DRW/LS/ 02

(Full signature)

CONSULTANTS DRAWING NUMBER

HCE/DRW/LS/ 02

For: Client

BENCHMARKS Lo 27 WGS 84			
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
BM3	24 883,100	2 831 135,410	1109,420
BM4	24 553,410	2 830 814,190	1112,520
BM5	24 724,480	2 830 778,890	1111,060
BM6	24 886,960	2 830 501,980	1107,600
BM7	25 193,670	2 830 494,480	1105,780
BM8	25 432,180	2 830 869,120	1105,640
BM9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830
BM11	25 464,620	2 830 462,670	1103,880



Pipe Bends Schedule (>3.0 Deg) Diameter1 (mm) Diameter2 (mm) Angle (Deg) 62.036 103.734 465.827

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

AUTHORITIES SUPERVISION.

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.

(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
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BM10	25 522,910	2 830 996,910	1103,830
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A 09/2024 FOR TENDER No DATE REVISION CONSULT DIR

FOR **TENDER**

LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388



SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 164 TO 181

SHEET 3 OF 51 (Full signature) For: Client **AS SHOWN** CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 03 RLM/DRW/LS/ 03



Pipe Bends Schedule (>3.0 Deg) Diameter1 (mm) Diameter2 (mm) Angle (Deg) 62.036 103.734 465.827

NOTES

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ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

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15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

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FIRE WATER SPECIFICATION

1. PIPEWORK

AUTHORITIES SUPERVISION.

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2. HYDRANTS

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3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

		HMARKS WGS 84	
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BM11	25 464,620	2 830 462,670	1103,880

A 09/2024 FOR TENDER No DATE REVISION CONSULT DIR

FOR **TENDER**

LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

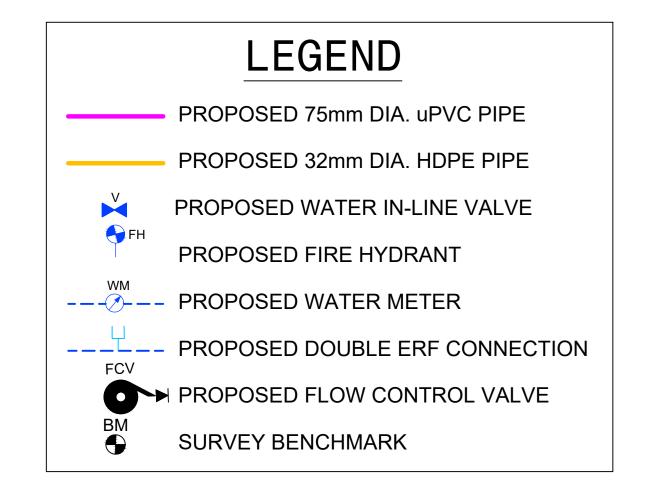
PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

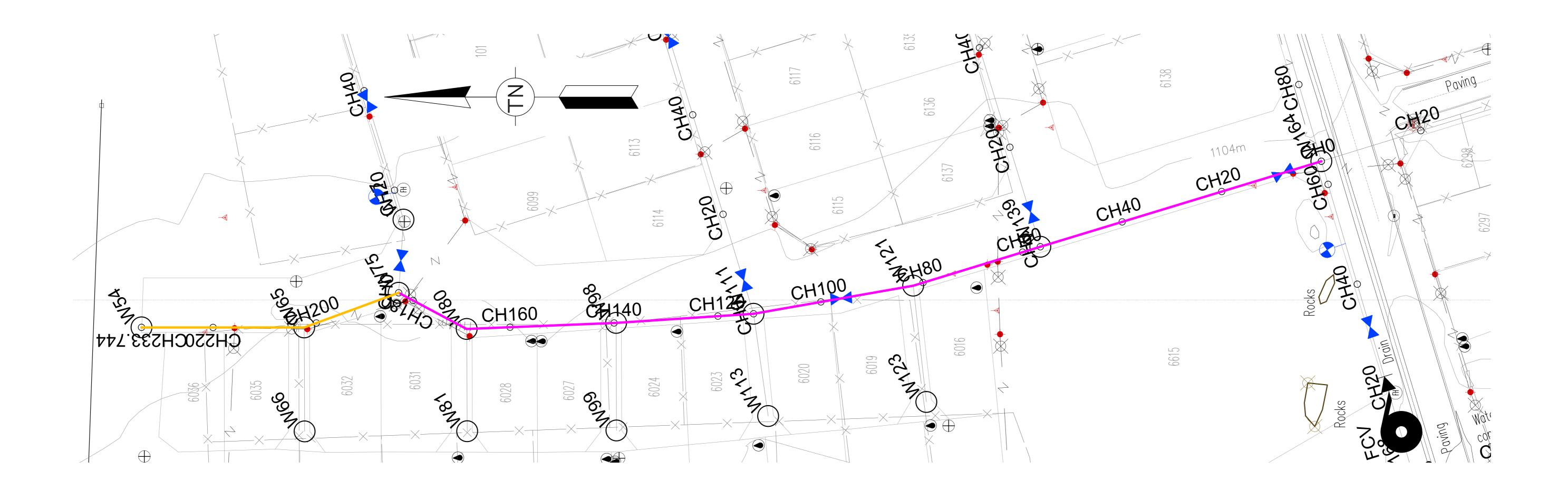


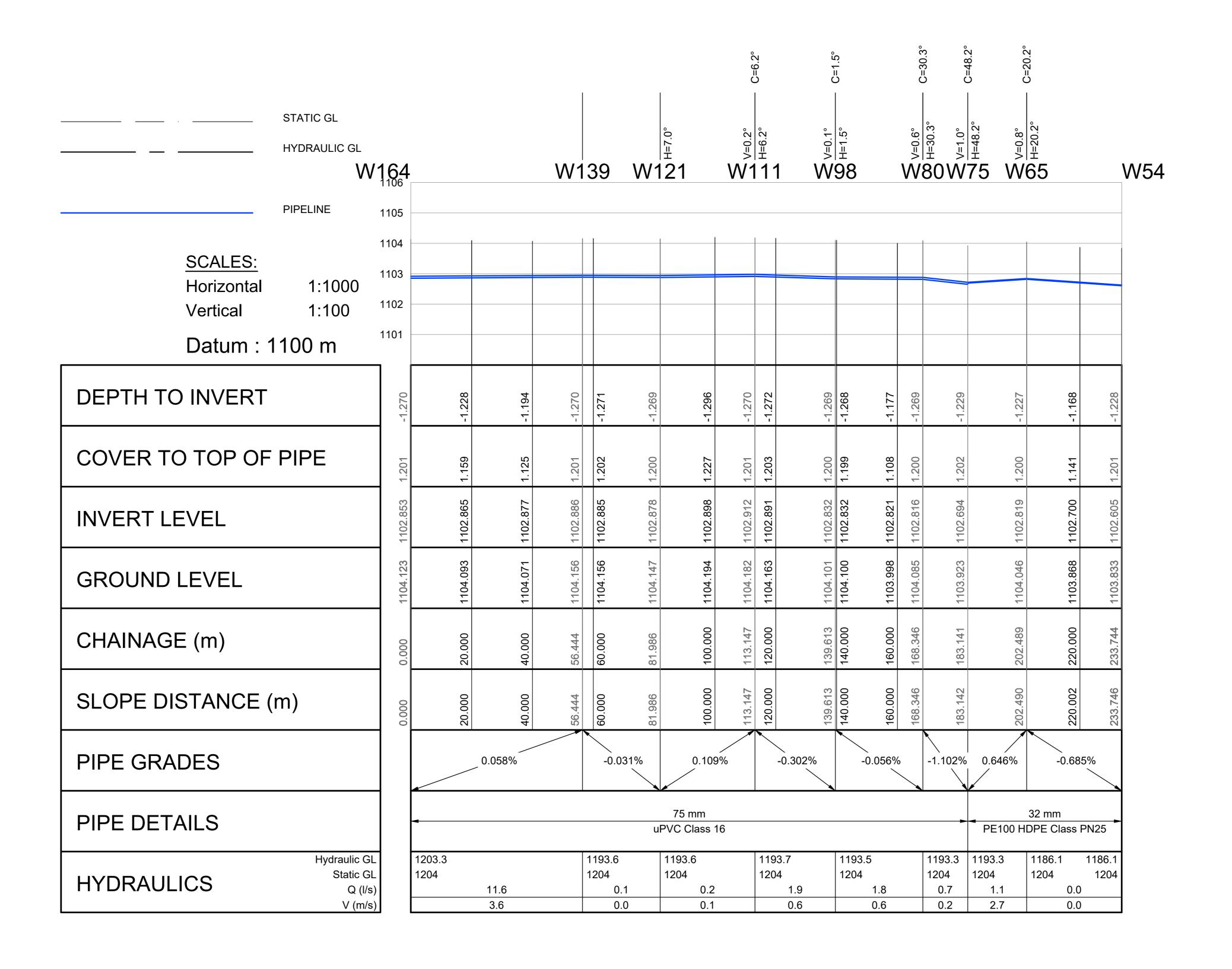
SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 164 TO 181

SHEET 3 OF 51 (Full signature) For: Client **AS SHOWN** CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 03 RLM/DRW/LS/ 03







Pipe Bends Schedule (>3.0 Deg)					
СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)		
113.147	75	75	6.2		
168.346	75	75	30.3		
183.141	75	32	48.2		
202.489	32	32	20.2		

NOT

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEV.

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3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT
ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

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12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES

WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
 (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

SABS 62/1971 AS AMENDED.

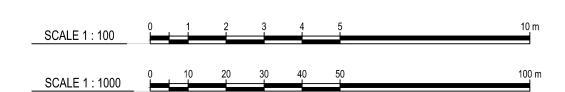
(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

0031ER3

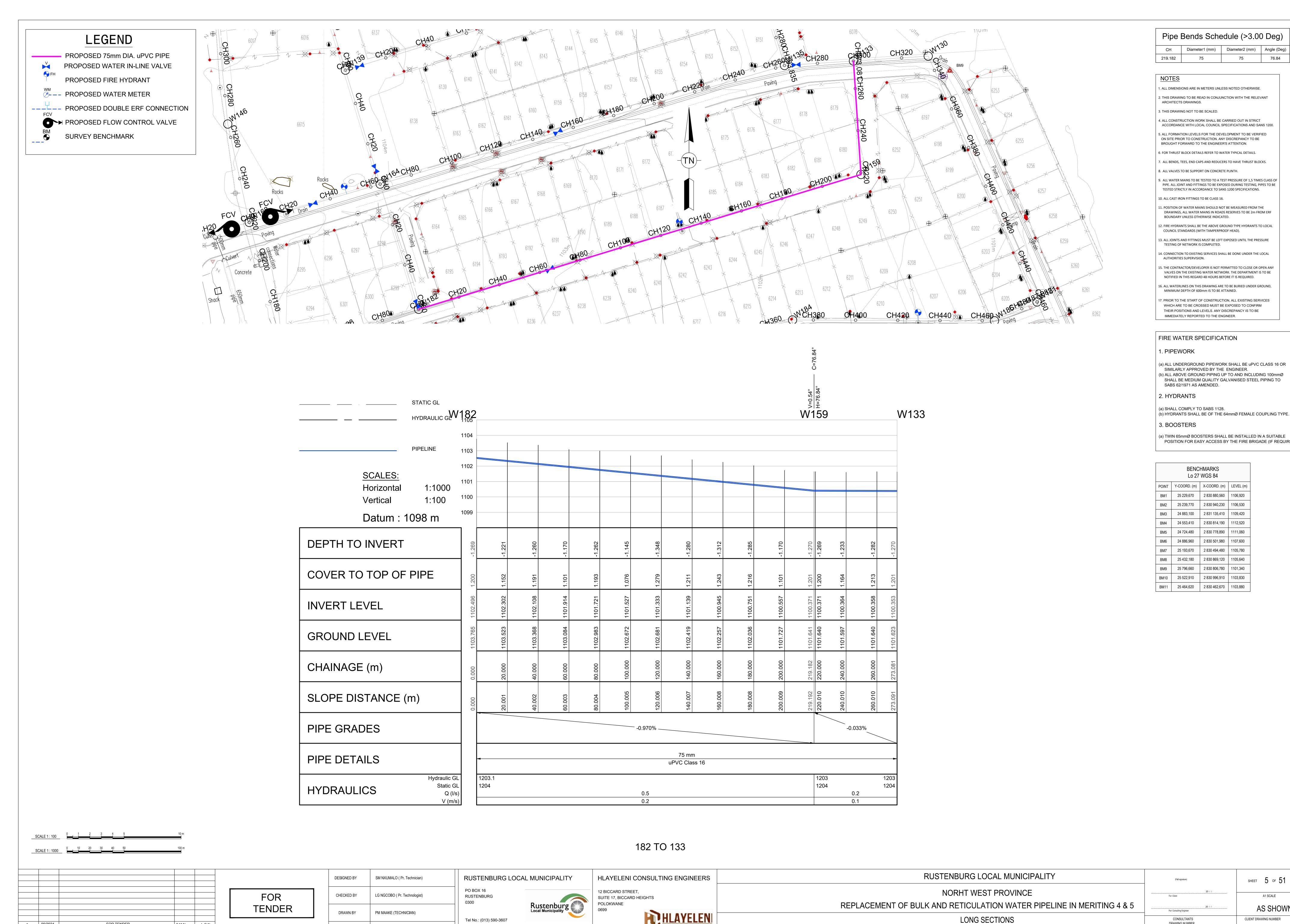
(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84			
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164 TO 54

RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS SM NXUMALO (Pr. Technician) **DESIGNED BY** SHEET 4 OF 51 (Full signature) PO BOX 16 NORHT WEST PROVINCE 12 BICCARD STREET, CHECKED BY LG NGCOBO (Pr. Technologist) RUSTENBURG For: Client A1 SCALE Rustenburg Local Municipality SUITE 17, BICCARD HEIGHTS 0300 POLOKWANE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **TENDER** AS SHOWN For: Consulting Engineer DRAWN BY PM MAAKE (TECHNICIAN) LONG SECTIONS CLIENT DRAWING NUMBER CONSULTANTS Tel No.: (013) 590-3607 DRAWING NUMBER A 09/2024 FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 164 TO 54 HCE/DRW/LS/ 04 CHECKED BY SM NXUMALO (Pr. Technician) RLM/DRW/LS/ 04 No DATE CONSULT DIR REVISION FAX: (086) 244 8999



TEL: (015) 297 7434

FAX: (086) 244 8999

Fax No.:(014) 590-3388

SM NXUMALO (Pr. Technician)

CHECKED BY

A 09/2024

No DATE

FOR TENDER

REVISION

CONSULT DIR

SHEET 5 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER

RLM/DRW/LS/ 05

HCE/DRW/LS/ 05

182 TO 133

Diameter1 (mm) | Diameter2 (mm) | Angle (Deg)

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

BOUNDARY UNLESS OTHERWISE INDICATED.

TESTING OF NETWORK IS COMPLETED.

AUTHORITIES SUPERVISION.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

SIMILARLY APPROVED BY THE ENGINEER.

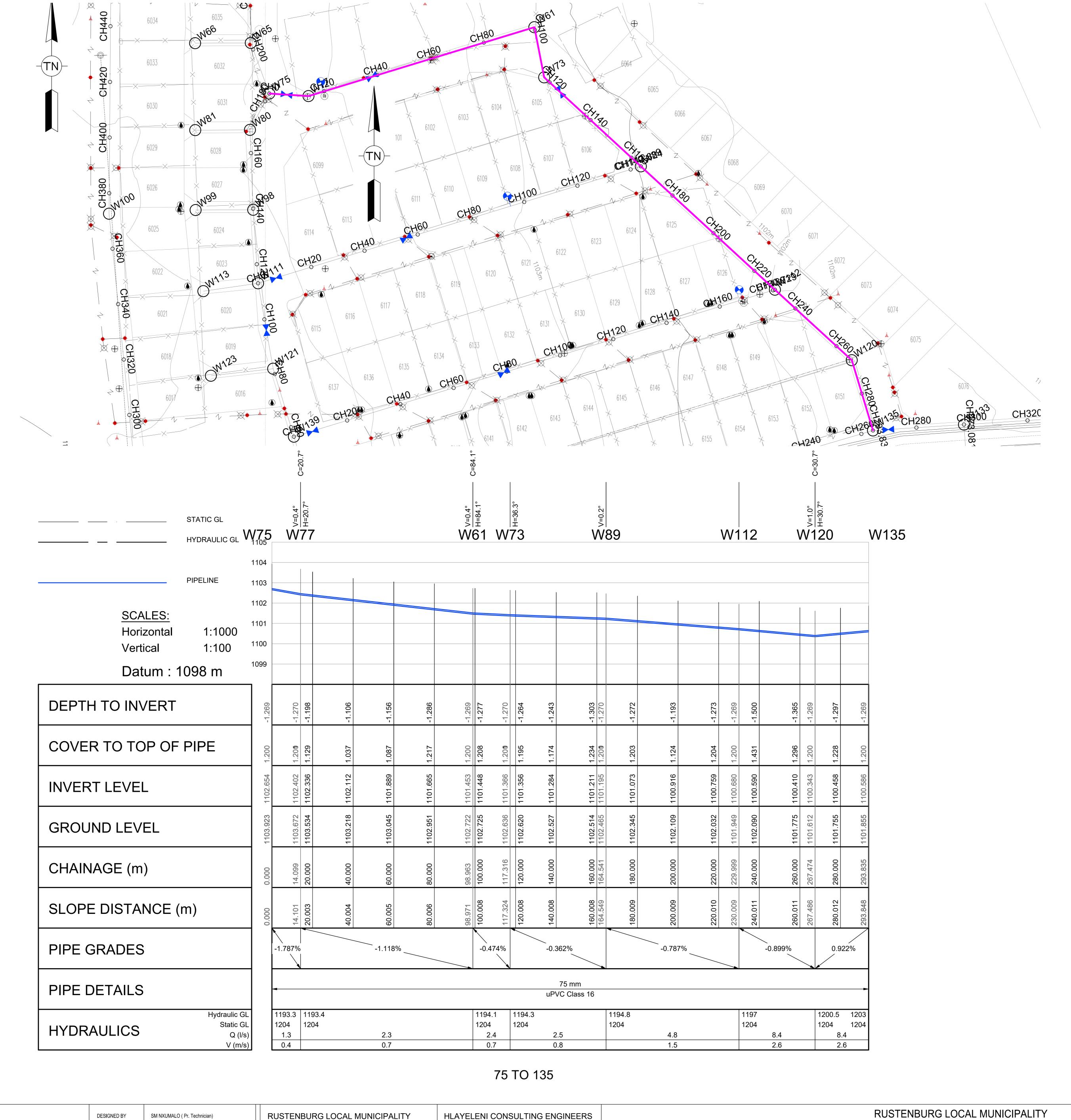
BENCHMARKS

Lo 27 WGS 84

SABS 62/1971 AS AMENDED.

SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).



Pipe	Bends Sch	edule (>3.0	Deg)
СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)
14.099	75	75	20.7
98.963	75	75	84.1
267 474	75	75	30.7

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED. 4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

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6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

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9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

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DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED. 12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

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FIRE WATER SPECIFICATION

1. PIPEWORK

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2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE. 3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

	BENCHMARKS Lo 27 WGS 84			
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FOR TENDER

CONSULT DIR

REVISION

A 09/2024

No DATE

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED DOUBLE ERF CONNECTION

PROPOSED FLOW CONTROL VALVE

PROPOSED WATER METER

PROPOSED 75mm DIA. uPVC PIPE

PROPOSED WATER IN-LINE VALVE

FOR TENDER

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Tel No.: (013) 590-3607

0300

Fax No.:(014) 590-3388

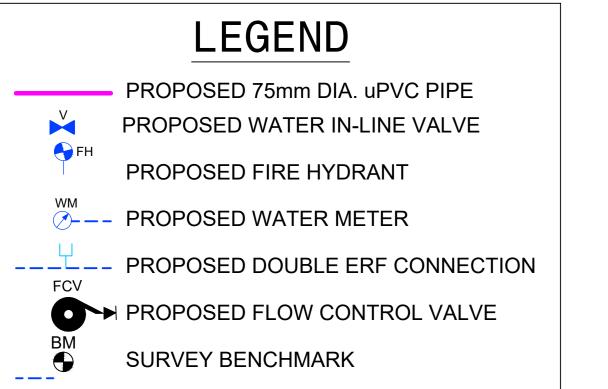


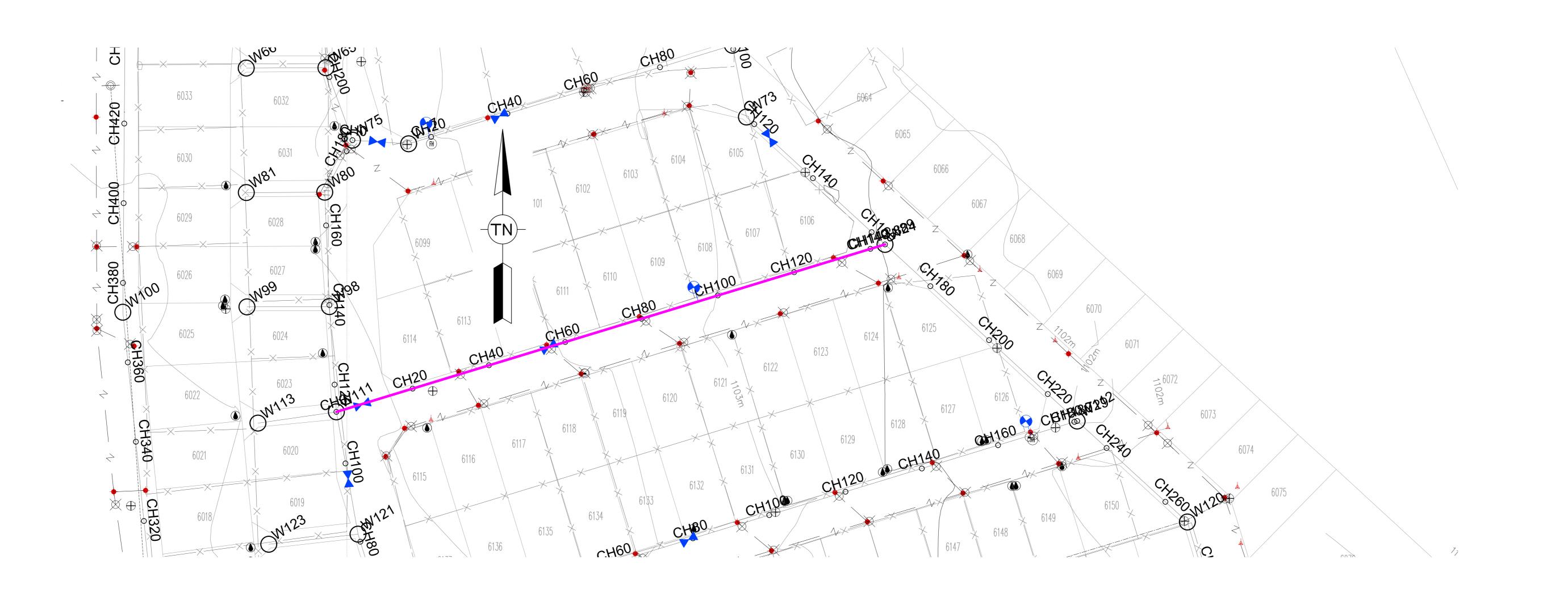


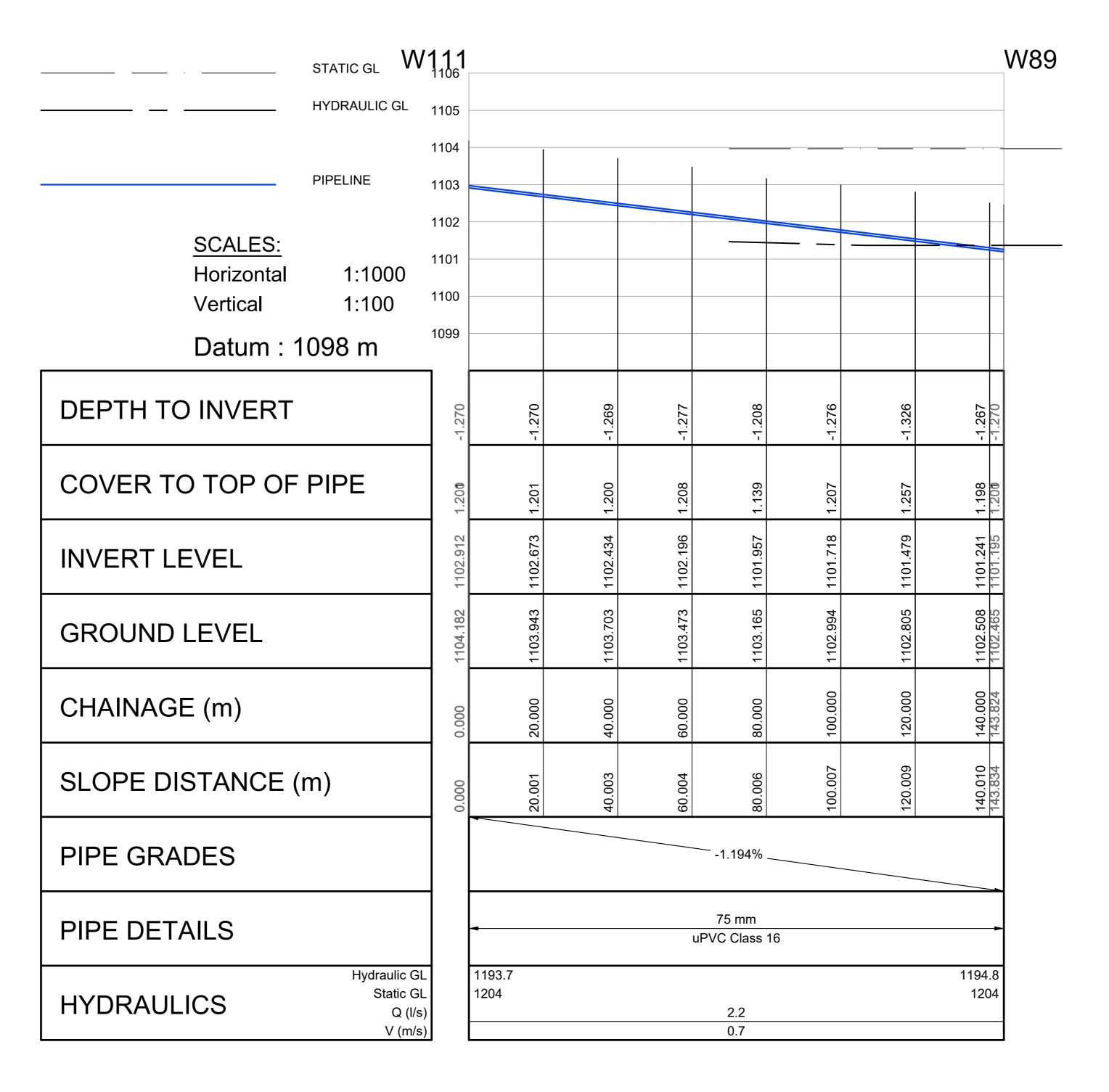
NORHT WEST PROVINCE	
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	
LONG SECTIONS	

75 TO 135

SHEET 6 OF 51 (Full signature) For: Client A1 SCALE **AS SHOWN** For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 06 RLM/DRW/LS/ 06







NOT

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1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

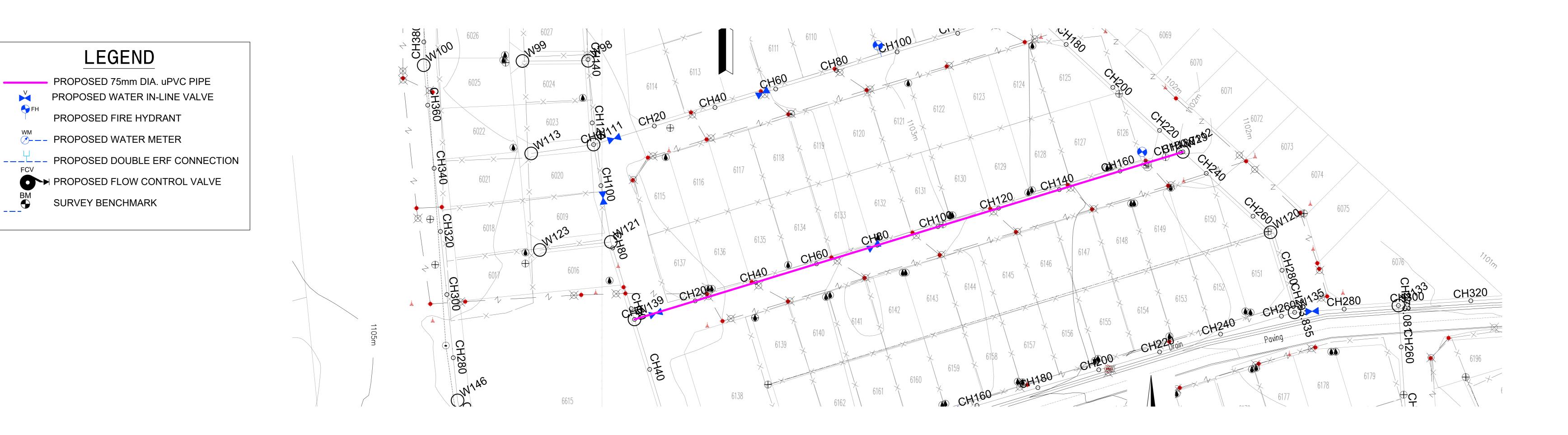
3. BOOSTERS

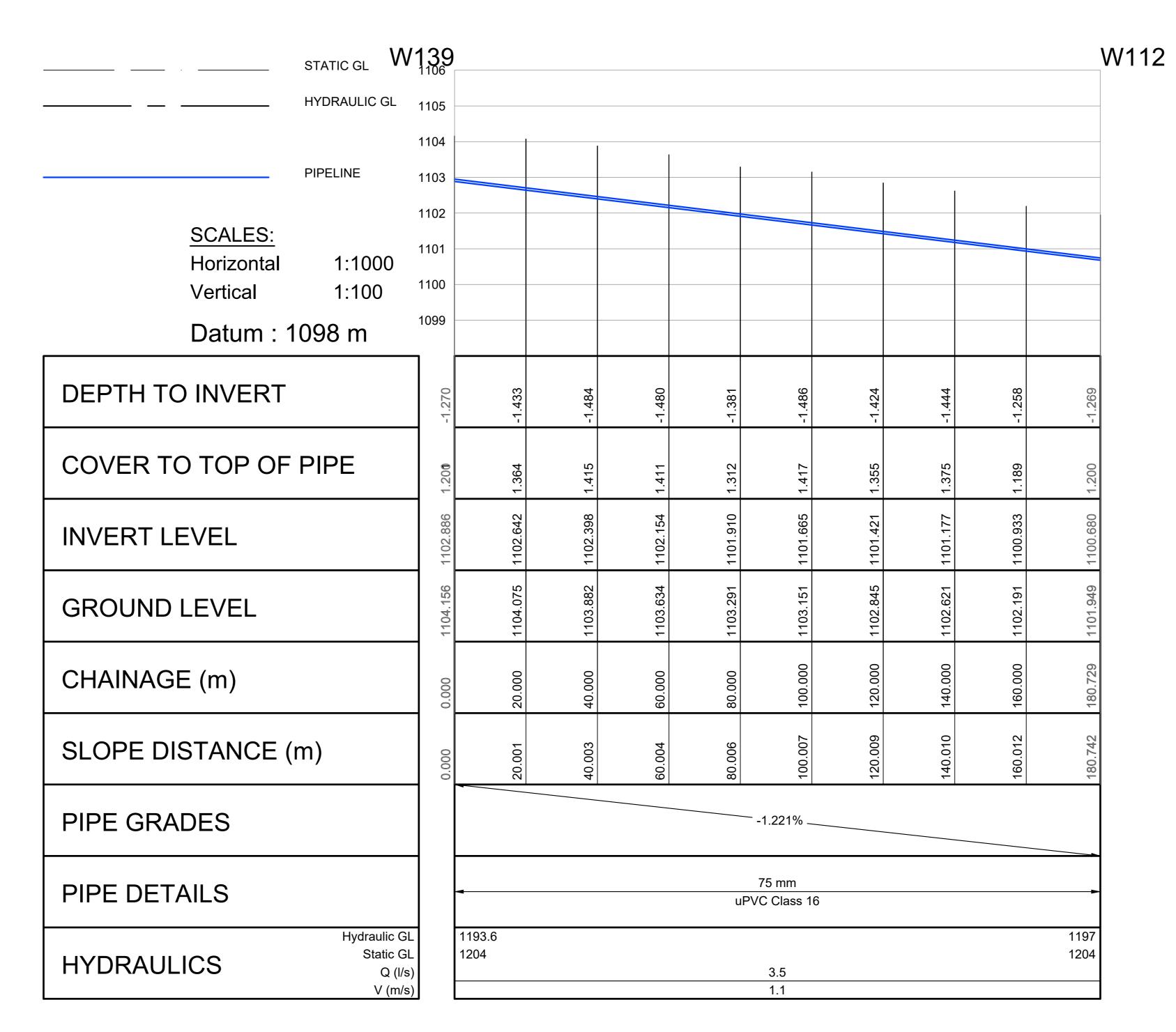
(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
ВМ3	24 883,100	2 831 135,410	1109,420
BM4	24 553,410	2 830 814,190	1112,520
BM5	24 724,480	2 830 778,890	1111,060
BM6	24 886,960	2 830 501,980	1107,600
BM7	25 193,670	2 830 494,480	1105,780
BM8	25 432,180	2 830 869,120	1105,640
ВМ9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830
BM11	25 464,620	2 830 462,670	1103,880

111 TO 89

				DESIGNED BY	SM NXUMALO (Pr. Technician)	RUSTENBURG LOC	CAL MUNICIPALITY	HLAYELENI CONSULTING ENGINEERS	RUSTENBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 7 OF 51
			FOR	CHECKED BY	LG NGCOBO (Pr. Technologist)	PO BOX 16 RUSTENBURG		12 BICCARD STREET, SUITE 17 BICCARD HEIGHTS	NORHT WEST PROVINCE		A1 SCALE
			TENDER	DRAWN BY	PM MAAKE (TECHNICIAN)	0300	Rustenburg Local Municipality	POLOKWANE 0699	REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	20 / / For: Consulting Engineer	AS SHOWN
A	09/2024 FOR TENDER	S.M.N L.G.N				Tel No.: (013) 590-3607		HLAYELEN	LONG SECTIONS	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
No	DATE REVISION	CONSULT DIR		CHECKED BY	SM NXUMALO (Pr. Technician)	Fax No.:(014) 590-3388		TEL: (015) 297 7434 FAX: (086) 244 8999	111 TO 89	HCE/DRW/LS/ 07	RLM/DRW/LS/ 07





139 TO 112

Α	09/2024	FOR TENDER	S.M.N	L.G.N	
No	DATE	REVISION	CONSULT	DIR	

LEGEND

PROPOSED FIRE HYDRANT

PROPOSED WATER METER

FOR **TENDER**

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 139 TO 112

SHEET 8 OF 51 (Full signature) For: Client A1 SCALE **AS SHOWN** CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER RLM/DRW/LS/ 08 HCE/DRW/LS/ 08

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR

SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

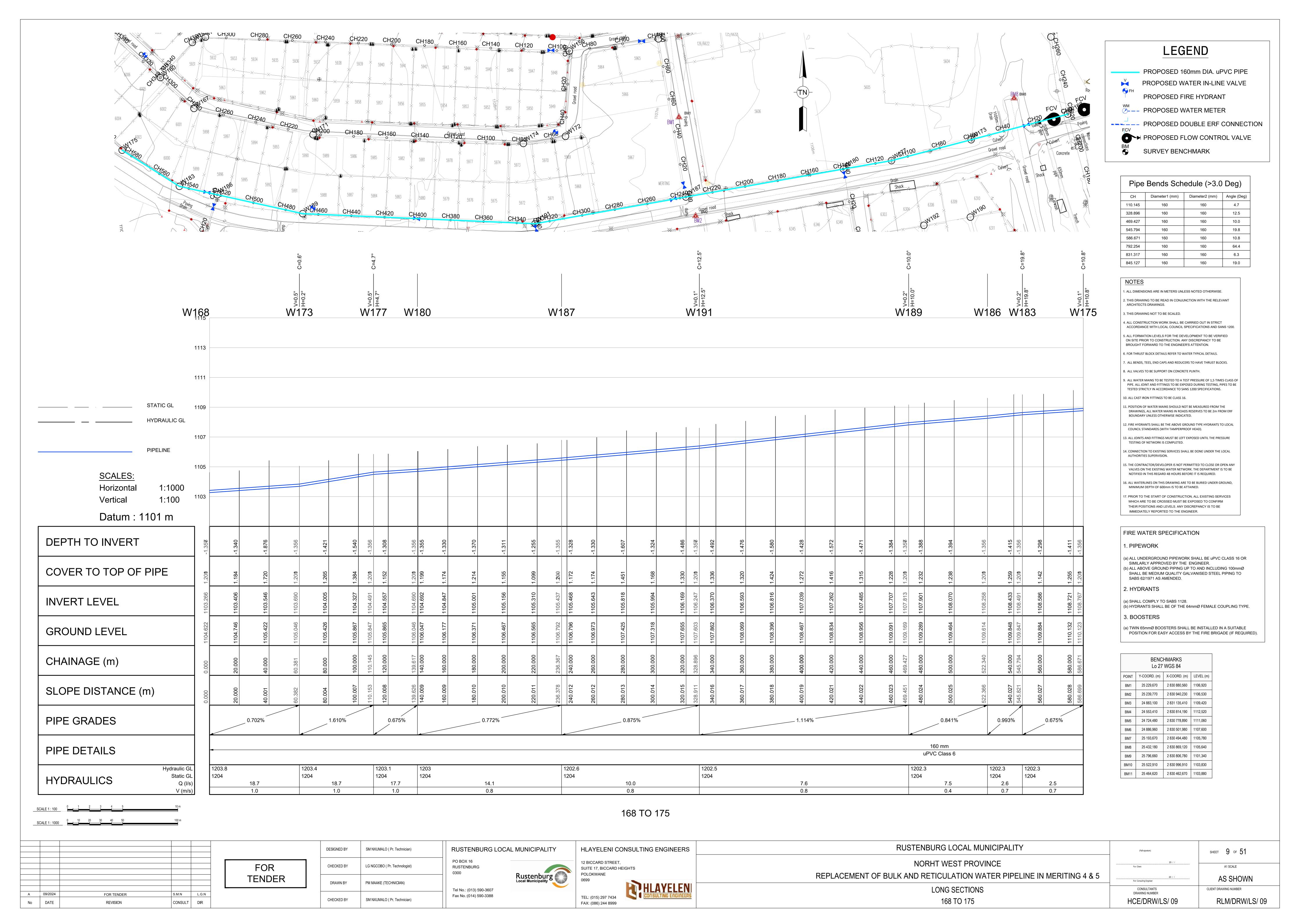
2. HYDRANTS

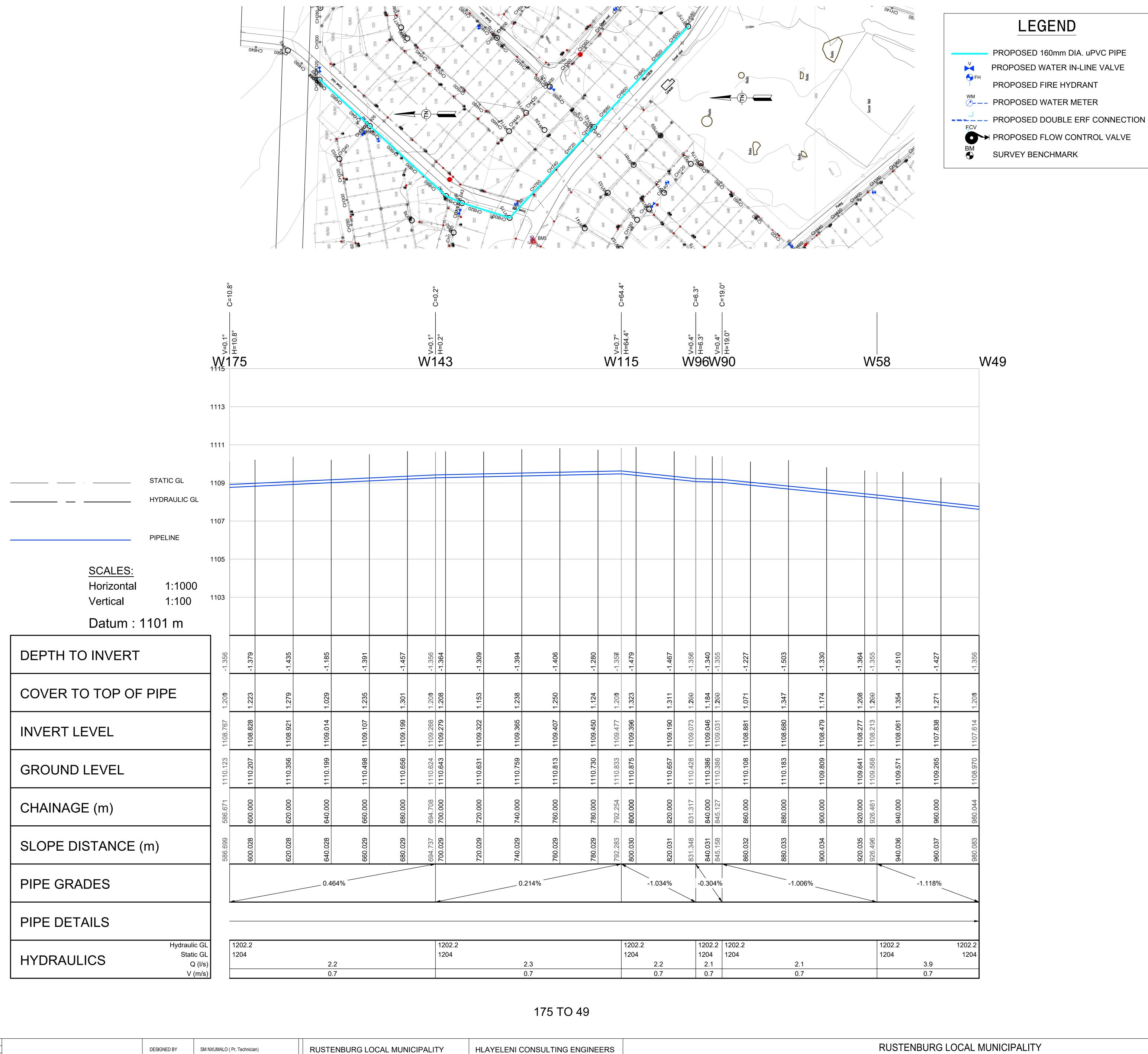
3. BOOSTERS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84						
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)			
BM1	25 229,670	2 830 880,560	1106,920			
BM2	25 239,770	2 830 940,230	1106,530			
BM3	24 883,100	2 831 135,410	1109,420			
BM4	24 553,410	2 830 814,190	1112,520			
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BM8	25 432,180	2 830 869,120	1105,640			
BM9	25 796,660	2 830 806,780	1101,340			
BM10	25 522,910	2 830 996,910	1103,830			
BM11	25 464,620	2 830 462,670	1103,880			





Pipe Bends Schedule (>3.0 Deg) Diameter1 (mm) Diameter2 (mm) Angle (Deg) 110.145 328.896 12.5 469.427 545.794 19.8 586.671 160 10.8 792.254 160 160 64.4 831.317 6.3 845.127 160 160 19.0

NOTE

 ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES
WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE
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FIRE WATER SPECIFICATION

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(a) SHALL COMPLY TO SABS 1128.
(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

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	BENCHMARKS Lo 27 WGS 84						
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BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				

A 09/2024 FOR TENDER S.M.N L.G.N
No DATE REVISION CONSULT DIR

FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

PM MAAKE (TECHNICIAN)

CHECKED BY

SM NXUMALO (Pr. Technician)

PO BOX 16
RUSTENBURG
0300

Rustenbu
Local Municipalit

Tel No.: (013) 590-3607
Fax No.:(014) 590-3388





NORHT WEST PROVINCE

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

175 TO 49

(Full signature)

SHEET 10 OF 51

20 / /

For: Client

A1 SCALE

AS SHOWN

CONSULTANTS
DRAWING NUMBER

HCE/DRW/LS/ 010

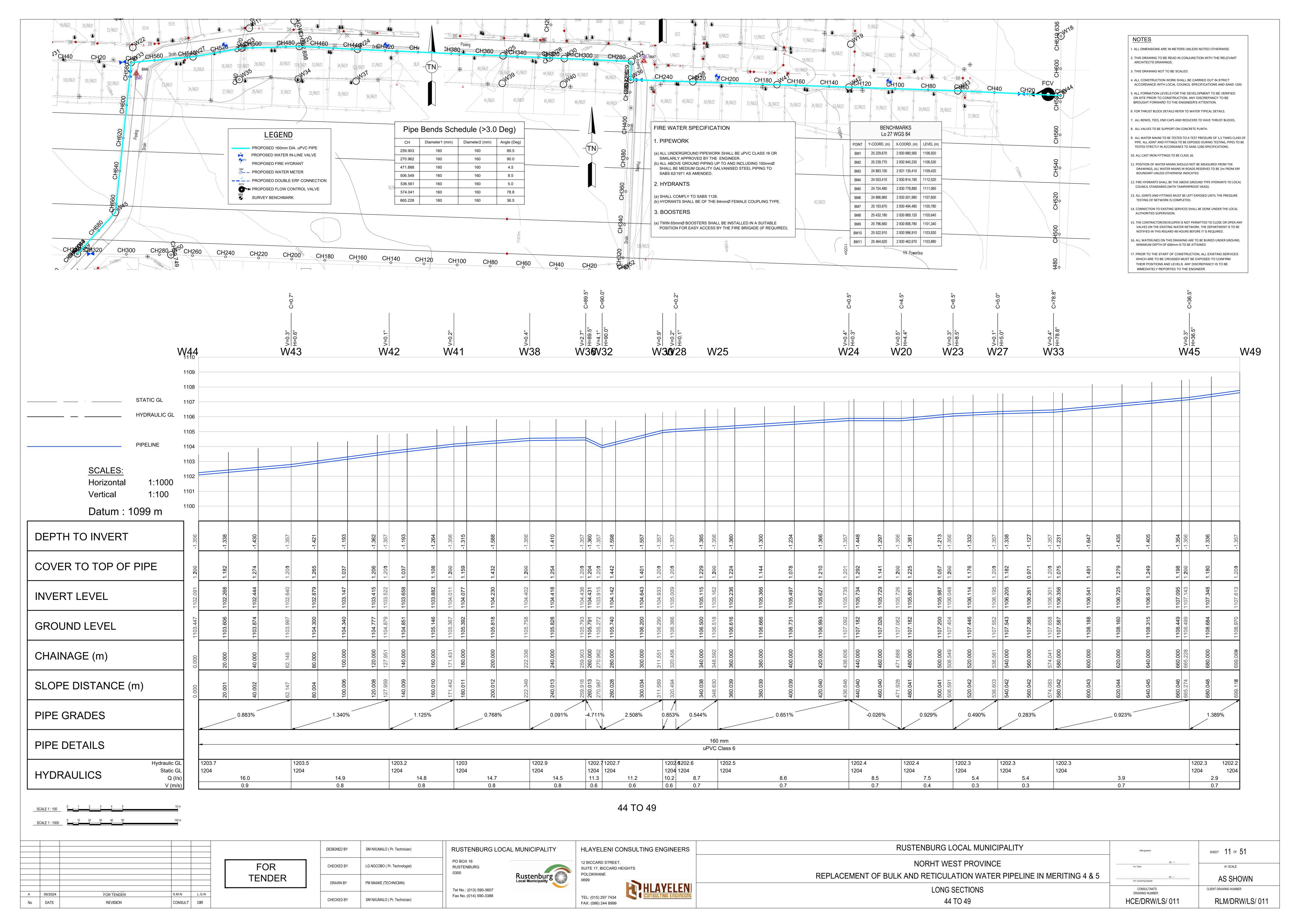
SHEET 10 OF 51

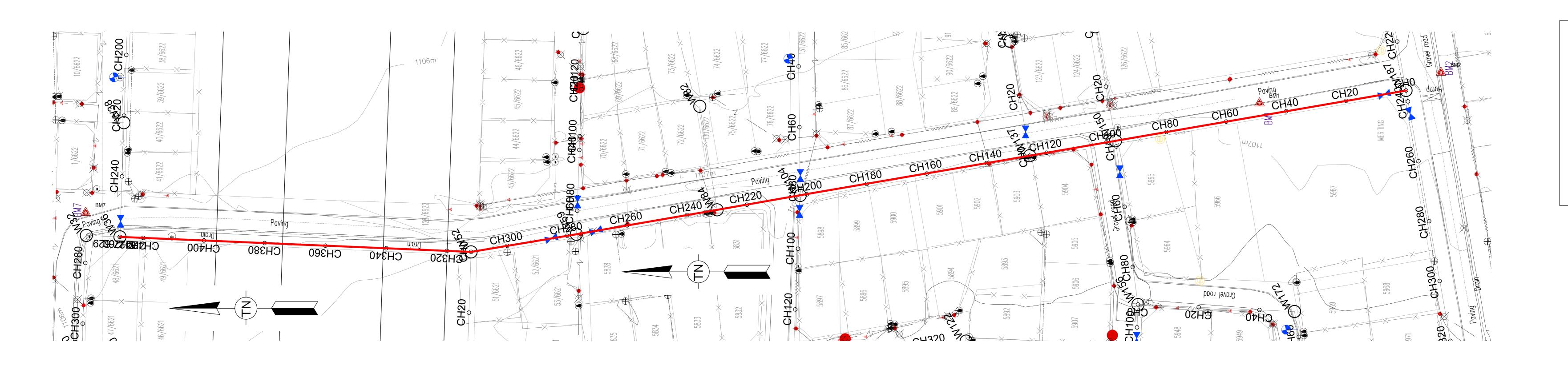
A1 SCALE

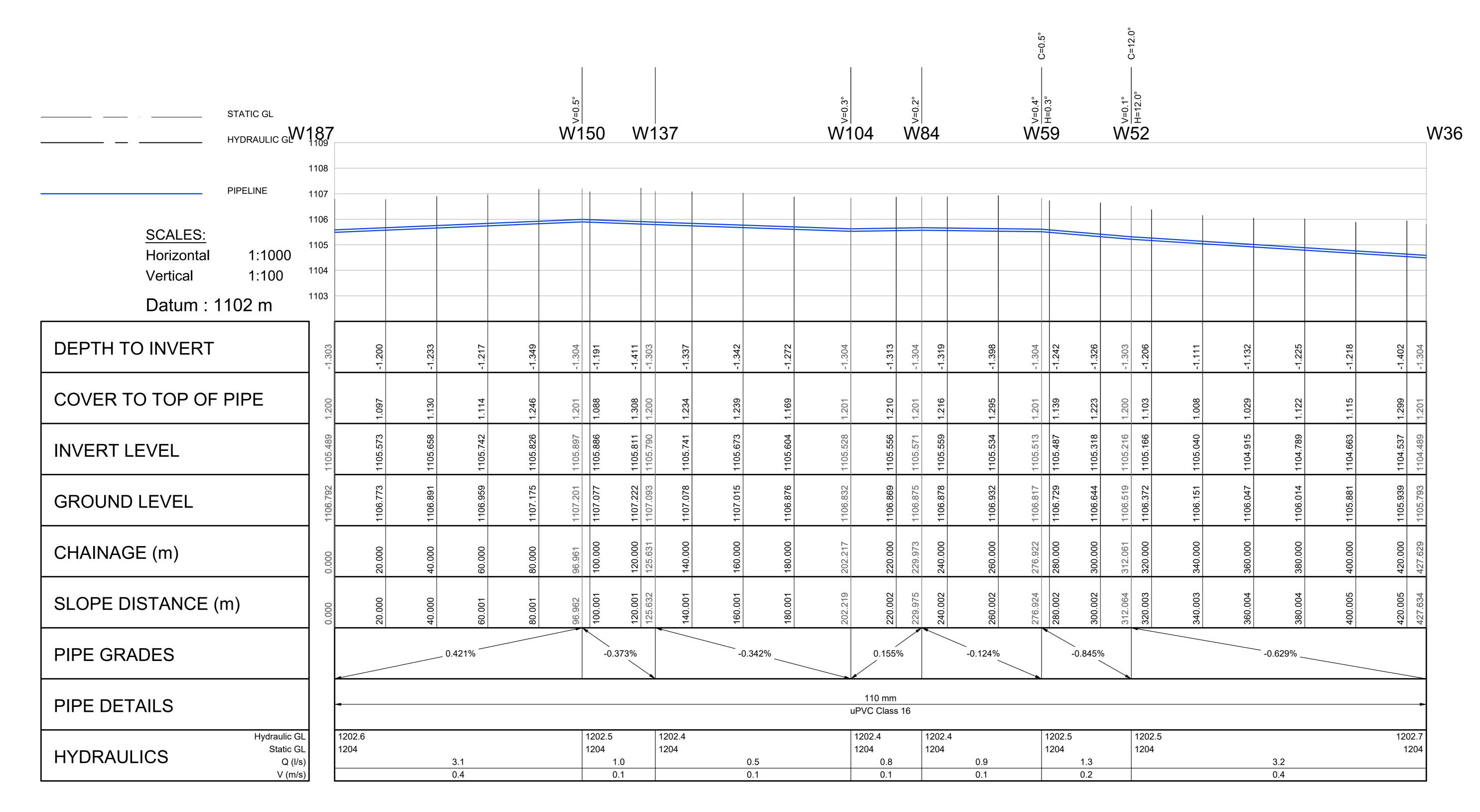
AS SHOWN

CLIENT DRAWING NUMBER

RLM/DRW/LS/ 010







LEGEND

PROPOSED 110mm DIA. uPVC PIPE

PROPOSED WATER IN-LINE VALVE PROPOSED FIRE HYDRANT

---PROPOSED WATER METER

--- PROPOSED DOUBLE ERF CONNECTION PROPOSED FLOW CONTROL VALVE

SURVEY BENCHMARK

Pipe Bends Schedule	(>3.0 Deg)
---------------------	------------

СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)
312.061	110	110	12.0

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

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DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

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16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

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2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

	BENCHMARKS Lo 27 WGS 84						
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
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ВМ9	25 796,660	2 830 806,780	1101,340				
BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				

187 TO 36

____A ____ 09/2024__ FOR TENDER

REVISION

CONSULT DIR

No DATE

FOR **TENDER**

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician) RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG Rustenburg Local Municipality Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

PO BOX 16

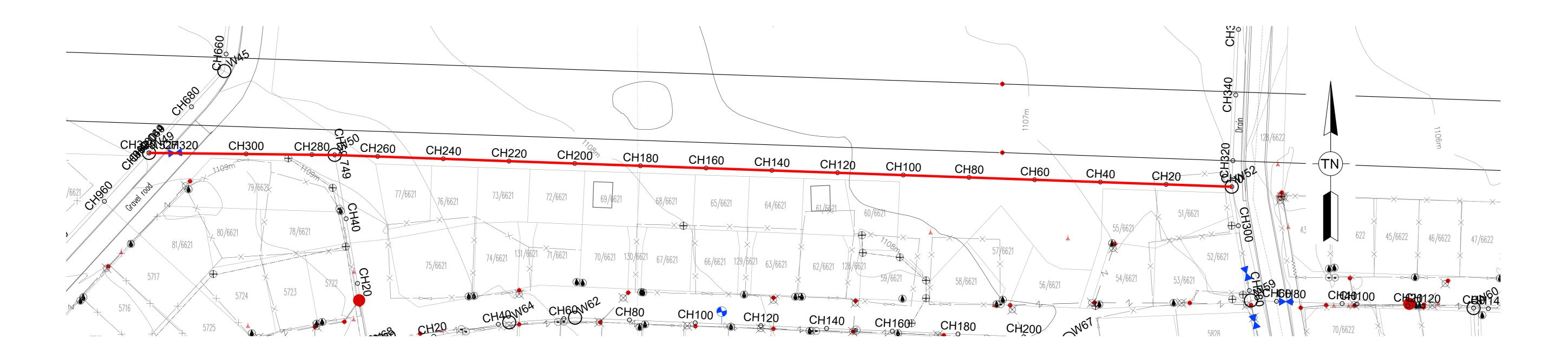
HLAYELENI CONSULTING ENGINEERS

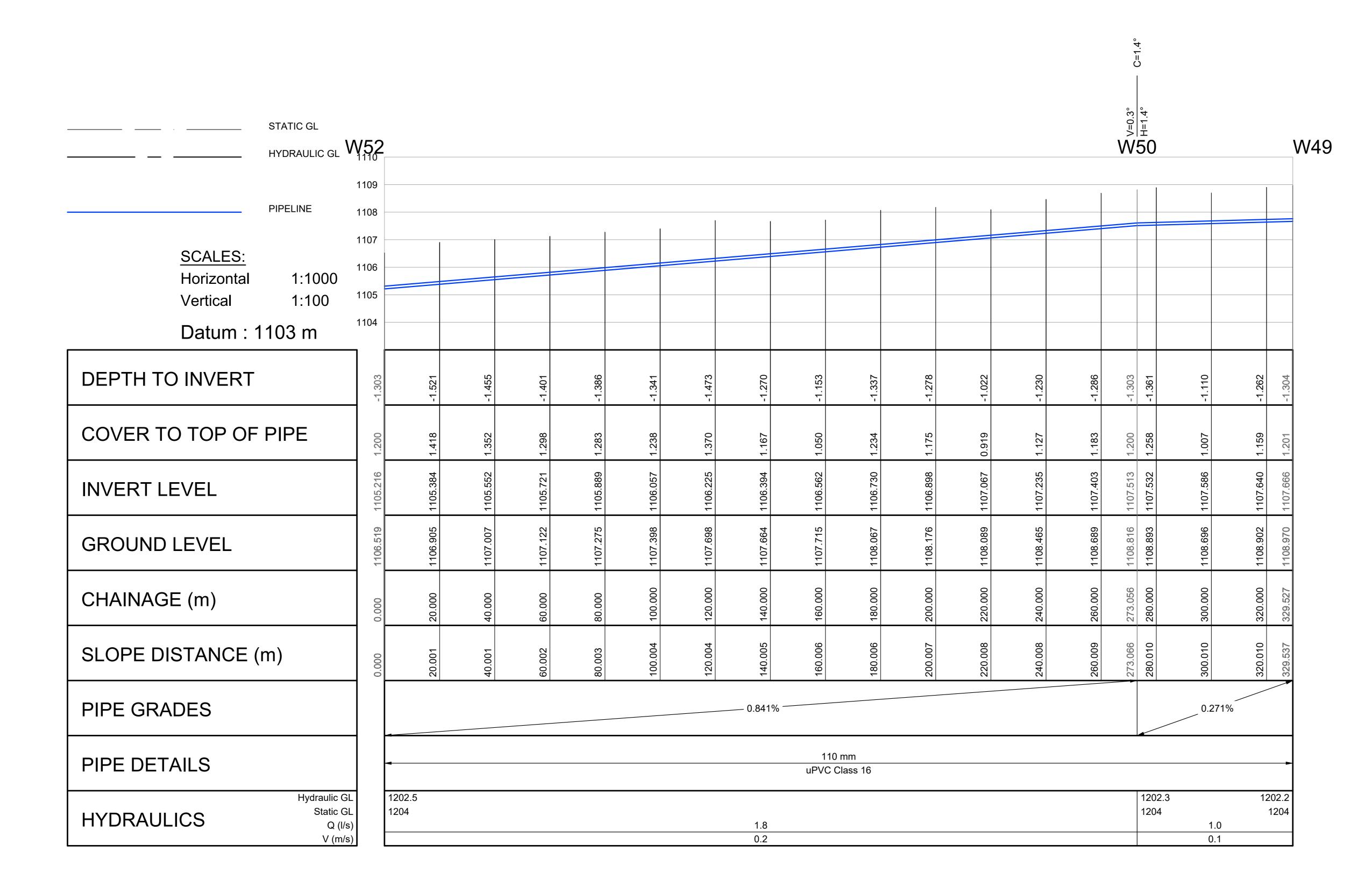


RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 187 TO 36

SHEET 12 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 012 RLM/DRW/LS/ 012

PROPOSED 110mm DIA. uPVC PIPE PROPOSED WATER IN-LINE VALVE PROPOSED FIRE HYDRANT PROPOSED WATER METER PROPOSED DOUBLE ERF CONNECTION PROPOSED FLOW CONTROL VALVE BM SURVEY BENCHMARK





52 TO 49

					Г
Α	09/2024	FOR TENDER	S.M.N	L.G.N	
No	DATE	REVISION	CONSULT	DIR	

FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

PM MAAKE (TECHNICIAN)

CHECKED BY

SM NXUMALO (Pr. Technician)

PO BOX 16
RUSTENBURG
0300

Rustenburg
0300

Tel No.: (013) 590-3607
Fax No.:(014) 590-3388



RUSTENBURG LOCAL MUNICIPALITY

NORHT WEST PROVINCE

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

52 TO 49

(Full signature)

SHEET 13 OF 51

A1 SCALE

AS SHOWN

CONSULTANTS
DRAWING NUMBER

HCE/DRW/LS/ 013

SHEET 13 OF 51

A1 SCALE

AS SHOWN

CLIENT DRAWING NUMBER

RLM/DRW/LS/ 013

Pipe Bends Schedule (>3.0 Deg)

CH Diameter1 (mm) Diameter2 (mm) Angle (Deg)

NOTES

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT
ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

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7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

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FIRE WATER SPECIFICATION

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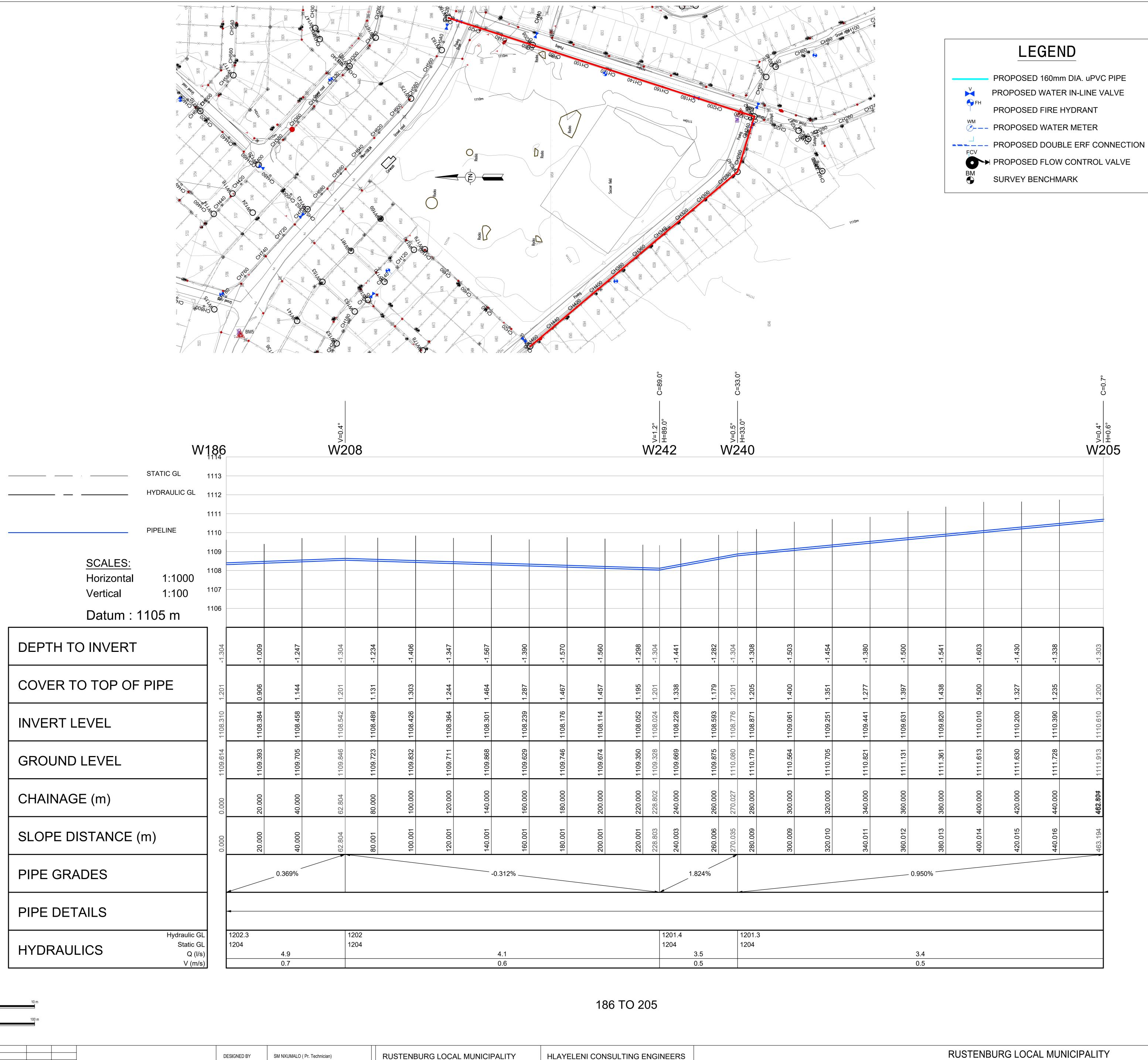
2. HYDRANTS

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BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		



Pipe Bends Schedule (>3.0 Deg) Diameter1 (mm) | Diameter2 (mm) | Angle (Deg) 228.802 110 270.027 628.586 110 110 25.9

684.326 735.960 110 110 16.0 793.791 949.134 12.9 958.813 110 110 13.5

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ARCHITECTS DRAWINGS. 3. THIS DRAWING NOT TO BE SCALED.

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8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD). 13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM

THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

SABS 62/1971 AS AMENDED.

FIRE WATER SPECIFICATION

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84 POINT Y-COORD. (m) X-COORD. (m) LEVEL (m) BM1 25 229,670 2 830 880,560 1106,920 BM2 25 239,770 2 830 940,230 1106,530 BM3 24 883,100 2 831 135,410 1109,420 BM4 24 553,410 2 830 814,190 1112,520 24 724,480 | 2 830 778,890 | 1111,060 24 886,960 | 2 830 501,980 | 1107,600 BM7 25 193,670 2 830 494,480 1105,780 BM8 25 432,180 2 830 869,120 1105,640 BM9 25 796,660 2 830 806,780 1101,340 BM10 | 25 522,910 | 2 830 996,910 | 1103,830 BM11 25 464,620 2 830 462,670 1103,880

A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

FOR **TENDER**

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

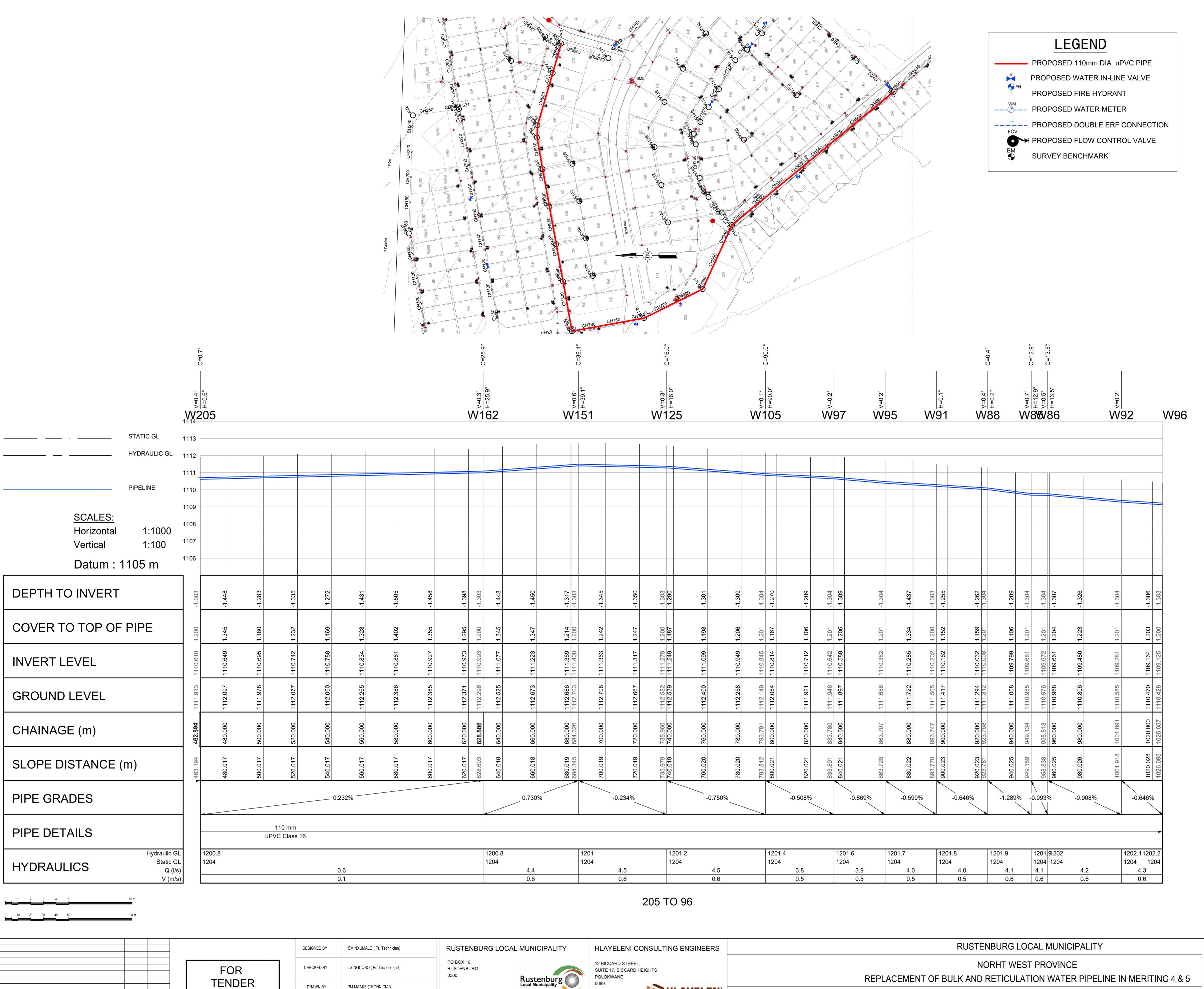




NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

186 TO 205

SHEET 14 OF 51 (Full signature) For: Client **AS SHOWN** CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 014 RLM/DRW/LS/ 014



TEL: (015) 297 7434

FAX: (086) 244 8999

TENDER

A 09/2024

No DATE

FOR TENDER

REVISION

CONSULT DIR

DRAWN BY

CHECKED BY

PM MAAKE (TECHNICIAN)

SM NXUMALO (Pr. Technician)

Tel No.: (013) 590-3607

Fax No.:(014) 590-3388

	Pipe Bends Schedule (>3.0 Deg)						
	СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)			
	228.802	110	110	89.0			
	270.027	110	110	33.0			
	628.586	110	110	25.9			
	684.326	110	110	39.1			
	735.960	110	110	16.0			
	793.791	110	110	90.0			
	949.134	110	110	12.9			
1							

110 110 13.5

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM

THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

SHEET 15 OF 51

A1 SCALE

CLIENT DRAWING NUMBER

AS SHOWN

RLM/DRW/LS/ 015

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84					
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
BM2	25 239,770	2 830 940,230	1106,530		
BM3	24 883,100	2 831 135,410	1109,420		
BM4	24 553,410	2 830 814,190	1112,520		
BM5	24 724,480	2 830 778,890	1111,060		
BM6	24 886,960	2 830 501,980	1107,600		
BM7	25 193,670	2 830 494,480	1105,780		
BM8	25 432,180	2 830 869,120	1105,640		
BM9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		

(Full signature)

For: Client

LONG SECTIONS

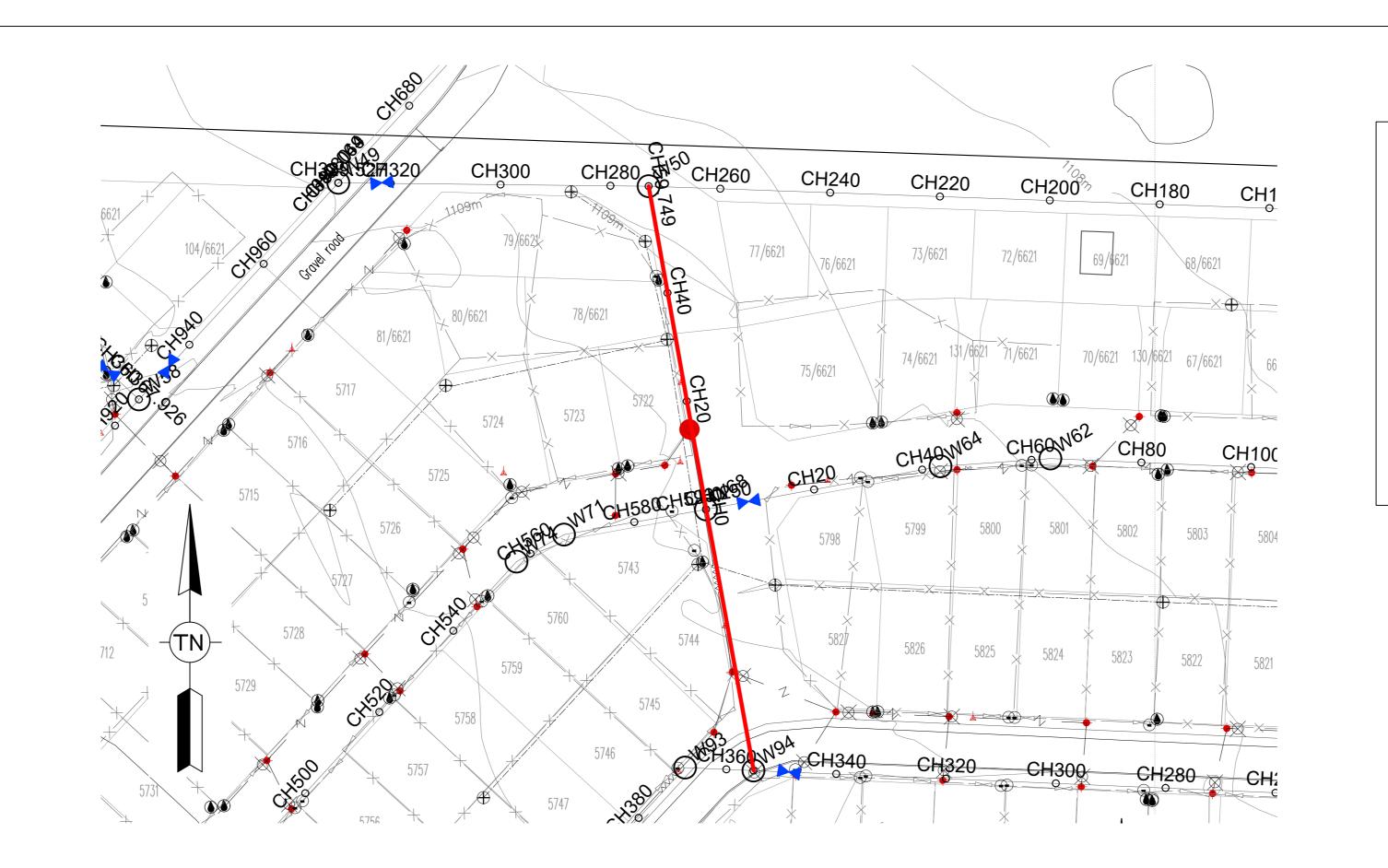
205 TO 96

For: Consulting Engineer

CONSULTANTS

HCE/DRW/LS/ 015

DRAWING NUMBER



LEGEND

PROPOSED 110mm DIA. uPVC PIPE PROPOSED WATER IN-LINE VALVE PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

--- PROPOSED DOUBLE ERF CONNECTION → PROPOSED FLOW CONTROL VALVE

SURVEY BENCHMARK

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM

THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ

SABS 62/1971 AS AMENDED. 2. HYDRANTS

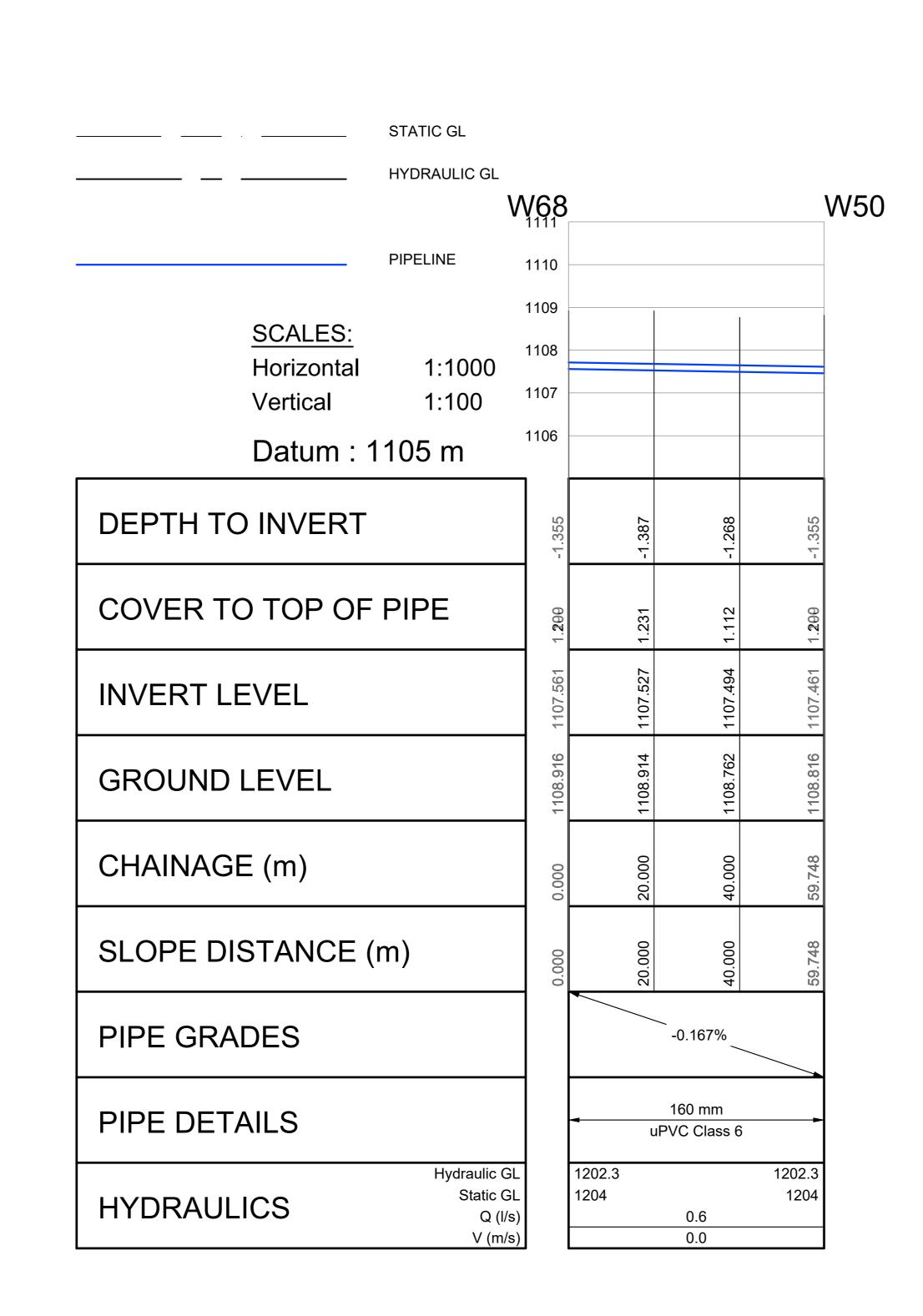
(a) SHALL COMPLY TO SABS 1128.(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84					
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
BM2	25 239,770	2 830 940,230	1106,530		
BM3	24 883,100	2 831 135,410	1109,420		
BM4	24 553,410	2 830 814,190	1112,520		
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BM6	24 886,960	2 830 501,980	1107,600		
BM7	25 193,670	2 830 494,480	1105,780		
BM8	25 432,180	2 830 869,120	1105,640		
BM9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		



TEND					
I LINL					
	L.G.N	S.M.N	FOR TENDER	09/2024	Α
	DIR	CONSULT	REVISION	DATE	No

NDER

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician) RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388



12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434 FAX: (086) 244 8999

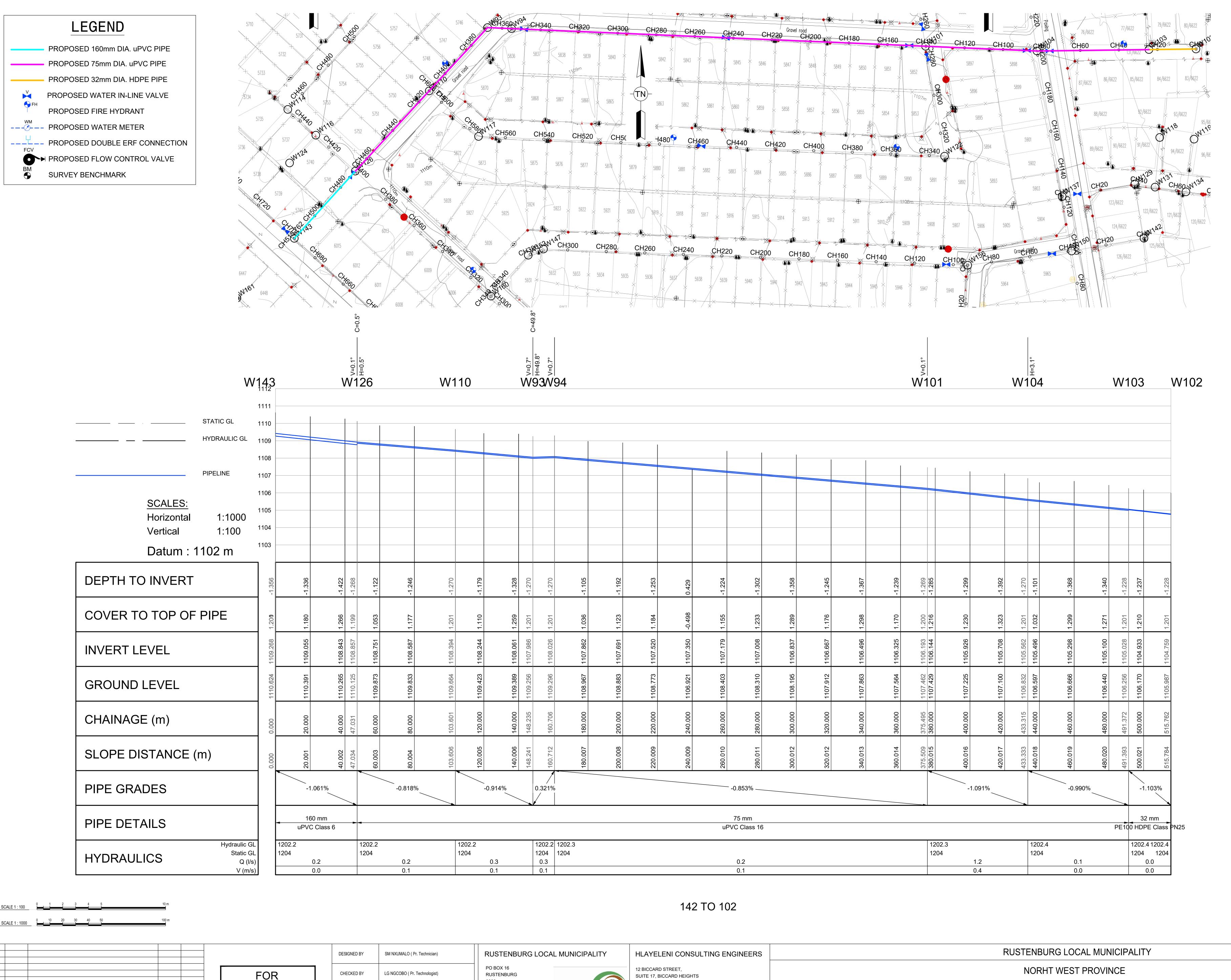
HLAYELENI CONSULTING ENGINEERS

50 TO 68

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

50 TO 68

SHEET 16 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 016 RLM/DRW/LS/ 016



NC NC

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

5. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES
WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

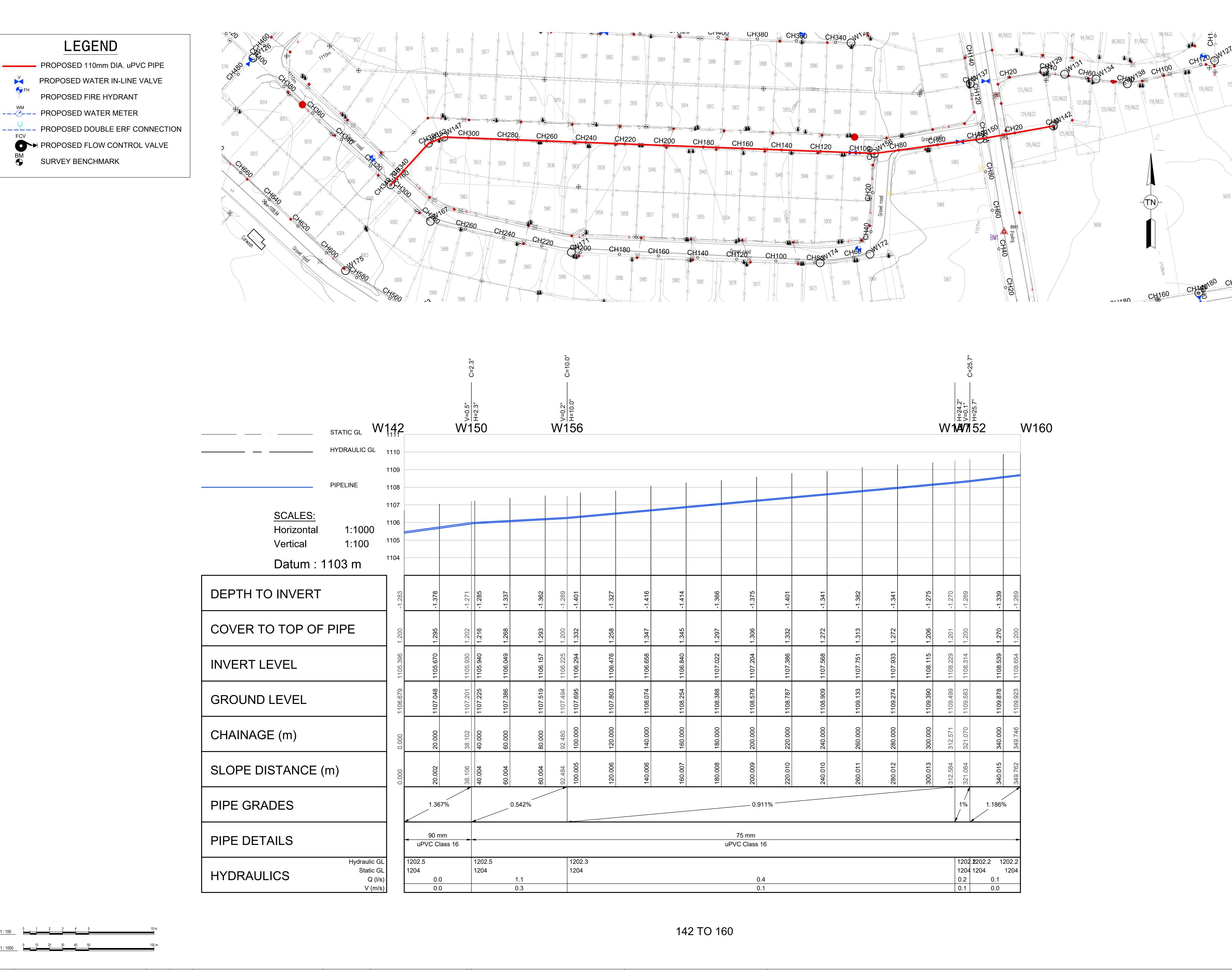
(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84					
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
BM2	25 239,770	2 830 940,230	1106,530		
BM3	24 883,100	2 831 135,410	1109,420		
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BM7	25 193,670	2 830 494,480	1105,780		
BM8	25 432,180	2 830 869,120	1105,640		
ВМ9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		

SHEET 17 OF 51 (Full signature) FOR Rustenburg Local Municipality For: Client A1 SCALE 0300 REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 POLOKWANE **TENDER** AS SHOWN For: Consulting Engineer DRAWN BY PM MAAKE (TECHNICIAN) LONG SECTIONS CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER Tel No.: (013) 590-3607 A 09/2024 FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 142 TO 102 HCE/DRW/LS/ 017 CHECKED BY SM NXUMALO (Pr. Technician) RLM/DRW/LS/ 017 No DATE REVISION CONSULT DIR FAX: (086) 244 8999



RUSTENBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 18 OF 51
NORHT WEST PROVINCE		A1 SCALE
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	20 / / For: Consulting Engineer	AS SHOWN
LONG SECTIONS	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
142 TO 160	HCE/DRW/LS/ 018	RLM/DRW/LS/ 018

Pipe Bends Schedule (>3.0 Deg)

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

2. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

SABS 62/1971 AS AMENDED.

SIMILARLY APPROVED BY THE ENGINEER.

BENCHMARKS Lo 27 WGS 84

POINT Y-COORD. (m) X-COORD. (m) LEVEL (m)

BM1 25 229,670 2 830 880,560 1106,920

BM2 25 239,770 2 830 940,230 1106,530 BM3 24 883,100 2 831 135,410 1109,420

BM4 24 553,410 2 830 814,190 1112,520

BM5 24 724,480 2 830 778,890 1111,060 BM6 24 886,960 2 830 501,980 1107,600

BM7 25 193,670 2 830 494,480 1105,780

BM8 25 432,180 2 830 869,120 1105,640

BM9 25 796,660 2 830 806,780 1101,340

BM10 | 25 522,910 | 2 830 996,910 | 1103,830

BM11 25 464,620 2 830 462,670 1103,880

1. PIPEWORK

2. HYDRANTS

3. BOOSTERS

5. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR

(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ

SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE

POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

TESTING OF NETWORK IS COMPLETED.

AUTHORITIES SUPERVISION.

BOUNDARY UNLESS OTHERWISE INDICATED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

321.070

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

Diameter1 (mm) | Diameter2 (mm) | Angle (Deg)

A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

FOR **TENDER**

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician)

PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

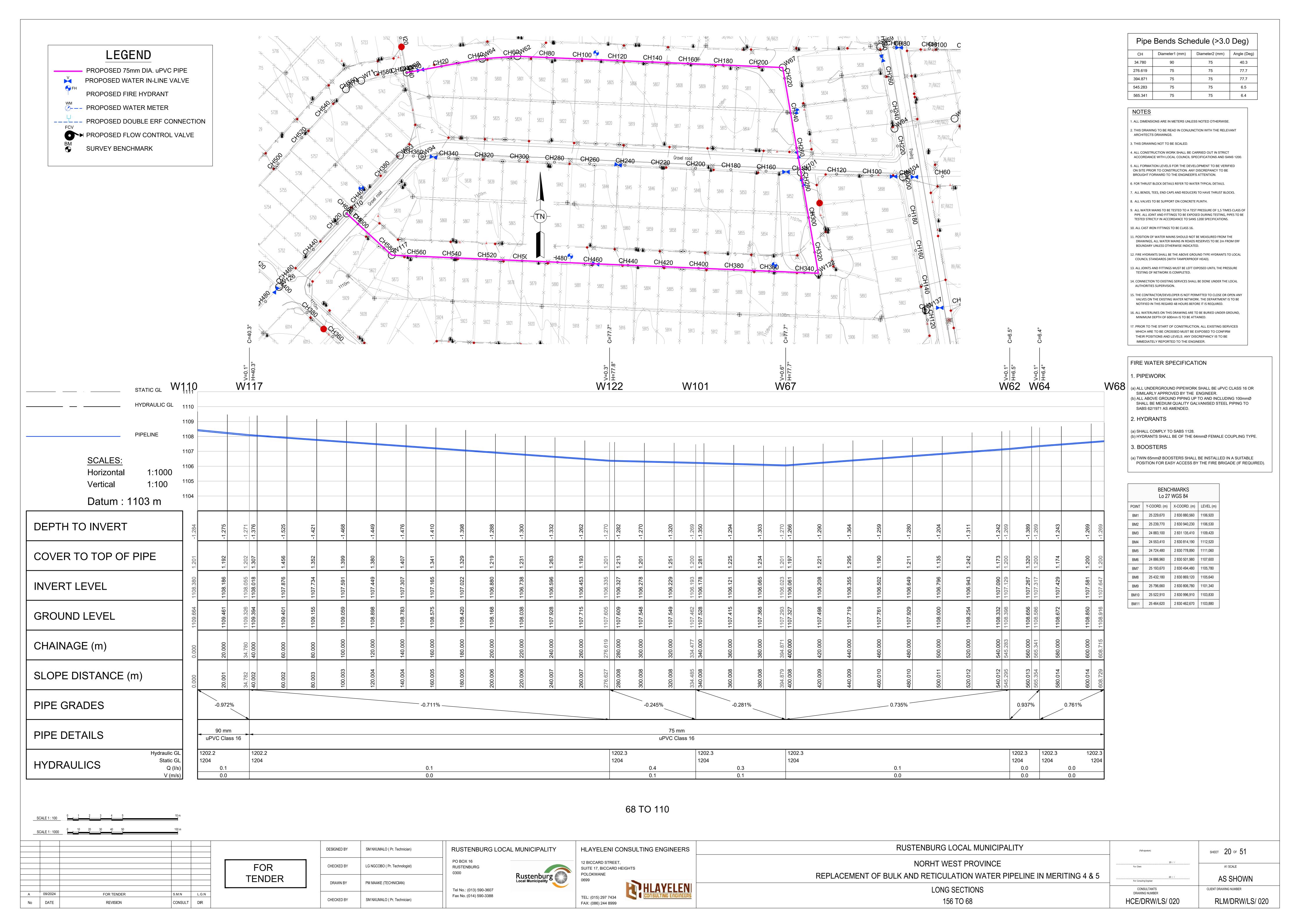
RUSTENBURG LOCAL MUNICIPALITY

Rustenburg Local Municipality

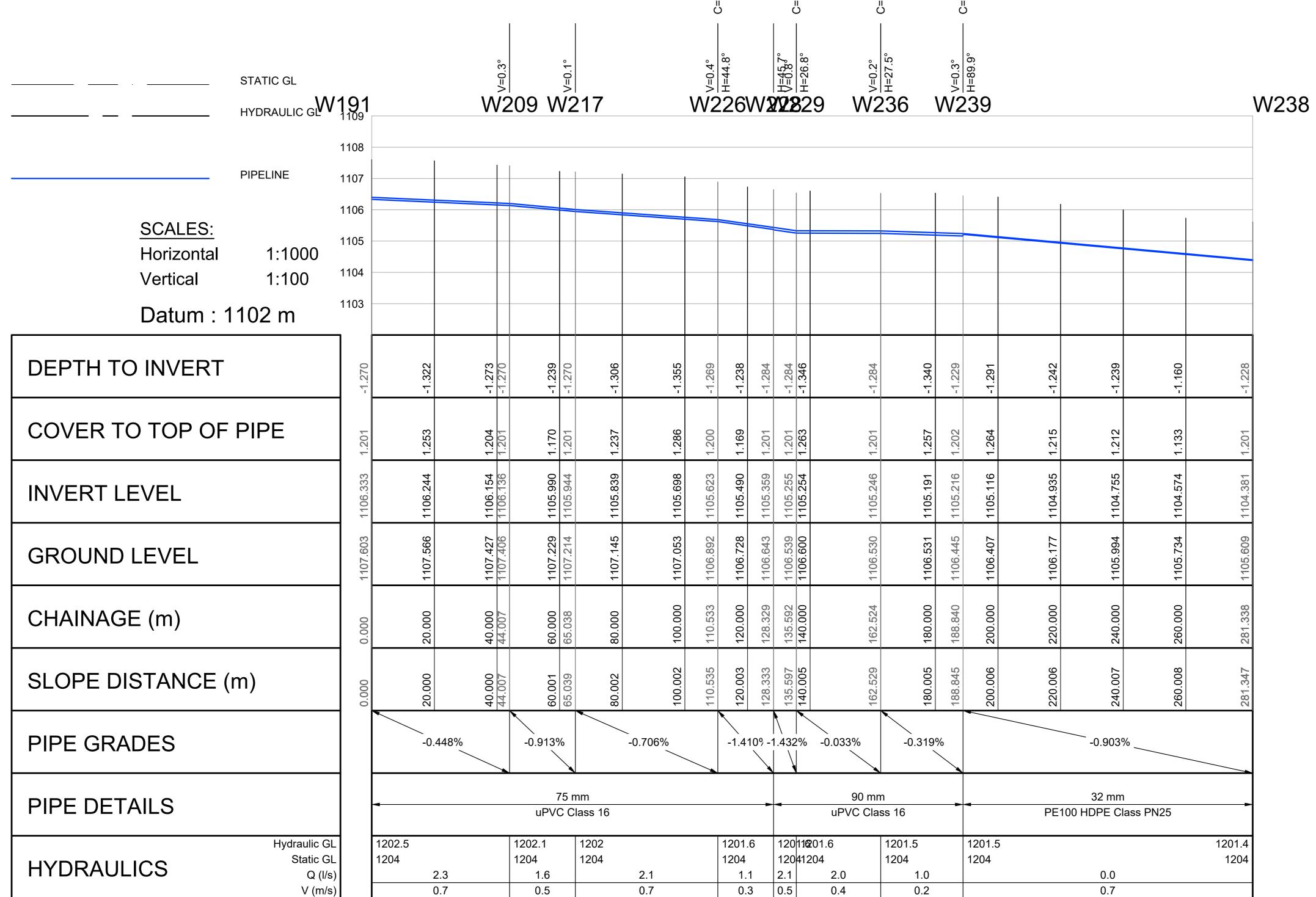


HLAYELENI CONSULTING ENGINEERS









LEGEND

PROPOSED 75mm DIA. uPVC PIPE PROPOSED 32mm DIA. HDPE PIPE PROPOSED WATER IN-LINE VALVE PROPOSED FIRE HYDRANT --- PROPOSED WATER METER --- PROPOSED DOUBLE ERF CONNECTION

SURVEY BENCHMARK

PROPOSED FLOW CONTROL VALVE

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

90

110.533

135.592

162.524

188.840

Pipe Bends Schedule (>3.0 Deg)

Diameter1 (mm) | Diameter2 (mm) | Angle (Deg)

90

32

26.8

27.5

89.9

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

- 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED
- ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.
- 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.
- 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.
- 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.
- 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

TESTING OF NETWORK IS COMPLETED.

- 11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.
- 12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL
- COUNCIL STANDARDS (WITH TAMPERPROOF HEAD). 13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE
- 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL
- AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY
- VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.
- 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.
- 7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84							
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
BM1	25 229,670	2 830 880,560	1106,920				
BM2	25 239,770	2 830 940,230	1106,530				
ВМ3	24 883,100	2 831 135,410	1109,420				
BM4	24 553,410	2 830 814,190	1112,520				
BM5	24 724,480	2 830 778,890	1111,060				
BM6	24 886,960	2 830 501,980	1107,600				
BM7	25 193,670	2 830 494,480	1105,780				
BM8	25 432,180	2 830 869,120	1105,640				
ВМ9	25 796,660	2 830 806,780	1101,340				
BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				

191 TO 238

Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR **TENDER**

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)







HLAYELENI CONSULTING ENGINEERS

NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

191 TO 238

RUSTENBURG LOCAL MUNICIPALITY

SHEET 21 OF 51 (Full signature) For: Client A1 SCALE AS SHOWN For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/021 RLM/DRW/LS/ 021



12 BICCARD STREET,

TEL: (015) 297 7434

FAX: (086) 244 8999

POLOKWANE

SUITE 17, BICCARD HEIGHTS

HLAYELEN CONSULTING ENGINEERS

Rustenburg Local Municipality

DESIGNED BY

CHECKED BY

DRAWN BY

CHECKED BY

FOR

FOR TENDER

REVISION

No DATE

CONSULT DIR

TENDER

LG NGCOBO (Pr. Technologist)

PM MAAKE (TECHNICIAN)

SM NXUMALO (Pr. Technician)

PO BOX 16

0300

RUSTENBURG

Tel No.: (013) 590-3607

Fax No.:(014) 590-3388

LEGEND

PROPOSED 75mm DIA. uPVC PIPE

PROPOSED WATER IN-LINE VALVE

PROPOSED FIRE HYDRANT PROPOSED WATER METER

NORHT WEST PROVINCE

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

180 TO 228

--- PROPOSED DOUBLE ERF CONNECTION

PROPOSED FLOW CONTROL VALVE

SURVEY BENCHMARK

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

> 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

115.762

136.919

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

Pipe Bends Schedule (>3.0 Deg)

Diameter1 (mm) Diameter2 (mm) Angle (Deg)

75

41.6

22.5

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED. 7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES

WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

SHEET 22 OF 51

A1 SCALE

CLIENT DRAWING NUMBER

AS SHOWN

RLM/DRW/LS/ 022

(Full signature)

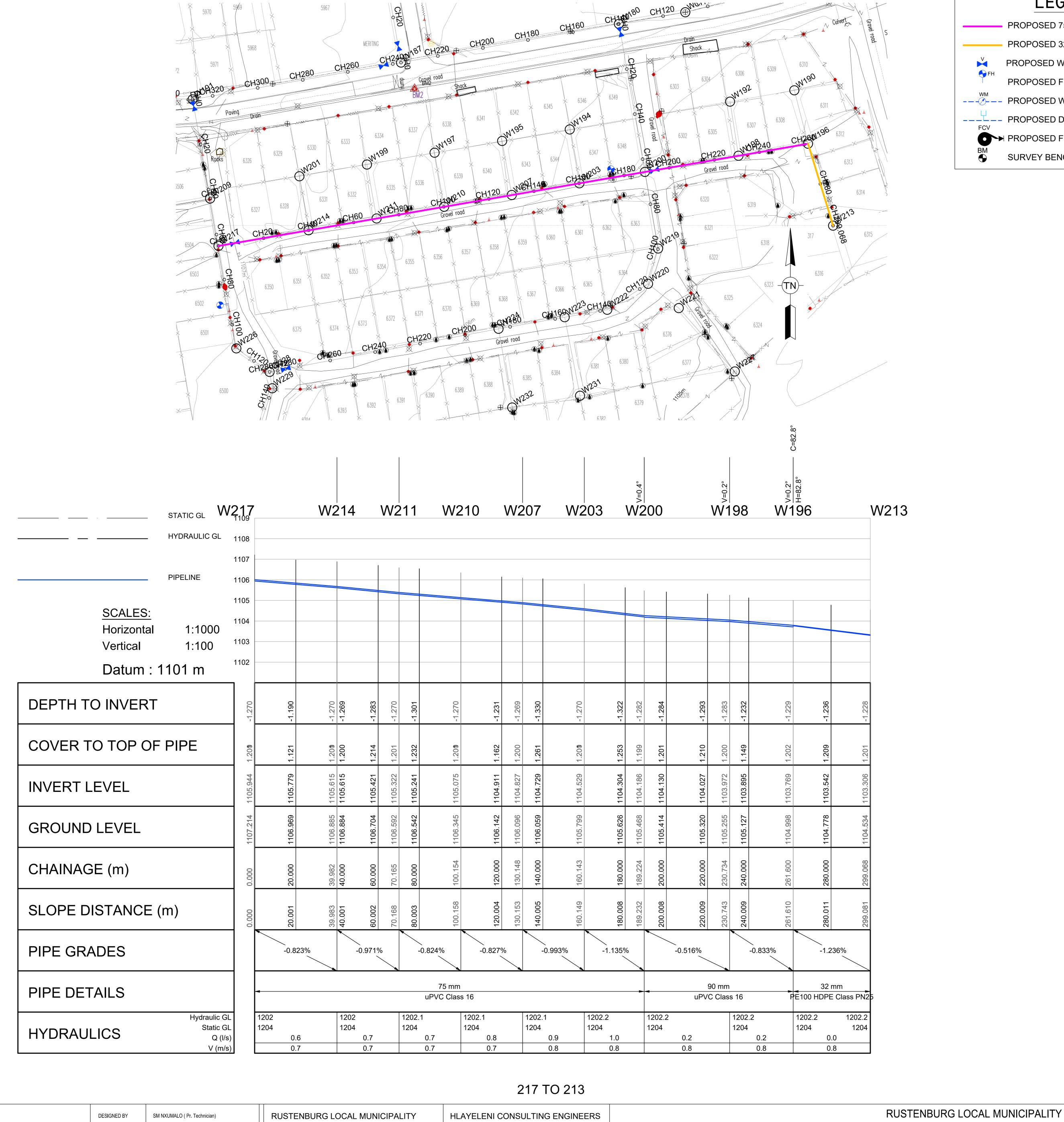
For: Client

For: Consulting Engineer

CONSULTANTS DRAWING NUMBER

HCE/DRW/LS/ 022

BENCHMARKS Lo 27 WGS 84							
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
BM1	25 229,670	2 830 880,560	1106,920				
BM2	25 239,770	2 830 940,230	1106,530				
BM3	24 883,100	2 831 135,410	1109,420				
BM4	24 553,410	2 830 814,190	1112,520				
BM5	24 724,480	2 830 778,890	1111,060				
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BM8	25 432,180	2 830 869,120	1105,640				
ВМ9	25 796,660	2 830 806,780	1101,340				
BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				



LEGEND

PROPOSED 75mm DIA. uPVC PIPE PROPOSED 32mm DIA. HDPE PIPE PROPOSED WATER IN-LINE VALVE PROPOSED FIRE HYDRANT --- PROPOSED WATER METER ---- PROPOSED DOUBLE ERF CONNECTION

PROPOSED FLOW CONTROL VALVE

SURVEY BENCHMARK

Pipe Bends Schedule (>3.0 Deg)

CH Diameter1 (mm) Diameter2 (mm) Angle (Deg) 261.600

<u>NOTES</u>

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED. 4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

AUTHORITIES SUPERVISION.

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

	DENO	LIMADICO					
BENCHMARKS Lo 27 WGS 84							
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
BM1	25 229,670	2 830 880,560	1106,920				
BM2	25 239,770	2 830 940,230	1106,530				
ВМ3	24 883,100	2 831 135,410	1109,420				
BM4	24 553,410	2 830 814,190	1112,520				
BM5	24 724,480	2 830 778,890	1111,060				
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ВМ9	25 796,660	2 830 806,780	1101,340				
BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				

A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

FOR **TENDER**

LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician)

PO BOX 16 RUSTENBURG 0300 Tel No.: (013) 590-3607

Fax No.:(014) 590-3388



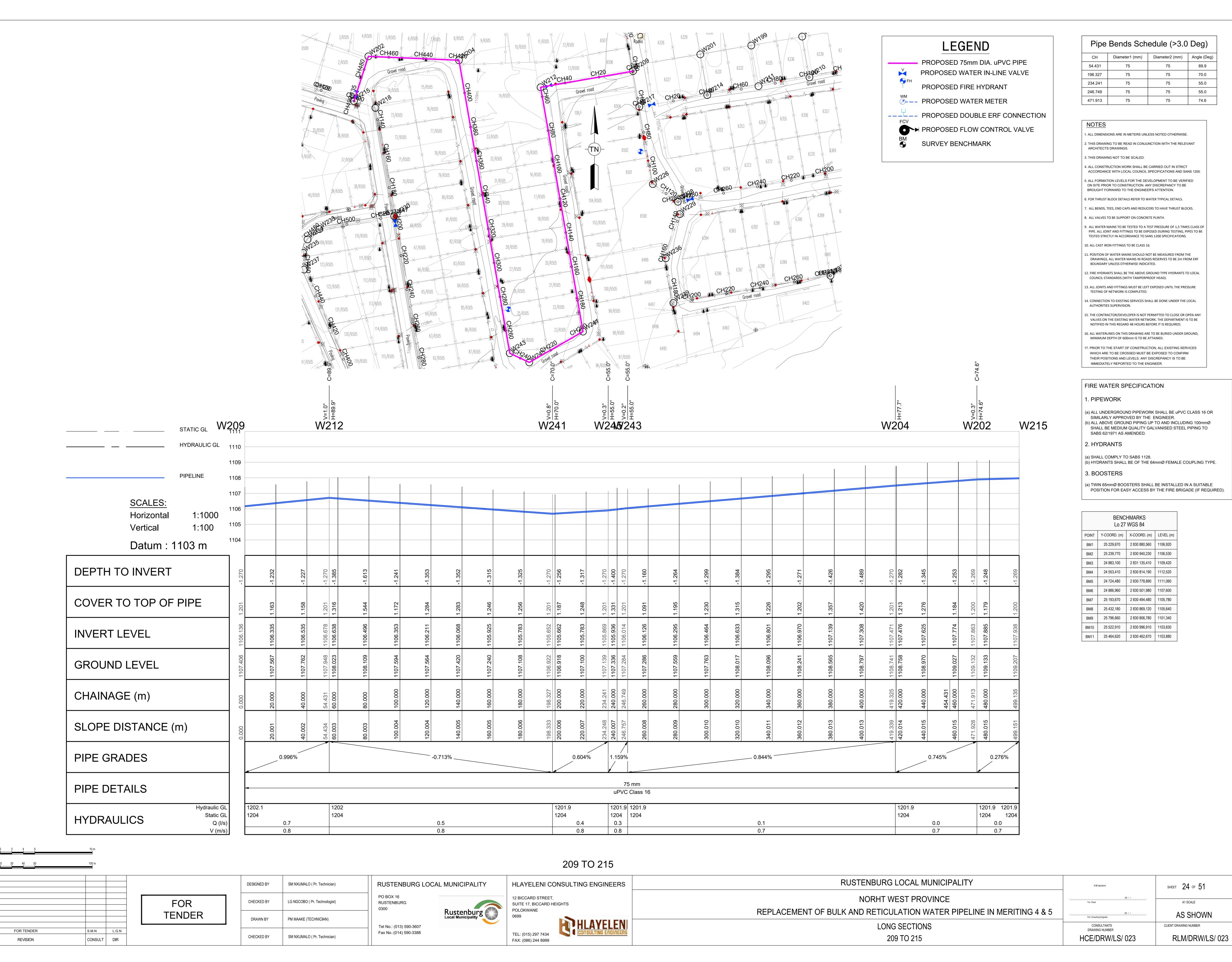


NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

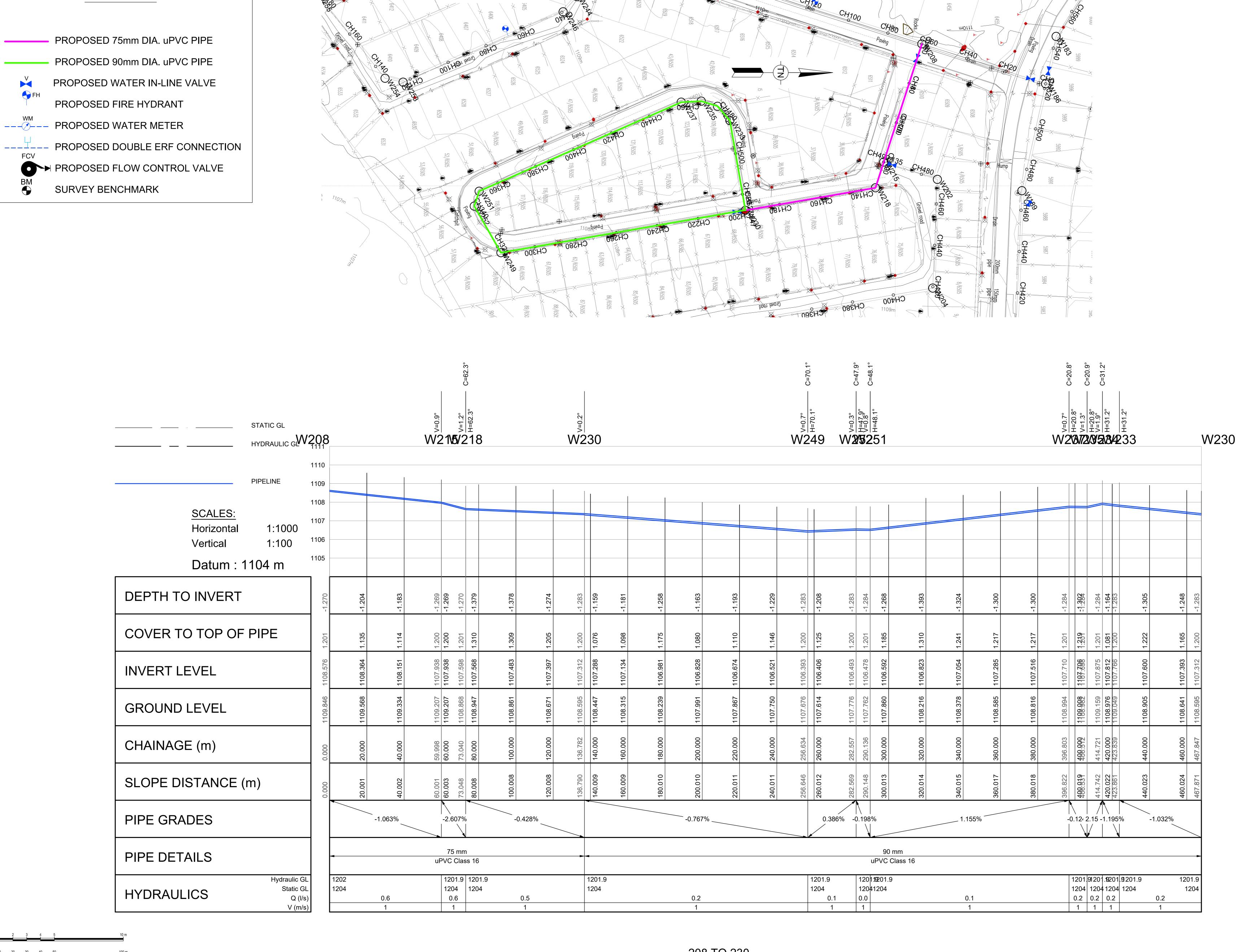
217 TO 213

For: Client For: Consulting Engineer CONSULTANTS DRAWING NUMBER HCE/DRW/LS/ 023

SHEET 23 of 51(Full signature) A1 SCALE AS SHOWN CLIENT DRAWING NUMBER RLM/DRW/LS/ 023



No DATE



LEGEND

SCALE 1:100

Pipe	Pipe Bends Schedule (>3.0 Deg)								
СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)						
73.040	75	75	62.3						
256.634	90	90	70.1						
282.557	90	90	47.9						
290.136	90	90	48.1						
396.803	90	90	20.8						
406.512	90	90	20.9						
414.721	90	90	31.2						

NOTES

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

BOUNDARY UNLESS OTHERWISE INDICATED.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

10. ALL CAST IRON FITTINGS TO BE CLASS 16.11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES
WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

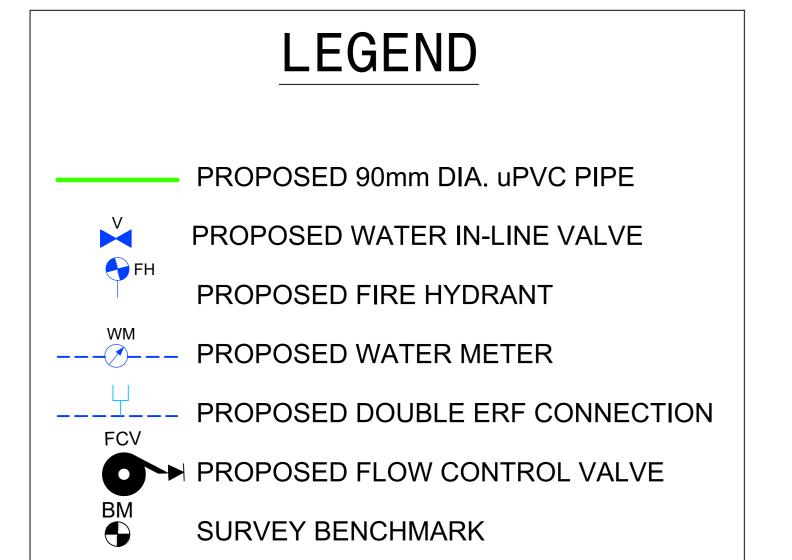
(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

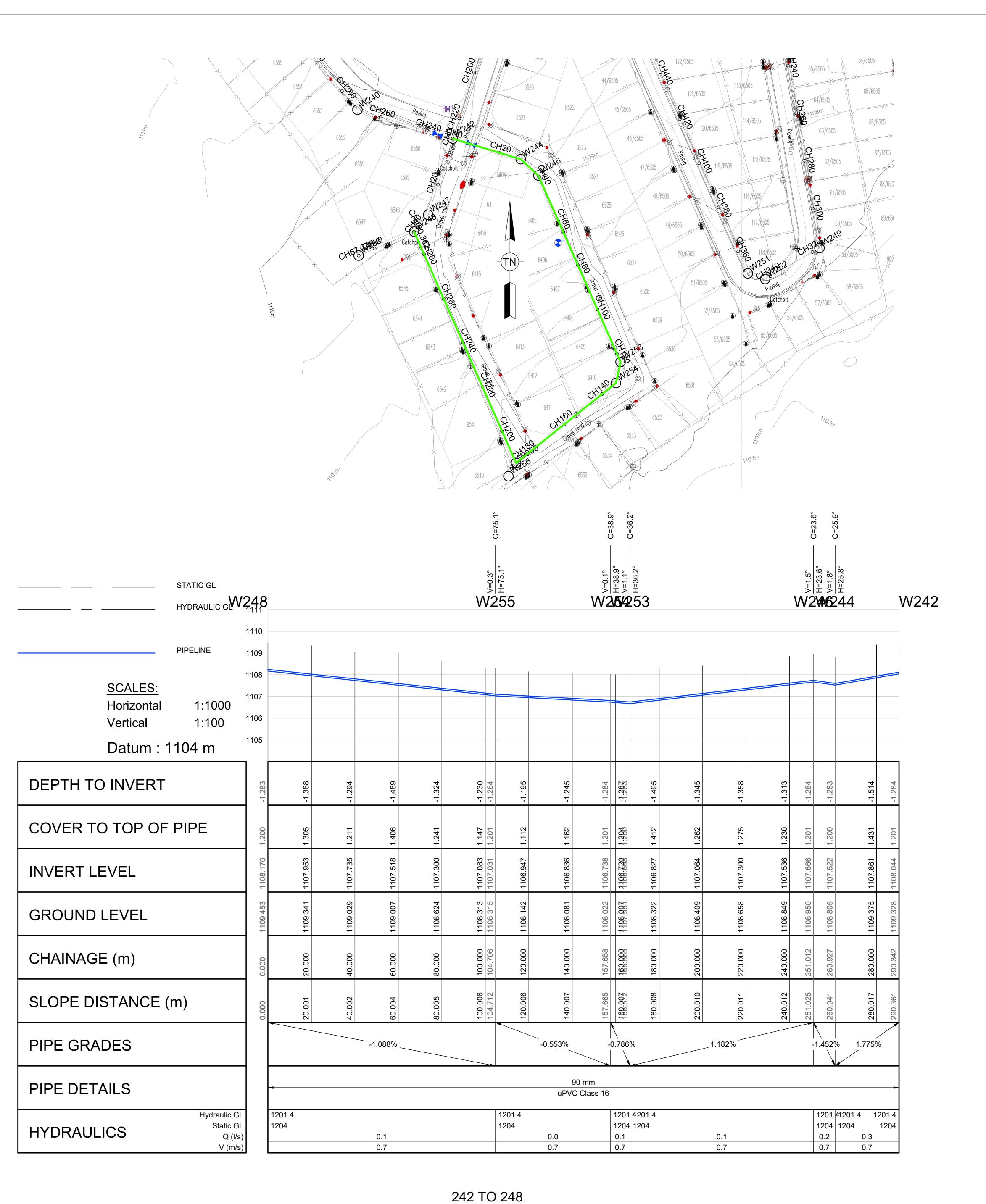
3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
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BM8	25 432,180	2 830 869,120	1105,640
ВМ9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830
BM11	25 464,620	2 830 462,670	1103,880

SCALE 1 : 1000 0 10	20 30 40 50	100 m						208 10 230			
				DESIGNED BY	SM NXUMALO (Pr. Technician)	RUSTENBURG LO	CAL MUNICIPALITY	HLAYELENI CONSULTING ENGINEERS	RUSTENBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 55 OF 51
			FOR	CHECKED BY	LG NGCOBO (Pr. Technologist)	PO BOX 16 RUSTENBURG		12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS	NORHT WEST PROVINCE		A1 SCALE
			TENDER	DRAWN BY	PM MAAKE (TECHNICIAN)	0300	Rustenburg Local Municipality	POLOKWANE 0699	REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	20 / / For: Consulting Engineer	AS SHOWN
A 09/2024	FOR TENDER	S.M.N L.G.N				Tel No.: (013) 590-3607 Fax No.:(014) 590-3388		HLAYELEN	LONG SECTIONS	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
No DATE	REVISION	CONSULT DIR		CHECKED BY	SM NXUMALO (Pr. Technician)	Fax No(014) 590-5500		TEL: (015) 297 7434 FAX: (086) 244 8999	208 TO 230	HCE/DRW/LS/ 025	RLM/DRW/LS/ 025





Pipe Bends Schedule (>3.0 Deg)

СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)
104.706	90	90	75.1
157.658	90	90	38.9
166.565	90	90	36.2
251.012	90	90	23.6
260.927	90	90	25.9

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

THEIR POSITIONS AND LEVELS, ANY DISCREPANCY IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED. 17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

AUTHORITIES SUPERVISION.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ

SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84							
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
BM1	25 229,670	2 830 880,560	1106,920				
BM2	25 239,770	2 830 940,230	1106,530				
ВМ3	24 883,100	2 831 135,410	1109,420				
BM4	24 553,410	2 830 814,190	1112,520				
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BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				

-	SCALE 1:100	0	1	2	3	4	5	10 m
-	SCALE 1:1000	0	10	20	30	40	50	 100 m

FOR TENDER

REVISION

A 09/2024

No DATE

FOR	
TENDED	

S.M.N L.G.N

CONSULT DIR

IENDER

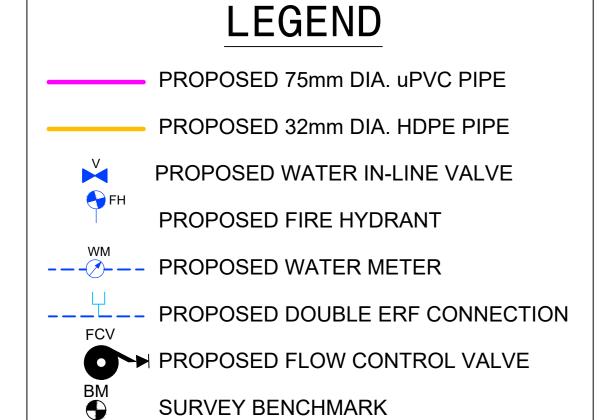
DESIGNED BY SM NXUMALO (Pr. Technician) CHECKED BY LG NGCOBO (Pr. Technologist) PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician) RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607

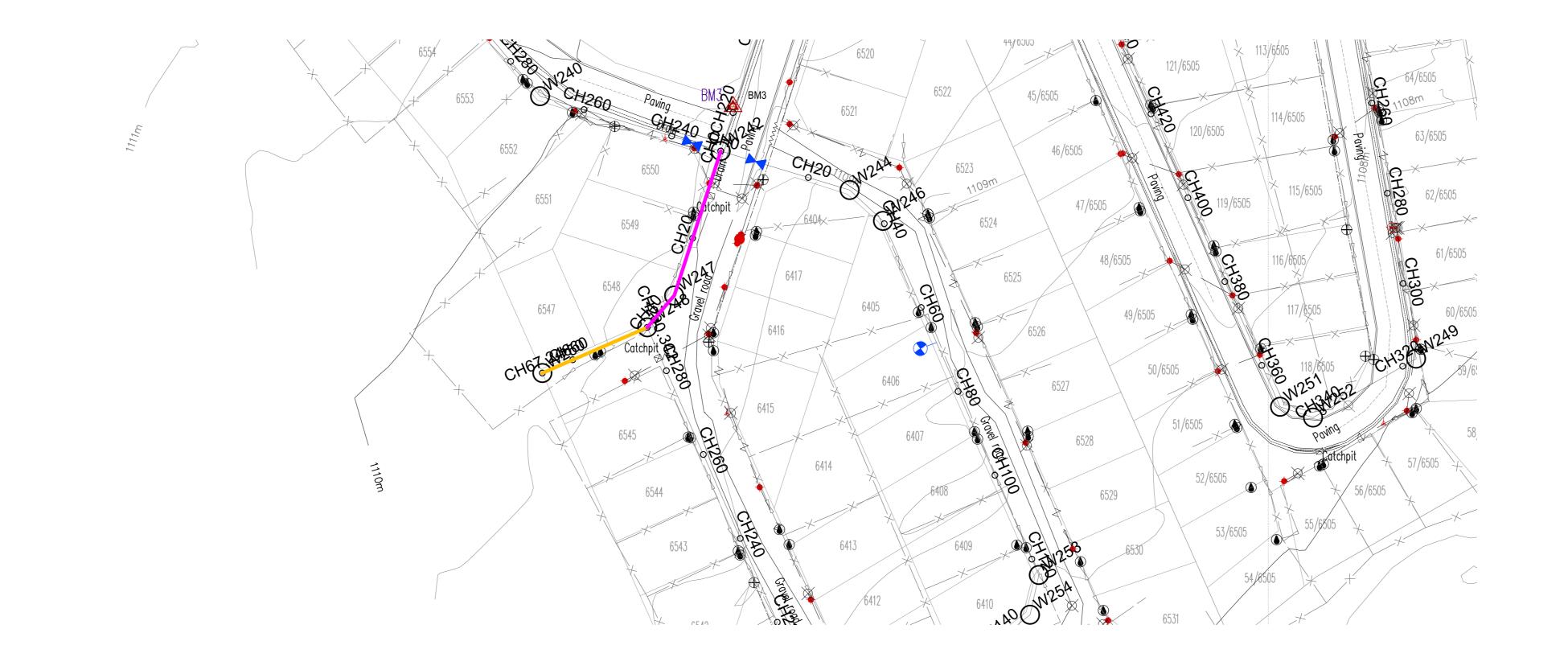
Fax No.:(014) 590-3388

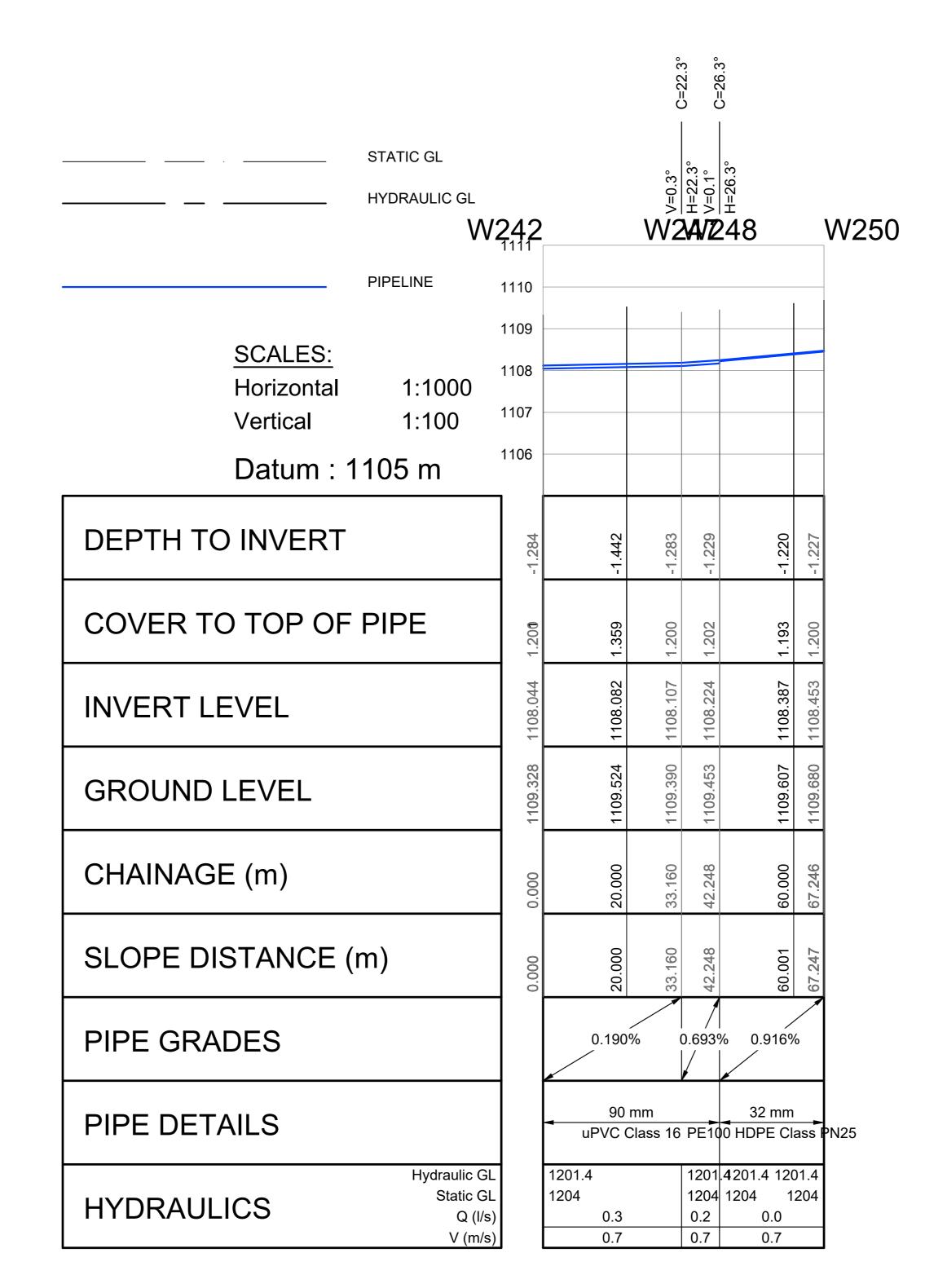


RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 242 TO 248

SHEET 26 OF 51 AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER RLM/DRW/LS/ 026 HCE/DRW/LS/ 026







Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR TENDER

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607

Fax No.:(014) 590-3388

POLOKWANE

FAX: (086) 244 8999

HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 242 TO 250 HCE/DRW/LS/ 027

Pipe Bends Schedule (>3.0 Deg) CH Diameter1 (mm) Diameter2 (mm) Angle (Deg) 33.160 22.3

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

SHEET 27 OF 51

A1 SCALE

CLIENT DRAWING NUMBER

AS SHOWN

RLM/DRW/LS/ 027

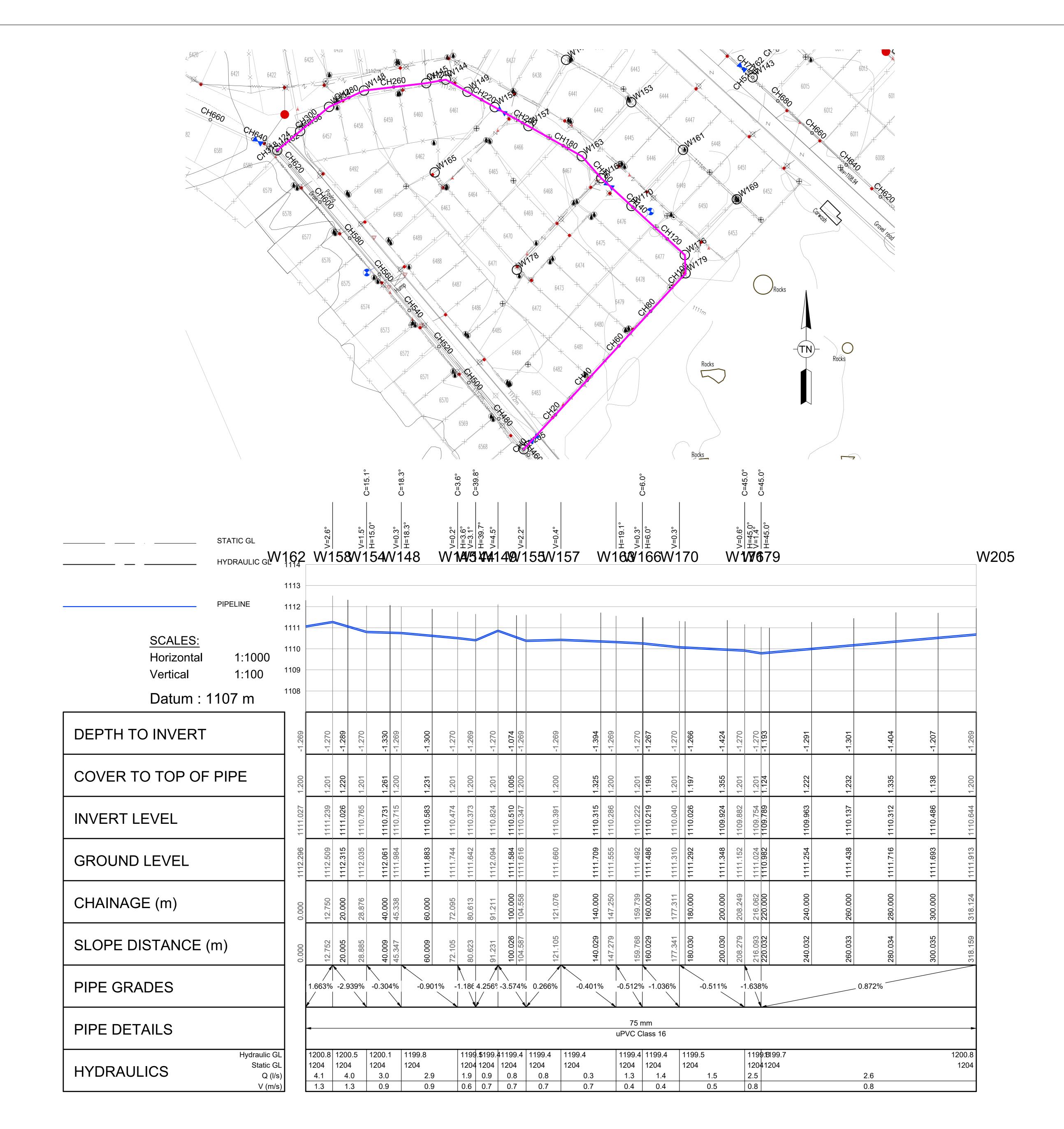
(Full signature)

For: Client

For: Consulting Engineer

CONSULTANTS DRAWING NUMBER

	BENCHMARKS Lo 27 WGS 84				
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
BM2	25 239,770	2 830 940,230	1106,530		
BM3	24 883,100	2 831 135,410	1109,420		
BM4	24 553,410	2 830 814,190	1112,520		
BM5	24 724,480	2 830 778,890	1111,060		
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ВМ9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		



Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED DOUBLE ERF CONNECTION

PROPOSED FLOW CONTROL VALVE

PROPOSED WATER METER

SURVEY BENCHMARK

PROPOSED 75mm DIA. uPVC PIPE

PROPOSED WATER IN-LINE VALVE

FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

PM MAAKE (TECHNICIAN)

CHECKED BY

SM NXUMALO (Pr. Technician)

PO BOX 16
RUSTENBURG
0300

Rustenburg
Local Municipality

Tel No.: (013) 590-3607
Fax No.:(014) 590-3388

RUSTENBURG LOCAL MUNICIPALITY



NORHT WEST PROVINCE

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

RUSTENBURG LOCAL MUNICIPALITY

205 TO 162

(Full signature)

SHEET 28 OF 51

For: Client

A1 SCALE

AS SHOWN

CONSULTANTS
DRAWING NUMBER

HCE/DRW/LS/ 028

SHEET 28 OF 51

A1 SCALE

AS SHOWN

CLIENT DRAWING NUMBER

RLM/DRW/LS/ 028

NOTES

45.338

72.095

80.613

159.739

208.249

216.062

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

75

75

Pipe Bends Schedule (>3.0 Deg)

Diameter2 (mm) Angle (Deg)

75

75

75

75

15.1

18.3

3.6

39.8

4.5

6.0

45.0

45.0

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4 ALL CONSTRUCTION WORK SHALL BE CARE

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

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15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

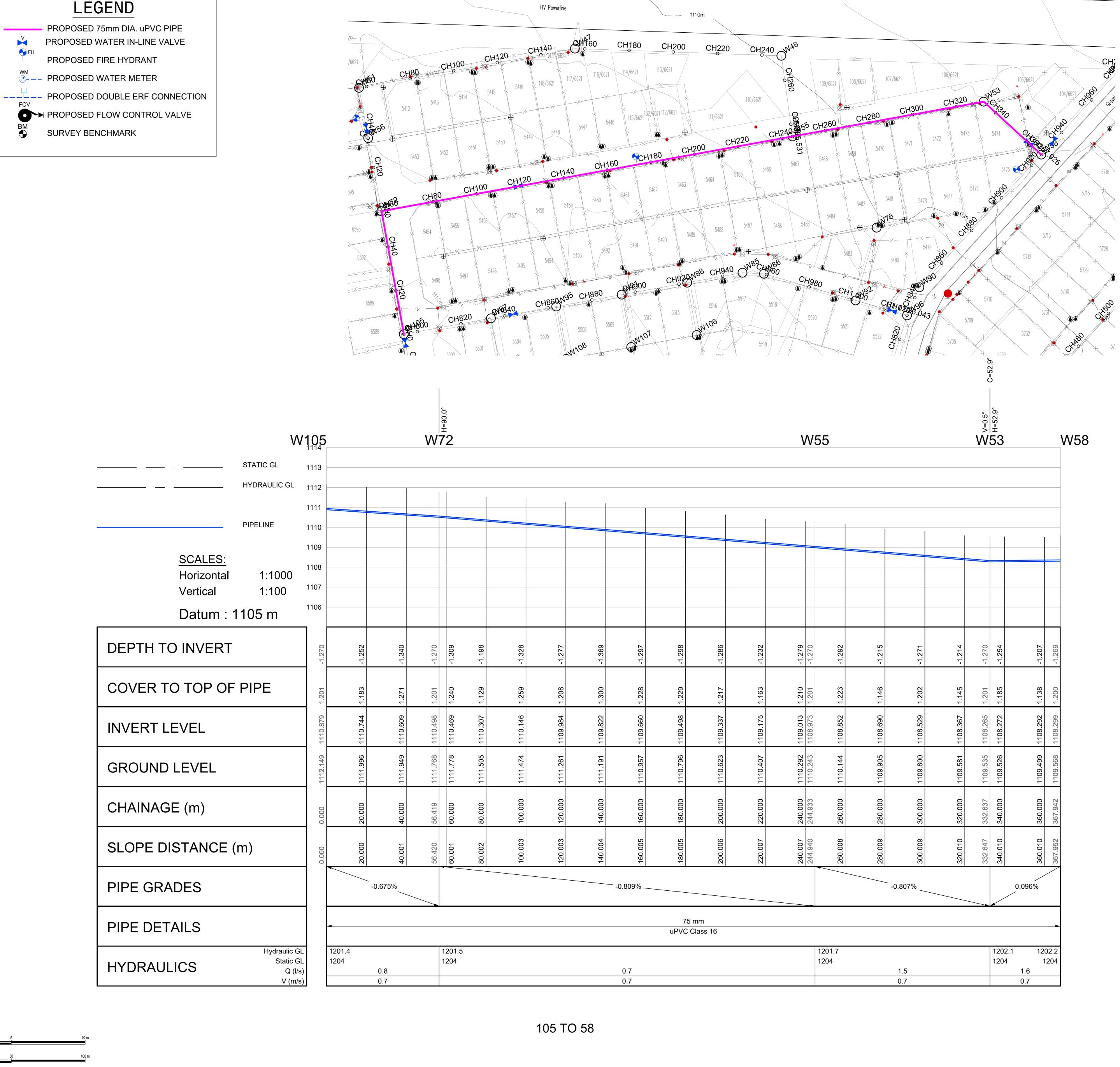
(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84			
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
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ВМ9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830
BM11	25 464,620	2 830 462,670	1103,880



Pipe Bends Schedule (>3.0 Deg)

CH Diameter1 (mm) Diameter2 (mm) Angle (Deg)

NOTES

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2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

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8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

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THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE
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MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

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BM11	25 464,620	2 830 462,670	1103,880		

A 09/2024 FOR TENDER S.M.N L.G.N
NO DATE REVISION CONSULT DIR

FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

PM MAAKE (TECHNICIAN)

CHECKED BY

SM NXUMALO (Pr. Technician)

PO BOX 16
RUSTENBURG
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Local Municipality

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NORHT WEST PROVINCE
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

105 TO 58

RUSTENBURG LOCAL MUNICIPALITY

SHEET 29 OF 51

20 / /
For: Client

A1 SCALE

AS SHOWN

CONSULTANTS
DRAWING NUMBER

HCE/DRW/LS/ 029

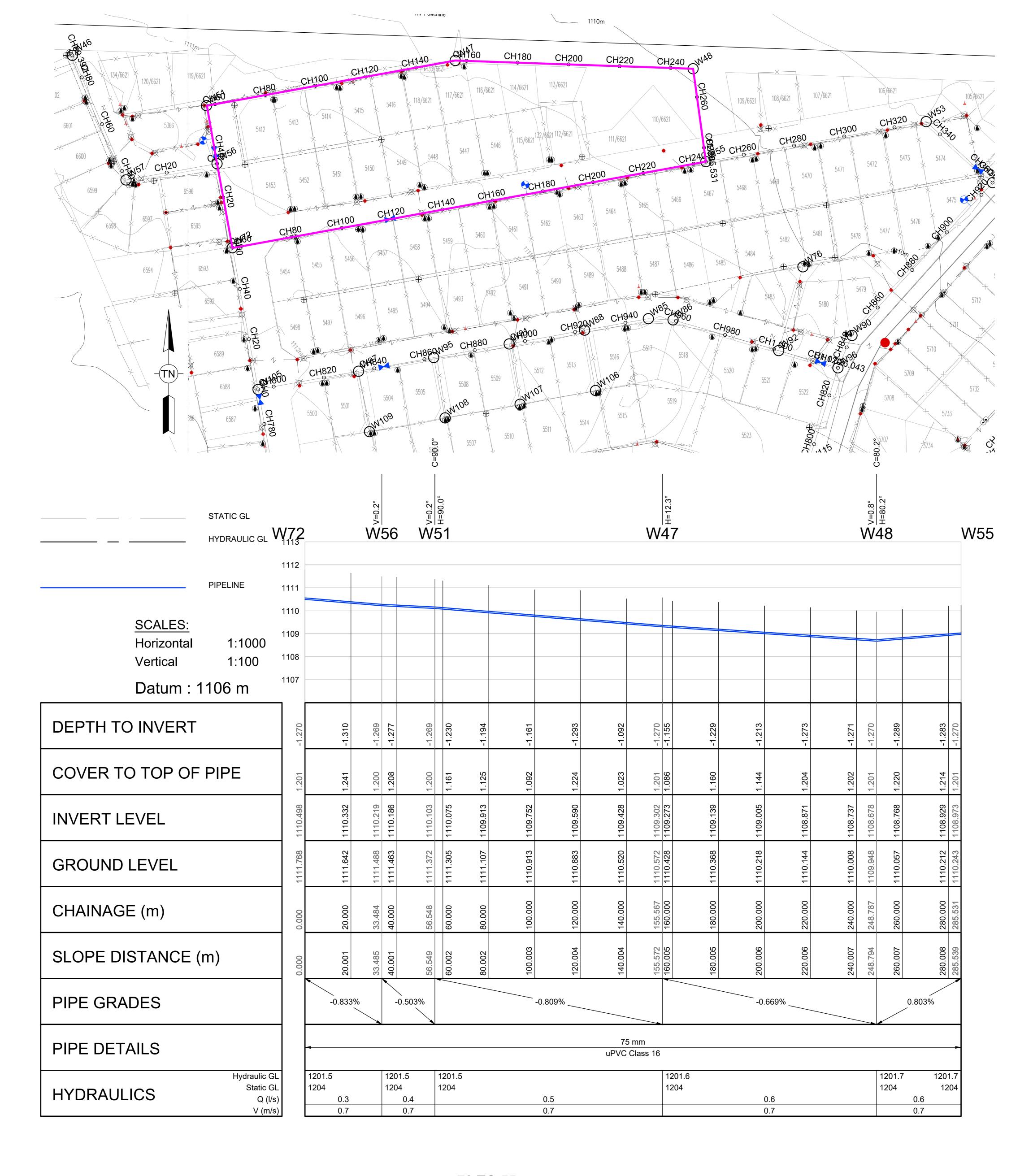
SHEET 29 OF 51

A1 SCALE

AS SHOWN

CLIENT DRAWING NUMBER

RLM/DRW/LS/ 029



PO BOX 16 RUSTENBURG 0300 **TENDER** A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED DOUBLE ERF CONNECTION

► PROPOSED FLOW CONTROL VALVE

PROPOSED WATER METER

SURVEY BENCHMARK

PROPOSED 75mm DIA. uPVC PIPE

PROPOSED WATER IN-LINE VALVE

DESIGNED BY	SM NXUMALO (Pr. Technician)
CHECKED BY	LG NGCOBO (Pr. Technologist)
DRAWN BY	PM MAAKE (TECHNICIAN)
CHECKED BY	SM NXUMALO (Pr. Technician)





RUSTENBURG LOCAL MUNICIPALITY	
NORHT WEST PROVINCE	
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	
LONG SECTIONS	
72 TO 55	

	(Full signature)	SHEET 30 OF 51
	20 / /	A1 SCALE
	FOI. Cliefil	AT SCALE
)	20 / / For: Consulting Engineer	AS SHOWN
	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
	HCE/DRW/LS/ 030	RLM/DRW/LS/ 030

248.787

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

Pipe Bends Schedule (>3.0 Deg)

CH Diameter1 (mm) Diameter2 (mm) Angle (Deg)

80.2

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

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COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

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13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

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FIRE WATER SPECIFICATION

1. PIPEWORK

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2. HYDRANTS

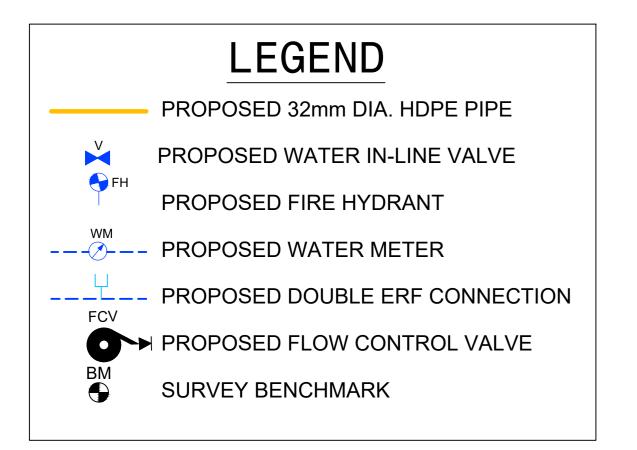
(a) SHALL COMPLY TO SABS 1128.

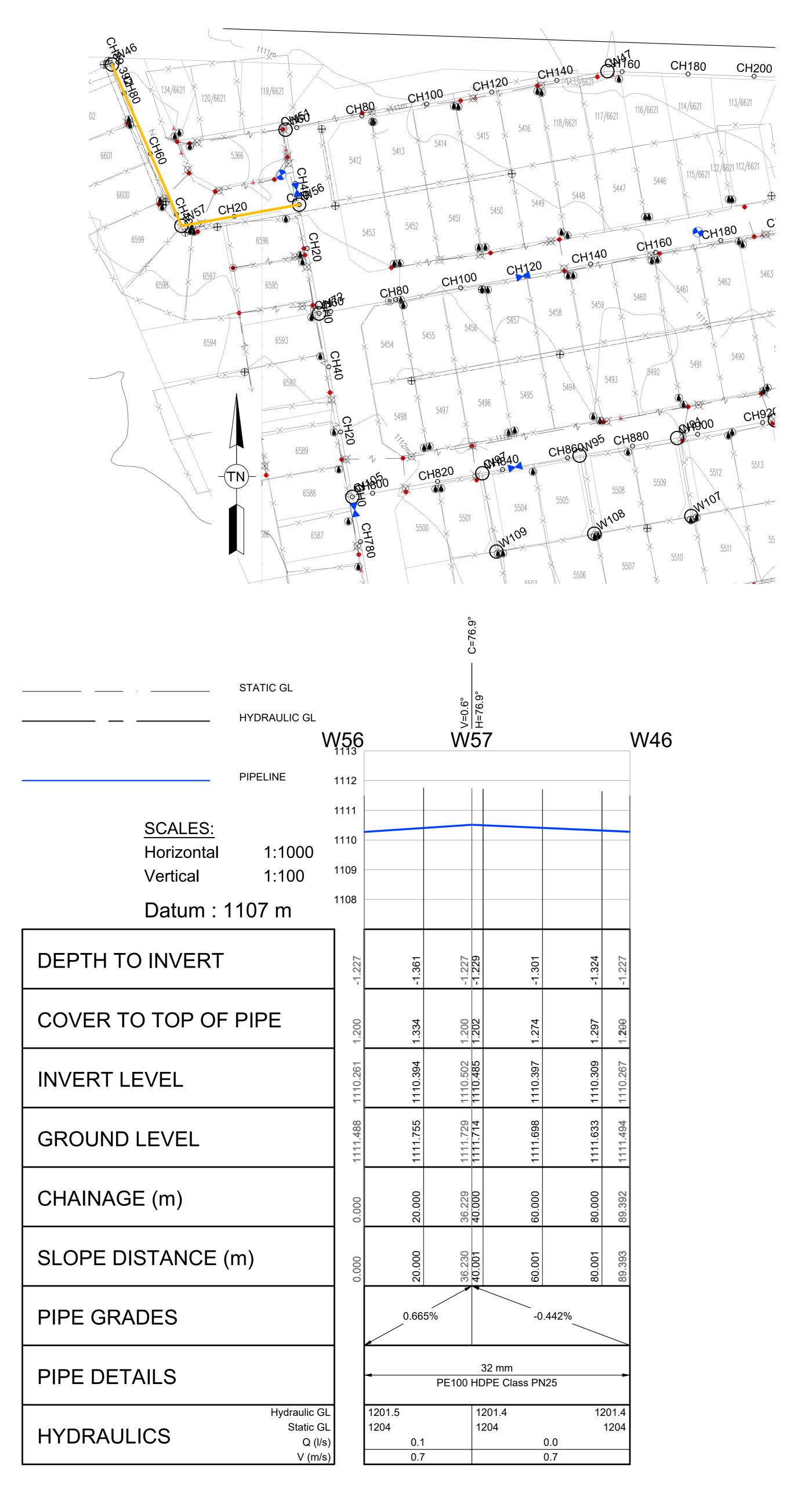
(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

	BENCHMARKS Lo 27 WGS 84			
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)	
BM1	25 229,670	2 830 880,560	1106,920	
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BM10	25 522,910	2 830 996,910	1103,830	
BM11	25 464,620	2 830 462,670	1103,880	





Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

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RUSTENBURG LOCAL MUNICIPALITY	
NORHT WEST PROVINCE	
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	
LONG SECTIONS	
72 TO 55	

(Full signature)	SHEET 31 OF 51
20 / /	
For: Client	A1 SCALE
20 / / For: Consulting Engineer	AS SHOWN
CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
HCE/DRW/LS/ 031	RLM/DRW/LS/ 031

NOTES

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ARCHITECTS DRAWINGS.

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Pipe Bends Schedule (>3.0 Deg)

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

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FIRE WATER SPECIFICATION

IMMEDIATELY REPORTED TO THE ENGINEER.

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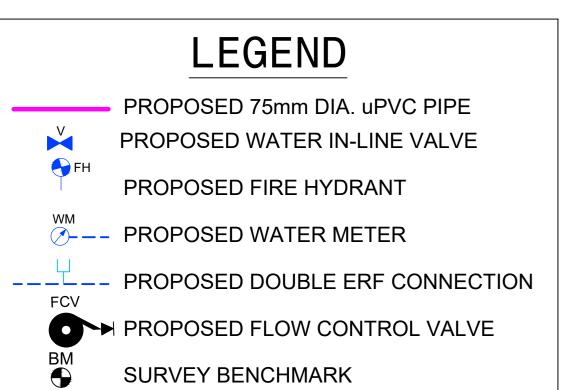
(a) SHALL COMPLY TO SABS 1128.

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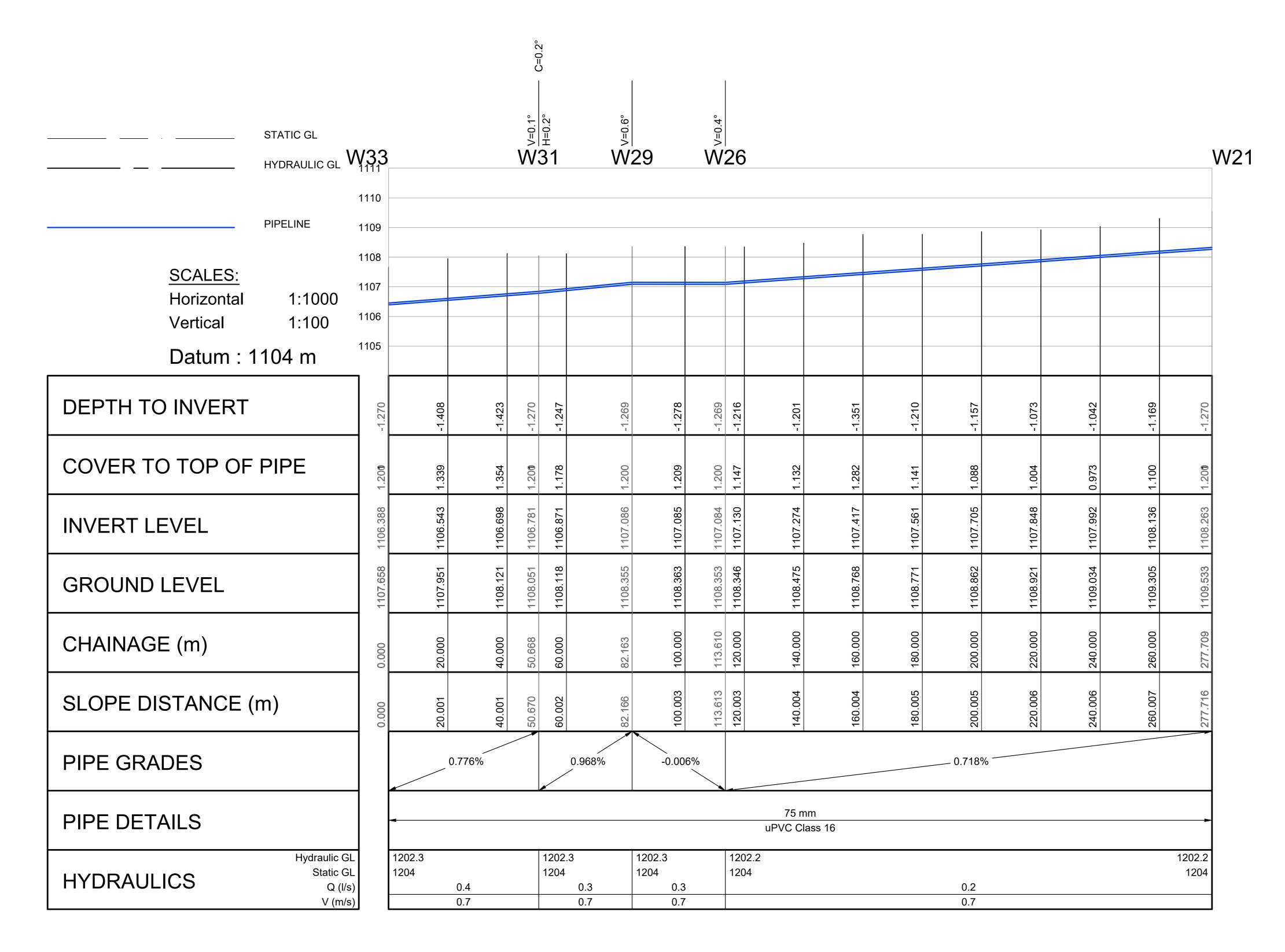
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A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

TENDER

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY Rustenburg Local Municipality

PO BOX 16

0300

RUSTENBURG

Tel No.: (013) 590-3607

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HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 33 TO 21

SHEET 32 OF 51 (Full signature) For: Client AS SHOWN For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 032 RLM/DRW/LS/ 032

CH | Diameter1 (mm) | Diameter2 (mm) | Angle (Deg)

Pipe Bends Schedule (>3.0 Deg)

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS. 3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

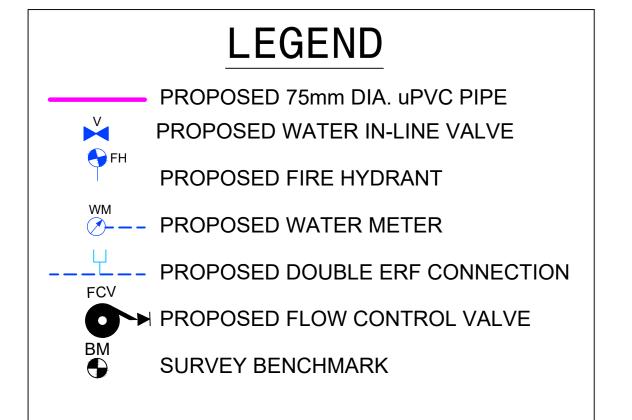
2. HYDRANTS

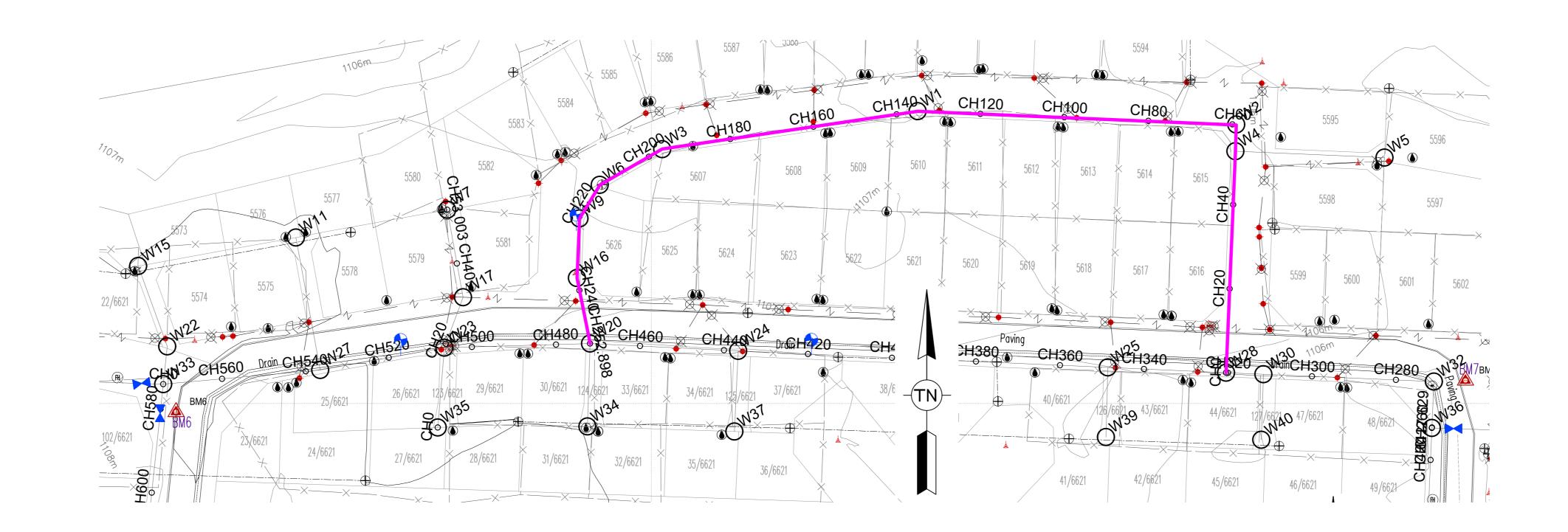
(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

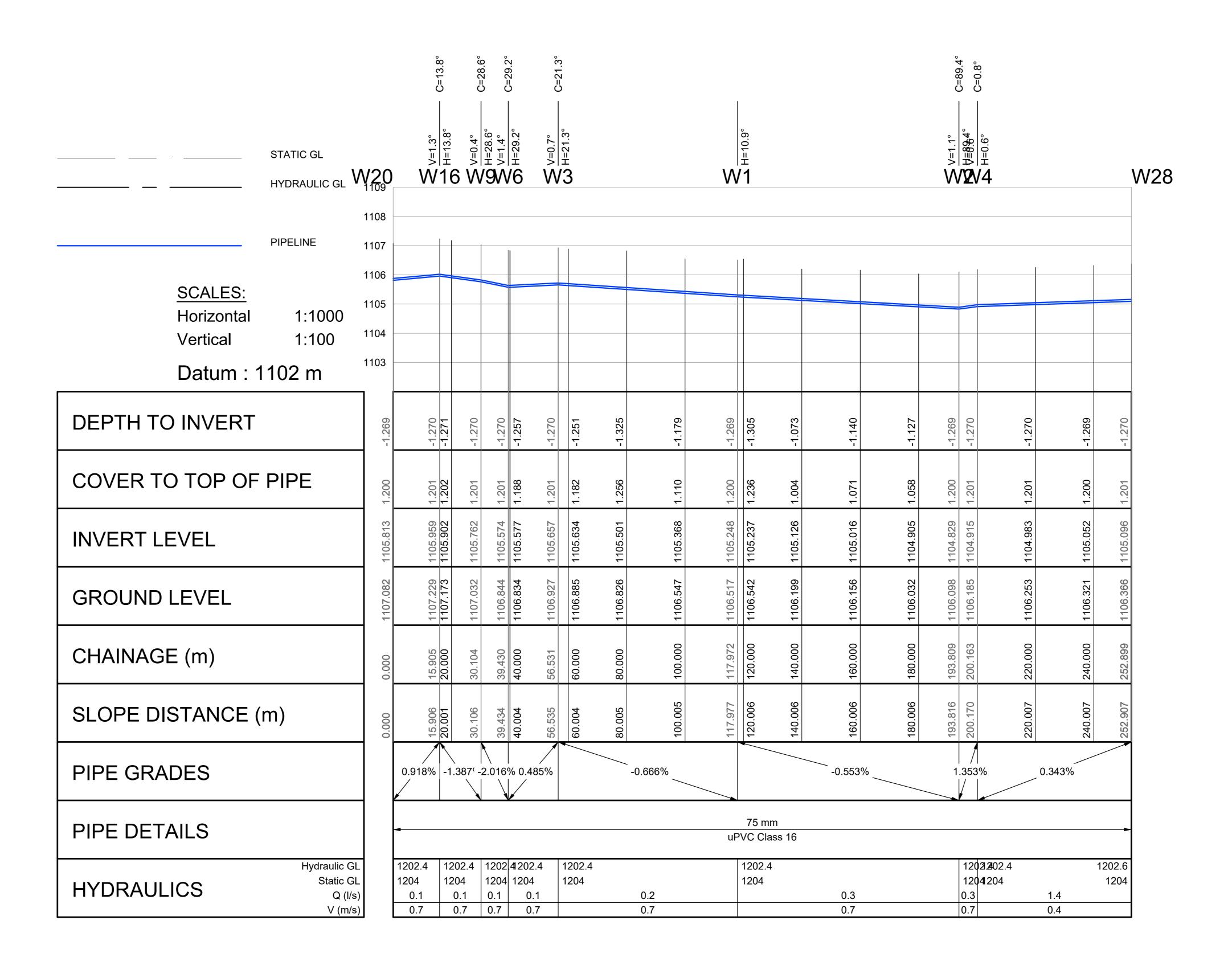
3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84				
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)	
BM1	25 229,670	2 830 880,560	1106,920	
BM2	25 239,770	2 830 940,230	1106,530	
BM3	24 883,100	2 831 135,410	1109,420	
BM4	24 553,410	2 830 814,190	1112,520	
BM5	24 724,480	2 830 778,890	1111,060	
BM6	24 886,960	2 830 501,980	1107,600	
BM7	25 193,670	2 830 494,480	1105,780	
BM8	25 432,180	2 830 869,120	1105,640	
BM9	25 796,660	2 830 806,780	1101,340	
BM10	25 522,910	2 830 996,910	1103,830	
BM11	25 464,620	2 830 462,670	1103,880	







Pipe Bends Schedule (>3.0 Deg)

СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)
15.905	75	75	13.8
30.104	75	75	28.6
39.430	75	75	29.2
56.531	75	75	21.3
193.809	75	75	89.4
	15.905 30.104 39.430 56.531	15.905 75 30.104 75 39.430 75 56.531 75	15.905 75 75 30.104 75 75 39.430 75 75 56.531 75 75

INUTE

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVA

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT
ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

L1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,
MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES
WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.

(b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

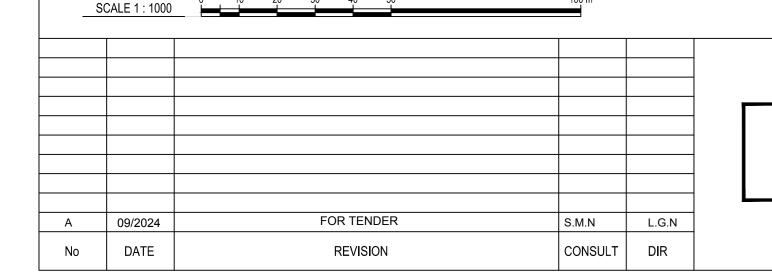
(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

	BENCHMARKS Lo 27 WGS 84				
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
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BM9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		

20 TO 28



FOR TENDER DESIGNED BY

SM NXUMALO (Pr. Technician)

CHECKED BY

LG NGCOBO (Pr. Technologist)

DRAWN BY

PM MAAKE (TECHNICIAN)

CHECKED BY

SM NXUMALO (Pr. Technician)

PO BOX 16
RUSTENBURG
0300

Rustenburg
Local Municipality

Tel No.: (013) 590-3607
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RUSTENBURG LOCAL MUNICIPALITY



RUSTENBURG LOCAL MUNICIPALITY

NORHT WEST PROVINCE

REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

LONG SECTIONS

20 TO 28

(Full signature)

SHEET 33 OF 51

20 / /

For: Client

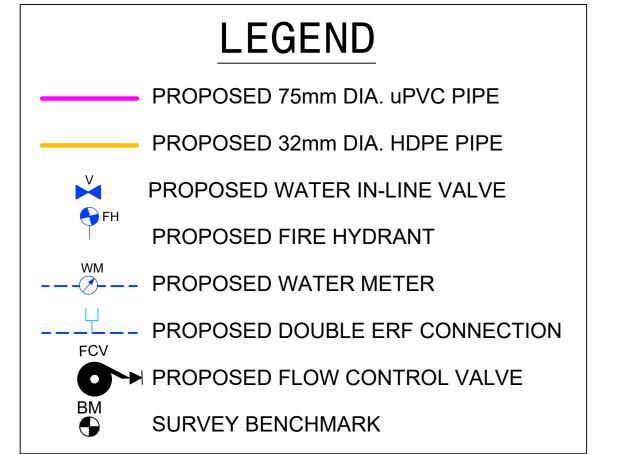
A1 SCALE

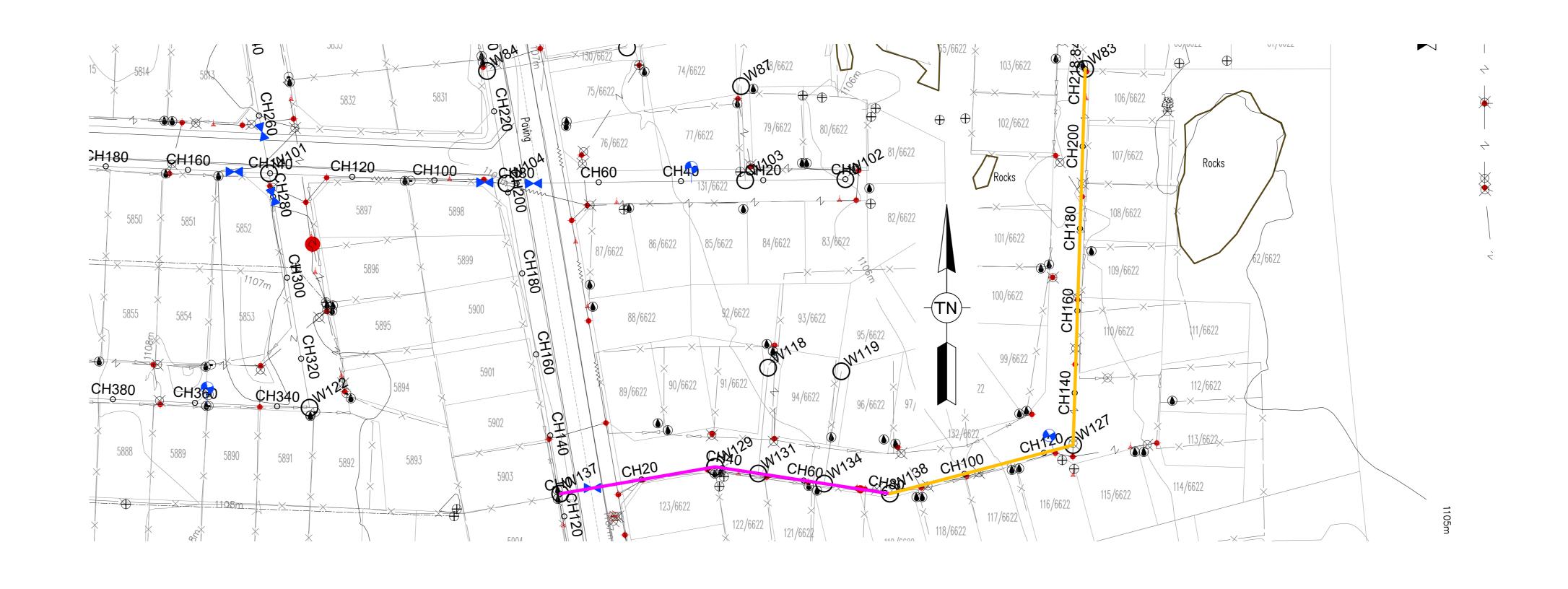
AS SHOWN

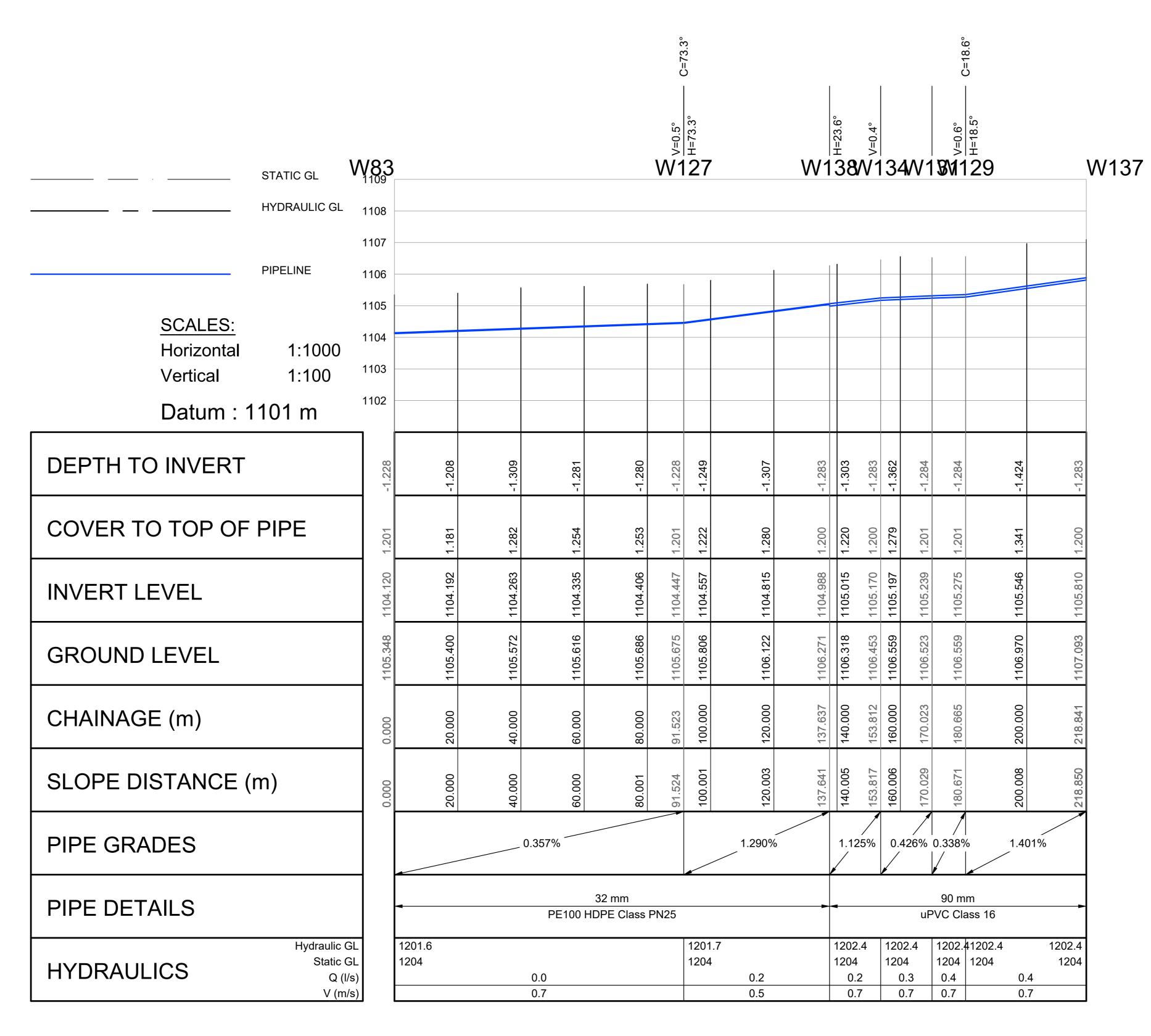
CONSULTANTS
DRAWING NUMBER

HCE/DRW/LS/ 033

RLM/DRW/LS/ 033







Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR **TENDER**

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388



RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 137 TO 83

CH Diameter1 (mm) Diameter2 (mm) Angle (Deg) 73.3 18.6

Pipe Bends Schedule (>3.0 Deg)

91.523

180.665

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS. 3. THIS DRAWING NOT TO BE SCALED. 4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16. 11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED. 12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD). 13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED. 17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION 1. PIPEWORK (a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED. 2. HYDRANTS (a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE. 3. BOOSTERS (a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84					
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
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ВМ9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		

(Full signature)

For: Client

For: Consulting Engineer

CONSULTANTS DRAWING NUMBER

HCE/DRW/LS/ 034

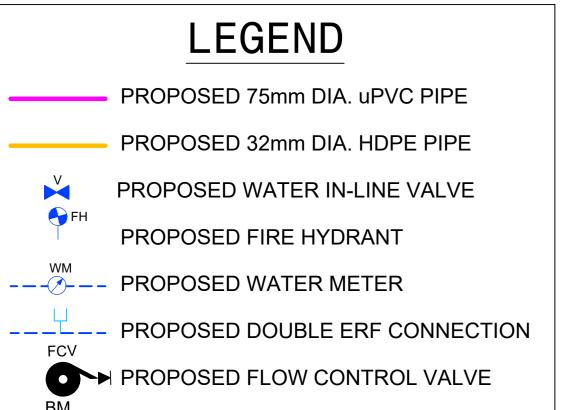
SHEET 34 OF 51

A1 SCALE

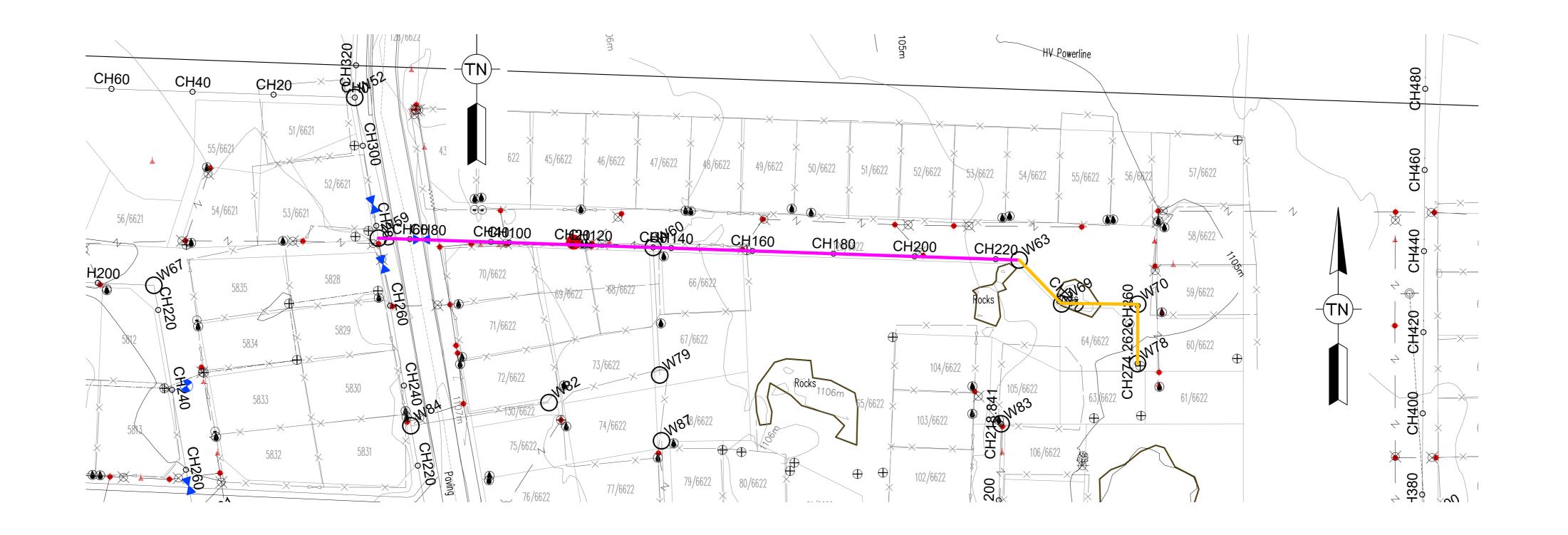
CLIENT DRAWING NUMBER

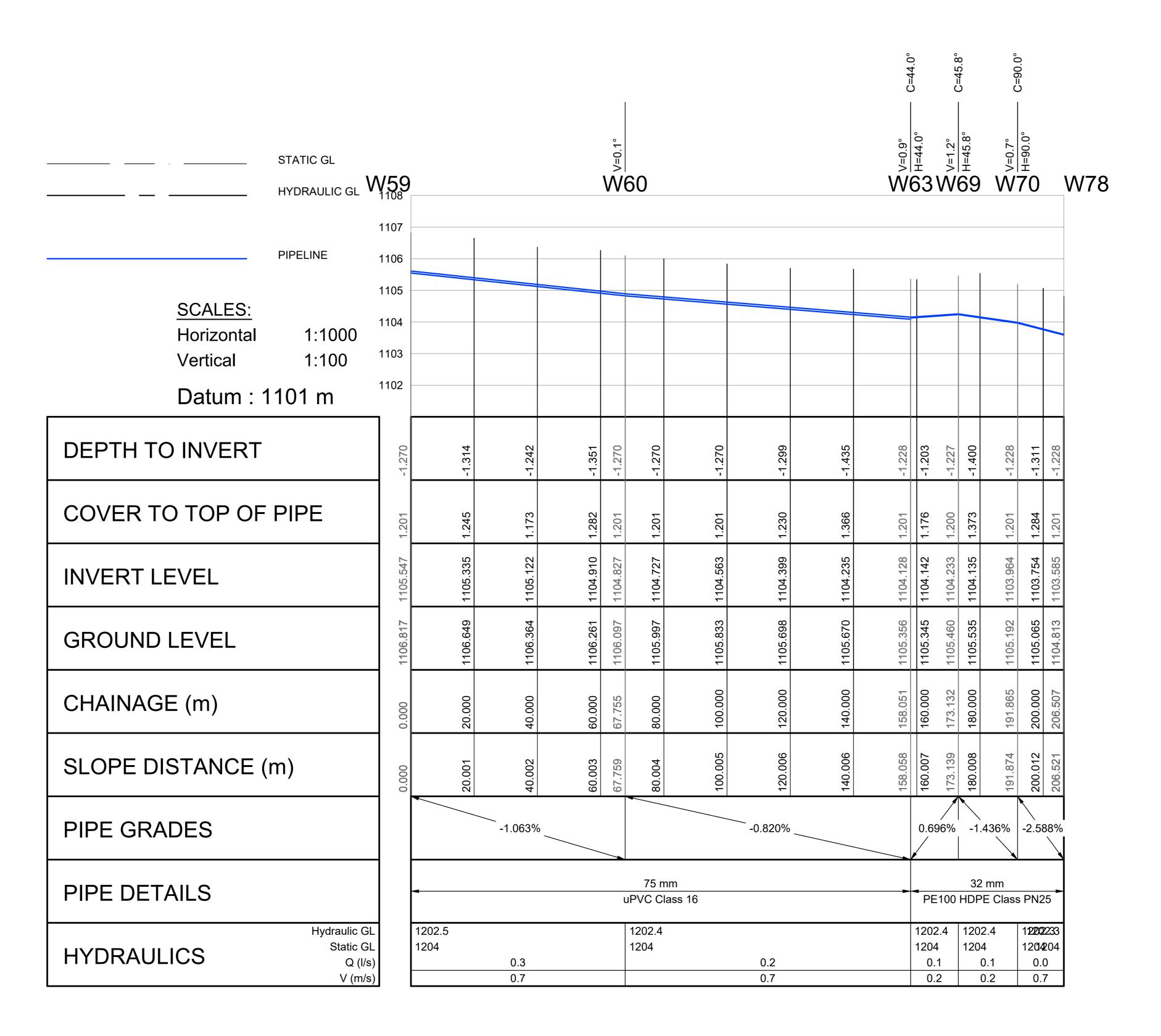
AS SHOWN

RLM/DRW/LS/ 034



SURVEY BENCHMARK





Pipe Bends Schedule (>3.0 Deg)

СН	Diameter1 (mm)	Diameter2 (mm)	Angle (Deg)
158.051	75	32	44.0
173.132	32	32	45.8
191.865	32	32	90.0

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

- 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.
- 3. THIS DRAWING NOT TO BE SCALED.
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ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

- BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.
- 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.
- 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.
- 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.
- 10. ALL CAST IRON FITTINGS TO BE CLASS 16. 11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE
- BOUNDARY UNLESS OTHERWISE INDICATED.

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

- TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL
- AUTHORITIES SUPERVISION.
- 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.
- 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,
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- WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

- 1. PIPEWORK
- (a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER.
- (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.
- 2. HYDRANTS
- (a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.
- 3. BOOSTERS
- (a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84				
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m	
BM1	25 229,670	2 830 880,560	1106,920	
BM2	25 239,770	2 830 940,230	1106,530	
ВМ3	24 883,100	2 831 135,410	1109,420	
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ВМ9	25 796,660	2 830 806,780	1101,340	
BM10	25 522,910	2 830 996,910	1103,830	
BM11	25 464,620	2 830 462,670	1103,880	

59 TO 78

					<u> </u>
Α	09/2024	FOR TENDER	S.M.N	L.G.N	
No	DATE	REVISION	CONSULT	DIR	

FOR TENDER

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

Rustenburg Local Municipality Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

RUSTENBURG LOCAL MUNICIPALITY

PO BOX 16

0300

RUSTENBURG



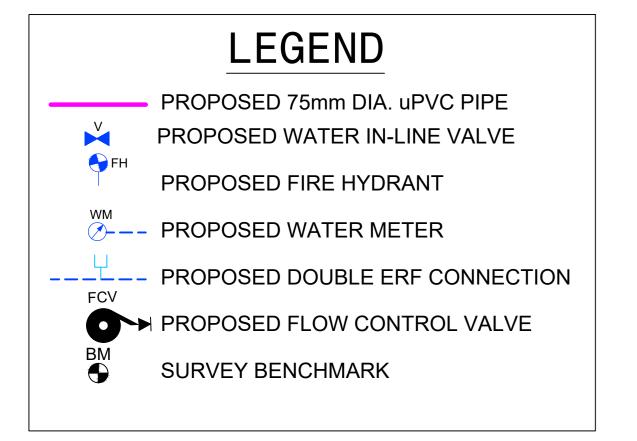


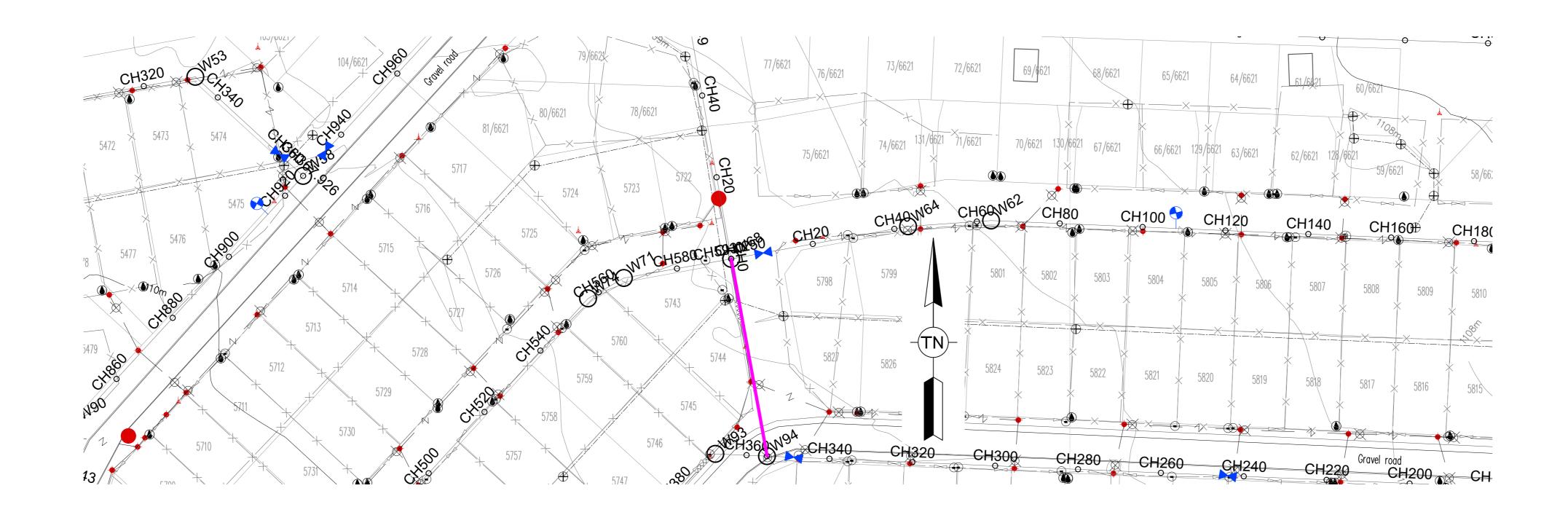
HLAYELENI CONSULTING ENGINEERS

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

59 TO 78

SHEET 35 OF 51 (Full signature) For: Client AS SHOWN For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 035 RLM/DRW/LS/ 035





1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

TESTING OF NETWORK IS COMPLETED.

AUTHORITIES SUPERVISION.

BOUNDARY UNLESS OTHERWISE INDICATED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

L1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

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(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

FIRE WATER SPECIFICATION

SABS 62/1971 AS AMENDED.

(a) SHALL COMPLY TO SABS 1128.

SIMILARLY APPROVED BY THE ENGINEER.

BENCHMARKS

Lo 27 WGS 84

POINT Y-COORD. (m) X-COORD. (m) LEVEL (m)

BM1 25 229,670 2 830 880,560 1106,920

BM2 25 239,770 2 830 940,230 1106,530

BM3 24 883,100 2 831 135,410 1109,420

BM4 24 553,410 2 830 814,190 1112,520

BM5 24 724,480 2 830 778,890 1111,060

BM6 24 886,960 2 830 501,980 1107,600

BM7 25 193,670 2 830 494,480 1105,780

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BM9 25 796,660 2 830 806,780 1101,340

 BM10
 25 522,910
 2 830 996,910
 1103,830

 BM11
 25 464,620
 2 830 462,670
 1103,880

1. PIPEWORK

2. HYDRANTS

3. BOOSTERS

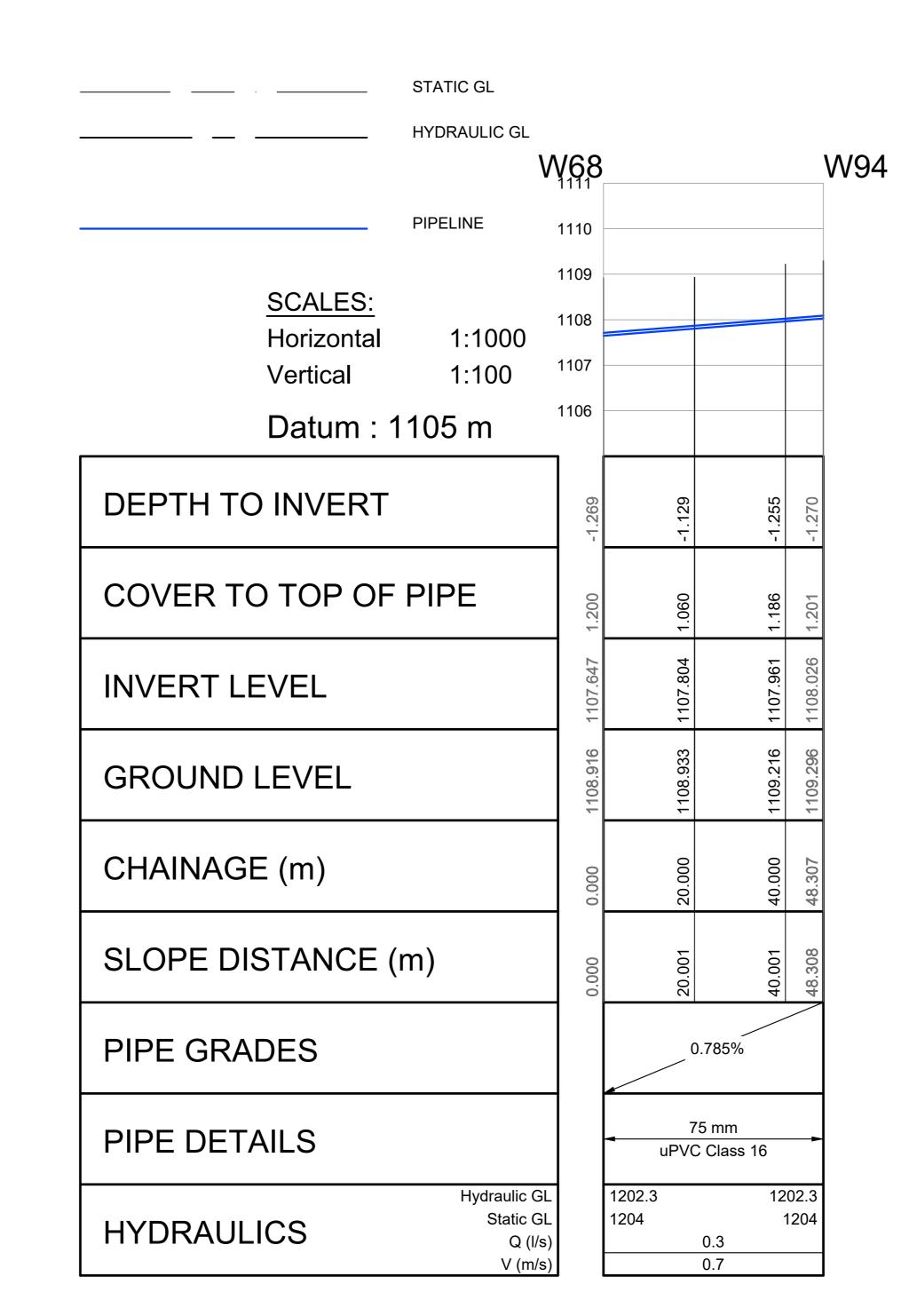
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ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

ARCHITECTS DRAWINGS.

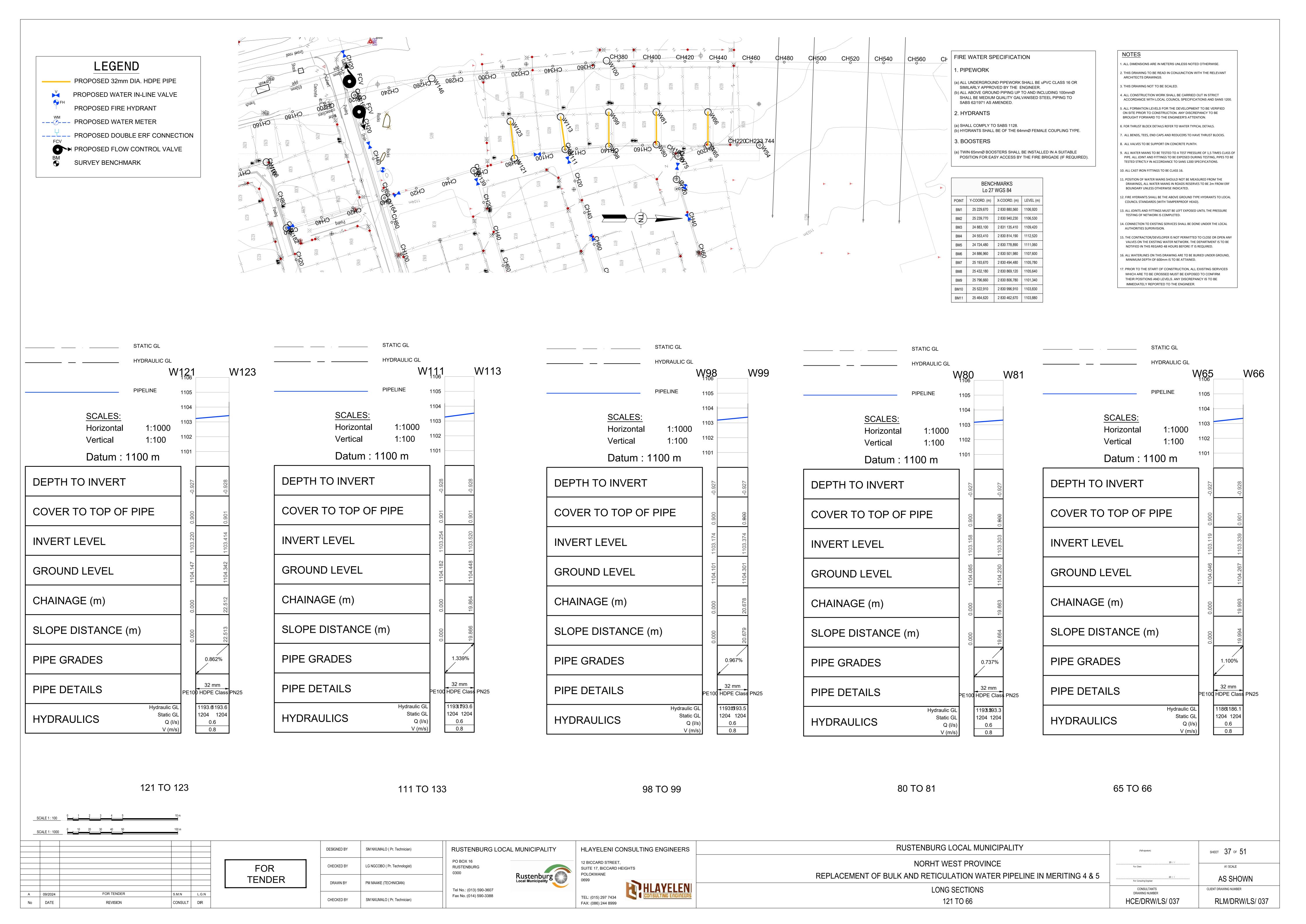
3. THIS DRAWING NOT TO BE SCALED.

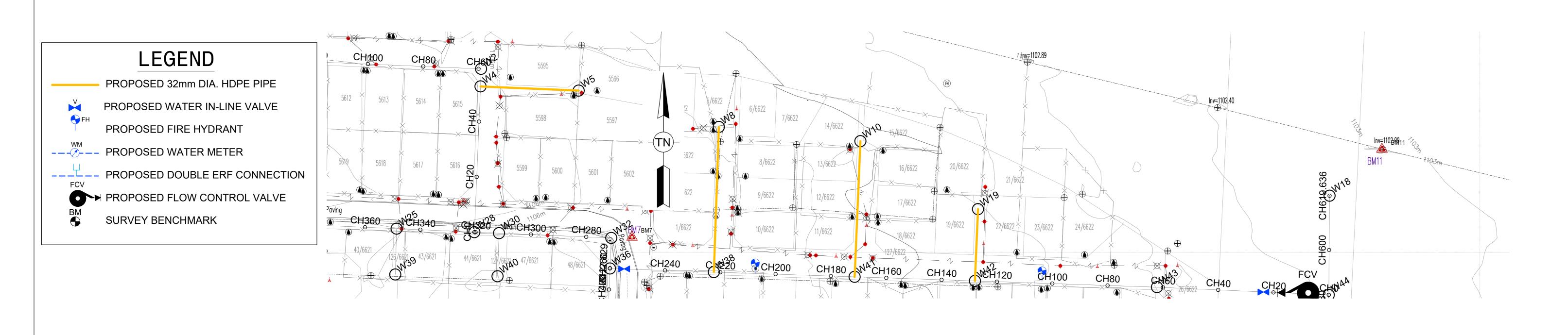
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT



68 TO 94

RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS SM NXUMALO (Pr. Technician) **DESIGNED BY** SHEET 36 OF 51 (Full signature) PO BOX 16 12 BICCARD STREET, NORHT WEST PROVINCE LG NGCOBO (Pr. Technologist) CHECKED BY RUSTENBURG For: Client A1 SCALE Rustenburg Local Municipality SUITE 17, BICCARD HEIGHTS 0300 REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **TENDER AS SHOWN** For: Consulting Engineer DRAWN BY PM MAAKE (TECHNICIAN) LONG SECTIONS CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER Tel No.: (013) 590-3607 FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 68 TO 94 HCE/DRW/LS/ 036 CHECKED BY SM NXUMALO (Pr. Technician) RLM/DRW/LS/ 036 No DATE CONSULT DIR REVISION FAX: (086) 244 8999





FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ

SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

BENCHMARKS Lo 27 WGS 84				
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)	
BM1	25 229,670	2 830 880,560	1106,920	
BM2	25 239,770	2 830 940,230	1106,530	
ВМ3	24 883,100	2 831 135,410	1109,420	
BM4	24 553,410	2 830 814,190	1112,520	
BM5	24 724,480	2 830 778,890	1111,060	
BM6	24 886,960	2 830 501,980	1107,600	
BM7	25 193,670	2 830 494,480	1105,780	
BM8	25 432,180	2 830 869,120	1105,640	
ВМ9	25 796,660	2 830 806,780	1101,340	
BM10	25 522,910	2 830 996,910	1103,830	
BM11	25 464 620	2 830 462 670	1103.880	

<u>NOTES</u> 1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS. 3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS. 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.

STATIC GL	STATIC GL	STATIC GL	STATIC GL
HYDRAULIC GL	HYDRAULIC GL	HYDRAULIC GL	HYDRAULIC GL
VA/40	W41 W10	W38 W8	W4 W5
	PIPELINE 1106	PIPELINE 1106	PIPELINE 1107
SCALES: Horizontal 1:1000 Vertical 1:100	SCALES: Horizontal 1:1000 Vertical 1:100	SCALES: Horizontal 1:1000 Vertical 1:100	SCALES: Horizontal 1:1000 Vertical 1:100
Datum : 1101 m	Datum : 1101 m	Datum : 1101 m	Datum : 1102 m
DEPTH TO INVERT 86.0 1 126.0 1	DEPTH TO INVERT 75.0.0 6.0.0 1	DEPTH TO INVERT	DEPTH TO INVERT 86.0 87.0 88.0 88.0 88.0 88.0
COVER TO TOP OF PIPE			
INVERT LEVEL 1103.694 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694 11 1103.694	INVERT LEAT 1104.265 1104.262 1204.262	INVERT LEAET 1104.686 1104.686 1104.686	INVERT LEVEL 1105.030
GROUND LEVEL 859. 1104.879 1104.879	GROUND LEVEL 1105.032 1105.032 1205.032	GROUND LEVEL 29.2011 1,05.621	GROUND LEVEL 1105.783 1105.783
CHAINAGE (m)	CHAINAGE (m) 80.0 80.0 90.0 90.0 90.0 90.0 90.0 90.0	CHAINAGE (m) 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CHAINAGE (m)
SLOPE DISTANCE (m)	SLOPE DISTANCE (m)	SLOPE DISTANCE (m) 60.07 10.04 15.05	SLOPE DISTANCE (m)
PIPE GRADES -1.284%	PIPE GRADES -0.362%	PIPE GRADES -0.724%	PIPE GRADES -1.133%
PIPE DETAILS 32 mm PE100 HDPE Class PN25	PIPE DETAILS 32 mm PE100 HDPE Class PN25	PIPE DETAILS 32 mm PE100 HDPE Class PN25	PIPE DETAILS 32 mm PE100 HDPE Class PN25
HYDRAULICS Hydraulic GL Static GL Q (I/s) V (m/s) 1203.2 1203.2 1204 1204 0.6 0.8	HYDRAULICS Hydraulic GL Static GL Q (I/s) V (m/s) 1203 1204 1204 1204 0.6 0.8	Hydraulic GL Static GL Q (l/s) 1202.9 1202.8 0.6 0.6 0.8 0.8	HYDRAULICS Hydraulic GL Static GL Q (I/s) V (m/s) 1202.4 1204 1204 1204 0.6 0.8

42 TO 19 4 TO 5 41 TO 10 38 TO 8

	1		1		
Α	09/2024	FOR TENDER	S.M.N	L.G.N	
No	DATE	REVISION	CONSULT	DIR	

FOR TENDER

SM NXUMALO (Pr. Technician) DESIGNED BY CHECKED BY LG NGCOBO (Pr. Technologist) DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

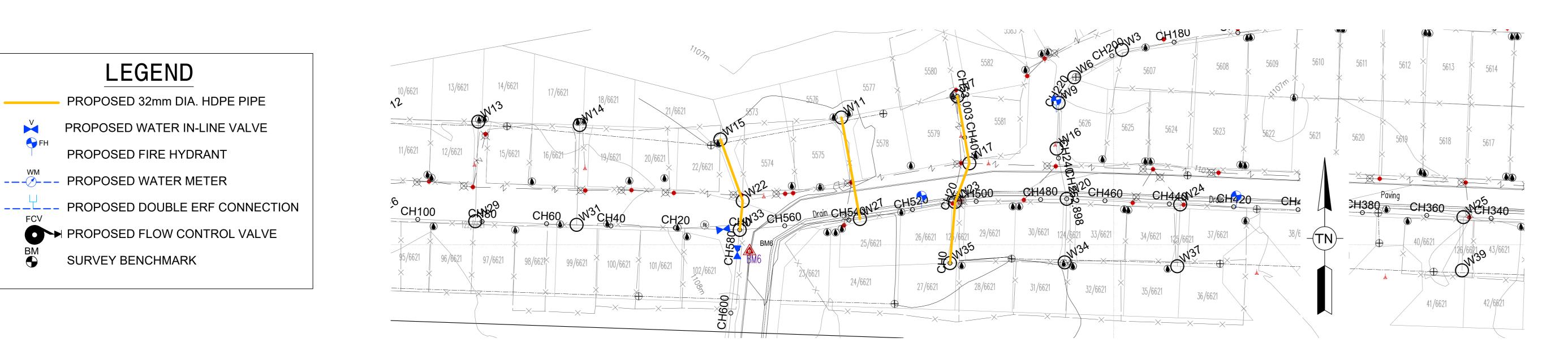
RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

Rustenburg Local Municipality

HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 42 TO 8

SHEET 38 of 51(Full signature) For: Client A1 SCALE AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 038 RLM/DRW/LS/ 038



LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

BENCHMARKS Lo 27 WGS 84								
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)					
BM1	25 229,670	2 830 880,560	1106,920					
BM2	25 239,770	2 830 940,230	1106,530					
BM3	24 883,100	2 831 135,410	1109,420					
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BM8	25 432,180	2 830 869,120	1105,640					
ВМ9	25 796,660	2 830 806,780	1101,340					
BM10	25 522,910	2 830 996,910	1103,830					
BM11	25 464,620	2 830 462,670	1103,880					

E WATER S	PECIFICA	MOIT

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED). 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

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14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

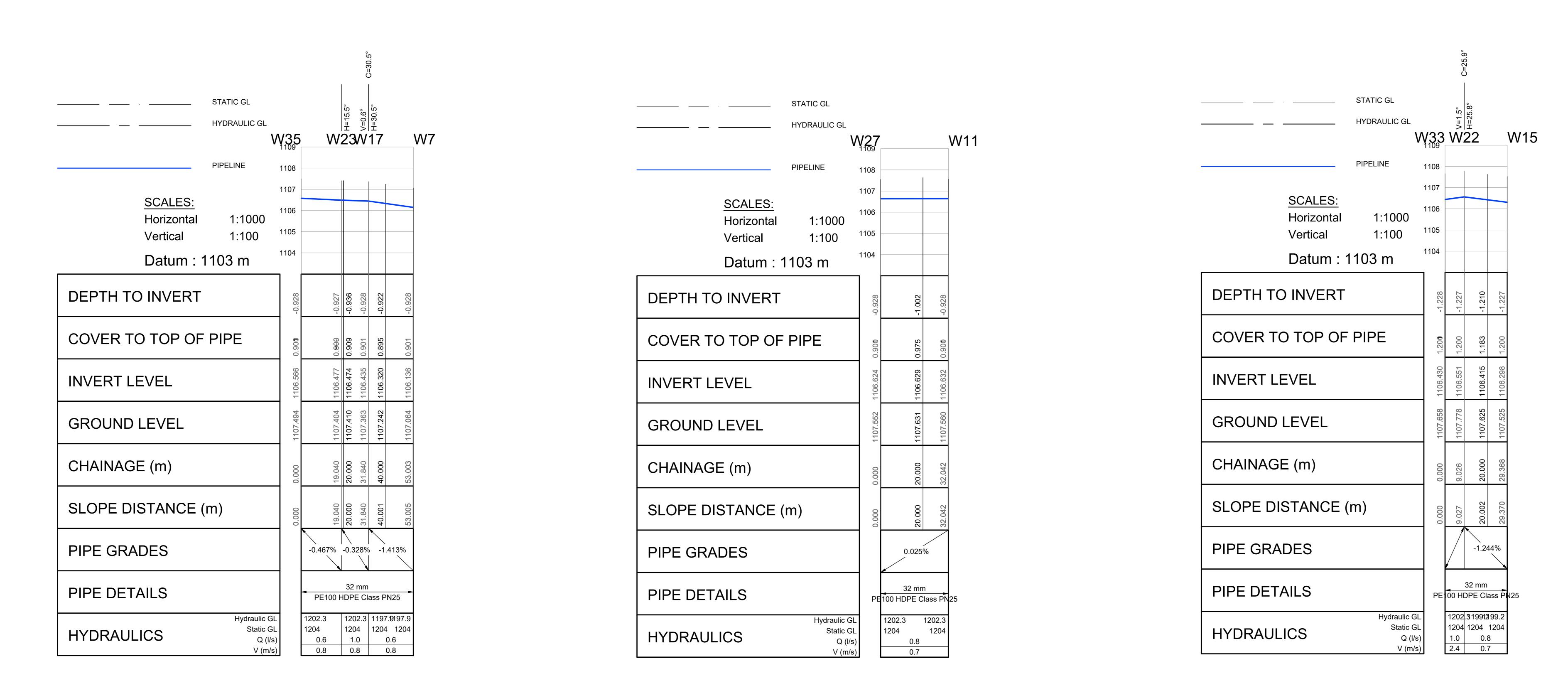
AUTHORITIES SUPERVISION.

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

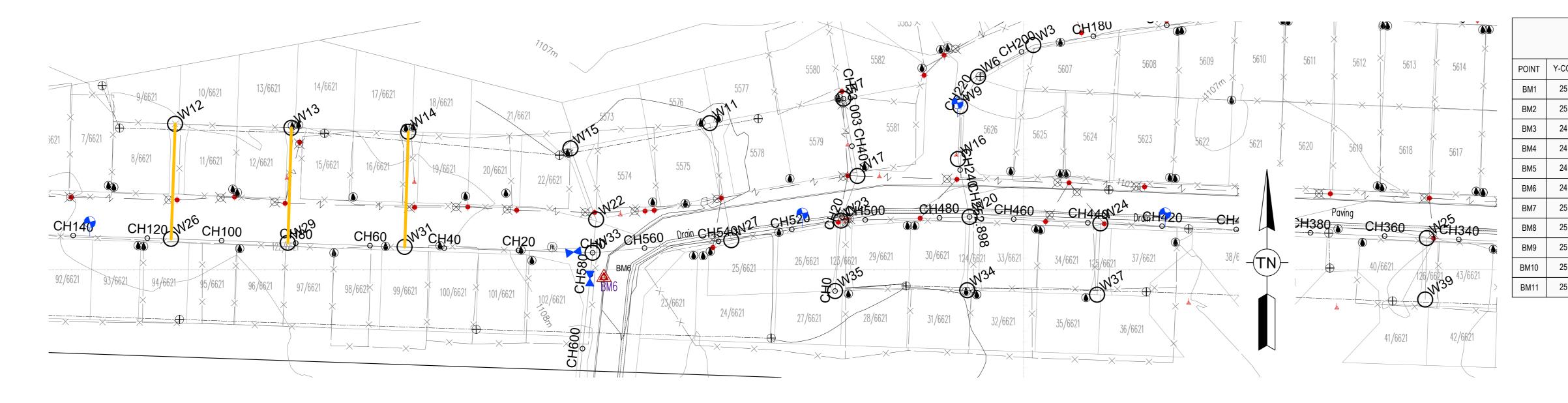
MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

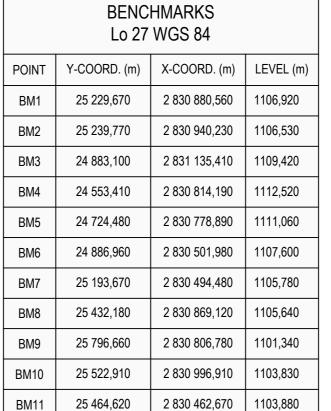
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35TO 7 33 TO 15 27 TO 11

SCALE 1 : 1000	0 10 20 30 40 50	100 m			DESIGNED BY	SM NXUMALO (Pr. Technician)	DUSTENBURG LOG			RUSTENBURG LOCAL MUNICIPALITY		
				 	DESIGNED BY	SWINXOWALO (Pr. Technician)	PO BOX 16	JAL MUNICIPALITY	HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET		(Full signature)	SHEET 39 OF 51
				FOR	CHECKED BY	LG NGCOBO (Pr. Technologist)	RUSTENBURG 0300	Rustenburg	SUITE 17, BICCARD HEIGHTS POLOKWANE	NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	For: Client	A1 SCALE
				TENDER	DRAWN BY	PM MAAKE (TECHNICIAN)	Tel No.: (013) 590-3607	Local Municipality	O699 HLAYELENI	LONG SECTIONS	For: Consulting Engineer CONSULTANTS DRAWING NUMBER	AS SHOWN CLIENT DRAWING NUMBER
A 09/2024 No DATE	FOR TENDER REVISION	S.M.N CONS	L.G.N JLT DIR		CHECKED BY	SM NXUMALO (Pr. Technician)	Fax No.:(014) 590-3388		TEL: (015) 297 7434 FAX: (086) 244 8999	35 TO 15	HCE/DRW/LS/ 039	RLM/DRW/LS/ 039





FIRE WATER SPECIFICATION

1. PIPEWORK

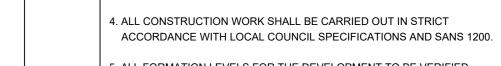
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(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

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(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).



3. THIS DRAWING NOT TO BE SCALED.

ARCHITECTS DRAWINGS.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

- 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.
- 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.
 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

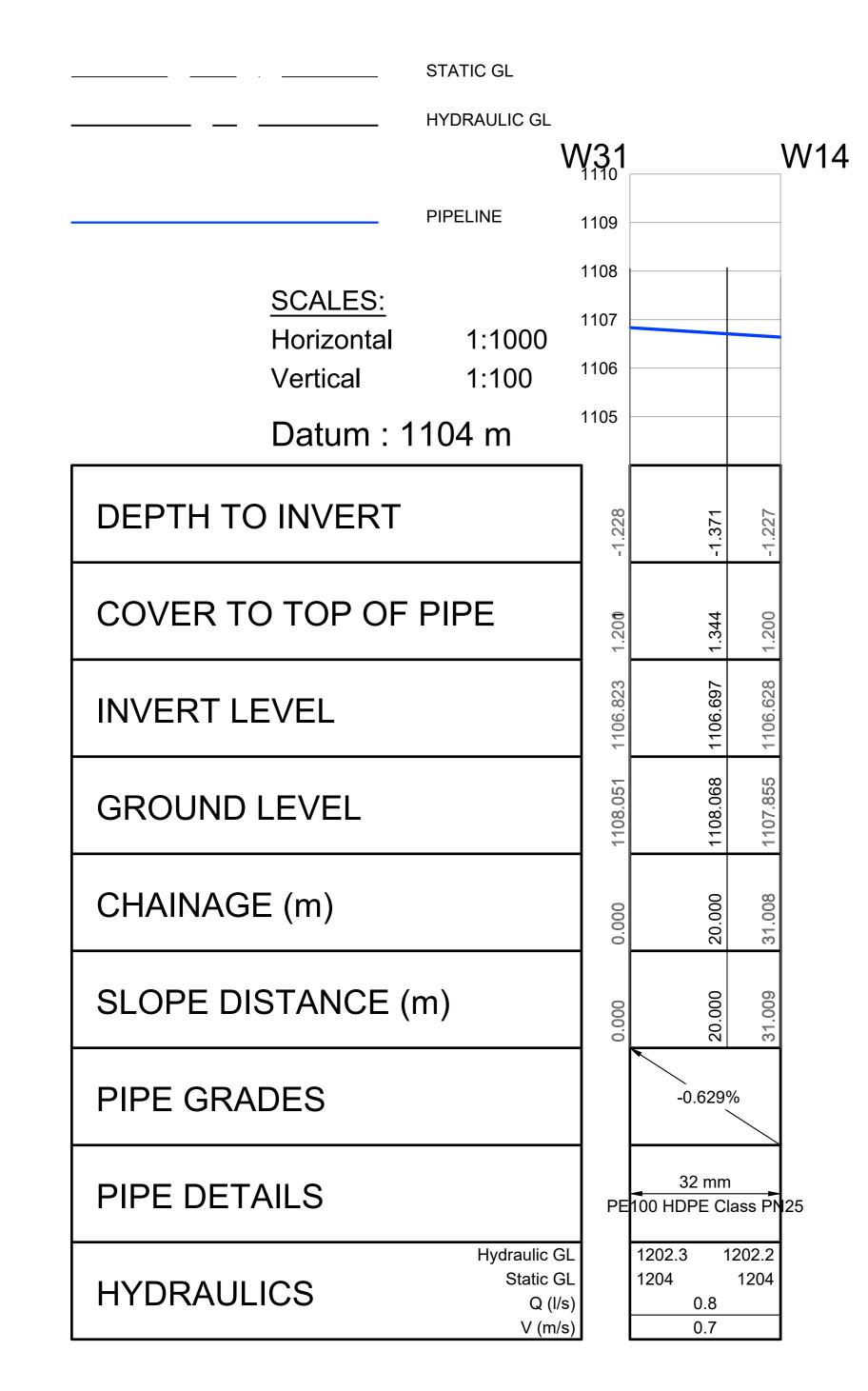
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- 10. ALL CAST IRON FITTINGS TO BE CLASS 16.11. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF
- BOUNDARY UNLESS OTHERWISE INDICATED.

 12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL
- 13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.
- 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

- 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.
- 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,
 MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.
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 WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM
 THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE
 IMMEDIATELY REPORTED TO THE ENGINEER.



LEGEND

PROPOSED FIRE HYDRANT

---- PROPOSED DOUBLE ERF CONNECTION

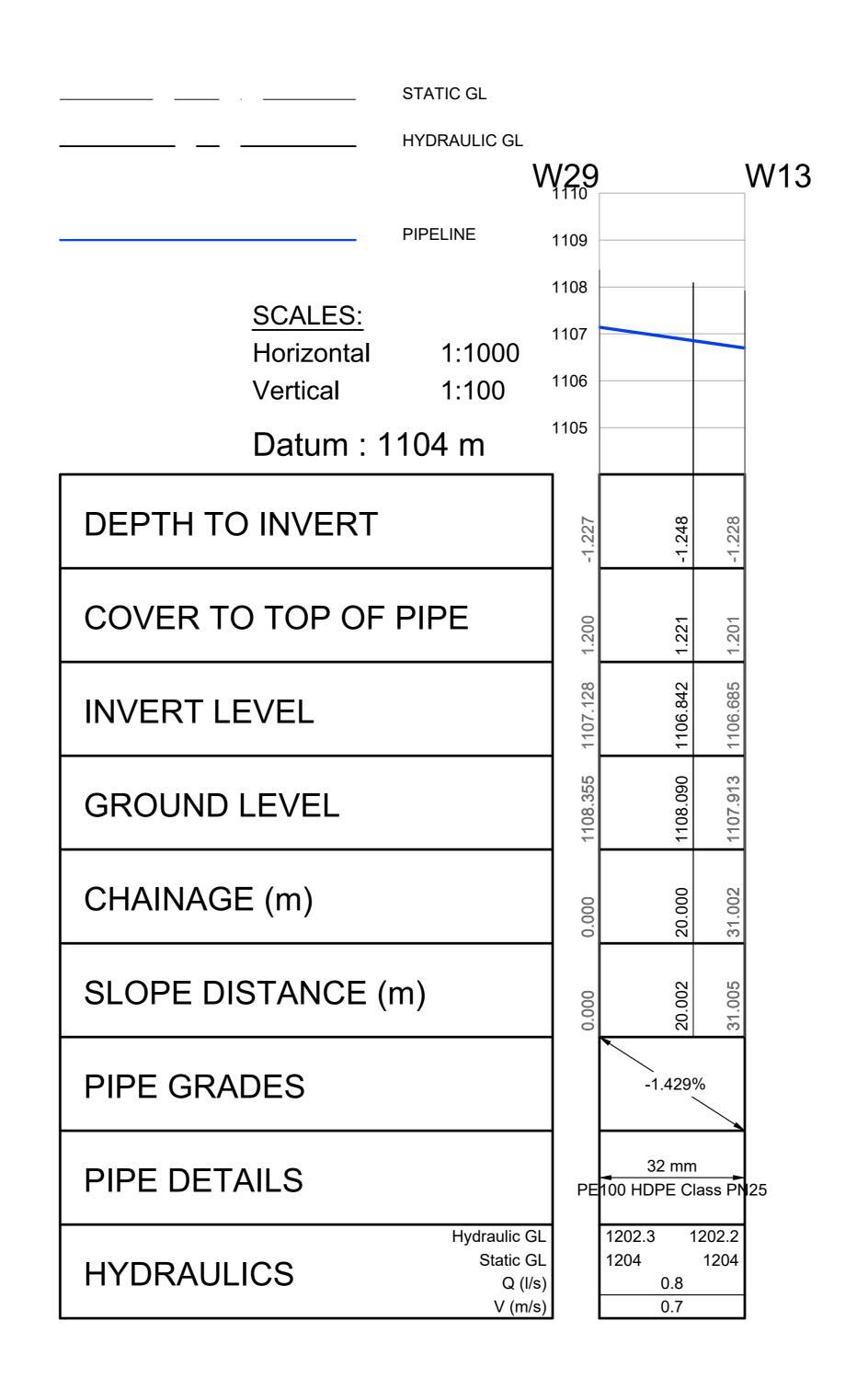
PROPOSED FLOW CONTROL VALVE

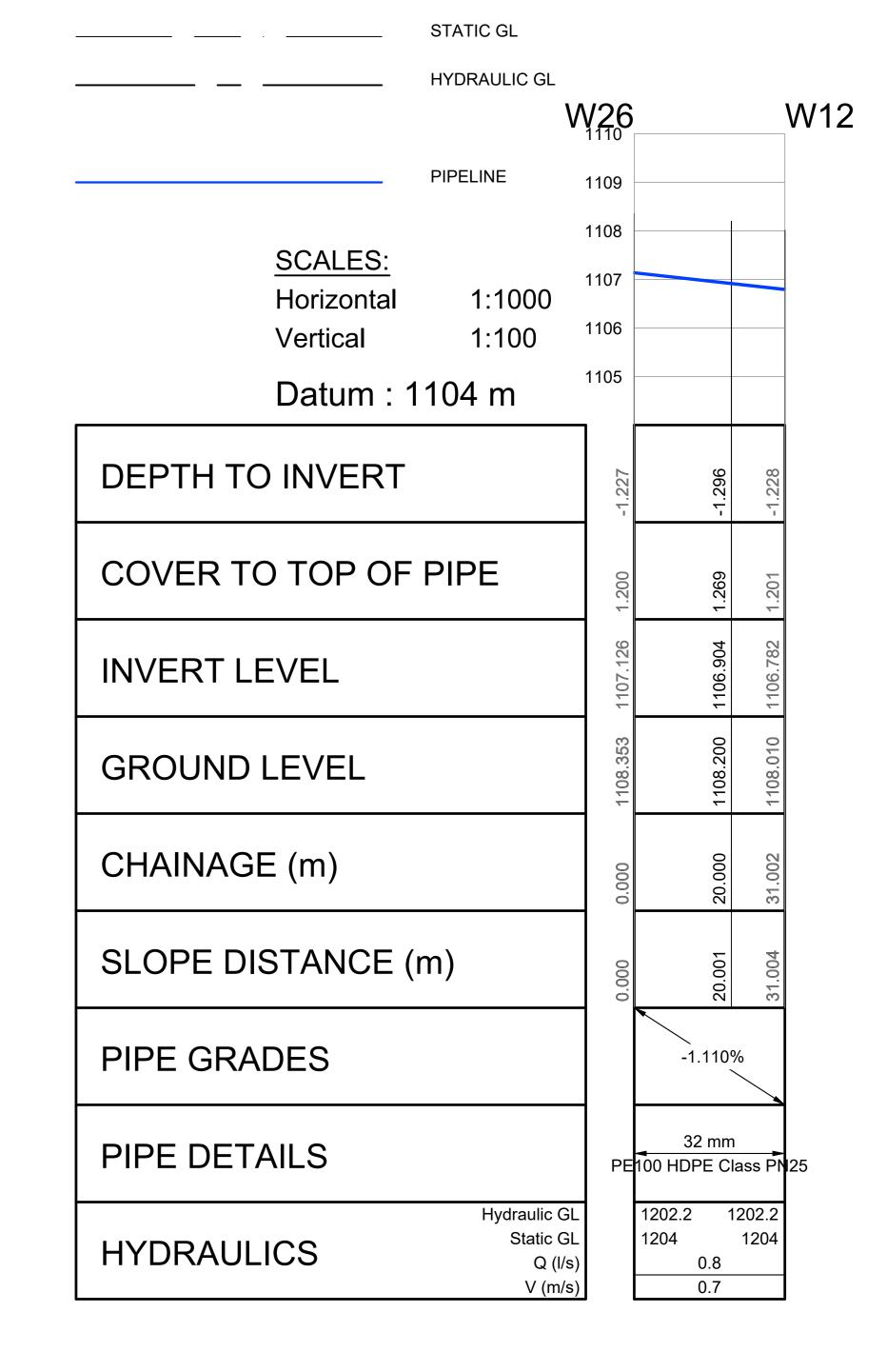
SURVEY BENCHMARK

--- PROPOSED WATER METER

PROPOSED 32mm DIA. HDPE PIPE

PROPOSED WATER IN-LINE VALVE



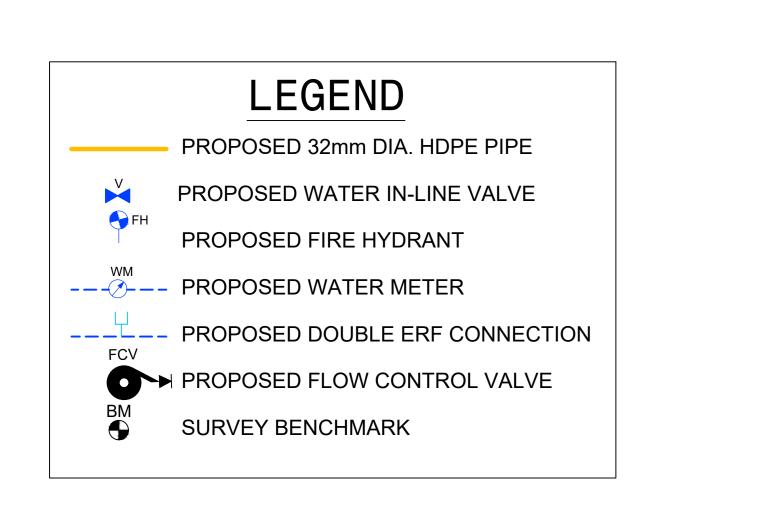


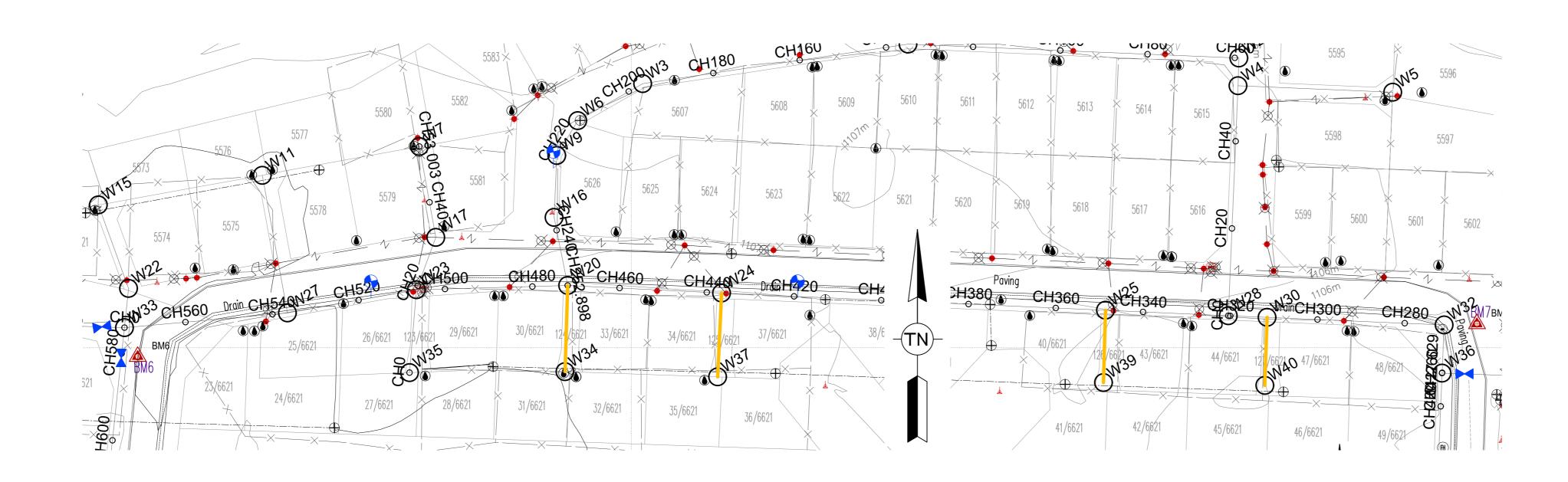
31 TO 14

29 TO 13

26 TO 12

SCALE 1: 100 0 1 2 3 4 5 10 m SCALE 1: 1000 0 10 20 30 40 50 100 m						
		DESIGNED BY SM NXUMALO (Pr. Technician)	RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS	RUSTENBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 40 OF 51
	FOR	CHECKED BY LG NGCOBO (Pr. Technologist)	PO BOX 16 RUSTENBURG 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS	NORHT WEST PROVINCE	20 / / For: Client	A1 SCALE
	TENDER	DRAWN BY PM MAAKE (TECHNICIAN)	O300 Rustenburg Local Municipality POLOKWANE 0699	REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	20 / / For: Consulting Engineer	AS SHOWN
A 09/2024 FOR TENDER S.M.N L.G.N		CHECKED BY SM NXUMALO (Pr. Technician)	Tel No.: (013) 590-3607 Fax No.:(014) 590-3388 TEL: (015) 297 7434	LONG SECTIONS 31 TO 12	CONSULTANTS DRAWING NUMBER HCE/DRW/LS/ 040	CLIENT DRAWING NUMBER RLM/DRW/LS/ 04





		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
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BM11	25 464,620	2 830 462,670	1103,880

FIRE WATER SPECIFICATION

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3. BOOSTERS

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ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

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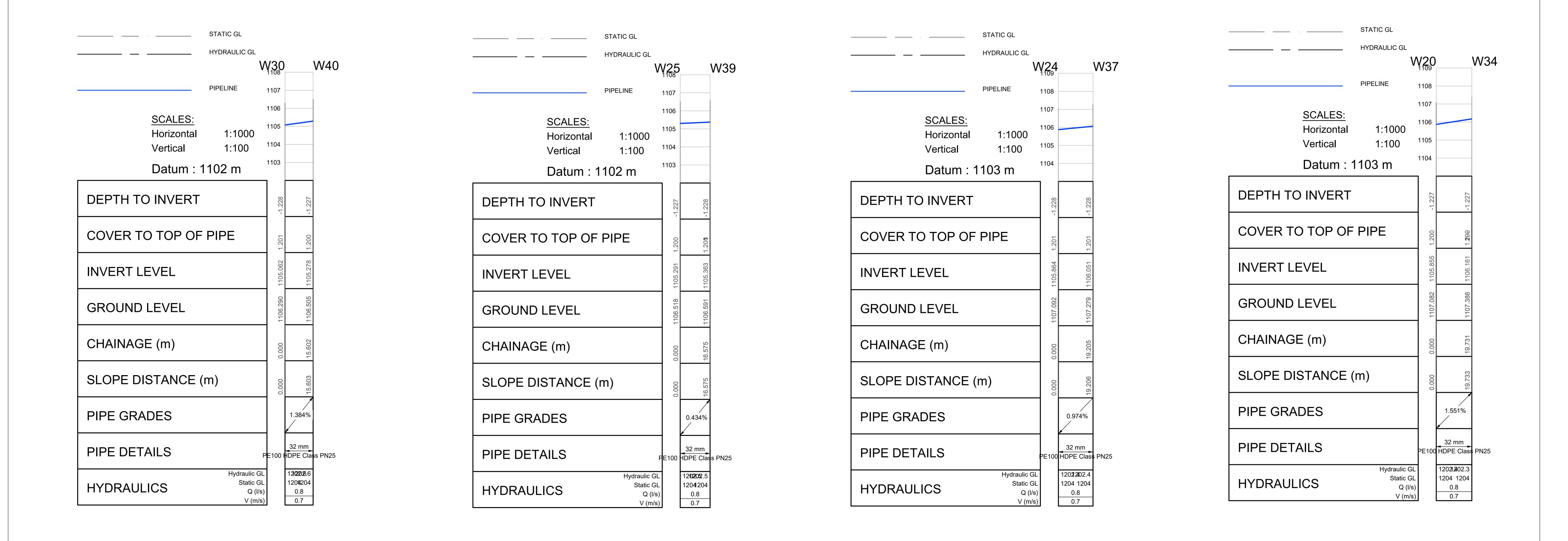
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COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

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30 TO 40 20 TO 34 25 TO 39 24 TO 37

A 09/2024 FOR TENI	DER S.I	.M.N	L.G.N
No DATE REVISIO	on co	ONSULT	DIR

FOR **TENDER**

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG Rustenburg Local Municipality Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

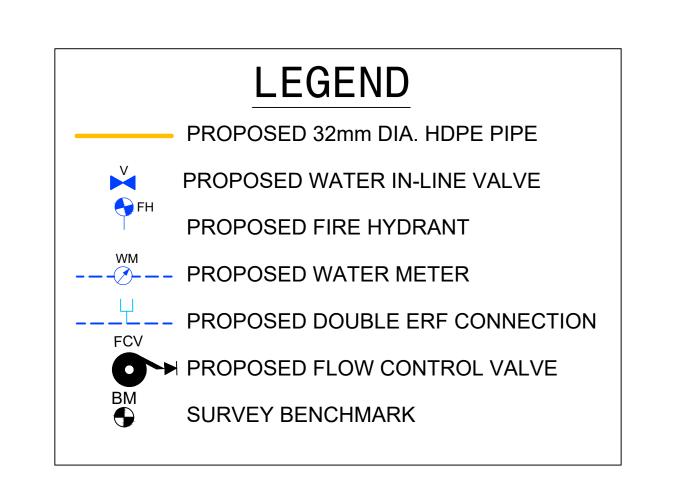


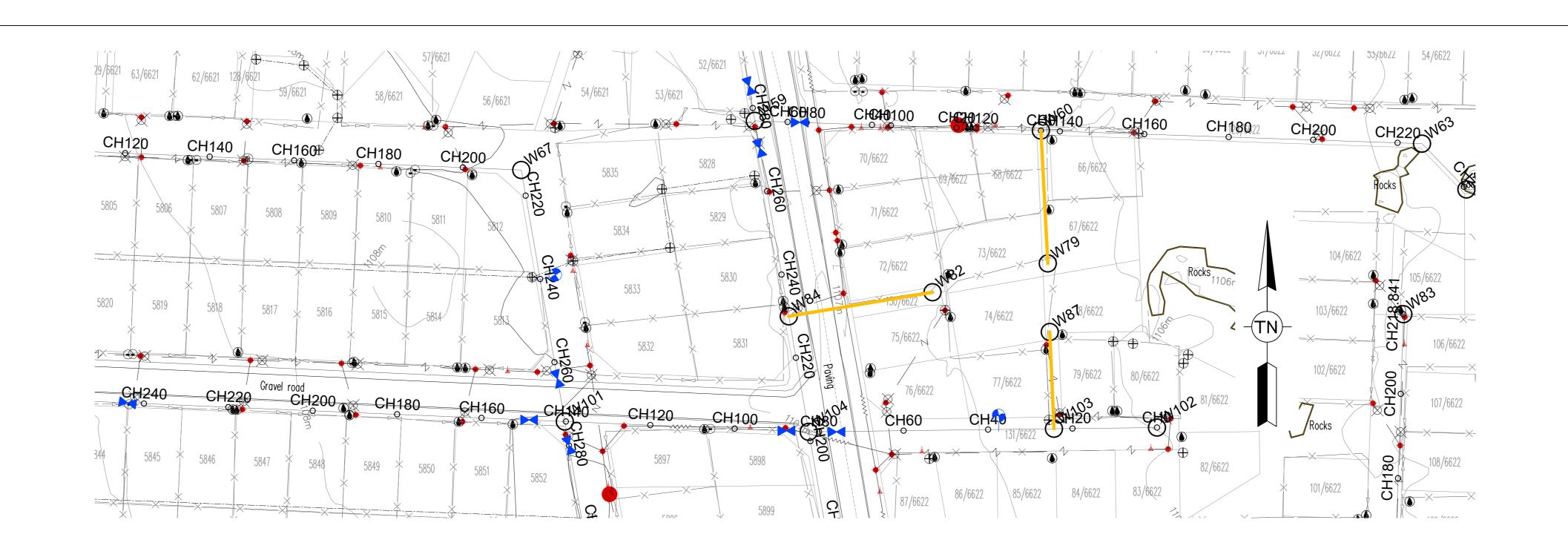
HLAYELENI CONSULTING ENGINEERS

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS

30 TO 34

SHEET 41 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS CLIENT DRAWING NUMBER DRAWING NUMBER HCE/DRW/LS/ 041 RLM/DRW/LS/ 041





	BENCHMARKS Lo 27 WGS 84						
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BM3	24 883,100	2 831 135,410	1109,420				
BM4	24 553,410	2 830 814,190	1112,520				
BM5	24 724,480	2 830 778,890	1111,060				
BM6	24 886,960	2 830 501,980	1107,600				
BM7	25 193,670	2 830 494,480	1105,780				
BM8	25 432,180	2 830 869,120	1105,640				
BM9	25 796,660	2 830 806,780	1101,340				
BM10	25 522,910	2 830 996,910	1103,830				
BM11	25 464,620	2 830 462,670	1103,880				
-							

FIRE WATER SPECIFICATION
1. PIPEWORK
(a) ALL UNDERGROUND PIPEWORK SHALL BE uPV SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLU SHALL BE MEDIUM QUALITY GALVANISED STEE
L CARC 60/4074 AC AMENDED

3. BOOSTERS

PVC CLASS 16 OR LUDING 100mmØ EEL PIPING TO SABS 62/1971 AS AMENDED.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE

POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

2. HYDRANTS ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. (a) SHALL COMPLY TO SABS 1128. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

> 7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

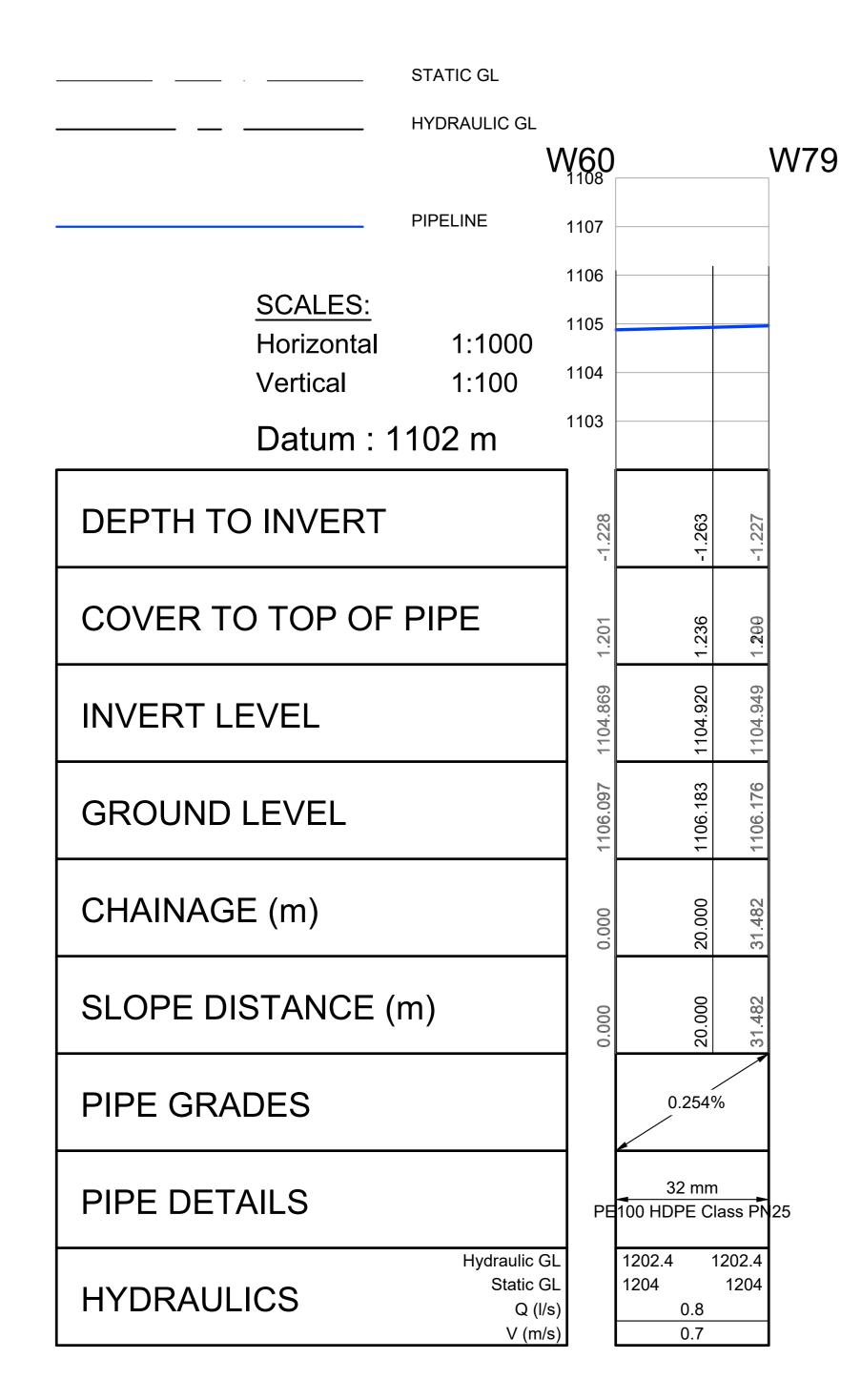
AUTHORITIES SUPERVISION. .5. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

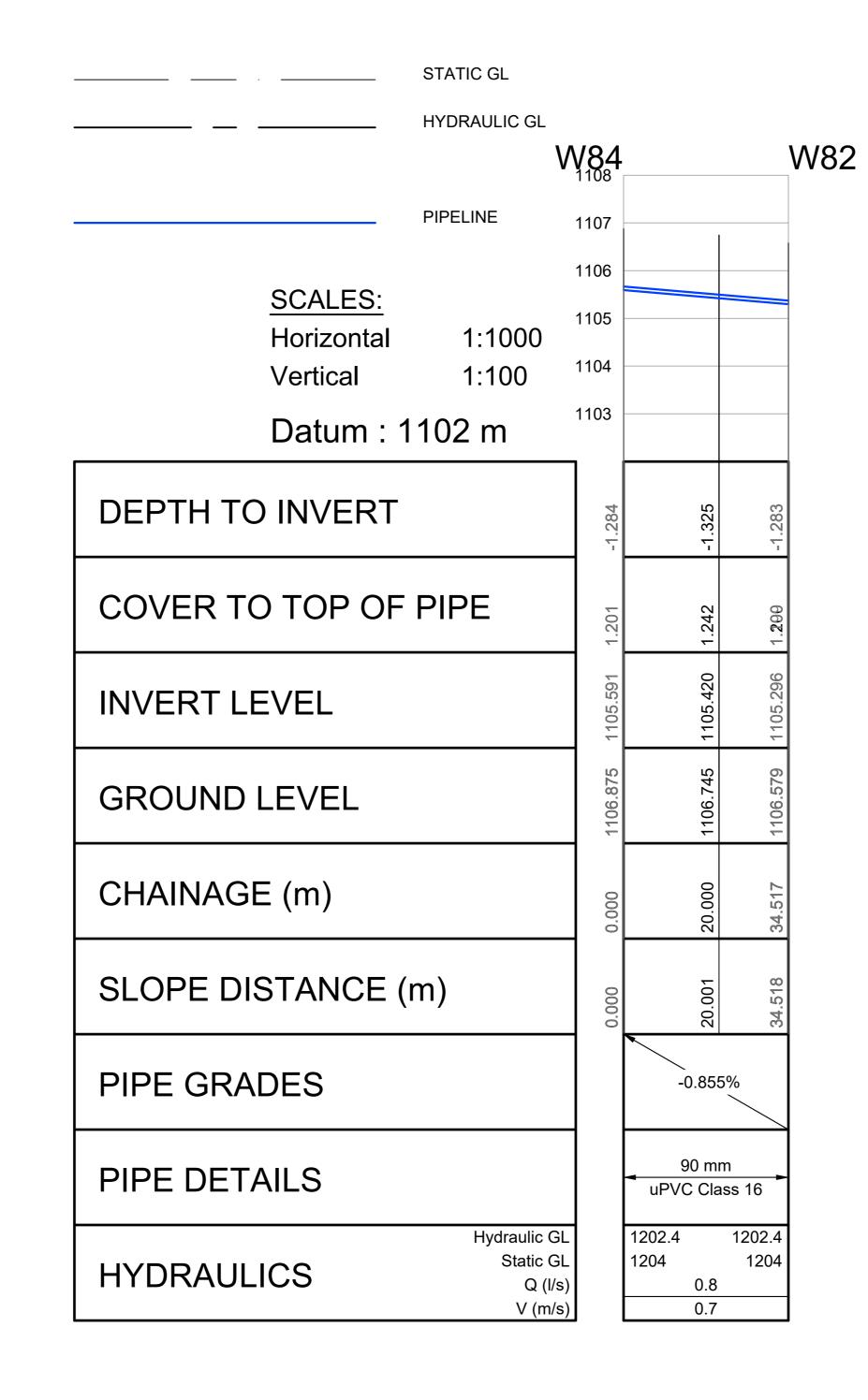
VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE





_____ STATIC GL HYDRAULIC GL SCALES: Horizontal 1:1000 1:100 Vertical Datum : 1102 m DEPTH TO INVERT COVER TO TOP OF PIPE INVERT LEVEL **GROUND LEVEL** CHAINAGE (m) SLOPE DISTANCE (m) PIPE GRADES 0.061% PIPE DETAILS PE100 HDPE Class PN25 1202.41202.4 Hydraulic GL 1204 1204 **HYDRAULICS** 8.0 0.7 V (m/s)

60 TO 79 84 TO 82 103 TO 87

CONSULT DIR No DATE

REVISION

FOR **TENDER** DESIGNED BY SM NXUMALO (Pr. Technician) CHECKED BY LG NGCOBO (Pr. Technologist) DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

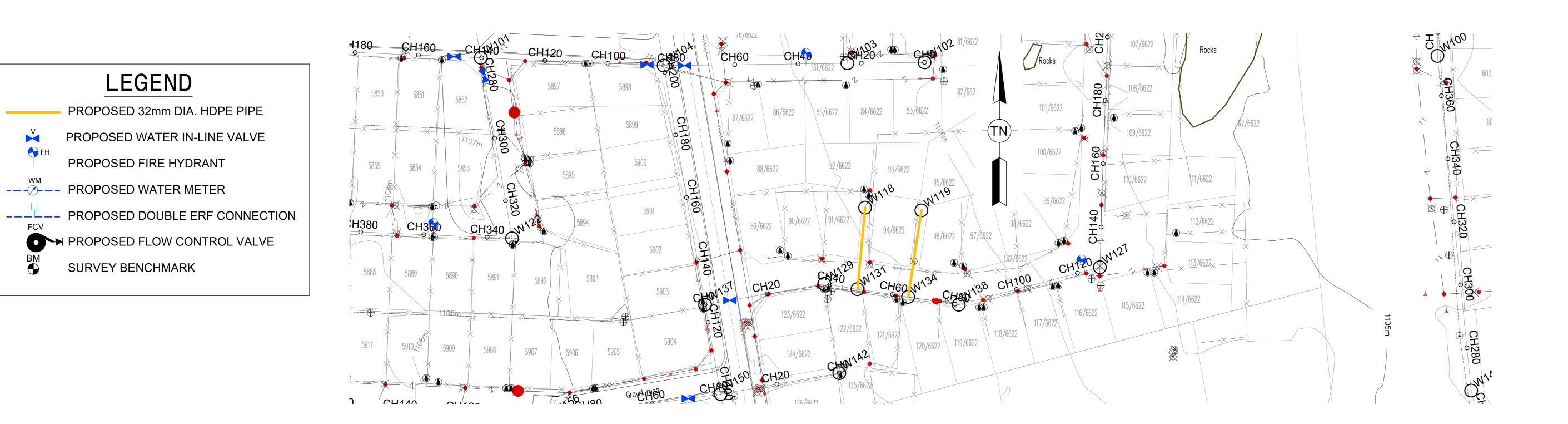
RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG Tel No.: (013) 590-3607 Fax No.:(014) 590-3388





RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 60 TO 87

SHEET 42 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS CLIENT DRAWING NUMBER DRAWING NUMBER HCE/DRW/LS/ 042 RLM/DRW/LS/ 042



POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
BM3	24 883,100	2 831 135,410	1109,420
BM4	24 553,410	2 830 814,190	1112,520
BM5	24 724,480	2 830 778,890	1111,060
BM6	24 886,960	2 830 501,980	1107,600
BM7	25 193,670	2 830 494,480	1105,780
BM8	25 432,180	2 830 869,120	1105,640
ВМ9	25 796,660	2 830 806,780	1101,340
	BM1 BM2 BM3 BM4 BM5 BM6 BM7	Lo 27 POINT Y-COORD. (m) BM1 25 229,670 BM2 25 239,770 BM3 24 883,100 BM4 24 553,410 BM5 24 724,480 BM6 24 886,960 BM7 25 193,670 BM8 25 432,180	BM1 25 229,670 2 830 880,560 BM2 25 239,770 2 830 940,230 BM3 24 883,100 2 831 135,410 BM4 24 553,410 2 830 814,190 BM5 24 724,480 2 830 778,890 BM6 24 886,960 2 830 501,980 BM7 25 193,670 2 830 494,480 BM8 25 432,180 2 830 869,120

BM10 25 522,910 2 830 996,910 1103,830

BM11 | 25 464,620 | 2 830 462,670 | 1103,880

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO

SABS 62/1971 AS AMENDED. 2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS. 8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

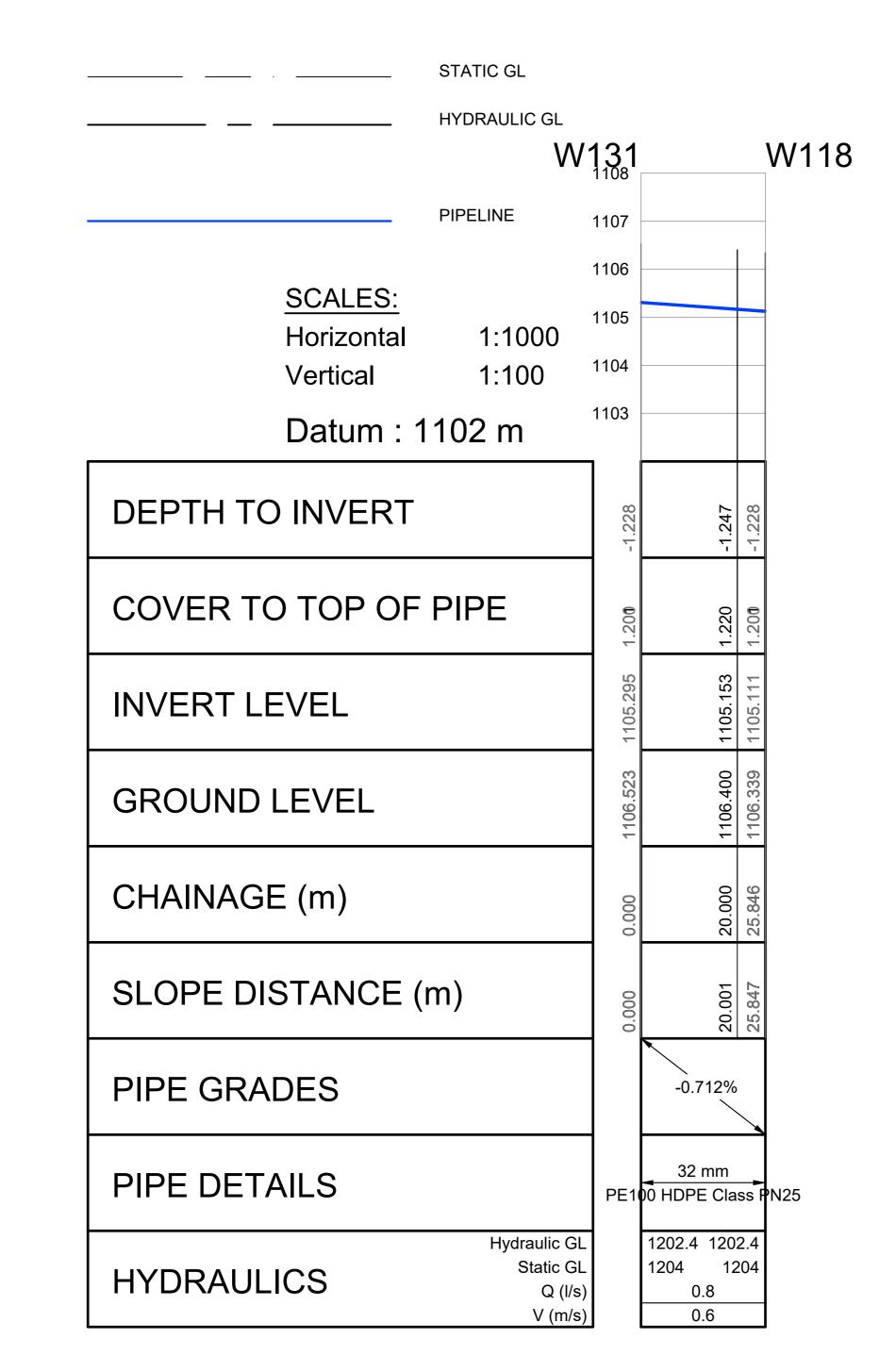
14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

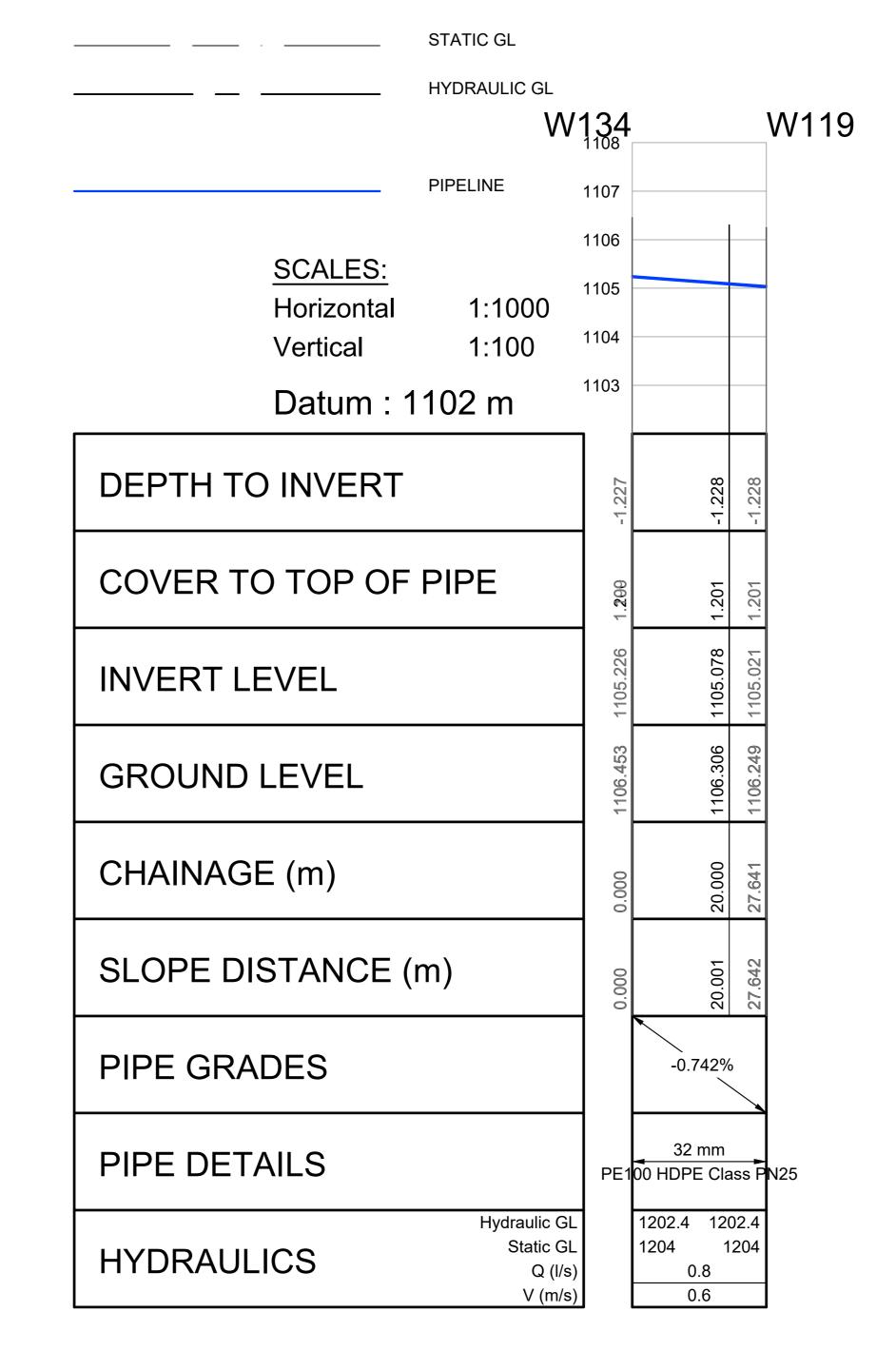
AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.





134 TO 119 131 TO 118

	_	SCALE 1 : 1000		SCALE 1:1000 0 10 20		30	40 50			100 m		
F												
	A	09/2024			FO	R TEN	DER			S.M.N	L.G.N	.
	No	DATE			F	REVISI	ON			CONSULT	DIR	

No DATE

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

FOR **TENDER**

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY
NORHT WEST PROVINCE
REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5
LONG SECTIONS
131 TO 119

SHEET 43 OF 51 (Full signature) For: Client A1 SCALE AS SHOWN For: Consulting Engineer CLIENT DRAWING NUMBER CONSULTANTS DRAWING NUMBER HCE/DRW/LS/ 043 RLM/DRW/LS/ 043



Fax No.:(014) 590-3388

SM NXUMALO (Pr. Technician)

CHECKED BY

CONSULT DIR

TEL: (015) 297 7434

FAX: (086) 244 8999

A 09/2024

No DATE

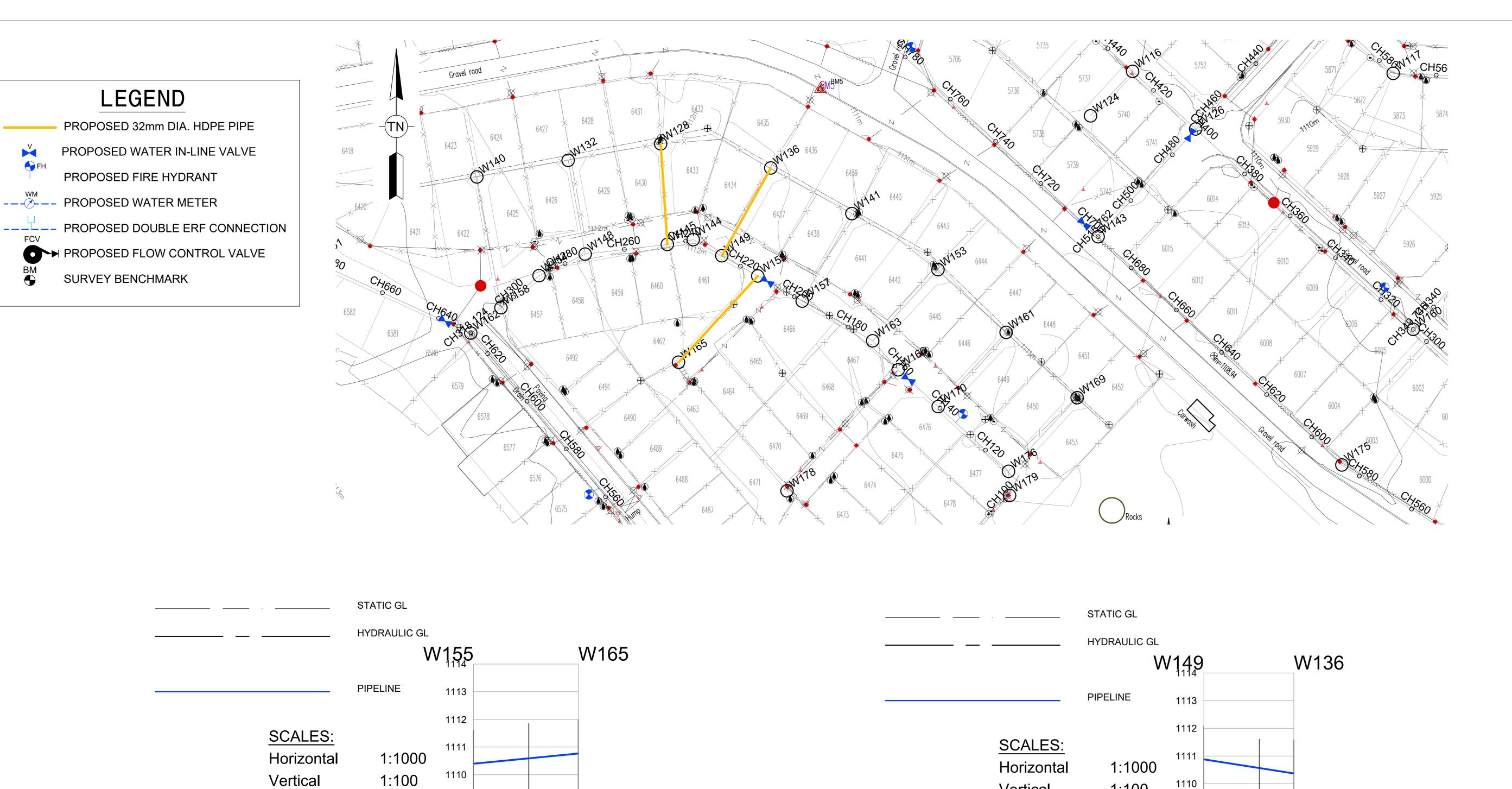
REVISION

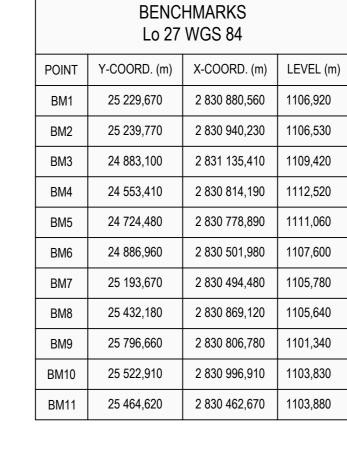
DRAWING NUMBER

HCE/DRW/LS/ 044

RLM/DRW/LS/ 044

176 TO 153





FIRE WATER SPECIFICATION

. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

_____ STATIC GL

B. BOOSTERS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

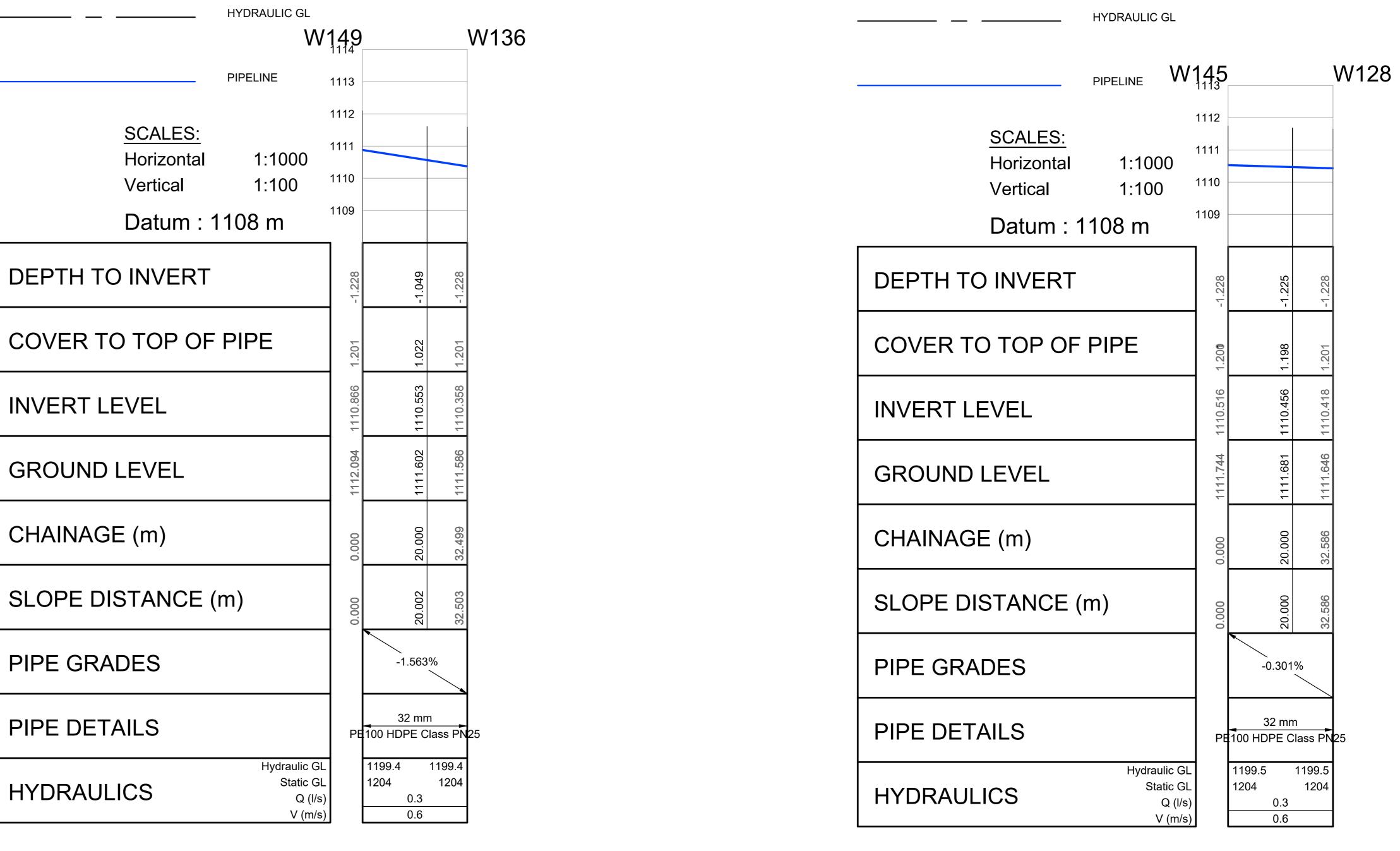
13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

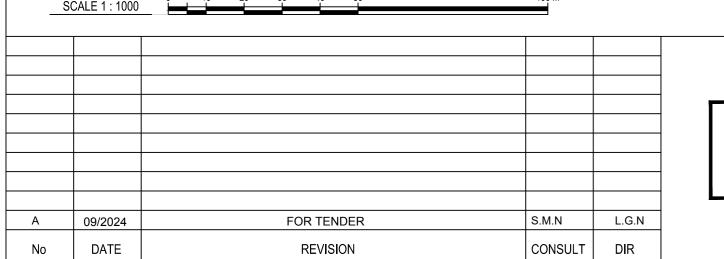
.5. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.



155 TO 165 149 TO 136 145 TO 128



LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

FOR **TENDER**

Hydraulic GL

Static GL

Q (I/s)

V (m/s)

Datum : 1108 m

DEPTH TO INVERT

INVERT LEVEL

GROUND LEVEL

CHAINAGE (m)

PIPE GRADES

PIPE DETAILS

HYDRAULICS

SLOPE DISTANCE (m)

COVER TO TOP OF PIPE

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

E100 HDPE Class PN2

0.6

1199.4

1204

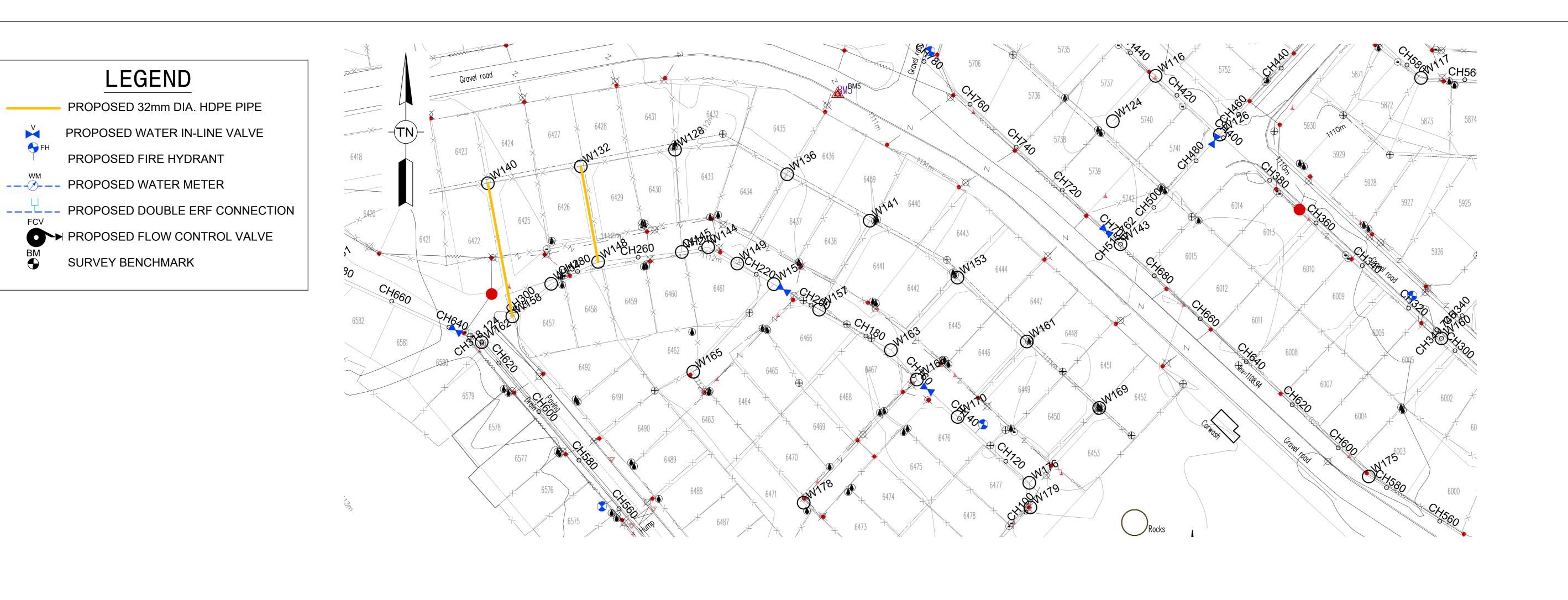
1199.4

RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 155 TO 128

SHEET 45 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 045 RLM/DRW/LS/ 045



		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
BM3	24 883,100	2 831 135,410	1109,420
BM4	24 553,410	2 830 814,190	1112,520
BM5	24 724,480	2 830 778,890	1111,060
BM6	24 886,960	2 830 501,980	1107,600
BM7	25 193,670	2 830 494,480	1105,780
BM8	25 432,180	2 830 869,120	1105,640
ВМ9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830

BM11 25 464,620 2 830 462,670 1103,880

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE. 3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).



1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS. 10. ALL CAST IRON FITTINGS TO BE CLASS 16.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.



158 TO 140 148 TO 132

Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	PEVISION	CONSULT	DIB

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

FOR TENDER

SM NXUMALO (Pr. Technician) CHECKED BY LG NGCOBO (Pr. Technologist) DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

RUSTENBURG Rustenburg Local Municipality Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

RUSTENBURG LOCAL MUNICIPALITY

HLAYELENI CONSULTING ENGINEERS 12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434 FAX: (086) 244 8999

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 148 TO 140

SHEET 46 OF 51 (Full signature) For: Client AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 046 RLM/DRW/LS/ 046



		HMARKS WGS 84	
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)
BM1	25 229,670	2 830 880,560	1106,920
BM2	25 239,770	2 830 940,230	1106,530
BM3	24 883,100	2 831 135,410	1109,420
BM4	24 553,410	2 830 814,190	1112,520
BM5	24 724,480	2 830 778,890	1111,060
BM6	24 886,960	2 830 501,980	1107,600
BM7	25 193,670	2 830 494,480	1105,780
BM8	25 432,180	2 830 869,120	1105,640
BM9	25 796,660	2 830 806,780	1101,340
BM10	25 522,910	2 830 996,910	1103,830
BM11	25 464,620	2 830 462,670	1103,880

FIRE WATER SPECIFICATION

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128.

(b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE. 3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16. 1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

TESTING OF NETWORK IS COMPLETED.

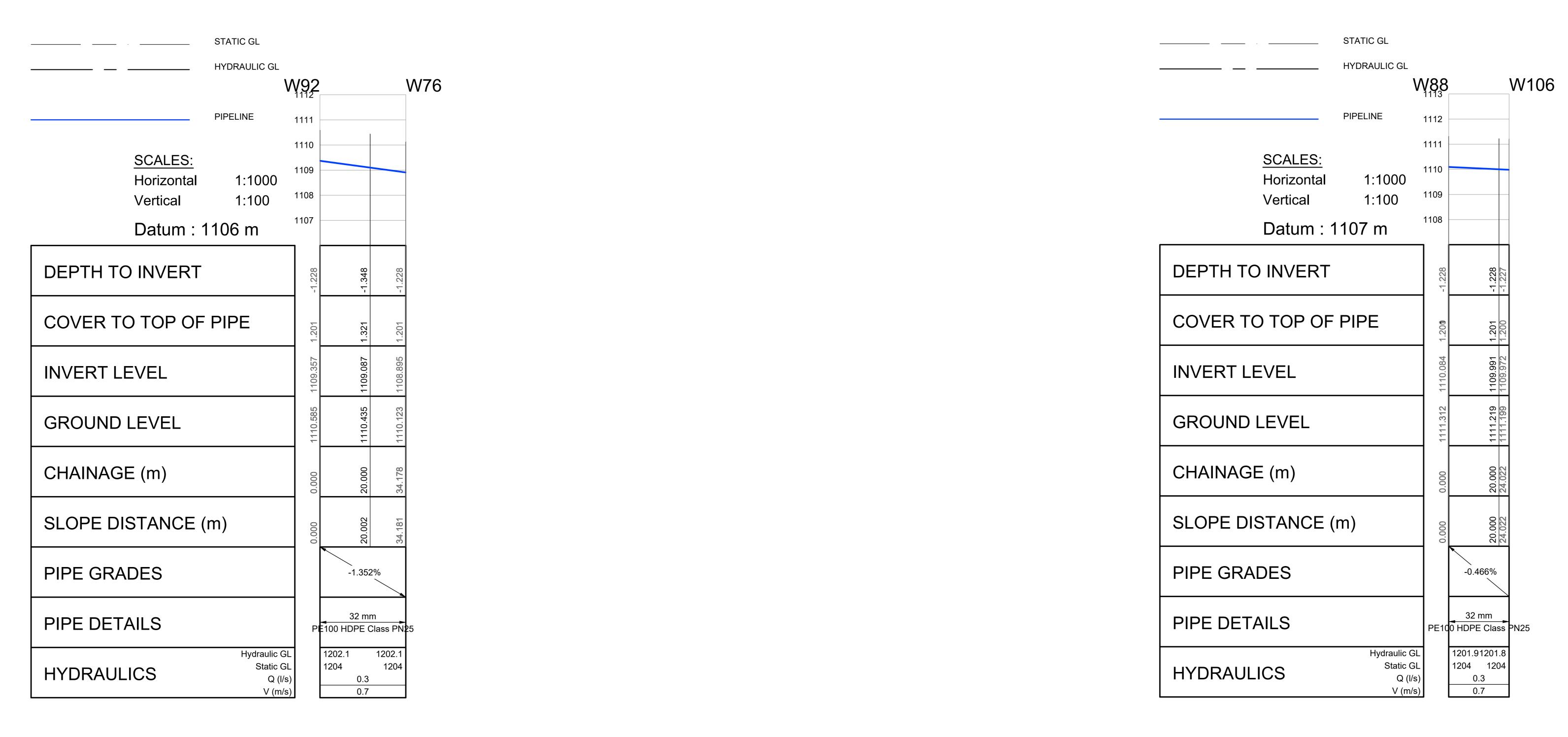
14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

BOUNDARY UNLESS OTHERWISE INDICATED.

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

17. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.



92 TO 76 88 TO 106

REVISION

No DATE

CONSULT DIR

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

FOR **TENDER**

SM NXUMALO (Pr. Technician) DESIGNED BY LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TECHNICIAN) DRAWN BY CHECKED BY SM NXUMALO (Pr. Technician)

RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

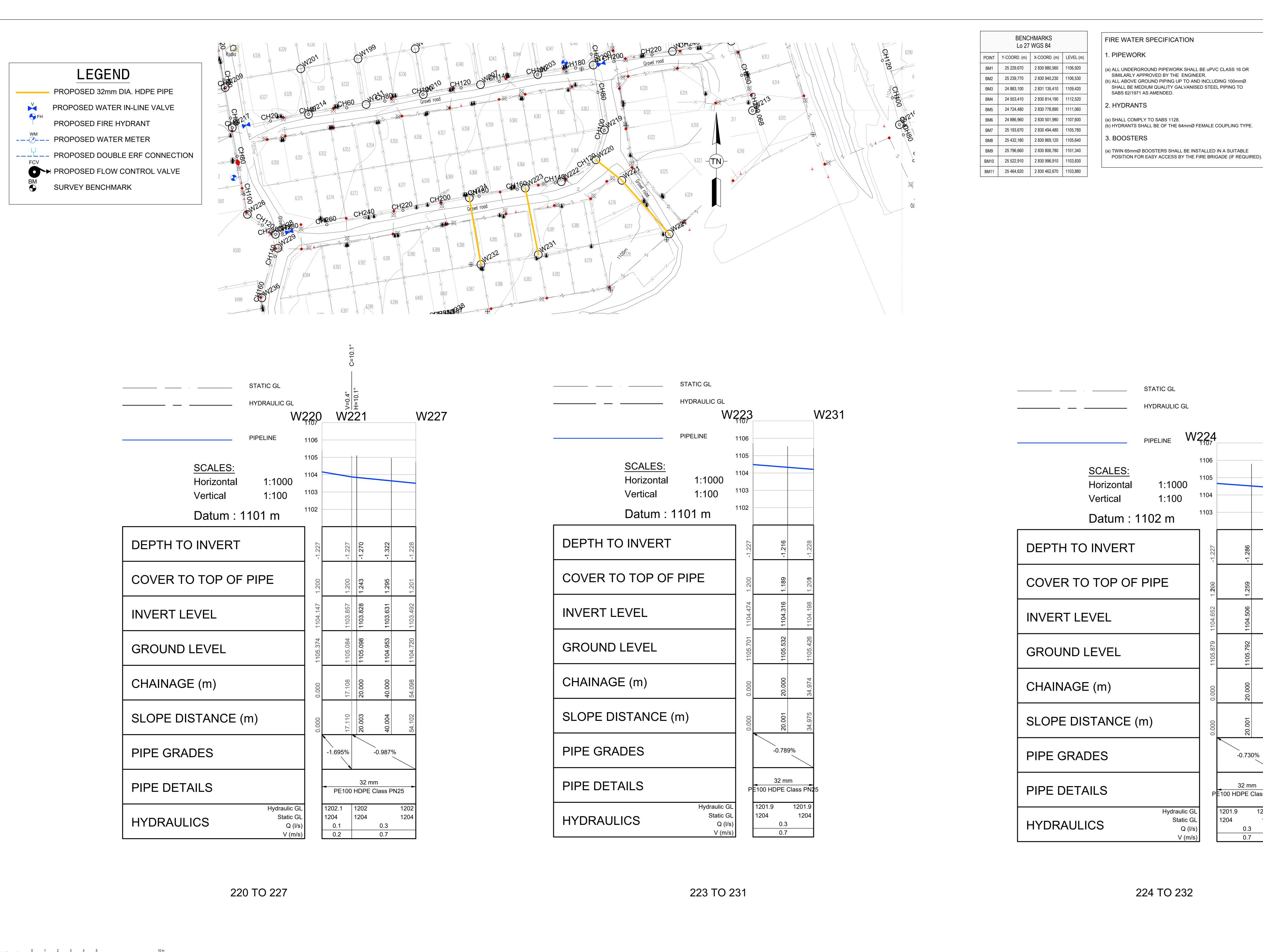
Rustenburg Local Municipality

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297 7434 FAX: (086) 244 8999

HLAYELENI CONSULTING ENGINEERS

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 92 TO 106

SHEET 47 OF 51 (Full signature) For: Client A1 SCALE AS SHOWN CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 047 RLM/DRW/LS/ 047



RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS SM NXUMALO (Pr. Technician) SHEET 48 OF 51 (Full signature) NORHT WEST PROVINCE FOR LG NGCOBO (Pr. Technologist) CHECKED BY RUSTENBURG For: Client Rustenburg Local Municipality SUITE 17, BICCARD HEIGHTS REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **TENDER** AS SHOWN DRAWN BY PM MAAKE (TECHNICIAN) LONG SECTIONS CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER Tel No.: (013) 590-3607 FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 220 TO 232 HCE/DRW/LS/ 048 RLM/DRW/LS/ 048 CHECKED BY SM NXUMALO (Pr. Technician) No DATE CONSULT DIR REVISION FAX: (086) 244 8999

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE

DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF

PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

BOUNDARY UNLESS OTHERWISE INDICATED.

TESTING OF NETWORK IS COMPLETED.

AUTHORITIES SUPERVISION.

W232

-0.730%

PE100 HDPE Class PN25

1201.9 1201.8

0.7

1204

1204

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT



LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

PROPOSED 32mm DIA. HDPE PIPE

BENCHMARKS Lo 27 WGS 84									
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)						
BM1	25 229,670	2 830 880,560	1106,920						
BM2	25 239,770	2 830 940,230	1106,530						
ВМ3	24 883,100	2 831 135,410	1109,420						
BM4	24 553,410	2 830 814,190	1112,520						
BM5	24 724,480	2 830 778,890	1111,060						
BM6	24 886,960	2 830 501,980	1107,600						
ВМ7	25 193,670	2 830 494,480	1105,780						
BM8	25 432,180	2 830 869,120	1105,640						
ВМ9	25 796,660	2 830 806,780	1101,340						
BM10	25 522,910	2 830 996,910	1103,830						
BM11	25 464,620	2 830 462,670	1103,880						

FIRE WATER SPECIFICATION

1. PIPEWORK

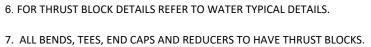
(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

(a) SHALL COMPLY TO SABS 1128. (b) HYDRANTS SHALL BE OF THE 64mmØ FEMALE COUPLING TYPE.

3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).



BROUGHT FORWARD TO THE ENGINEER'S ATTENTION.

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE

ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

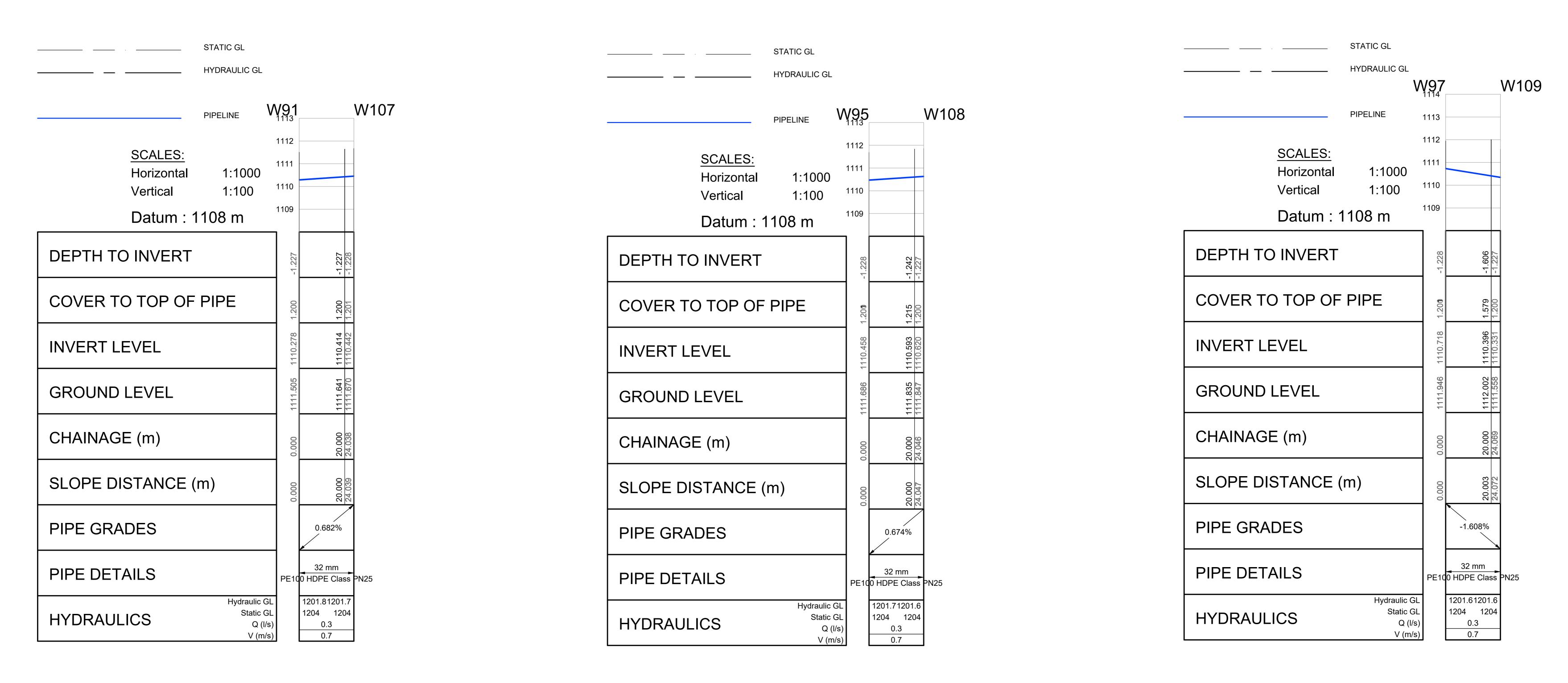
.5. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

IMMEDIATELY REPORTED TO THE ENGINEER.

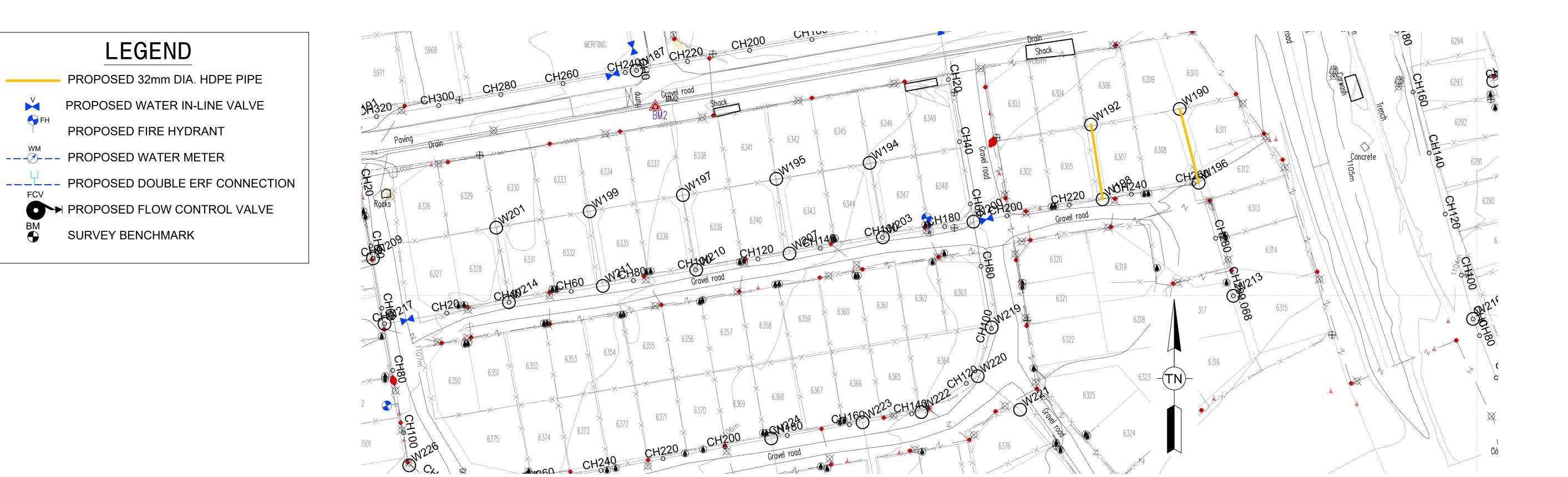
NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED. 16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND,

7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE



97 TO 109 91 TO 107 95 TO 108





POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)		
BM1	25 229,670	2 830 880,560	1106,920		
BM2	25 239,770	2 830 940,230	1106,530		
BM3	24 883,100	2 831 135,410	1109,420		
BM4	24 553,410	2 830 814,190	1112,520		
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BM8	25 432,180	2 830 869,120	1105,640		
BM9	25 796,660	2 830 806,780	1101,340		
BM10	25 522,910	2 830 996,910	1103,830		
BM11	25 464,620	2 830 462,670	1103,880		

1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

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3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED).



1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED. 4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200.

5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

10. ALL CAST IRON FITTINGS TO BE CLASS 16.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH.

9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE TESTED STRICTLY IN ACCORDANCE TO SANS 1200 SPECIFICATIONS.

1. POSITION OF WATER MAINS SHOULD NOT BE MEASURED FROM THE DRAWINGS, ALL WATER MAINS IN ROADS RESERVES TO BE 2m FROM ERF BOUNDARY UNLESS OTHERWISE INDICATED.

COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

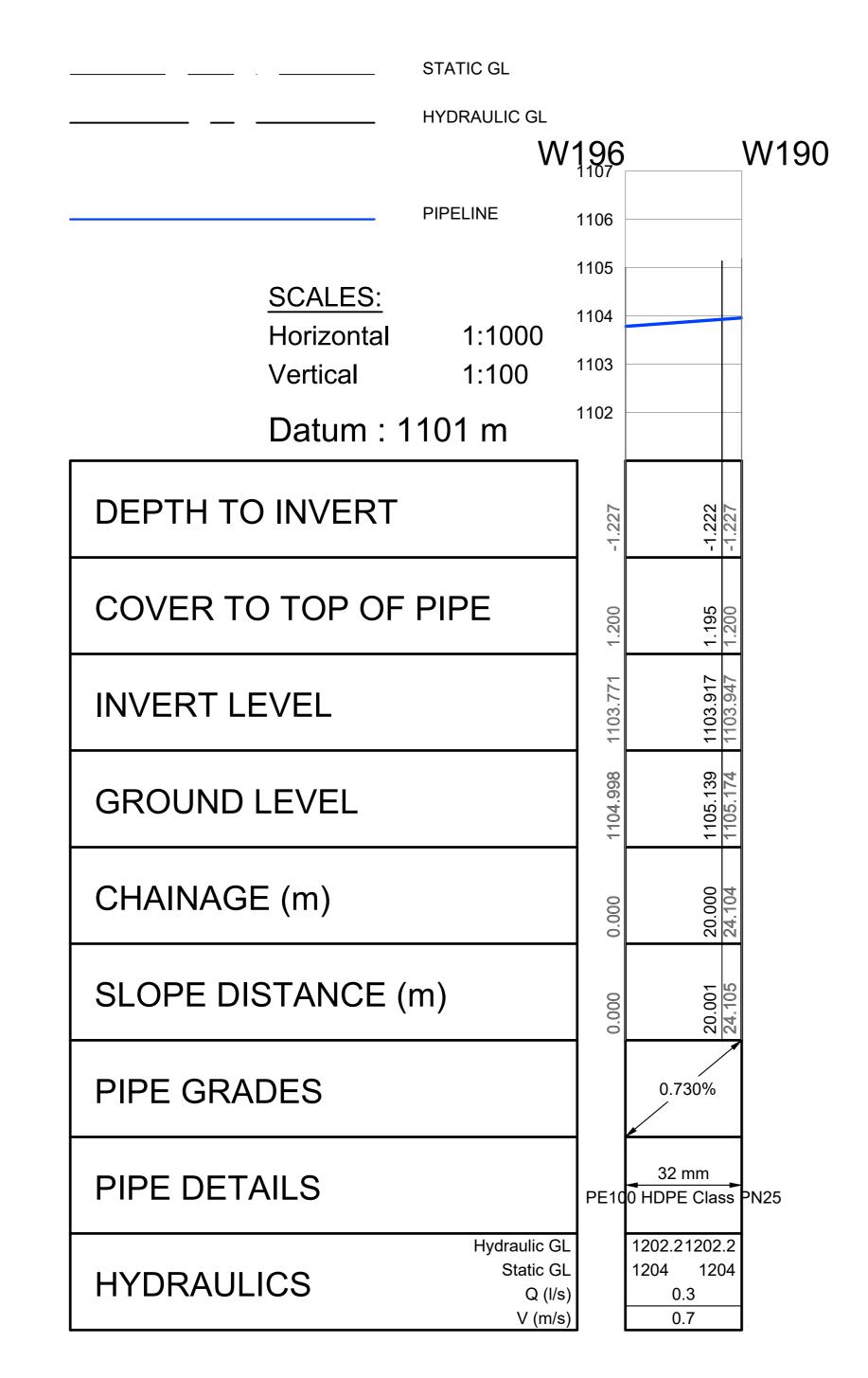
13. ALL JOINTS AND FITTINGS MUST BE LEFT EXPOSED UNTIL THE PRESSURE TESTING OF NETWORK IS COMPLETED.

14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL AUTHORITIES SUPERVISION.

VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE NOTIFIED IN THIS REGARD 48 HOURS BEFORE IT IS REQUIRED.

16. ALL WATERLINES ON THIS DRAWING ARE TO BE BURIED UNDER GROUND, MINIMUM DEPTH OF 600mm IS TO BE ATTAINED.

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HYDRAULIC GL W192 PIPELINE SCALES: 1:1000 Horizontal 1:100 Vertical Datum : 1101 m DEPTH TO INVERT COVER TO TOP OF PIPE INVERT LEVEL **GROUND LEVEL** CHAINAGE (m) SLOPE DISTANCE (m) PIPE GRADES 1.207% PIPE DETAILS PE100 HDPE Class PN25 Hydraulic GL 1202.21202.2 Static GL 1204 1204 **HYDRAULICS** Q (l/s) 0.3 0.7 V (m/s)

STATIC GL

196 TO 190 198 TO 192

FAX: (086) 244 8999

FOR TENDER No DATE CONSULT DIR REVISION

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

PROPOSED 32mm DIA. HDPE PIPE

PROPOSED WATER IN-LINE VALVE

TENDER

SM NXUMALO (Pr. Technician) **DESIGNED BY** LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

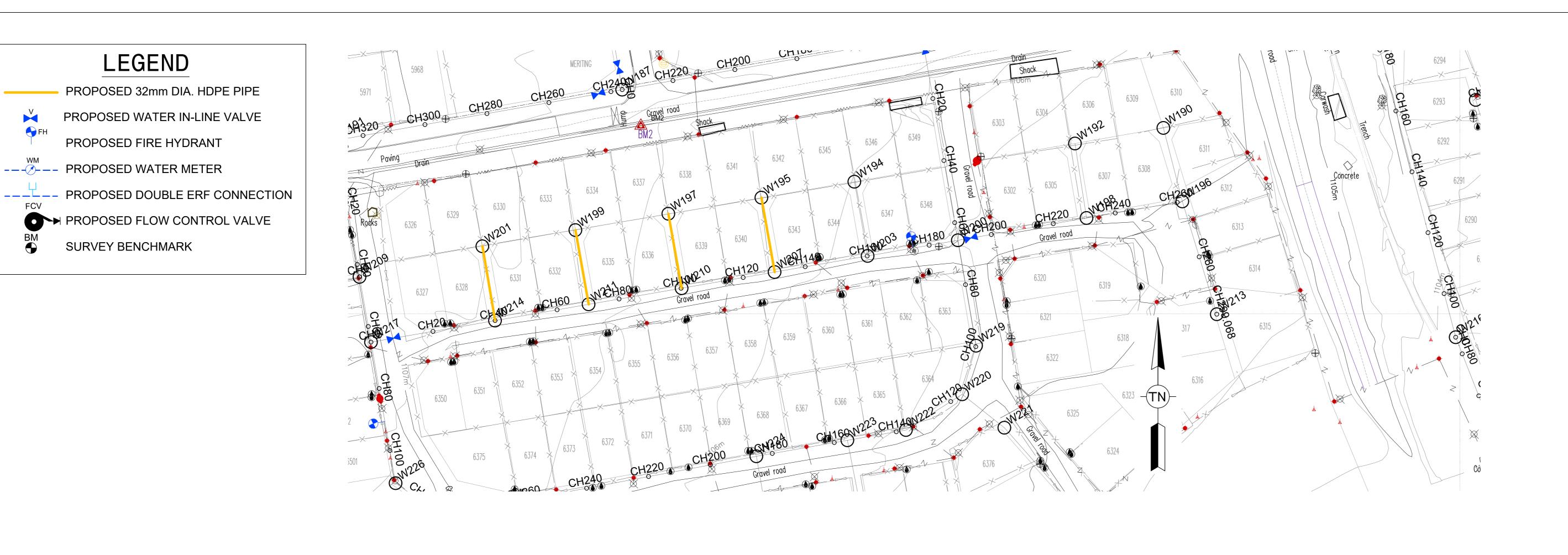
RUSTENBURG LOCAL MUNICIPALITY PO BOX 16 RUSTENBURG Rustenburg Local Municipality 0300 Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

HLAYELENI CONSULTING ENGINEERS POLOKWANE

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 196 TO 192

SHEET 50 OF 51 (Full signature) For: Client AS SHOWN For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/LS/ 050 RLM/DRW/LS/ 050



BENCHMARKS Lo 27 WGS 84							
POINT	Y-COORD. (m)	X-COORD. (m)	LEVEL (m)				
BM1	25 229,670	2 830 880,560	1106,920				
BM2	25 239,770	2 830 940,230	1106,530				
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FIRE WATER SPECIFICATION
1. PIPEWORK

(a) ALL UNDERGROUND PIPEWORK SHALL BE uPVC CLASS 16 OR SIMILARLY APPROVED BY THE ENGINEER. (b) ALL ABOVE GROUND PIPING UP TO AND INCLUDING 100mmØ SHALL BE MEDIUM QUALITY GALVANISED STEEL PIPING TO SABS 62/1971 AS AMENDED.

2. HYDRANTS

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3. BOOSTERS

(a) TWIN 65mmØ BOOSTERS SHALL BE INSTALLED IN A SUITABLE POSITION FOR EASY ACCESS BY THE FIRE BRIGADE (IF REQUIRED). 1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE. 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS DRAWINGS.

3. THIS DRAWING NOT TO BE SCALED.

4. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LOCAL COUNCIL SPECIFICATIONS AND SANS 1200. 5. ALL FORMATION LEVELS FOR THE DEVELOPMENT TO BE VERIFIED

ON SITE PRIOR TO CONSTRUCTION. ANY DISCREPANCY TO BE BROUGHT FORWARD TO THE ENGINEER'S ATTENTION. 6. FOR THRUST BLOCK DETAILS REFER TO WATER TYPICAL DETAILS.

7. ALL BENDS, TEES, END CAPS AND REDUCERS TO HAVE THRUST BLOCKS.

8. ALL VALVES TO BE SUPPORT ON CONCRETE PLINTH. 9. ALL WATER MAINS TO BE TESTED TO A TEST PRESSURE OF 1,5 TIMES CLASS OF PIPE. ALL JOINT AND FITTINGS TO BE EXPOSED DURING TESTING, PIPES TO BE

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BOUNDARY UNLESS OTHERWISE INDICATED. 12. FIRE HYDRANTS SHALL BE THE ABOVE GROUND TYPE HYDRANTS TO LOCAL

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VALVES ON THE EXISTING WATER NETWORK. THE DEPARTMENT IS TO BE

TESTING OF NETWORK IS COMPLETED. 14. CONNECTION TO EXISTING SERVICES SHALL BE DONE UNDER THE LOCAL

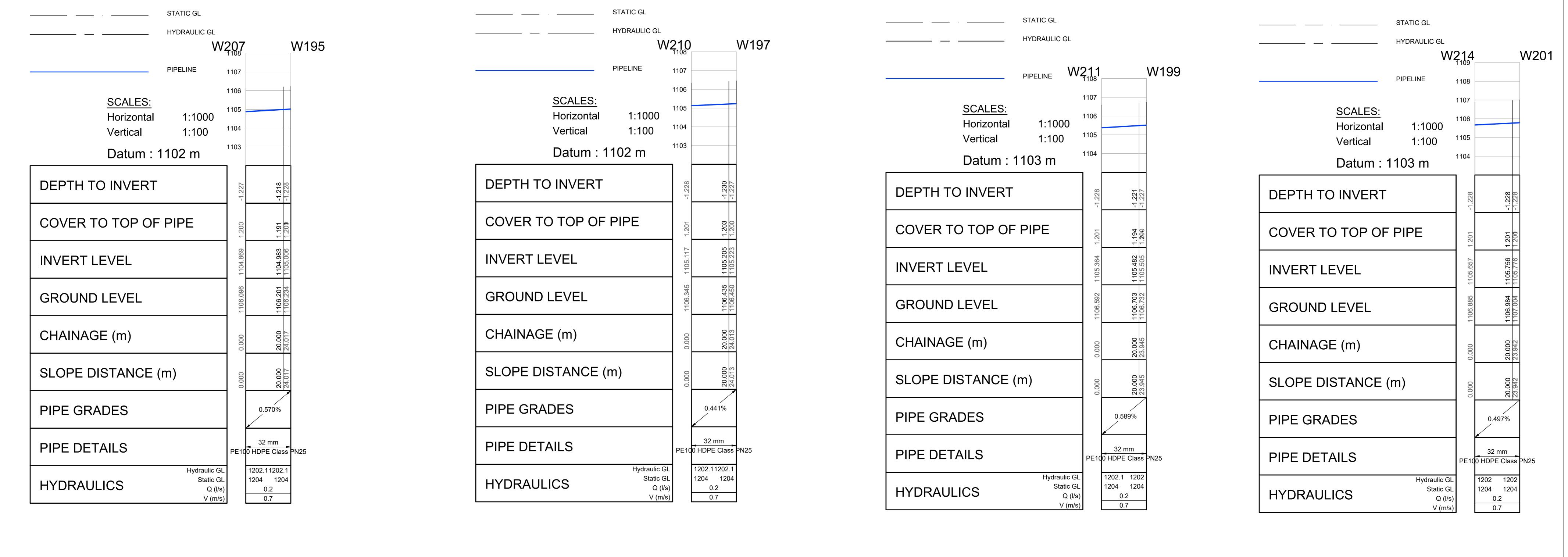
COUNCIL STANDARDS (WITH TAMPERPROOF HEAD).

AUTHORITIES SUPERVISION. 15. THE CONTRACTOR/DEVELOPER IS NOT PERMITTED TO CLOSE OR OPEN ANY

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MINIMUM DEPTH OF 600mm IS TO BE ATTAINED. 7. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SERVICES

WHICH ARE TO BE CROSSED MUST BE EXPOSED TO CONFIRM THEIR POSITIONS AND LEVELS. ANY DISCREPANCY IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER.



207 TO 195 210 TO 197 211 TO 199 214 TO 201

A 09/2024 FOR TENDER No DATE CONSULT DIR REVISION

LEGEND

PROPOSED FIRE HYDRANT

--- PROPOSED WATER METER

SURVEY BENCHMARK

TENDER

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) CHECKED BY DRAWN BY PM MAAKE (TECHNICIAN) SM NXUMALO (Pr. Technician) CHECKED BY

RUSTENBURG Tel No.: (013) 590-3607 Fax No.:(014) 590-3388

RUSTENBURG LOCAL MUNICIPALITY

0300

Rustenburg Local Municipality

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS TEL: (015) 297 7434 FAX: (086) 244 8999

HLAYELENI CONSULTING ENGINEERS

RUSTENBURG LOCAL MUNICIPALITY NORHT WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 LONG SECTIONS 207 TO 201

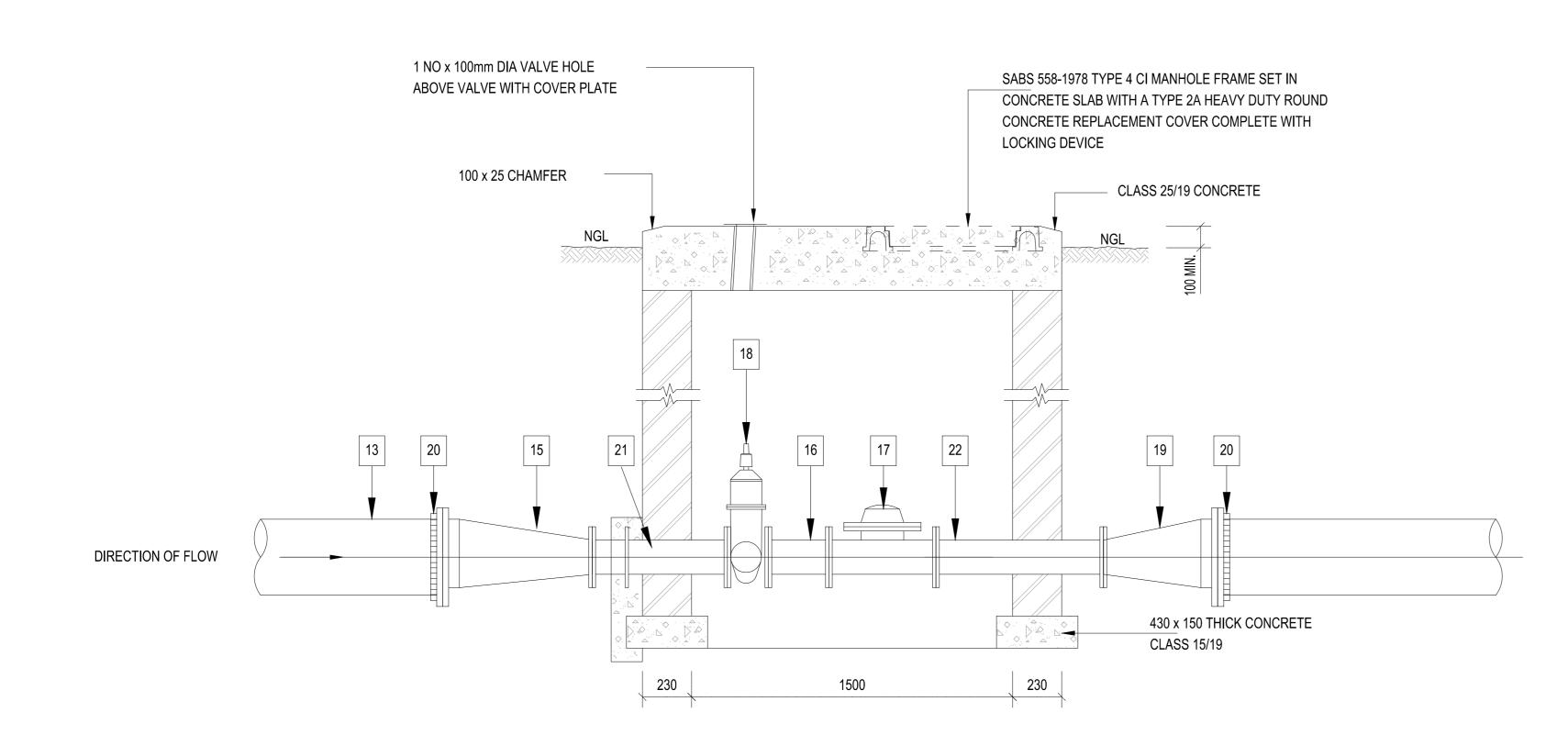
SHEET 51 OF 51 (Full signature) For: Client AS SHOWN For: Consulting Engineer CLIENT DRAWING NUMBER CONSULTANTS DRAWING NUMBER HCE/DRW/LS/ 051 RLM/DRW/LS/ 051

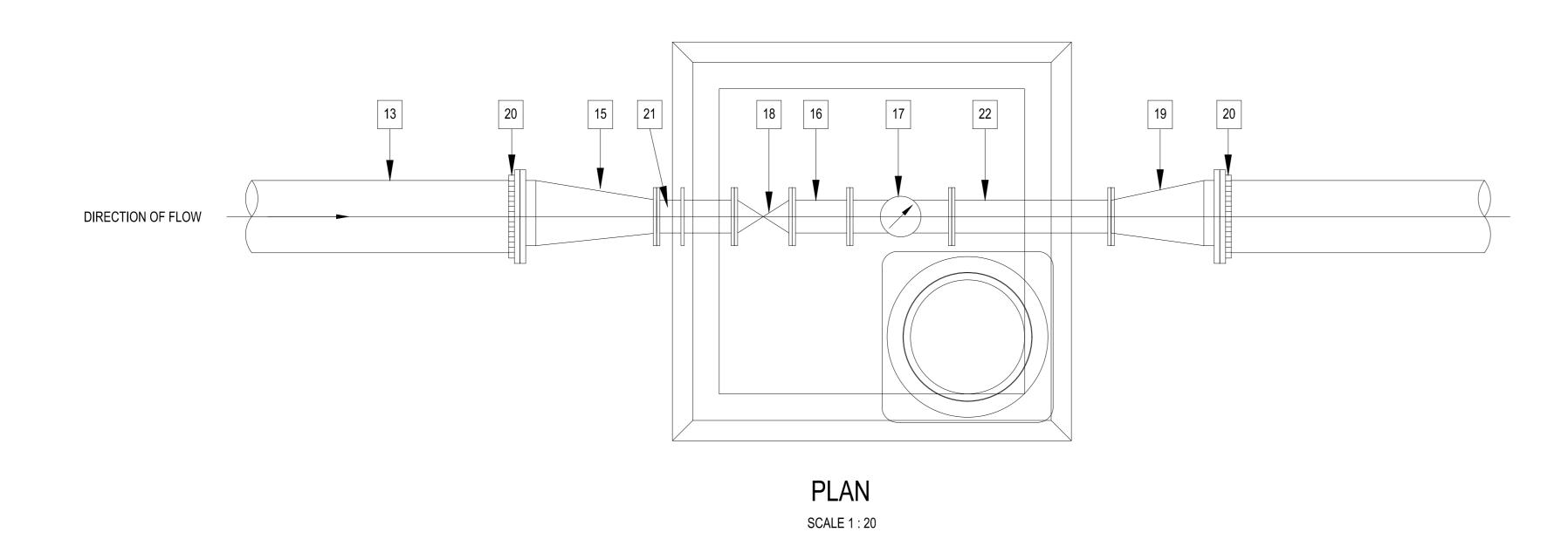
RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS SM NXUMALO (Pr. Technician) DESIGNED BY SHEET 1 OF 1 (Full signature) PO BOX 16 RUSTENBURG 12 BICCARD STREET, NORHT WEST PROVINCE FOR CHECKED BY LG NGCOBO (Pr. Technologist) A1 SCALE SUITE 17, BICCARD HEIGHTS For: Client POLOKWANE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 TENDER **AS SHOWN** For: Consulting Engineer DRAWN BY PM MAAKE (TECHNICIAN) WATER METER CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER Tel No.: (013) 590-3607 A 09/2024

No DATE S.M.N L.G.N FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 TYPICAL DETAILS HCE/DRW/WMD/ 056 RLM/DRW/WMD/ 056 CHECKED BY SM NXUMALO (Pr. Technician) CONSULT DIR REVISION FAX: (086) 244 8999

CALE 1: 100 0 1 2 3 4 5 10 m

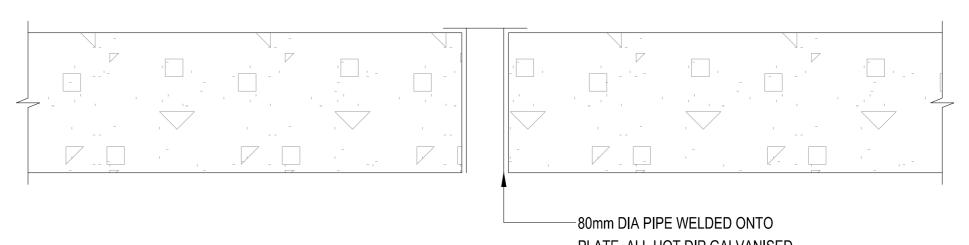
SECTION SCALE 1:20







SCALE 1:10



SCHEDULE OF FITTINGS

13 UPSTREAM PIPELINE

14 VJ FLANGE ADAPTOR TO SUIT

15 FLANGED REDUCER TO SUIT UPSTREAM PIPE

16 FLANGED SPOOL PIECE MIN LENGTH 3 x DIA

17 MEINECKE COSMOS, WATER METER, WPD,

MODEL AND CLASS ACCORDING TO LAYOUT

19 FLANGED REDUCER TO SUIT DOWNSTREAM PIPE

21 FLANGED SPOOL PIECE, 1030 LONG WITH PUDDLE FLANGE

22 FLANGED SPOOL PIECE TO SUIT (MIN LENGTH 3 x DIA)

20 VJ FLANGE ADAPTOR TO SUIT

680 FROM FLANGE

18 FLANGED RSV GATE VALVE BY PREMIER OR SIMILAR

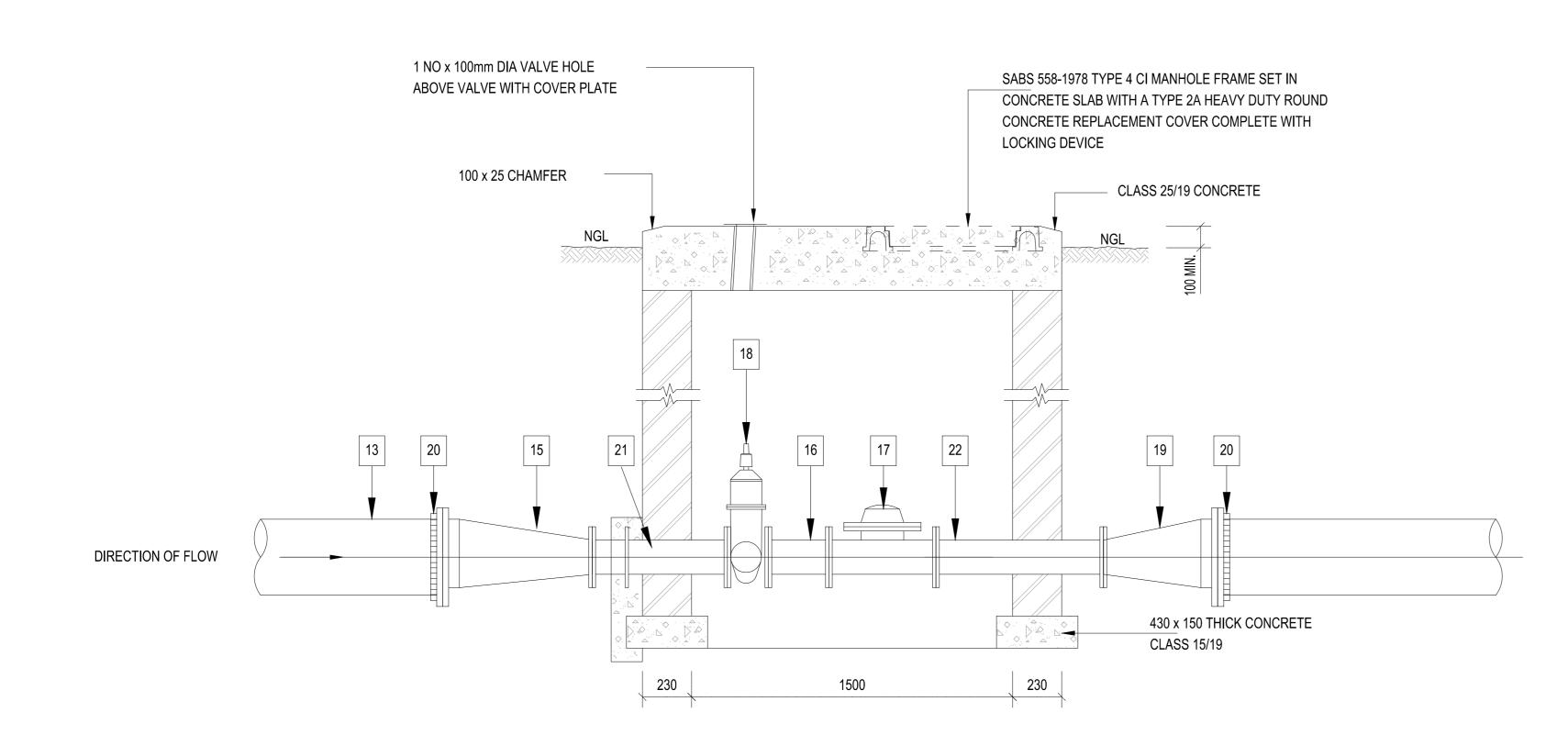
APPROVED, CAP TOP, NON RISING SPINDLE, CLOCKWISE CLOSING

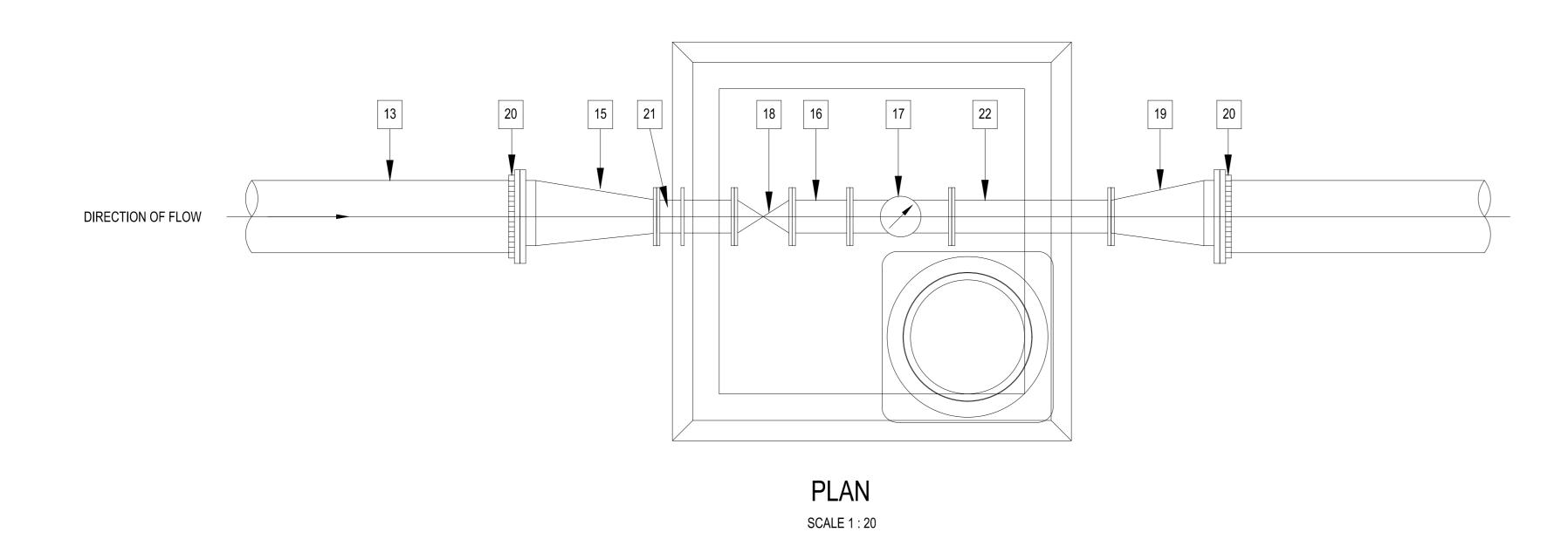
RUSTENBURG LOCAL MUNICIPALITY RUSTENBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS SM NXUMALO (Pr. Technician) DESIGNED BY SHEET 1 OF 1 (Full signature) PO BOX 16 RUSTENBURG 12 BICCARD STREET, NORHT WEST PROVINCE FOR CHECKED BY LG NGCOBO (Pr. Technologist) A1 SCALE SUITE 17, BICCARD HEIGHTS For: Client POLOKWANE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 TENDER **AS SHOWN** For: Consulting Engineer DRAWN BY PM MAAKE (TECHNICIAN) WATER METER CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER Tel No.: (013) 590-3607 A 09/2024

No DATE S.M.N L.G.N FOR TENDER Fax No.:(014) 590-3388 TEL: (015) 297 7434 TYPICAL DETAILS HCE/DRW/WMD/ 056 RLM/DRW/WMD/ 056 CHECKED BY SM NXUMALO (Pr. Technician) CONSULT DIR REVISION FAX: (086) 244 8999

CALE 1: 100 0 1 2 3 4 5 10 m

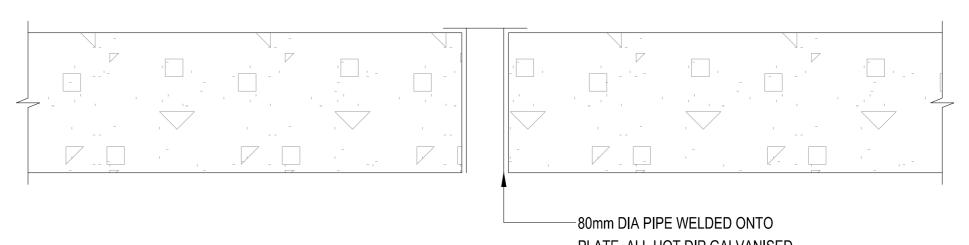
SECTION SCALE 1:20







SCALE 1:10



SCHEDULE OF FITTINGS

13 UPSTREAM PIPELINE

14 VJ FLANGE ADAPTOR TO SUIT

15 FLANGED REDUCER TO SUIT UPSTREAM PIPE

16 FLANGED SPOOL PIECE MIN LENGTH 3 x DIA

17 MEINECKE COSMOS, WATER METER, WPD,

MODEL AND CLASS ACCORDING TO LAYOUT

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21 FLANGED SPOOL PIECE, 1030 LONG WITH PUDDLE FLANGE

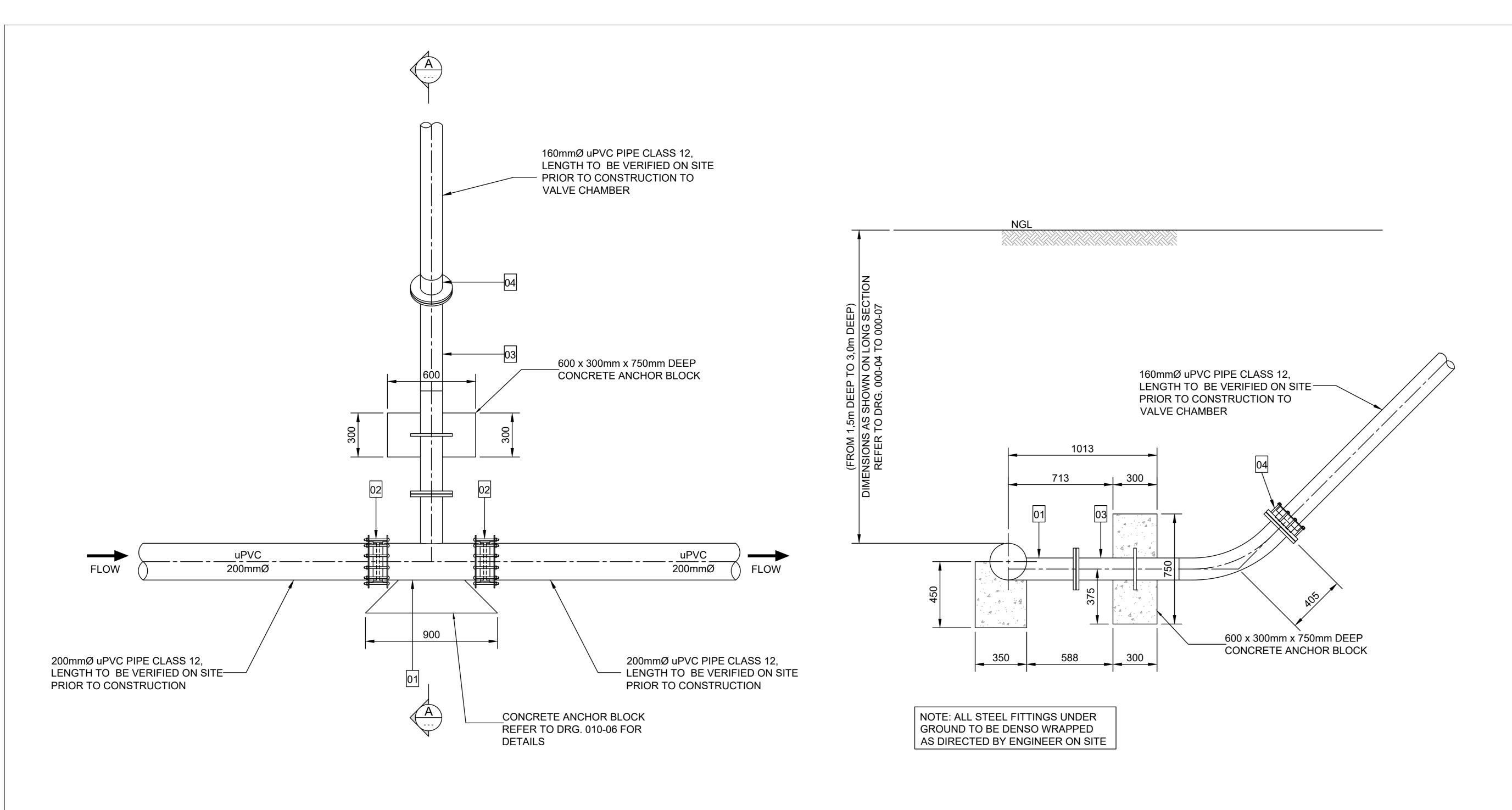
22 FLANGED SPOOL PIECE TO SUIT (MIN LENGTH 3 x DIA)

20 VJ FLANGE ADAPTOR TO SUIT

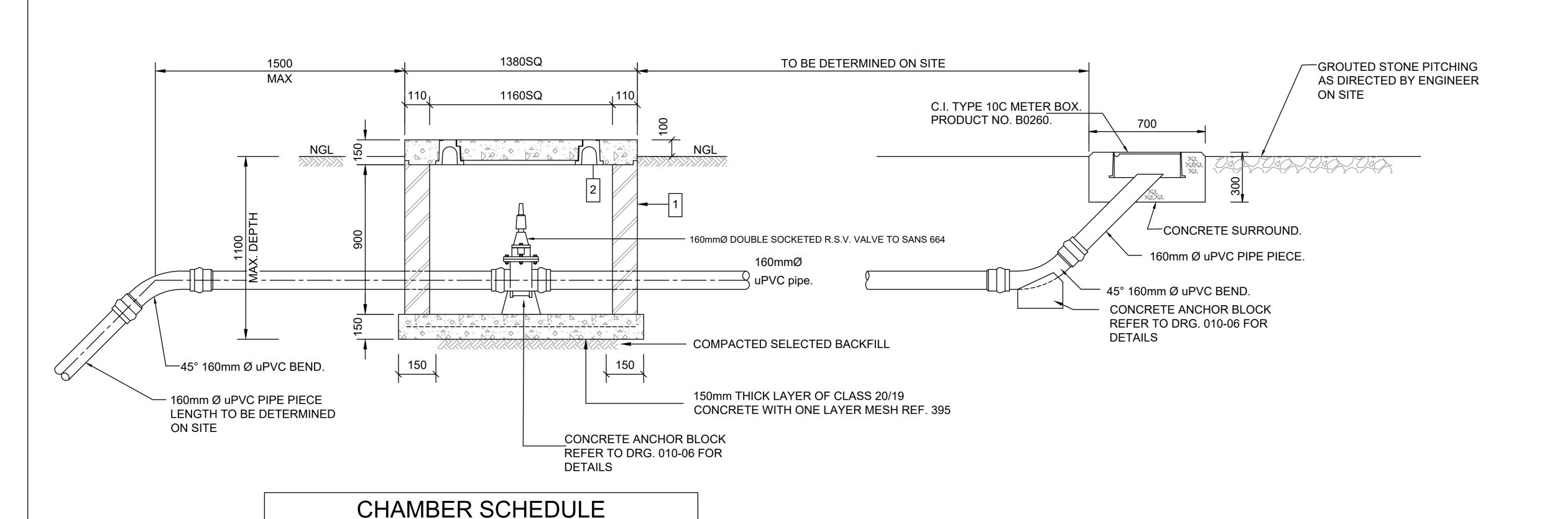
680 FROM FLANGE

18 FLANGED RSV GATE VALVE BY PREMIER OR SIMILAR

APPROVED, CAP TOP, NON RISING SPINDLE, CLOCKWISE CLOSING



SECTION A-A LAYOUT PLAN SCOUR TEE SCALE 1:20



SM NXUMALO (Pr. Technician)

LG NGCOBO (Pr. Technologist)

SM NXUMALO (Pr. Technician)

PM MAAKE (TCHNICIAN)

DRAWN BY

SCALE 1:20

1 110mm ENGINEERING BRICK WALLS

L.G.N

CONSULT DIR

LOCKING DEVICE

A 09/2024

No DATE

FOR TENDER

REVISION

2 SANS 558-1978 TYPE 4 CI MANHOLE FRAME SET IN

CONCRETE SLAB WITH A TYPE B HEAVY DUTY ROUND

FOR

TENDER

CONCRETE REPLACEMENT COVER COMPLETE WITH

CHAMBER DETAILS FOR DOUBLE SOCKETED RSV FINAL POSITION AS DIRECTED BY ENGINEER ON SITE

SCALE 1:20

PO Box 16

0300

RUSTERNBURG

TEL: (013) 590-3607

FAX: (014) 590-3388

RUSTERNBURG LOCAL MUNICIPALITY HLAYELENI CONSULTING ENGINEERS

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE

TEL: (015) 297-7434

FAX: (086) 244-8999

RUSTERNBURG LOCAL MUNICIPALITY SHEET 1 OF 2(Full signature) NORTH WEST PROVINCE 20 / / AO SCALE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **AS SHOWN** 20 / / For: Consulting Engineer SCOUR VALVE CHAMBER DETAILS CLIENT DRAWING NUMBER (MAIN PIPE 1,5m UP to 3,0m DEEP) RLM/DRW/SVC/057 HCE/DRW/SVC/057

PIPE SCHEDULE:

No.	DESCRIPTION	DIAGRAM	PRESSURE RATING	FLANGE SPEC.	QUANTITY
01	200mmØ x 150mmØ SCOUR TEE, ONE END FLANGED OTHER END PLAIN SUITABLE FOR STEP COUPLING	150mmØ 200mmØ 460 460 920	PN16 t=4,5mm SEE NOTE 4	TABLE 1600/3 SANS1123	1
02	200mmØ STEP COUPLING TO COUPLE PVC TO STEEL OR SIMILAR APPROVED	200mmØ	STANDARD	TABLE 1600/3 SANS1123	2
03	SPECIAL 150mmØ x 45° LONG RADIUS BEND, FLANGED BOTH ENDS WITH PUDDLE FLANGE IN POSITION AS INDICATED	150mmØ R=5D (750mm) 1105	PN16 t=4,0mm SEE NOTE 4	TABLE 1600/3 SANS1123	1
04	150mmØ FLANGE ADAPTER SUITABLE TO COUPLE 160mmØ uPVC TO 150mm STEEL FLANGE	150mmØ	STANDARD	TABLE 1600/3 SANS1123	1

GENERAL NOTES

2. ITEM:

3. CLASS:

4. PROTECTION CODES:

B. FACTORY PROTECTION

6. RESILIENT SEAL GATE VALVES:

7. ABBREVIATIONS:

MS - MILD STEEL

CI - CAST IRON

AC - ASBESTOS CEMENT

SS - STAINLESS STEEL

GS - GALVANISED STEEL

5. MATERIAL : AS SHOWN AT EACH ITEM

SPECIFIED UNBALANCED PRESSURE.

VJ - ADAPTOR (VIKING JOHNSON OR SIMILAR)

VJF - FLANGE ADAPTOR (VIKING JOHNSON OR SIMILAR)

PIPE ITEMS ARE TO BE ADAPTED ACCORDINGLY.

CLASSES INDICATED SIGNIFY THE FOLLOWING:

APPLIED TO A TOTAL DRY THICKNESS = 250 microns

1. CERTAIN VALVES ARE USED FOR THE DESIGN OF THE PIPE LAYOUT, IN THE EVENT THAT

ALTERNATIVE ITEMS ARE ACCEPTED DURING TENDER THE DIMENSIONS OF ADJACENT

EACH ITEM IS TO BE MARKED CLEARLY ACCORDING TO THE NUMBER AND THE LIST GIVEN

TEST PRESSURE = 1,5 x WORKING PRESSURE, FLANGES IN ACCORDANCE TO SANS 1123

A. ALL ITEMS TO BE SANDBLAST CLEANED AND 2 LAYERS OF EPOXY RESIN COPON EP 2300

IN ACCORDANCE TO SANS 664. RIGHT HAND LOCKING. ALL VALVES ARE FLANGED AND

8. ALL FLANGES IN ACCORDANCE WITH TABLE 1600/3, UNLESS OTHERWISE STATED.

EQUIPPED WITH HANDWHEELS, UNLESS OTHERWISE STATED. VALVES TO BE SUPLIED WITH

THE NECESSARY PRESSURE REDUCERS AND/OR GEARS TO ENABLE FUNCTIONING AT THE

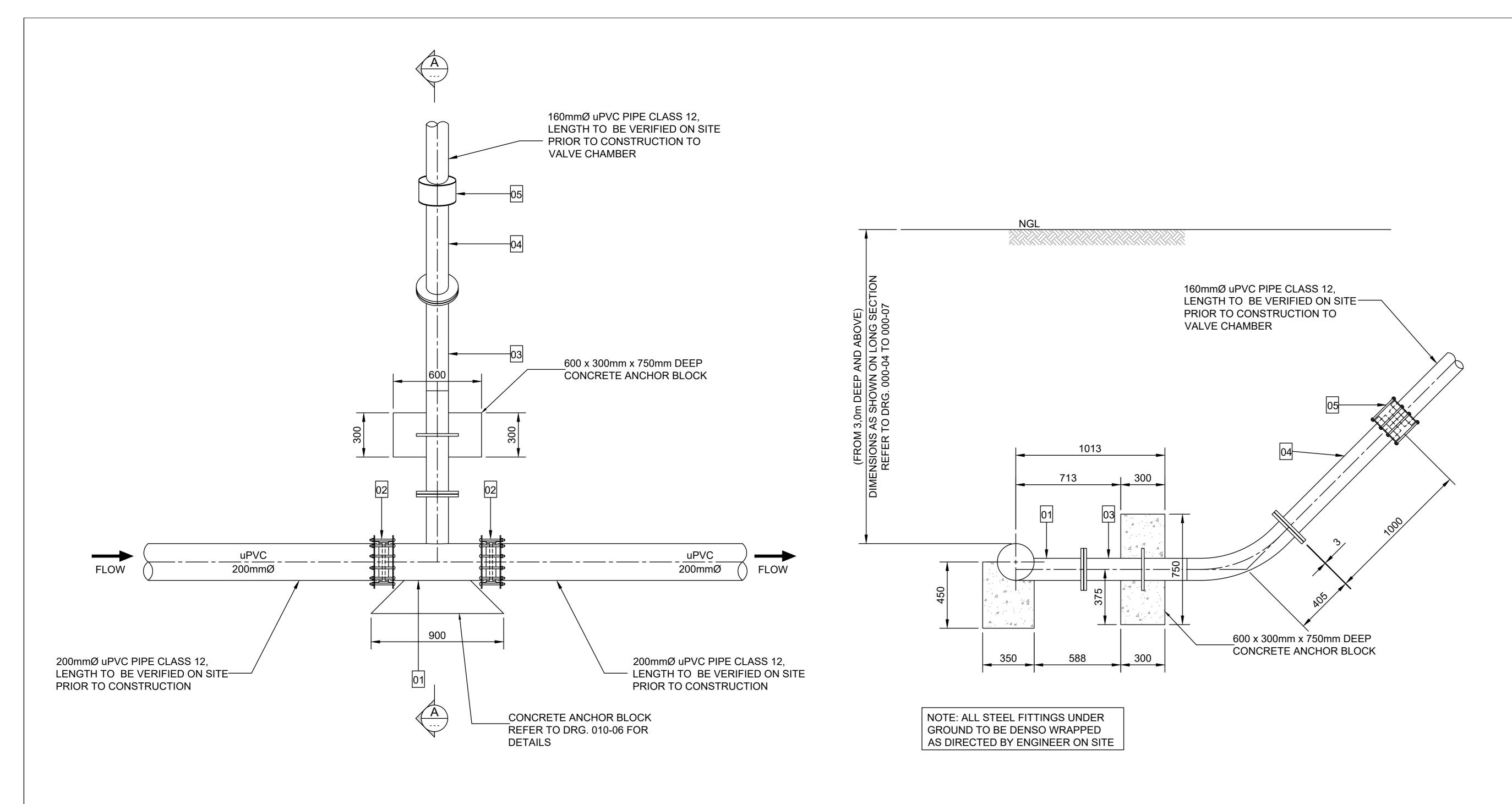
SANS 1123 FLANGE TABLE

1000/3

1600/3

2500/3

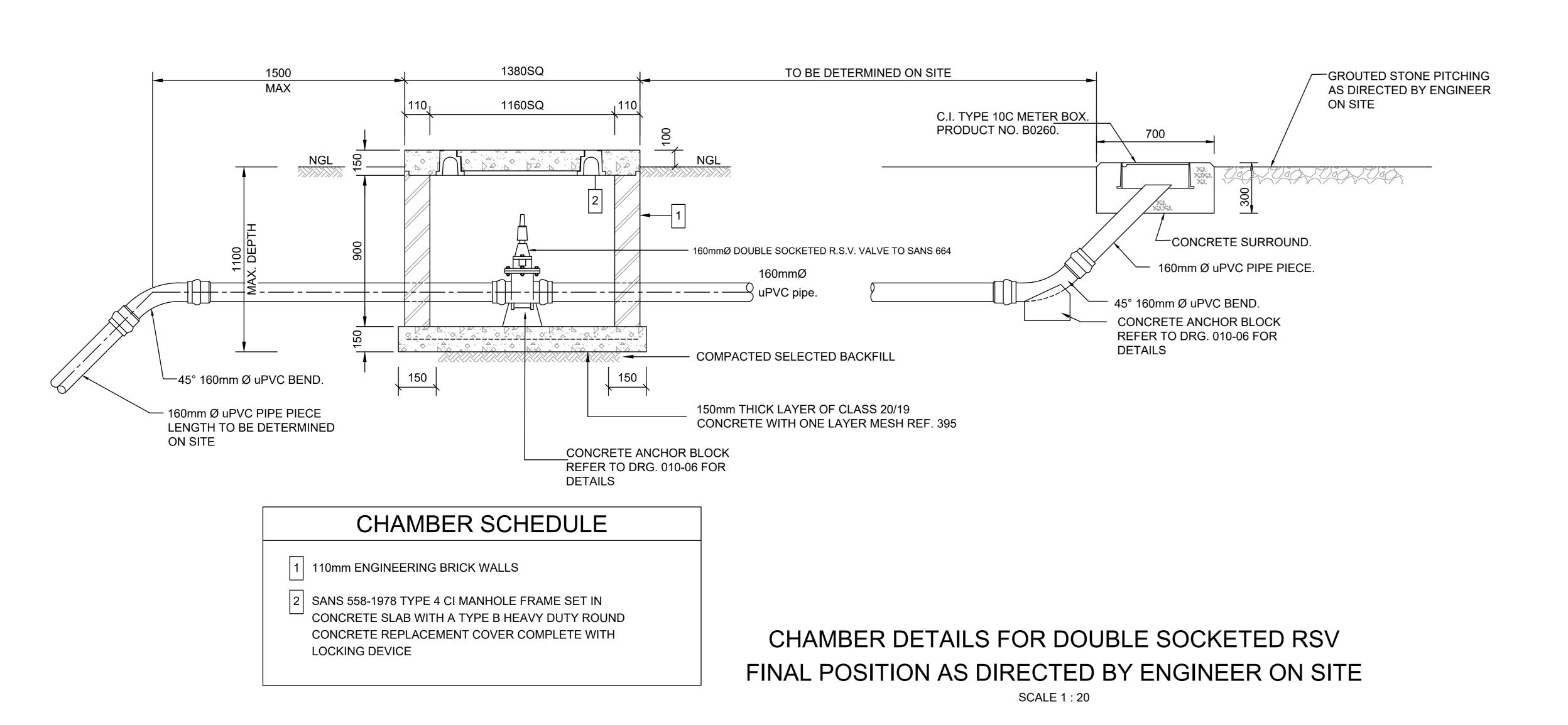
WORKING PRESSURE (kPa)



LAYOUT PLAN SCOUR TEE
SCALE 1: 20

SECTION A-A

SCALE 1:20



GENERAL NOTES

1. CERTAIN VALVES ARE USED FOR THE DESIGN OF THE PIPE LAYOUT, IN THE EVENT THAT ALTERNATIVE ITEMS ARE ACCEPTED DURING TENDER THE DIMENSIONS OF ADJACENT PIPE ITEMS ARE TO BE ADAPTED ACCORDINGLY.

2. ITEM :

EACH ITEM IS TO BE MARKED CLEARLY ACCORDING TO THE NUMBER AND THE LIST GIVEN

3. CLASS :

CLASSES INDICATED SIGNIFY THE FOLLOWING:

CLASS	WORKING PRESSURE (kPa)	SANS 1123 FLANGE TABLE
6	600	600/3
10	1 000	1000/3
16	1 600	1600/3
25	2 500	2500/3
40	4 000	4000/3

TEST PRESSURE = 1,5 x WORKING PRESSURE, FLANGES IN ACCORDANCE TO SANS 1123

4. PROTECTION CODES :

A. ALL ITEMS TO BE SANDBLAST CLEANED AND 2 LAYERS OF EPOXY RESIN COPON EP 2300 APPLIED TO A TOTAL DRY THICKNESS = 250 microns

B. FACTORY PROTECTION

5. MATERIAL : AS SHOWN AT EACH ITEM

6. RESILIENT SEAL GATE VALVES :

IN ACCORDANCE TO SANS 664. RIGHT HAND LOCKING. ALL VALVES ARE FLANGED AND EQUIPPED WITH HANDWHEELS, UNLESS OTHERWISE STATED. VALVES TO BE SUPLIED WITH THE NECESSARY PRESSURE REDUCERS AND/OR GEARS TO ENABLE FUNCTIONING AT THE SPECIFIED UNBALANCED PRESSURE.

7. ABBREVIATIONS :

VJ - ADAPTOR (VIKING JOHNSON OR SIMILAR)

VJF - FLANGE ADAPTOR (VIKING JOHNSON OR SIMILAR)

MS - MILD STEEL

AC - ASBESTOS CEMENT

SS - STAINLESS STEEL CI - CAST IRON

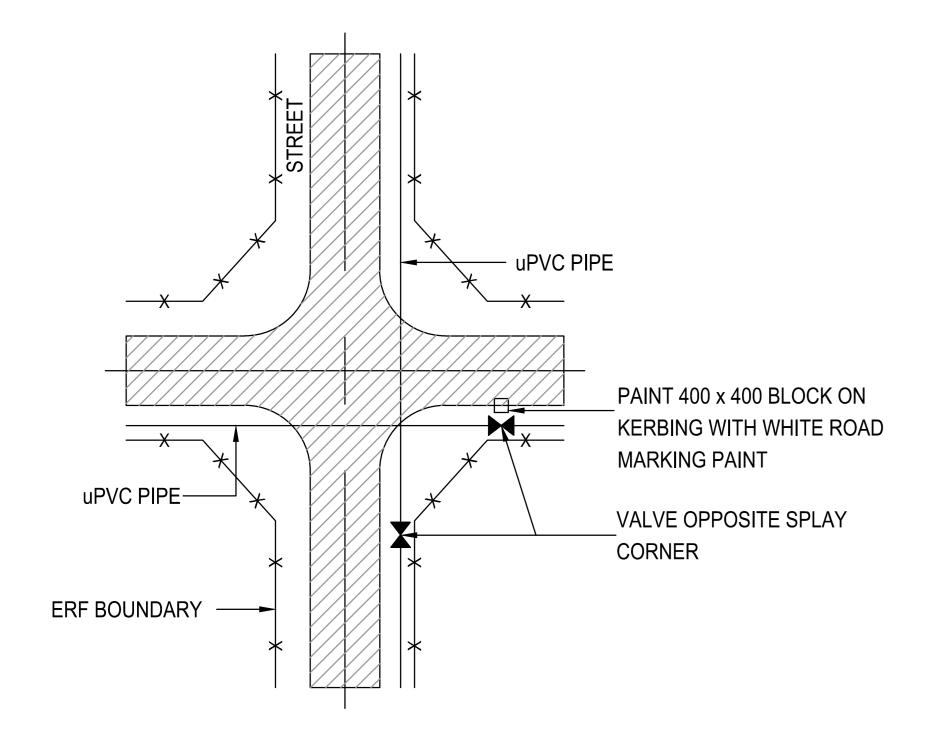
GS - GALVANISED STEEL

8. ALL FLANGES IN ACCORDANCE WITH TABLE 1600/3, UNLESS OTHERWISE STATED.

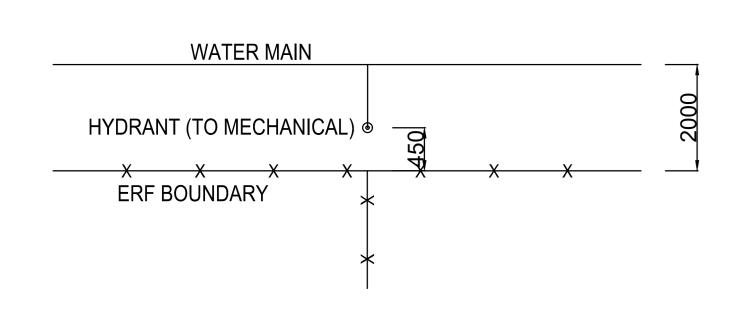
PIPE SCHEDULE:

No.	DESCRIPTION	DIAGRAM	PRESSURE RATING	FLANGE SPEC.	QUANTITY
01	200mmØ x 150mmØ SCOUR TEE, ONE END FLANGED OTHER END PLAIN SUITABLE FOR STEP COUPLING	150mmØ 200mmØ 460 460 920	PN16 t=4,5mm SEE NOTE 4	TABLE 1600/3 SANS1123	1
02	200mmØ STEP COUPLING TO COUPLE PVC TO STEEL OR SIMILAR APPROVED	200mmØ	STANDARD	TABLE 1600/3 SANS1123	2
03	SPECIAL 150mmØ x 45° LONG RADIUS BEND, FLANGED BOTH ENDS WITH PUDDLE FLANGE IN POSITION AS INDICATED	150mmØ R=5D (750mm) 1105	PN16 t=4,0mm SEE NOTE 4	TABLE 1600/3 SANS1123	1
04	150mmØ PIPE, ONE END FLANGED OTHER END PLAIN SUITABLE FOR STEP COUPLING	150mmØ 1000	PN16 t=4,0mm SEE NOTE 4	TABLE 1600/3 SANS1123	1
05	150mmØ STEP COUPLING TO COUPLE 160mmØ uPVC TO STEEL OR SIMILAR APPROVED	150mmØ	STANDARD	TABLE 1600/3 SANS1123	1

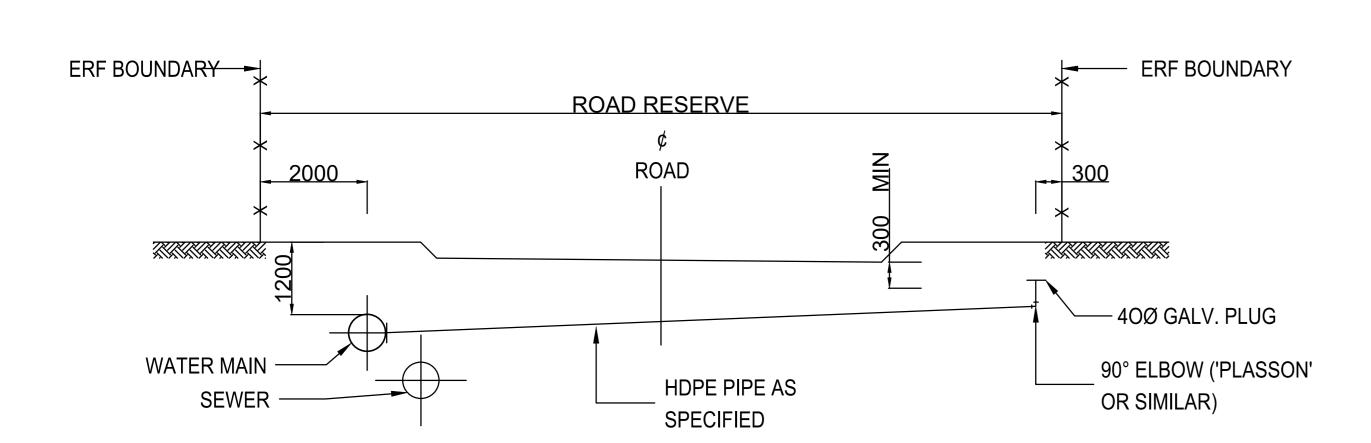
					DESIGNED BY	SM NXUMALO (Pr. Technician)	RUSTERNBUR	G LOCAL MUNICIPALITY	HLAYELENI CONS	ULTING ENGINEERS	RUSTERNBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 2 OF 2
				FOR	CHECKED BY	LG NGCOBO (Pr. Technologist)	PO Box 16		12 BICCARD STREET,		NORTH WEST PROVINCE	. For: Client	AO SCALE
				TENDER	DRAWN DV	DNA NA AVE (TCHNICIANI)	RUSTERNBURG 0300	Ductophung	POLOKWANE	HLAYELEN	REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5	. For: Consulting Engineer	AS SHOWN
A 09/2	024	FOR TENDER	S.M.N L.G.N			PIVI MAARE (TCHINICIAN)		Local Municipality	0099	CONSULTING ENGINEERS	SCOUR VALVE CHAMBER DETAILS	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
No DA	TE .	REVISION	CONSULT DIR		CHECKED BY	SM NXUMALO (Pr. Technician)	TEL: (013) 590-3607 FAX: (014) 590-3388		TEL: (015) 297-7434 FAX: (086) 244-8999		(MAIN PIPE 1,5m UP to 3,0m DEEP)	HCE/DRW/SVC/058	RLM/DRW/SVC/058



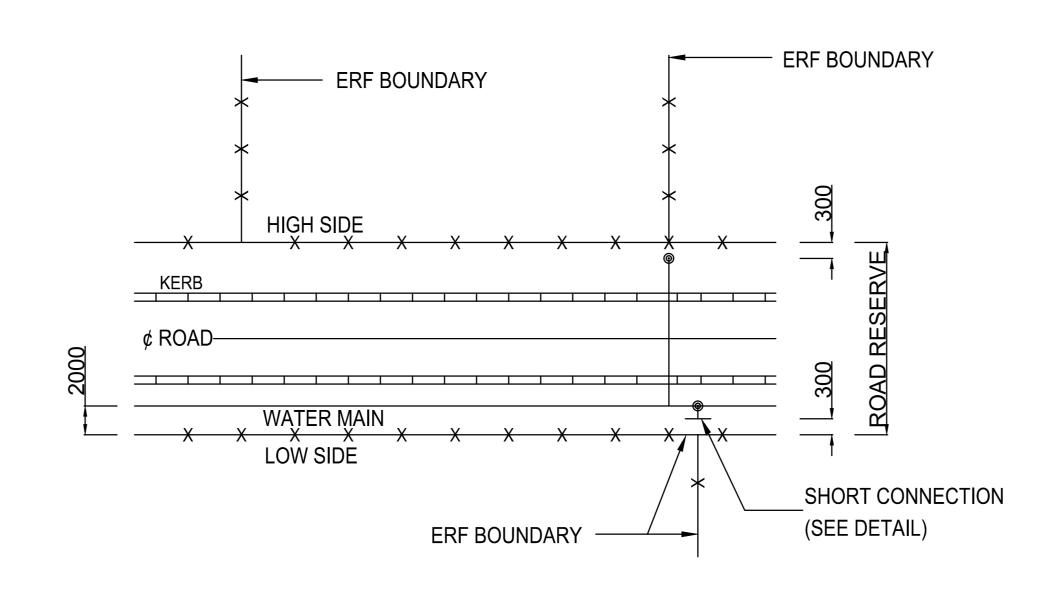
PIPE & VALVES AT INTERSECTION NOT TO SCALE



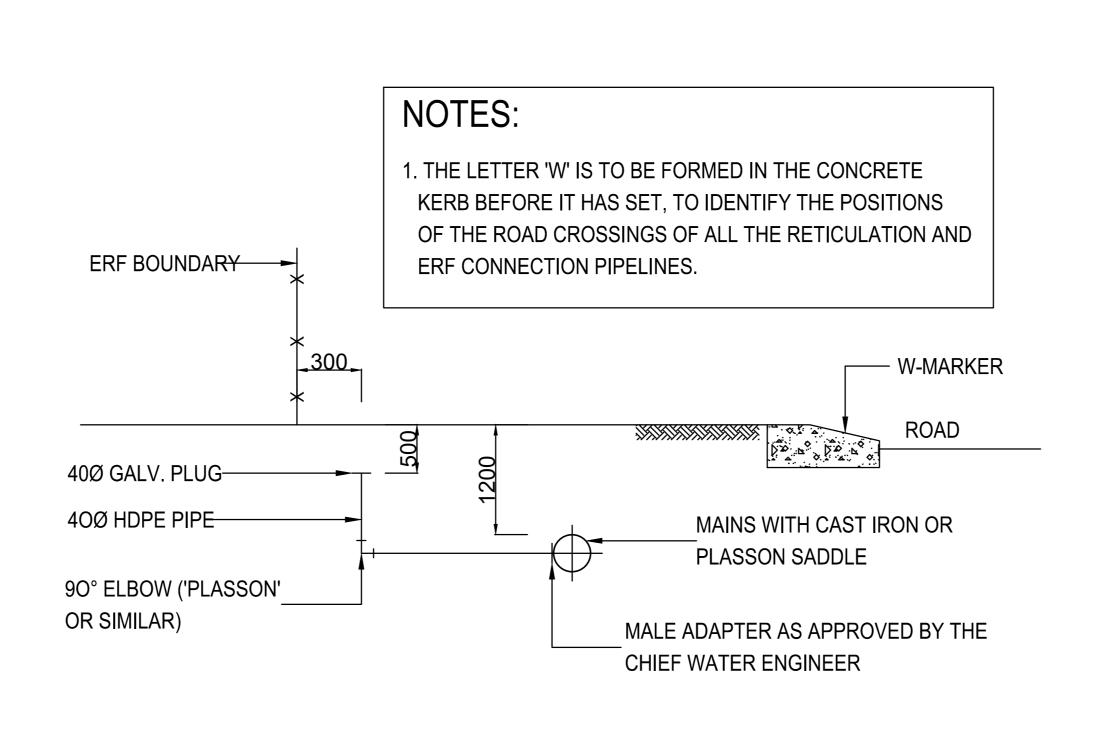
HYDRANT LOCATION NOT TO SCALE



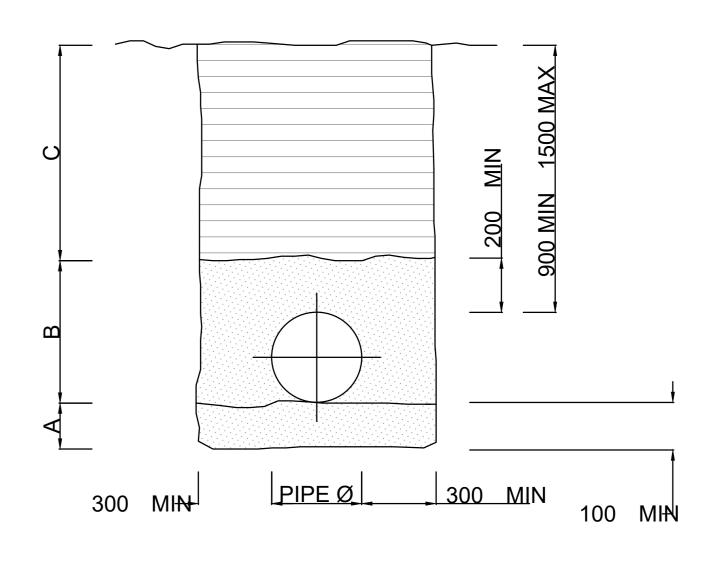
SECTION LONG CONNECTION NOT TO SCALE



PLAN ROAD RESERVE NOT TO SCALE

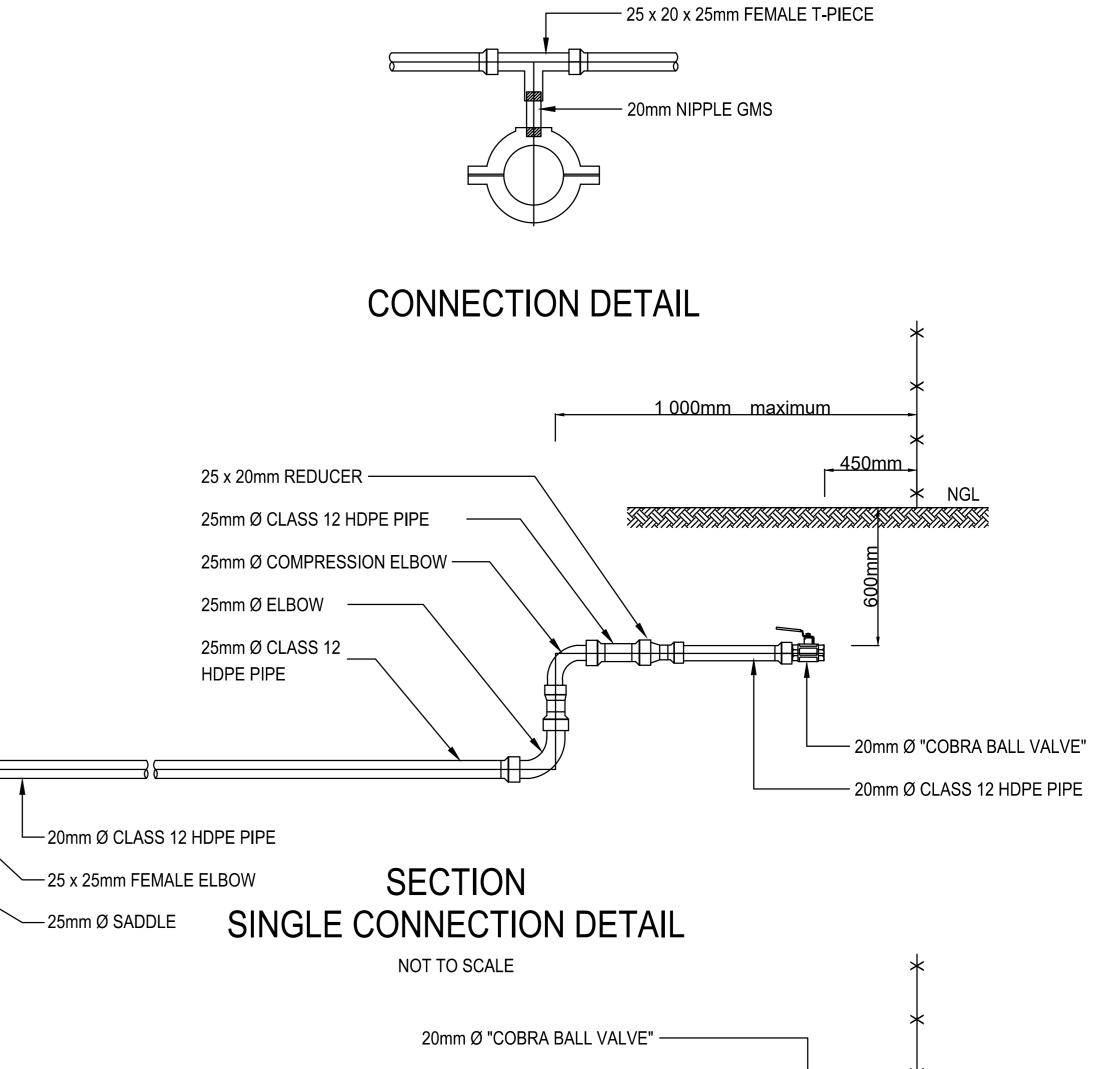


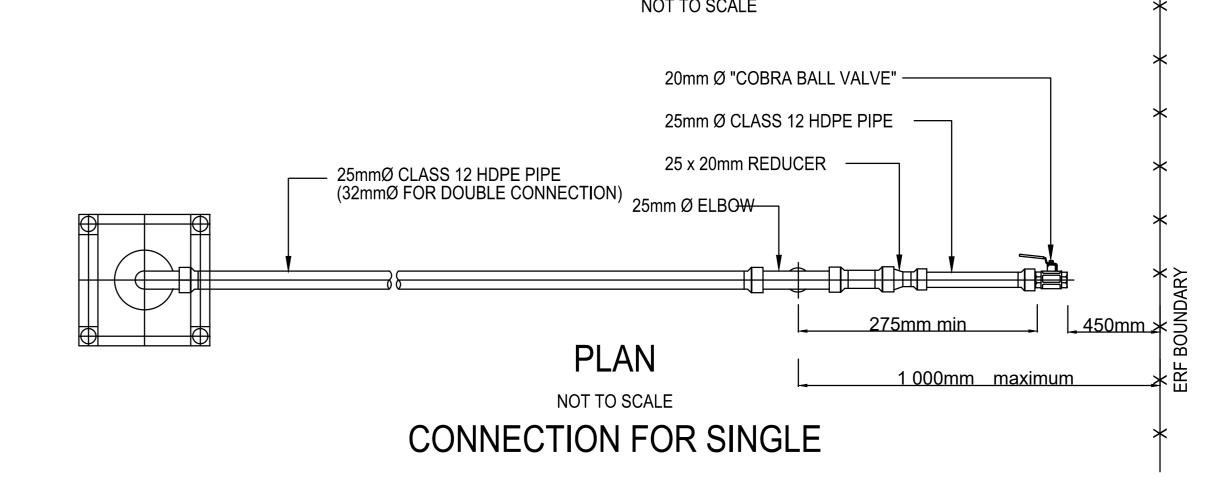
SECTION SHORT CONNECTION NOT TO SCALE



A: SELECTED BEDDING LAYER (UNCOMPACTED) B: SELECTED BACK FILL (AGGREGATE MAX 10mm) C: BACK FILL (COMPACTED)

TYPICAL CROSS SECTION OF PIPE TRENCH NOT TO SCALE





09/2024	FOR TENDER	S.M.N	L.G.N
DATE	REVISION	CONSULT	DIR

FOR TENDER

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) CHECKED BY PM MAAKE (TCHNICIAN) DRAWN BY SM NXUMALO (Pr. Technician) FAX: (014) 590-3388

RUSTERNBURG LOCAL MUNICIPALITY PO Box 16 RUSTERNBURG 0300 TEL: (013) 590-3607

FAX: (086) 244-8999

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE 0699 TEL: (015) 297-7434

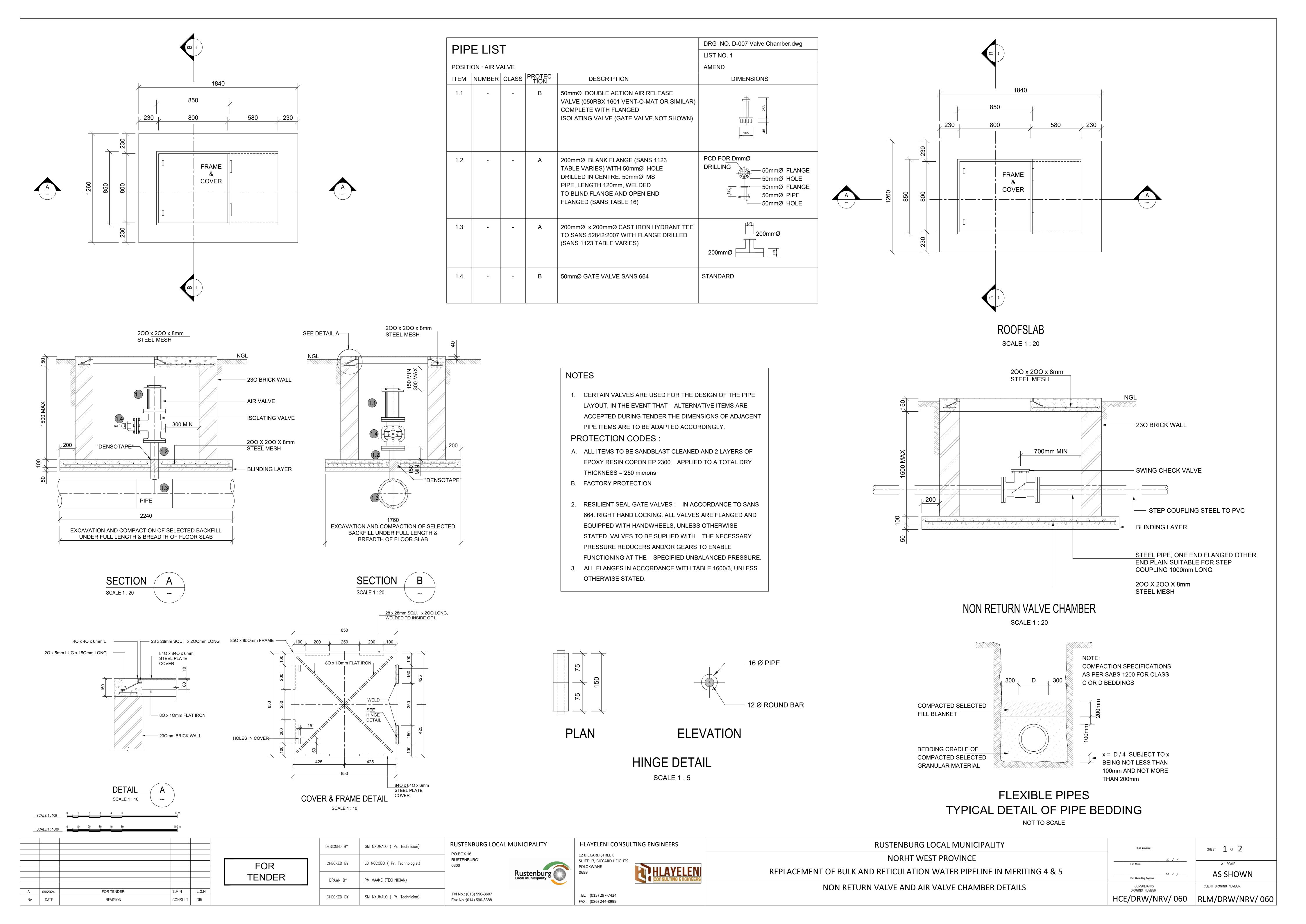
HLAYELENI CONSULTING ENGINEERS

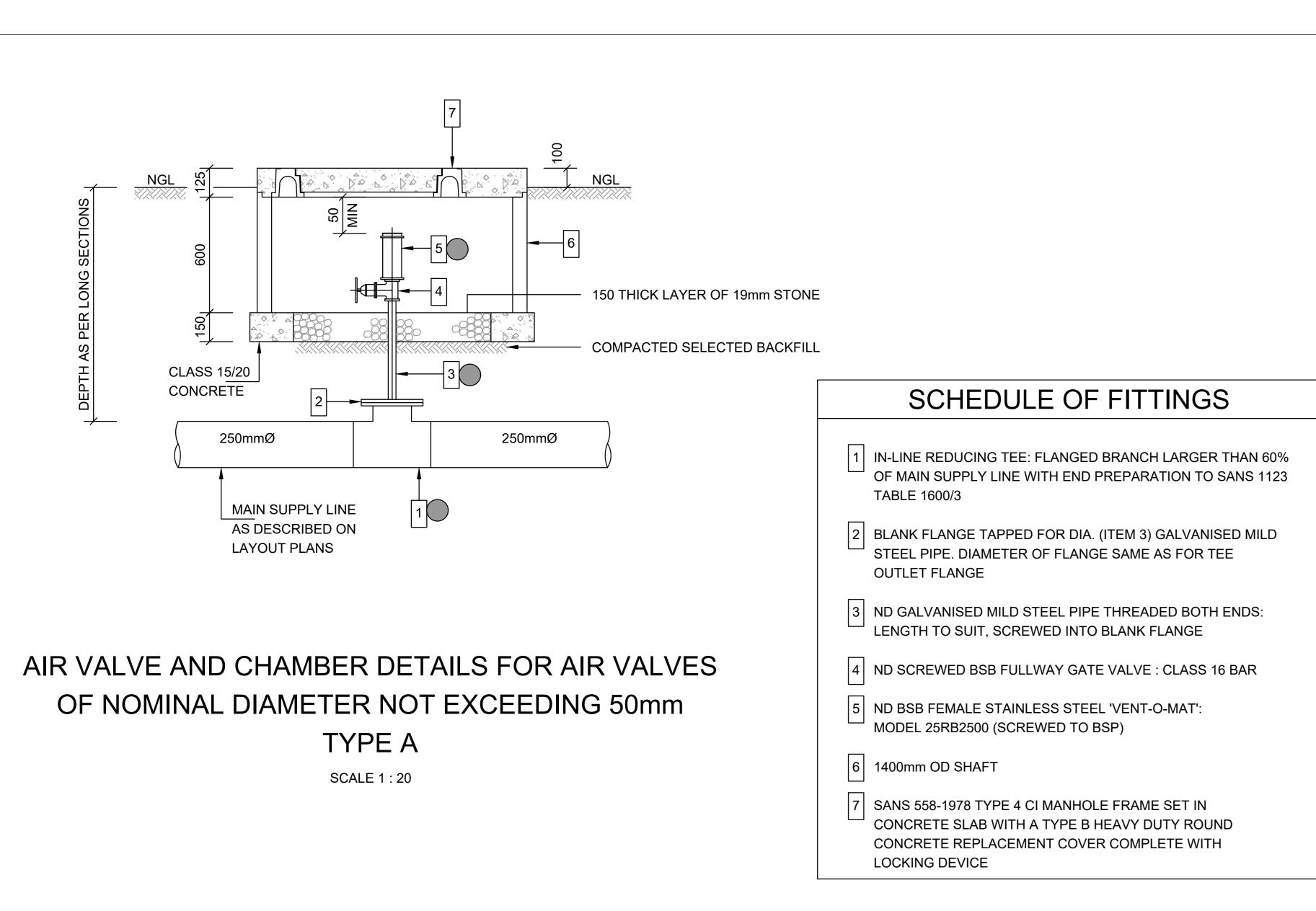
RUSTERNBURG LOCAL MUNICIPALITY NORTH WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **ERF CONNECTION**

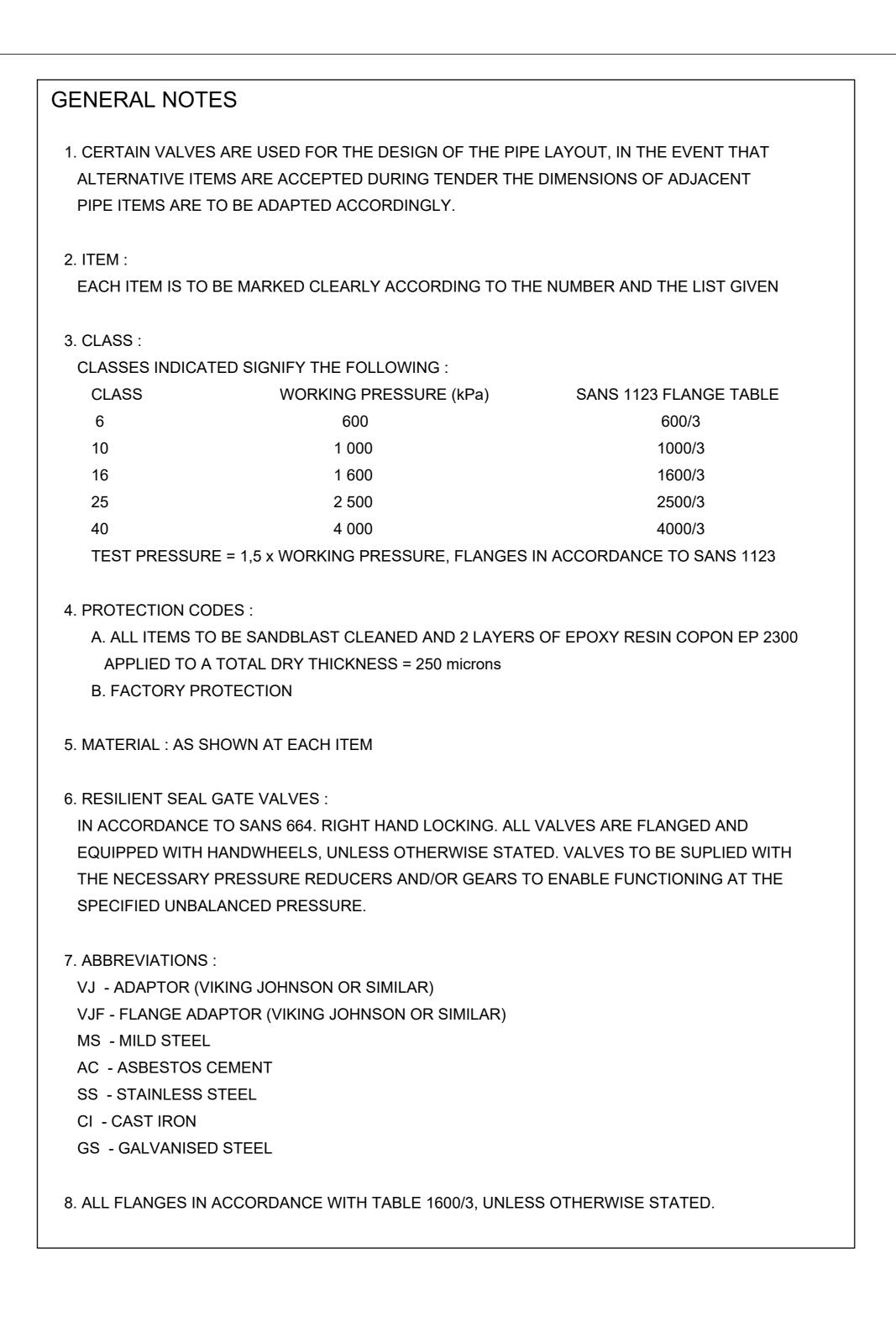
PIPE DETAILS

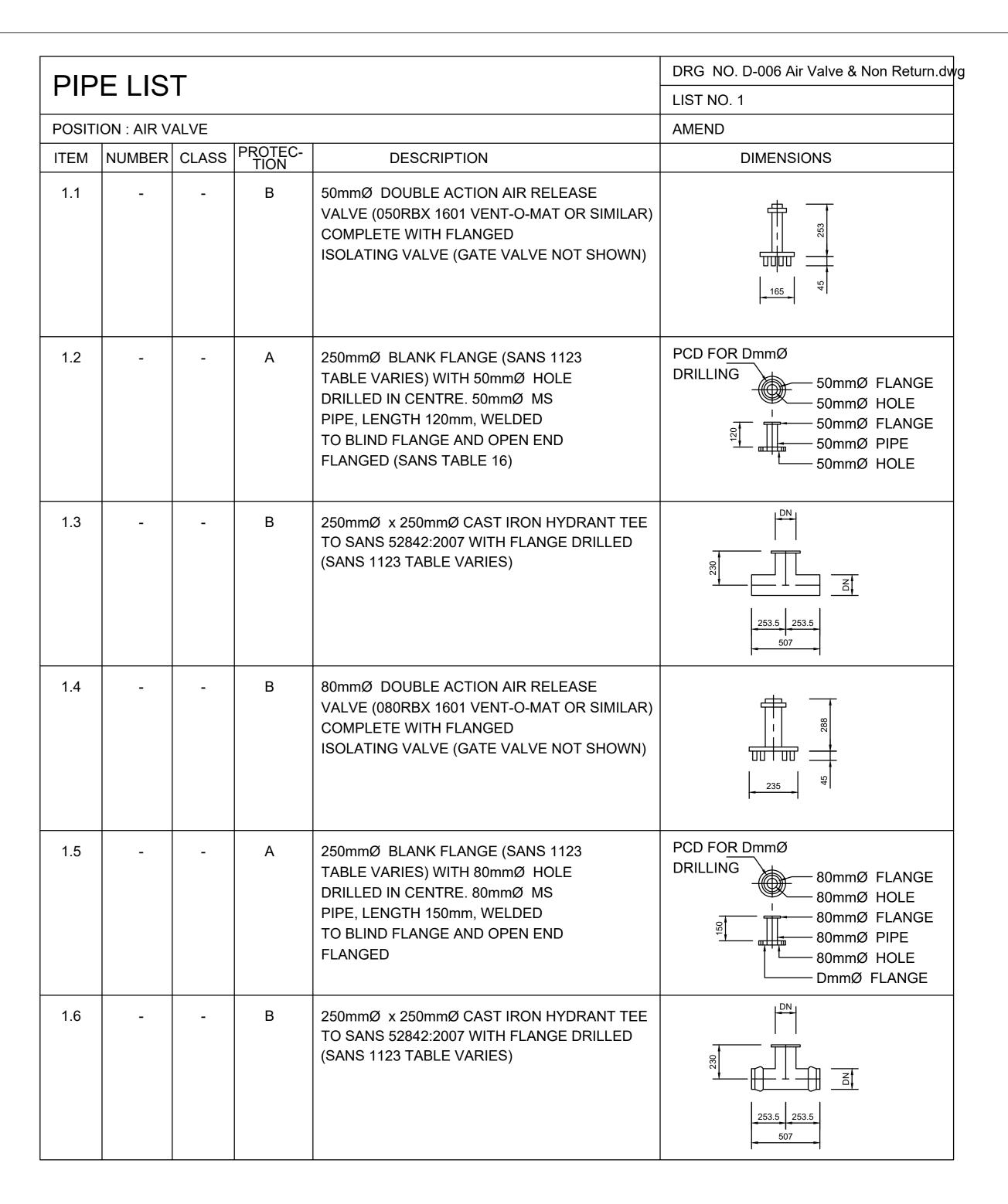
25mm NIPPLE-

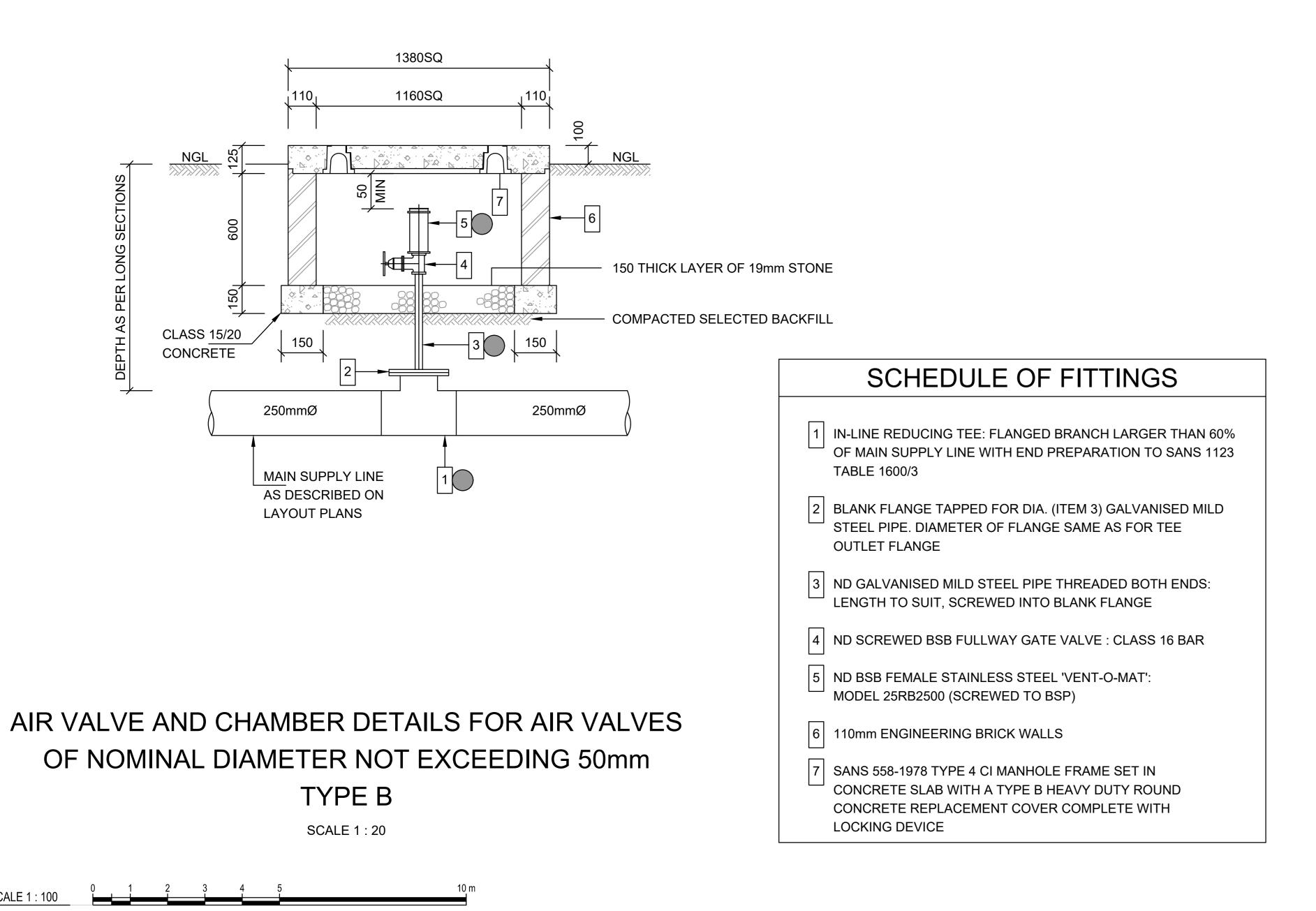
SHEET 1 OF 1(Full signature) 20 / / AO SCALE **AS SHOWN** 20 / / For: Consulting Engineer CONSULTANTS DRAWING NUMBER CLIENT DRAWING NUMBER HCE/DRW/EC/059 RLM/DRW/EC/059

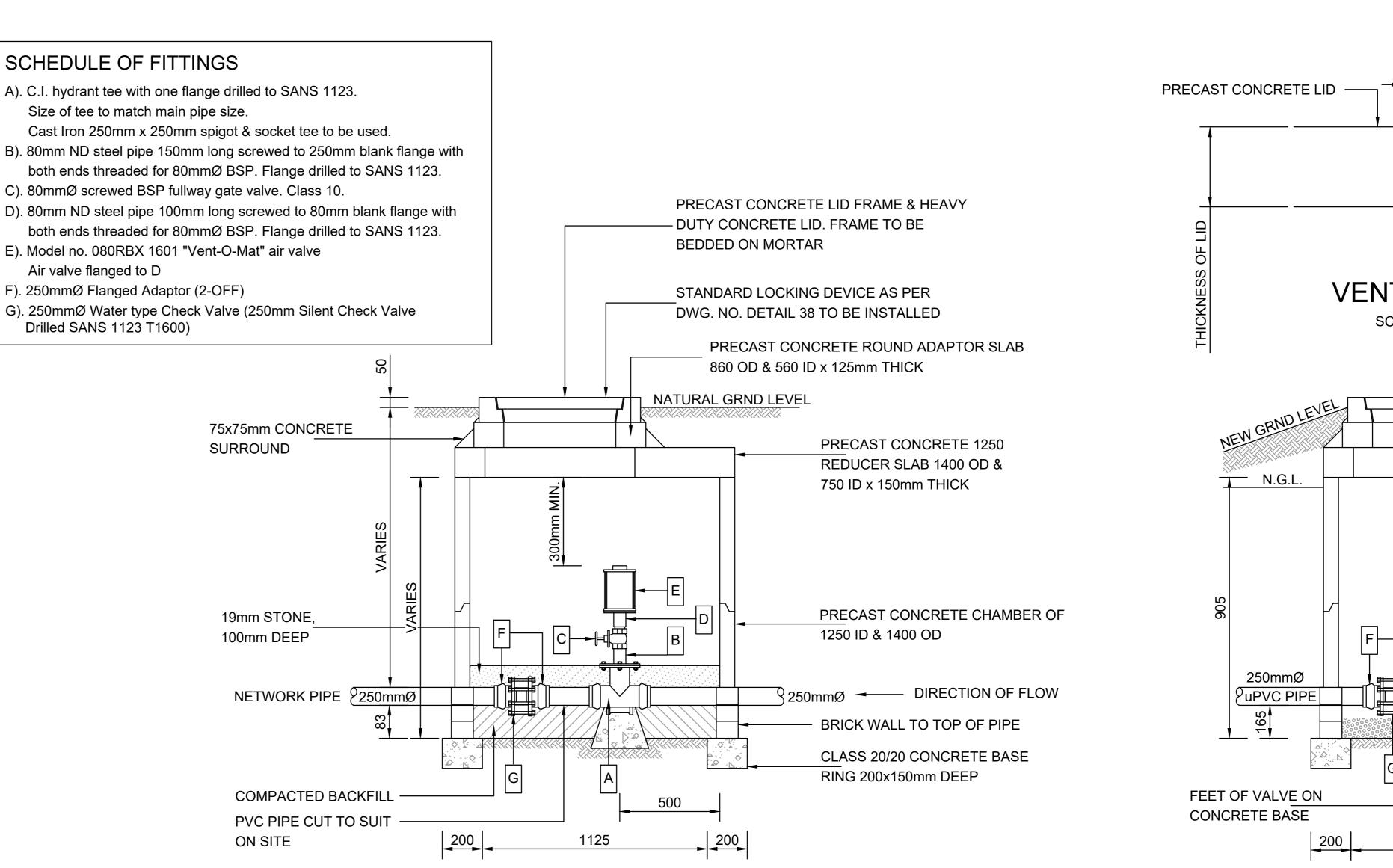












CONICAL VENT HOLE TO BE DRILLED THROUGH PRECAST CONCRETE LID ON SITE. TWO VENTS PER MANHOLE 50 **VENT HOLE** SCALE 1:5 N.G.L. 250mmØ (250mmØ uPVC PIPE

ENOUGH COVER: AIR RELESE VALVE CHAMBER

TYPE C SCALE 1:20

NOT ENOUGH COVER: AIR RELESE VALVE CHAMBEF TYPE C

SCALE 1:20

A 09/2024 L.G.N

REVISION

CONSULT DIR

SCALE 1: 1000

No DATE

FOR TENDER

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) PM MAAKE (TCHNICIAN) DRAWN BY

SM NXUMALO (Pr. Technician)

RUSTERNBURG LOCAL MUNICIPALITY PO Box 16 RUSTERNBURG 0300

TEL: (013) 590-3607

FAX: (014) 590-3388



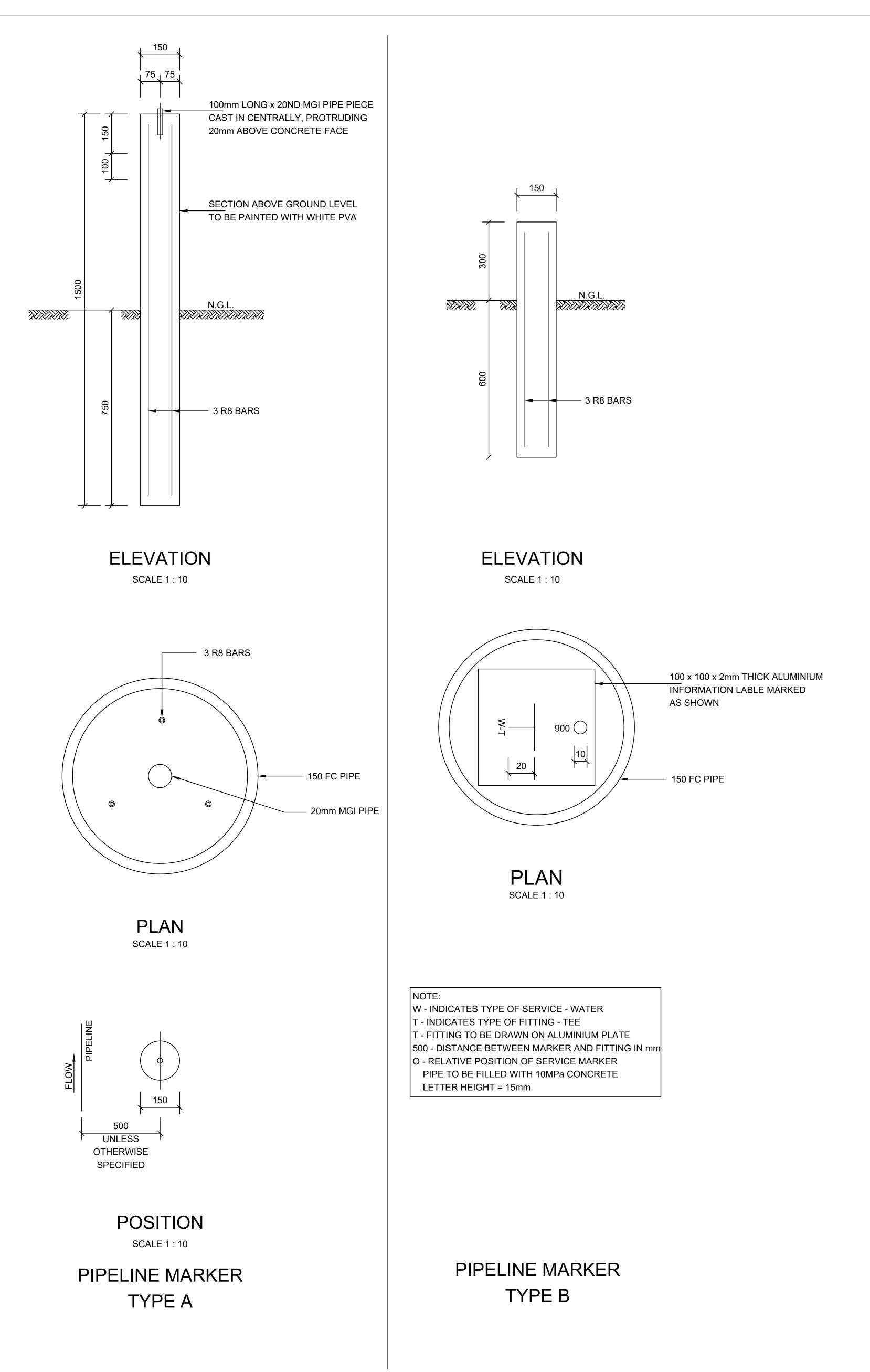
12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS **POLOKWANE**

TEL: (015) 297-7434

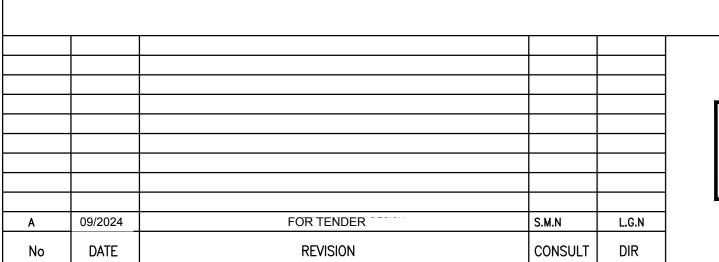
FAX: (086) 244-8999

HLAYELENI CONSULTING ENGINEERS

RUSTERNBURG LOCAL MUNICIPALITY SHEET 2 OF 2(Full signature) NORTH WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **AS SHOWN** For: Consulting Engineer NON RETURN VALVE AND AIR VALVE CHAMBER DETAILS CLIENT DRAWING NUMBER HCE/DRW/NRV/061 RLM/DRW/NRV/061



PIPELINE MARKERS TYPE A & B



FOR **TENDER**

SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) DRAWN BY PM MAAKE (TCHNICIAN) SM NXUMALO (Pr. Technician) RUSTERNBURG LOCAL MUNICIPALITY PO Box 16 RUSTERNBURG 0300

TEL: (013) 590-3607

FAX: (014) 590-3388



12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297-7434

HLAYELENI CONSULTING ENGINEERS

FAX: (086) 244-8999

Double-socket resilient seal gate valve non-rising spindle class 16

SECTION A

SCALE 1:5

uPVC Pipe

CAST IRON VALVE **BOX DETAILS**

RUSTERNBURG LOCAL MUNICIPALITY SHEET 1 OF 1(Full signature) NORTH WEST PROVINCE AO SCALE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 **AS SHOWN** For: Consulting Engineer ISOLATION VALVE & PIPELINE MARKERS CLIENT DRAWING NUMBER

SECTION B

NOTES:

THE VALVE BOX.

BE FLAT.

ROUNDED WITH-

01 - R08

5mm RADIUS

—CONCRETE COLLAR CONCRETE COLLAR ►

01 - R08

175 x 115

CAST IRON VALVE BOX

ROUNDED WITH

5mm RADIUS

- VALVE BOX

WELL COMPACTED

BACKFILL

√ uPVC Pipe

PLAN

SCALE 1:5

1. VALVE BOXES AND CONCRETE COLLARS MUST BE PAINTED

2. WHERE VALVE BOXES OCCUR A 400 x 400 WHITE BLOCK

3. THE LETTER V IS TO BE FORMED IN THE CONCRETE KERB

4. BOX LENGTH TO BE PLACED IN THE DIRECTION OF THE PIPE.

WITH ROAD PAINT MUST BE PAINTED ON THE KERB.

BEFORE IT HAS SET, TO IDENTIFY THE POSITION OF

6. WHERE THE VALVE BOX IS PLACED IN THE ROAD OR

PAVEMENT, THE TOP OF THE CONCRETE COLLAR MUST

5. CONCRETE STRENGTH - 20 MPa (28 DAYS)

VALVE BOX

200Ø uPVC

160Ø uPVC

- BRICKS

RLM/DRW/IVPM/062

PIPE

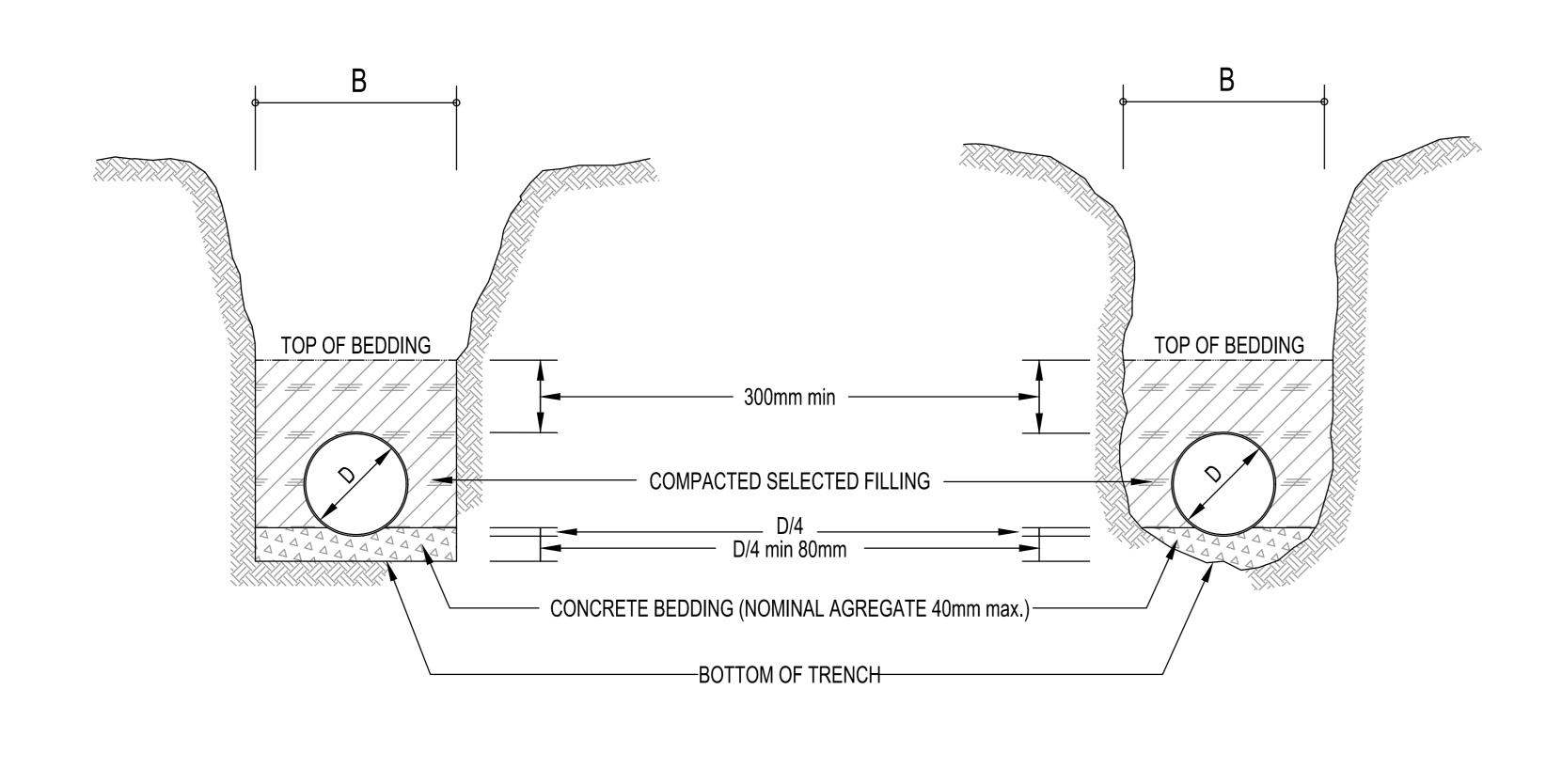
PIPE

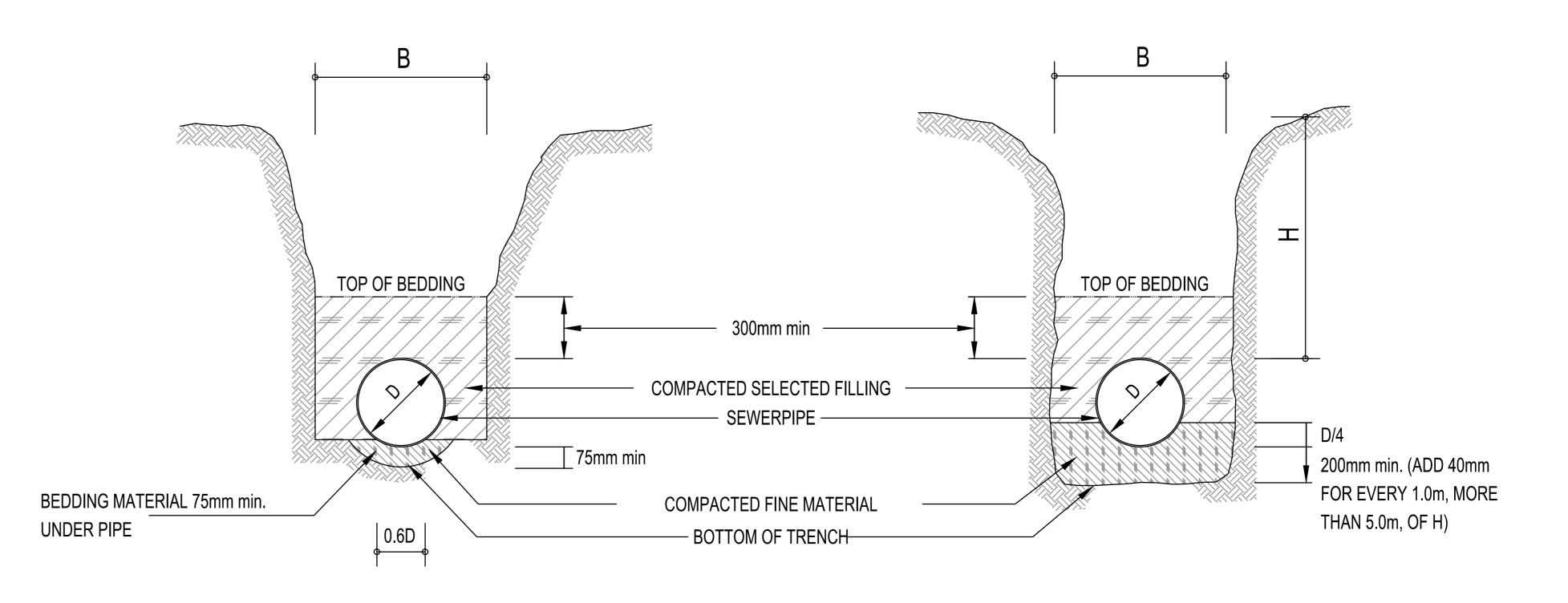
CONCRETE COVER - 50mm.

WITH PLASCON TP 24 (WHITE) PAINT.

CLASS A BEDDING: LOADFACTOR = 3.0

CLASS B BEDDING: LOADFACTOR = 1.9





(1) BOTTOM MATERIAL ACCEPTABLE FOR BEDDING OF PIPE

(2) BOTTOM MATERIAL UNACCEPTABLE FOR BEDDING OF PIPE

CLASS B1

CLASS B2

CLASS A1

APPROVED FOR TRENCH BOTTOM

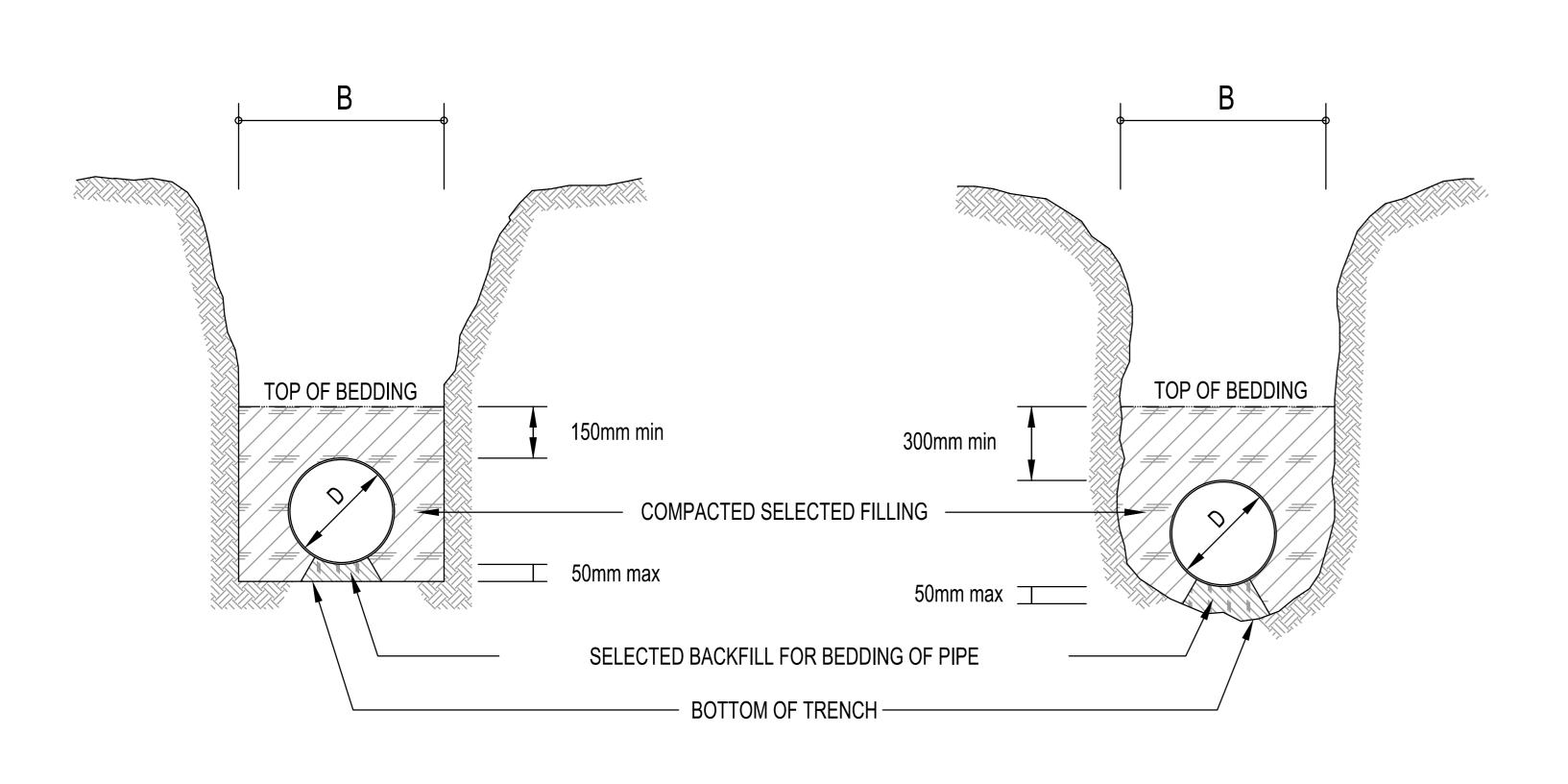
(1) TRENCH IN SOFT MATERIAL

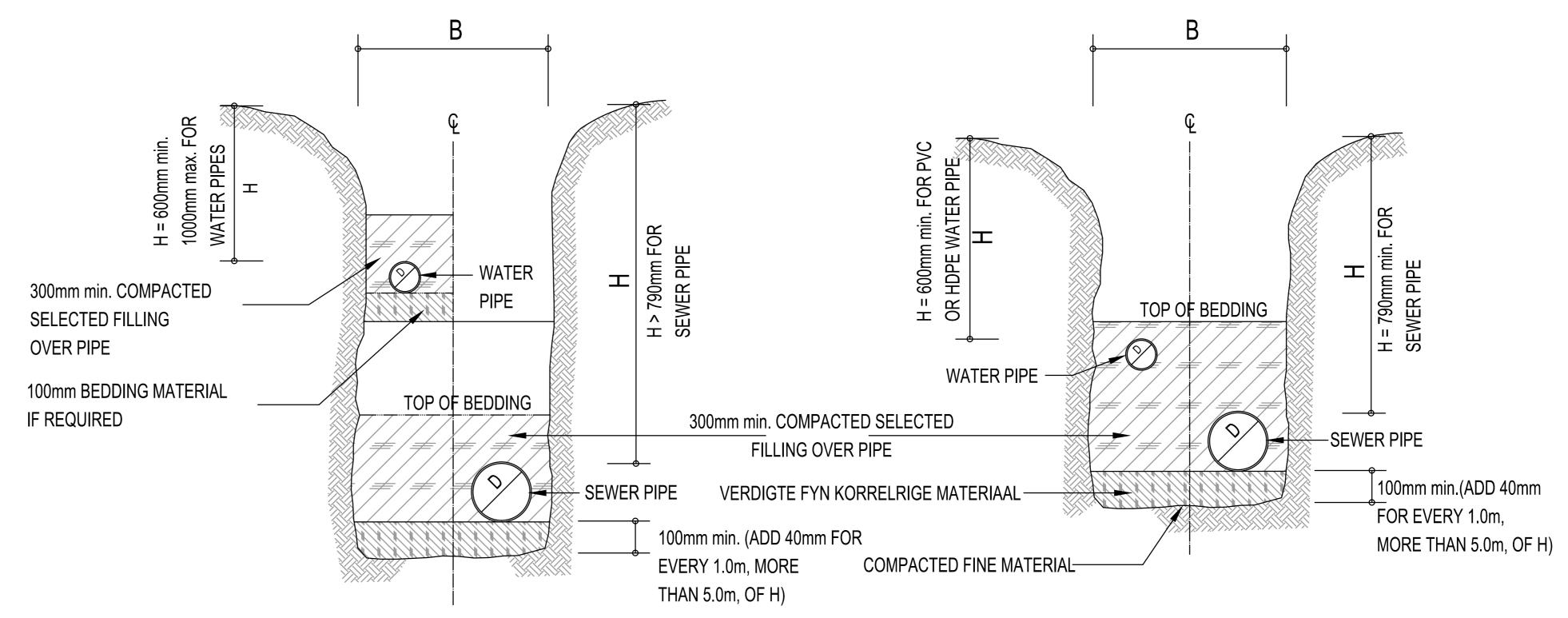
CLASS A2

(2) TRENCH IN HARD ROCK MATERIAL

CLASS C BEDDING: LOADFACTOR = 1,5

TYPICAL COMBINED SEWER / WATER TRENCH CLASS B2





(1) BOTTOM MATERIAL ACCEPTABLE FOR BEDDING OF PIPE

(2) BOTTOM MATERIAL UNACCEPTABLE FOR BEDDING OF PIPE

CLASS C1

CLASS C2

TEL: (013) 590-3607

FAX: (014) 590-3388

MINIMUM DEPTH < 1000mm

MINIMUM DEPTH UP TO 1000mm

Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR **TENDER**

DRAWN BY

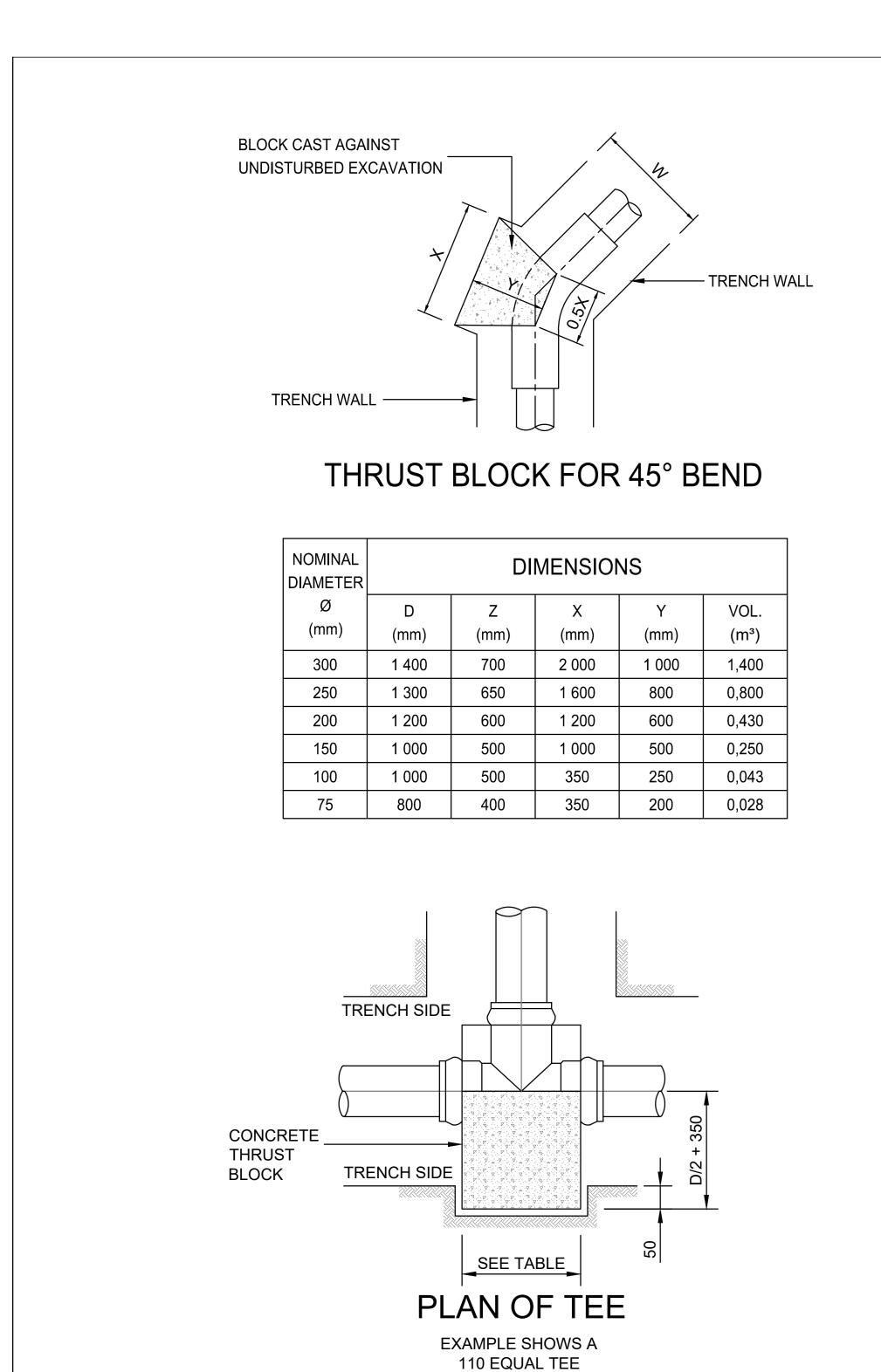
SM NXUMALO (Pr. Technician) LG NGCOBO (Pr. Technologist) PM MAAKE (TCHNICIAN) SM NXUMALO (Pr. Technician)

RUSTERNBURG LOCAL MUNICIPALITY RUSTERNBURG

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297-7434 FAX: (086) 244-8999

HLAYELENI CONSULTING ENGINEERS

RUSTERNBURG LOCAL MUNICIPALITY	(Full signature)	SHEET $f 1$ OF $f 1$
NORTH WEST PROVINCE		AO SCALE
LACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5		AS SHOWN
TRENCHES AND BEDDING DETAILS	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
	HCE/DRW/TBD/063	RLM/DRW/TBD/063



SCALE 1:10

150 150

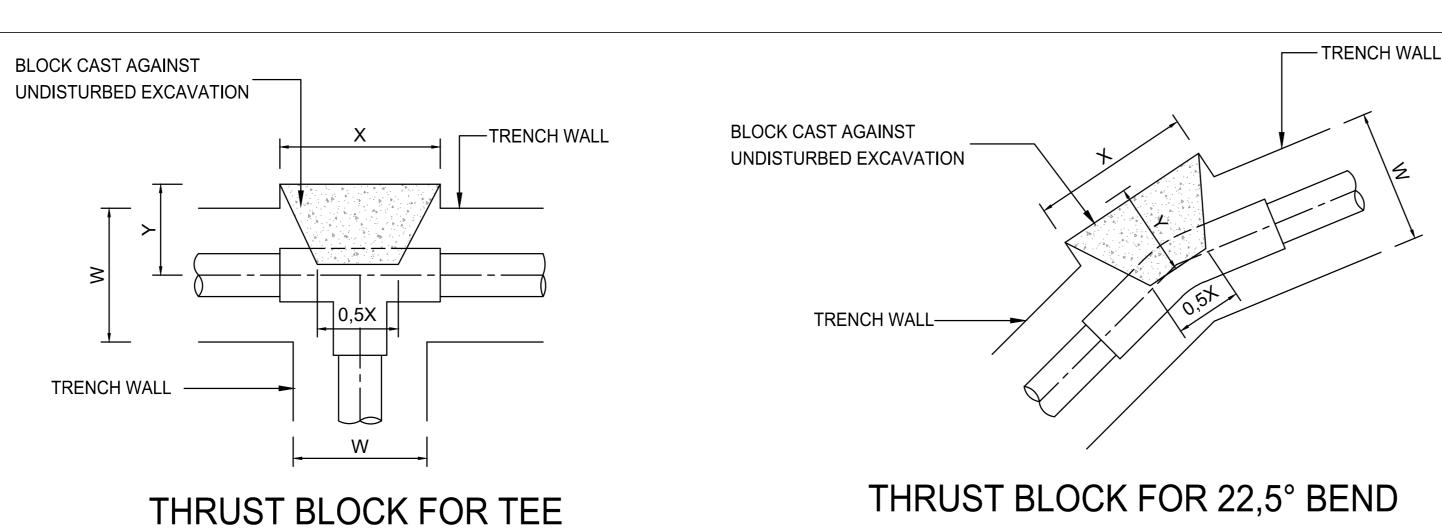
PLAN OF END CAP

EXAMPLE SHOWS A 110 END CAP

SCALE 1:10

- CONCRETE THRUST BLOCK

TRENCH SIDE



HALF OF

TRENCH

D/2 + 350

NOMINAL

(mm)

300

250

200

150

100

75

TRENCH

SIDE

TRENCH BASE

SEE TABLE

ELEVATION OF TEE

EXAMPLE SHOWS

A 110 EQUAL TEE

SCALE 1:10

TRENCH SIDE

300

ELEVATION OF END CAP

EXAMPLE SHOWS

A 110 END CAP

SCALE 1:10

TRENCH BASE

TRENCH

TRENCH BASE

1 300

1 000

800

DIMENSIONS

1 000

300

500

400

400

300

200

200

(mm)

700

650

600

500

400

300

VOL.

 (m^3)

0,350

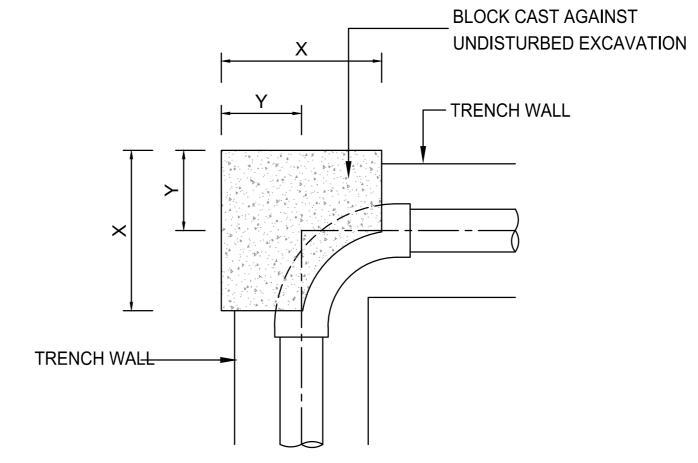
0,200

0,150

0,075

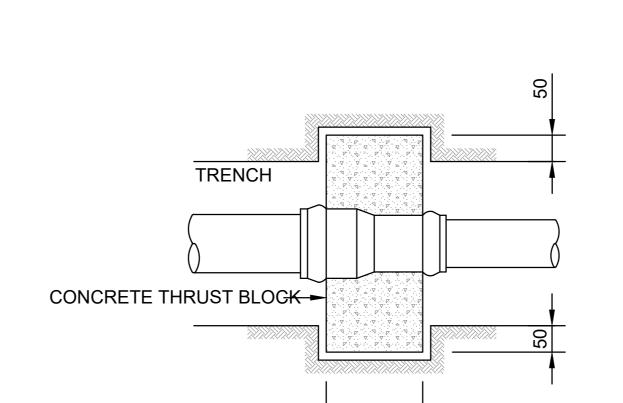
0,024

0,018



THRUST BLOCK FOR 90° BEND

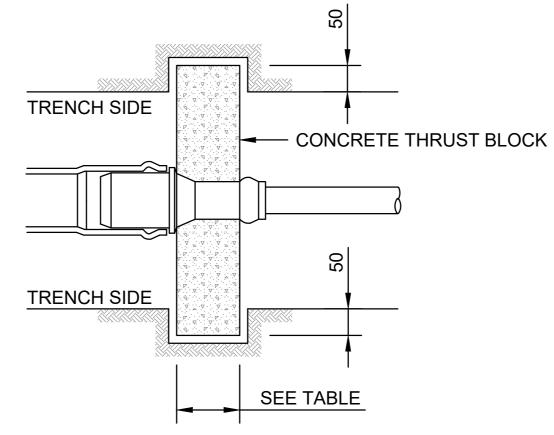
NOMINAL DIAMETER		DI	MENSIO	NS	
Ø (mm)	D (mm)	Z (mm)	X (mm)	Y (mm)	VOL. (m³)
300	1 400	700	2 700	1 400	5,00
250	1 300	650	2 150	1 100	3,00
200	1 200	600	1 600	800	1,54
150	1 000	500	1 300	700	0,80
100	1 000	500	500	300	0,12
75	800	400	450	300	0,08



PLAN OF REDUCER

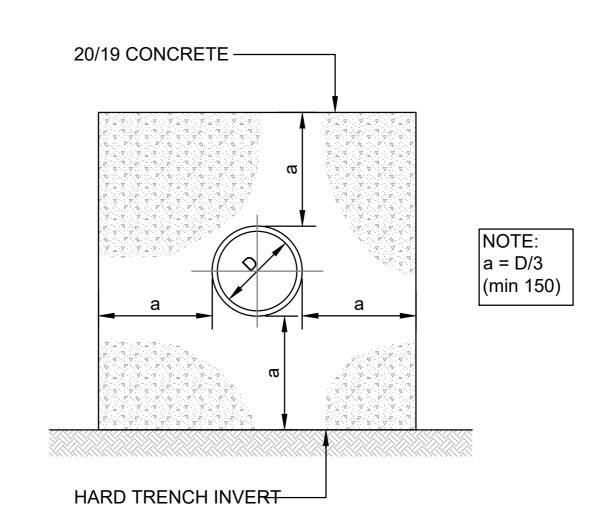
EXAMPLE SHOWS A 110 TO 90 REDUCER

SCALE 1:10



PLAN OF REDUCER BUSH EXAMPLE SHOWS A 110 TO 50 REDUCER BUSH

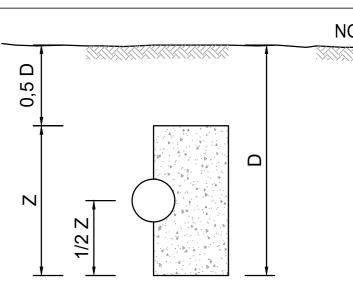
SCALE 1:10



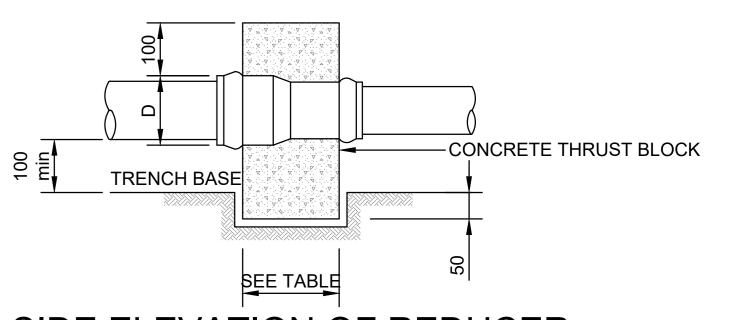
CONCRETE **ENCASING DETAILS**

NOTES:

- 1. THIS TABLE WAS CALCULATED FOR ANCHOR BLOCKS IN SANDY SOILS.
- 2. USE 10mPA CONCRETE.
- 3. HALF THE DEPTH OF THE ANCHOR BLOCK NEEDS TO BE BELOW THE PIPE AXIS.
- 4. KEEP THE CONCRETE AWAY FROM THE COUPLINGS & THE PIPE JOINTS.
- 5. ANCHOR BLOCKS FOR PIPE Ø LARGER THAN 300mm & HIGHER TEST PRESSURES THAN 18 BAR NEEDS TO BE DESIGNED BY THE ENGINEER.
- 6. ANCHOR BLOCKS AT PADDLE FLANGES NEEDS TO BE REINFORCED & DESIGNED BY THE ENGINEER.
- 7. IN CASES OF SOFT CLAY & SILTY SANDS, THE ANCHOR BLOCKS NEED TO BE DESIGNED BY THE ENGINEER.

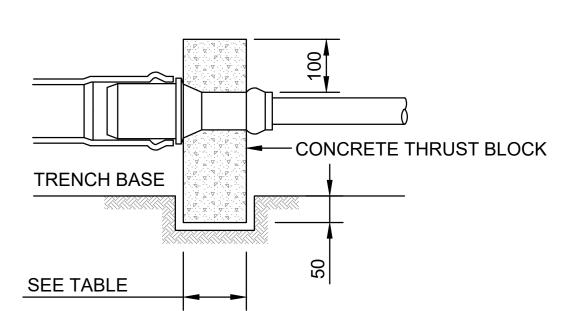


SECTION



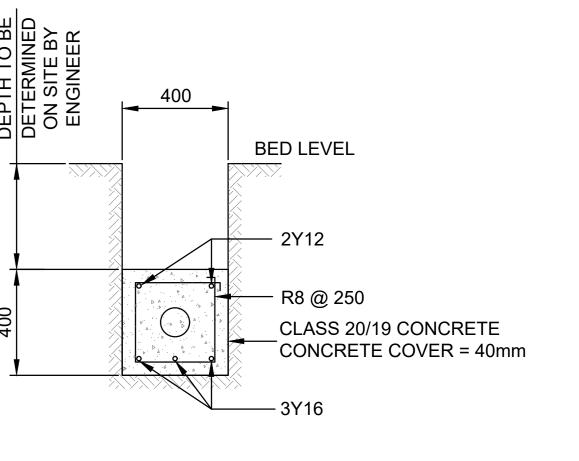
SIDE ELEVATION OF REDUCER

EXAMPLE SHOWS A 110 TO 90 REDUCER SCALE 1:10



SIDE ELEVATION OF REDUCER BUSH

EXAMPLE SHOWS A 110 TO 50 REDUCER BUSH SCALE 1:10



RIVERCROSSING REINFORCEMENT DETAIL SCALE 1:10

(Full signature)

A 09/2024 FOR TENDER CONSULT DIR No DATE REVISION

PLAN OF 90° BEND

EXAMPLE SHOWS

A 110 90° BEND

SCALE 1:10

R = 385

TRENCH SIDE

FOR **TENDER**

CONCRETE THRUST BLOCK

SM NXUMALO (Pr. Technician) CHECKED BY LG NGCOBO (Pr. Technologist) DRAWN BY PM MAAKE (TCHNICIAN)

SM NXUMALO (Pr. Technician)

NOMINAL

DIAMETER

Ø

(mm)

300

250

200

150

100

75

1 400

1 300

1 200

1 000

800

650

600

500

500

400

DIMENSIONS

2 700

2 150

1 600

1 300

500

450

VOL.

 (m^3)

2,550

1,500

0,770

0,420

0,075

0,054

(mm)

1 300

1 100

800

650

300

300

CONCRETE

THRUST

CONCRETE THRUST BLOCK ►

BLOCK

RUSTERNBURG LOCAL MUNICIPALITY PO Box 16 RUSTERNBURG 0300 Rustenburg Local Municipality TEL: (013) 590-3607

VARIES

SIDE ELEVATION OF

90° BEND

EXAMPLE SHOWS

A 110 90° BEND

SCALE 1:10

FAX: (014) 590-3388

— CONCRETE THRUST BLOCK

12 BICCARD STREET, SUITE 17, BICCARD HEIGHTS POLOKWANE TEL: (015) 297-7434

FAX: (086) 244-8999

HLAYELENI CONSULTING ENGINEERS

RUSTERNBURG LOCAL MUNICIPALITY

NORTH WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5

WATER ANCHOR BLOCK TYPICAL DETAILS

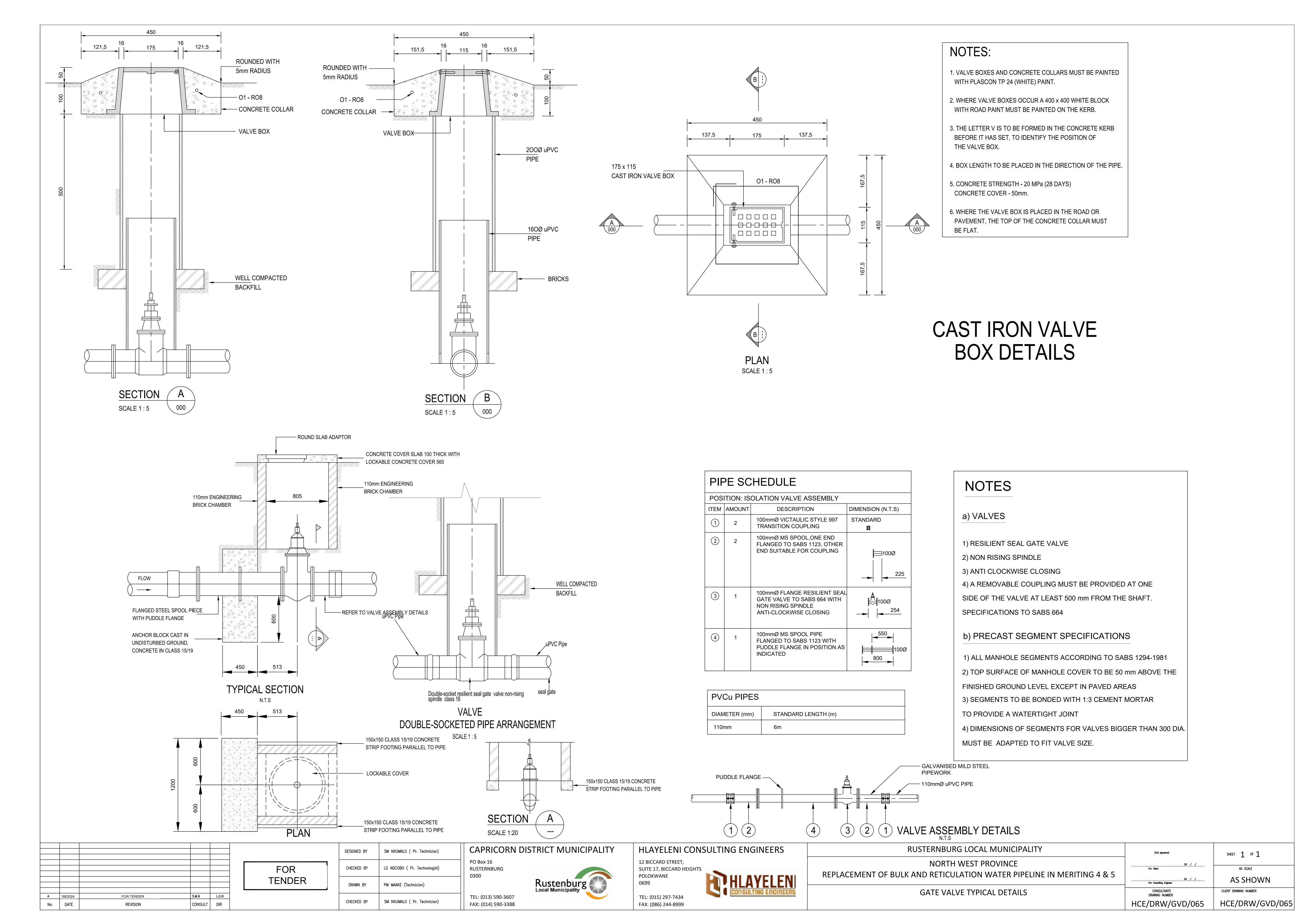
For: Consulting Engineer

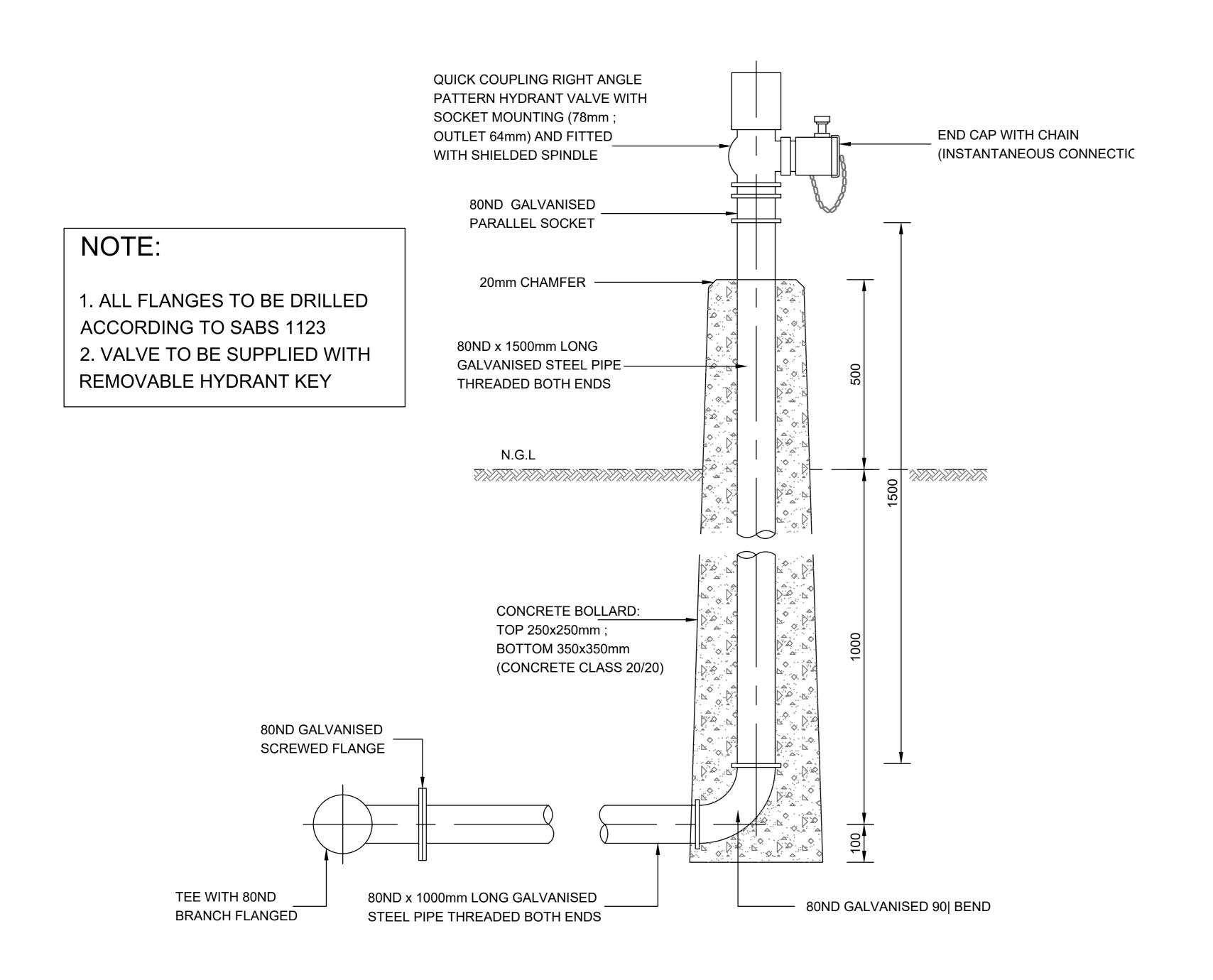
AO SCALE **AS SHOWN** CLIENT DRAWING NUMBER

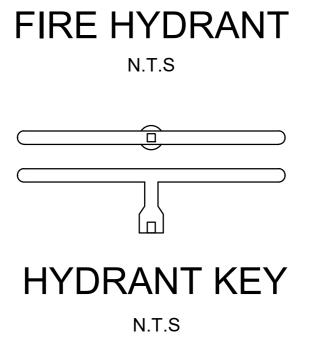
SHEET 1 OF 1

DRAWING NUMBER HCE/DRW/WABD/064 | RLM/DRW/WABD/064

20 / /



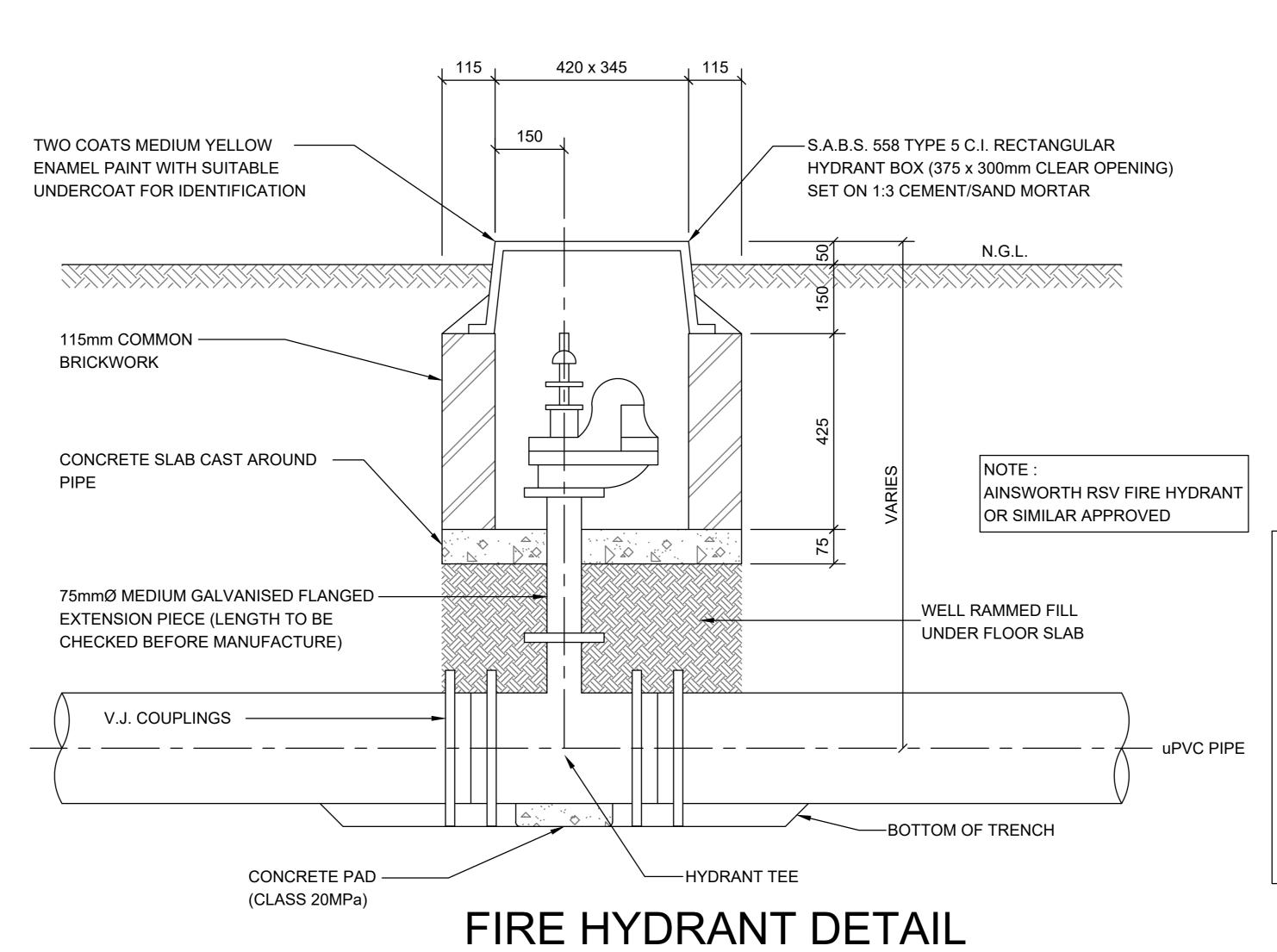




FIRE HYDRANT DETAIL

TYPE A

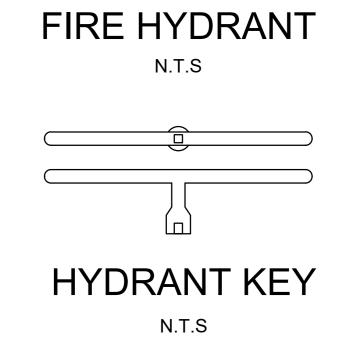
SCREW-DOWN PATTERN FIRE HYDRANT
WITH BAYONET LUG OUTLET
BELOW GROUND INSTALLATION
SCALE 1: 10



QUICK COUPLING RIGHT ANGLE PATTERN HYDRANT VALVE WITH SOCKET MOUNTING (75mm; END CAP WITH CHAIN OUTLET 64mm) AND FITTED (INSTANTANEOUS CONNECTION) WITH SHIELDED SPINDLE 80ND GALVANISED PARALLEL SOCKET NOTE: 1. ALL FLANGES TO BE DRILLED **ACCORDING TO SABS 1123** 80ND x 1500mm LONG 2. VALVE TO BE SUPPLIED WITH GALVANISED STEEL PIPE-REMOVABLE HYDRANT KEY THREADED BOTH ENDS 80ND GALVANISED

80ND x 1000mm LONG GALVANISED

STEEL PIPE THREADED BOTH ENDS



-80ND GALVANISED 90| BEND

FIRE HYDRANT DETAIL

TYPE B

NOTES:

TEE WITH 80ND

BRANCH FLANGED

- 1. HYDRANTS MUST BE LOCATED IN COLLABORATION WITH THE CITY ELECTRICAL ENGINEERS DEPARTMENT SO THAT THEIR POSITIONS DO NOT COINCIDE WITH THOSE SELECTED FOR ELECTRICAL HOUSE CONNECTION BOXES.
- 2. ALL THREADED CONNECTIONS BELOW GROUND MUST BE TAPED WITH DENSOTAPE OR SIMILAR.
- 3. THE LETTER 'FH' IS TO BE FORMED IN THE CONCRETE KERB WITH YELLOW COLOR.

TYPE B

				DESIGNED BY	SM NXUMALO (Pr. Technician)	RUSTERNBUR	RG LOCAL MUNICIPALITY	HLAYELENI CONS	SULTING ENGINEERS	RUSTERNBURG LOCAL MUNICIPALITY	(Full signature)	SHEET 1 OF 1
			[[OD	CHECKED BY	LG NGCOBO (Pr. Technologist)	PO Box 16		12 BICCARD STREET,		NORTH WEST PROVINCE		AO SCALE
			FOR	ONEONED BY	Ed NGCOBO (Pr. Technologist)	RUSTERNBURG		SUITE 17, BICCARD HEIGHTS		REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5		
			TENDER	DRAWN BY	PM MAAKE (TCHNICIAN)	0300	Rustenburg	POLOKWANE 0699	HI AYFI FNI	REPLACEIVILING OF BOLK AND REFICULATION WATER FIFELINE IN WILKITING 4 & 3	For: Consulting Engineer	AS SHOWN
A 09/2024	FOR TENDER	SMN LGN				_	Local Municipality		CONSULTING ENGINEERS	FIRE HYDRANT DETAILS TYPE A&B	CONSULTANTS DRAWING NUMBER	CLIENT DRAWING NUMBER
No DATE	REVISION	CONSULT DIR		CHECKED BY	SM NXUMALO (Pr. Technician)	TEL: (013) 590-3607 FAX: (014) 590-3388		TEL: (015) 297-7434 FAX: (086) 244-8999			HCE/DRW/FHD/066	RLM/DRW/FHD/066

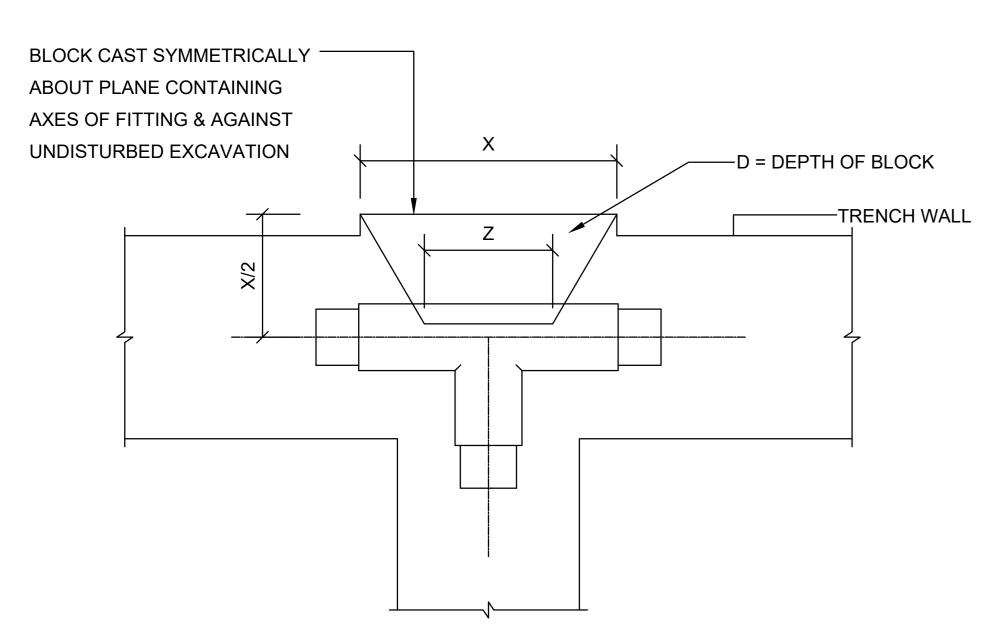
BLOCK CAST SYMMETRICALLY ABOUT PLANE CONTAINING AXES OF FITTING AND TRENCH WALL AGAINST UNDISTURBED **EXCAVATION** TRENCH WALL -D = DEPTH OF BLOCK

NOTE: COUPLINGS AND FLANGES SHALL BE LEFT CLEAR OF CONCRETE

PIPE DIAMETE	R X	D	Z
200	800	500	250
160	700	450	175
110	500	300	100
75	300	225	75
<50	300	225	75

THRUST BLOCK IN PRESSURE PIPELINE FOR 90 DEG. BEND

N.T.S.



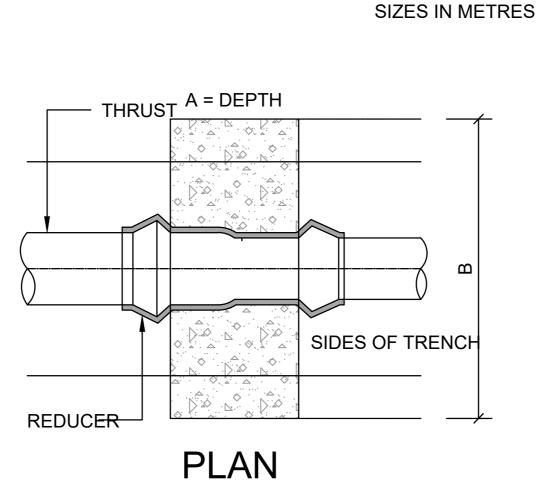
NOTE: COUPLINGS AND FLANGES SHALL BE LEFT CLEAR OF CONCRETE

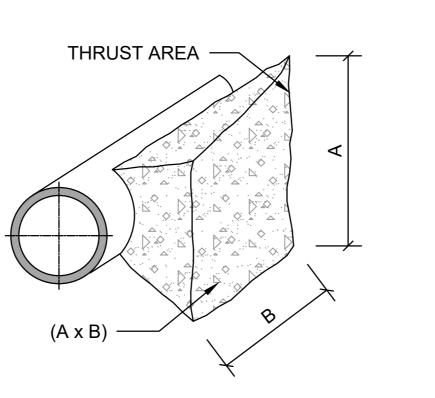
PIPE DIAMETER	X	D	Z
200	900	400	250
160	800	350	200
110	750	300	100
75	700	275	75
<50	700	275	75

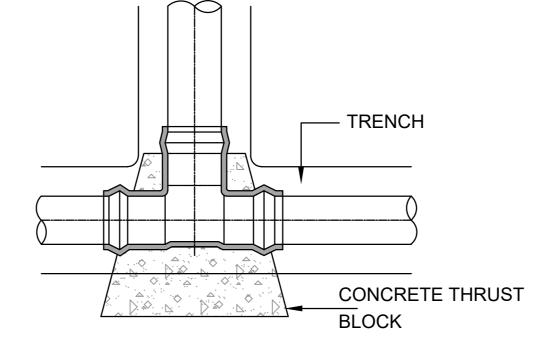
THRUST BLOCK IN PRESSURE PIPELINE FOR TEE

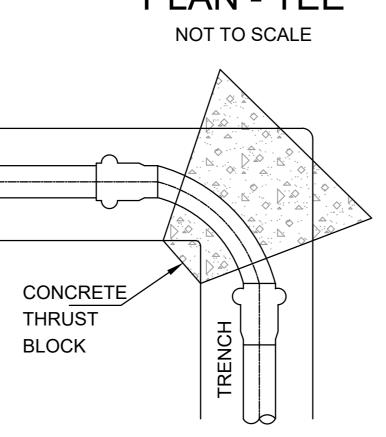
N.T.S.

A GUIDE TO THRUST BLOCK SIZES LINE PRESSURE - 90m, PLUS ALLOWANCE FOR SURGE PRESSURE SOIL - MEDIUM LOAN END CAPS / SLUICE VALVES TEES 90° BENDS 45° BENDS PIPE SIZE REDUCERS AxB AxB AxB 50mm - 90mm $0,2 \times 0,2$ $0,2 \times 0,2$ 0,25 x 0,25 0,25 x 0,6 110mm 0,3 x 0,25 0.3×0.3 0.3×0.6 0.3×0.3 125mm & 140mr 0,3 x 0,45 $0,3 \times 0,3$ $0,3 \times 0,4$ 0,3 x 0,65 $0,3 \times 0,6$ $0,3 \times 0,4$ 0,3 x 0,45 0.3×0.7 0,45 x 0,8 200mm $0,45 \times 0,7$ 0.3×0.7 0,45 x 0,6 250mm 0,6 x 0,6 0,45 x 0,8 0,45 x 0,85 $0,6 \times 0,9$ $0,6 \times 0,9$ 315mm 0,6 x 1,3 $0,6 \times 0,9$ 0,6 x 1,0 355mm 0,6 x 1,2 0,6 x 1,4 0,6 x 1,4 0,8 x 1,5 0,8 x 1,5 1,0 x 1,6 1,0 x 1,2 0,8 x 1,5



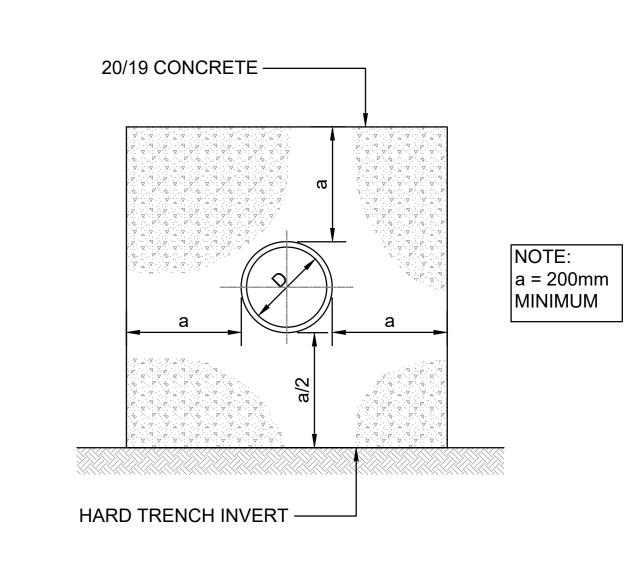






NOT TO SCALE

PLAN - TEE



NOT TO SCALE

1. FOR THE PIPES CROSSING THE STREAM,

THE STONES SHALL BE LOOSELY PACKED.

2. ALL FLANGES TO BE DRILLED ACCORDING

3. ALL GMS PIPEWORK IN ACCORDENCE WITH

5. 1 x 1 x 0.5m GABION BOX TO BE PROVIDED

ON INSTRUCTION OF THE RESIDENT ENGINEER.

6. ALL PIPEWORK TO BE TESTED BEFORE DENSO-

TO SABS 1123 TABLE 1600.

SABS 62, AND DENSO WRAPPED.

4. ALL CONCRETE TO BE 20MPa.

TRENCH BASE

TRENCH BASE

TO SUIT REDUCER

- CONCRETE THRUST BLOCK

TO SUIT දු

CONCRETE THRUST BLOCK

REDUCER

SIDE ELEVATION OF REDUCER

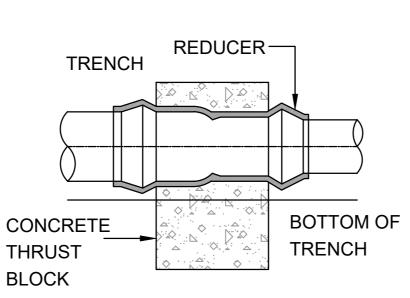
SCALE 1:10

SIDE ELEVATION OF REDUCER BUSH

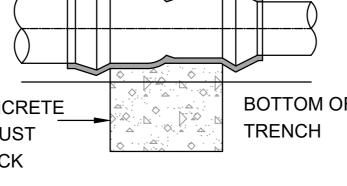
SCALE 1:10

NOT TO SCALE

PLAN



PLAN

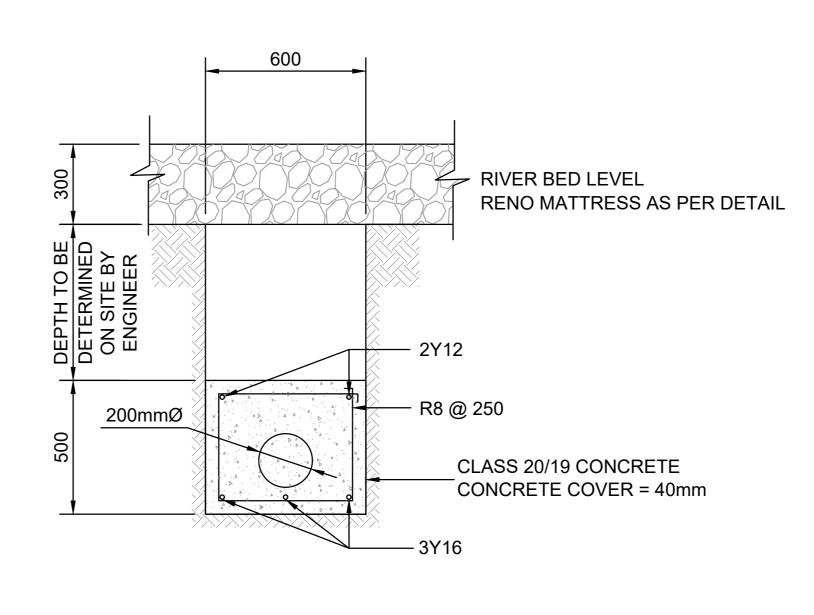


REDUCER, VALVES ETC.

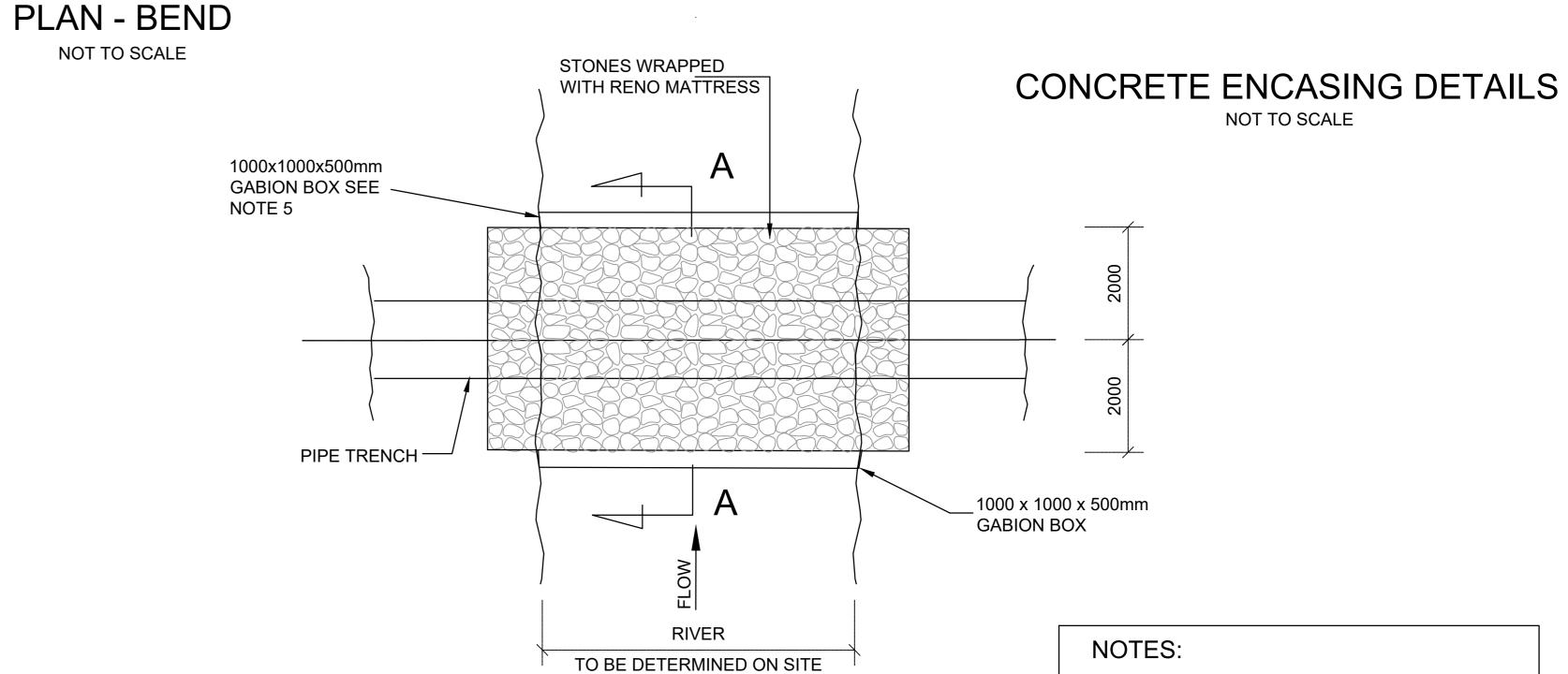
END ELEVATION

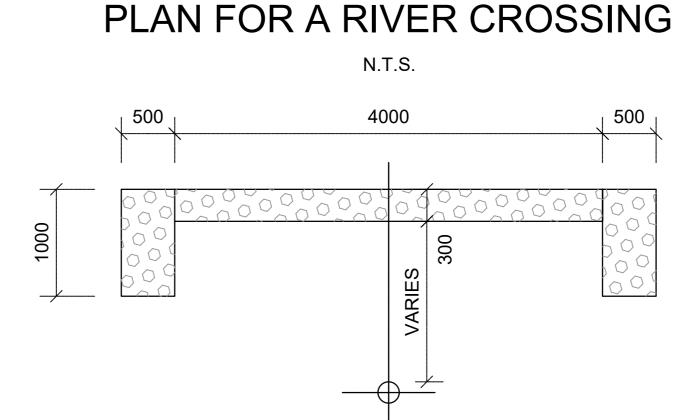
REDUCER

NOT TO SCALE









WRAPPED AND INSTALLED.

SECTION A FOR A RIVER CROSSING

SCALE 1:50

Α	09/2024	FOR TENDER	S.M.N	L.G.N
No	DATE	REVISION	CONSULT	DIR

FOR TENDER	

	BEGIONES BY	
	CHECKED BY	LG N
₹	DRAWN BY	PM
	CHECKED BY	1 M2

DESIGNED BY	SM NXUMALO (Pr. Technician)
CHECKED BY	LG NGCOBO (Pr. Technologist)
DRAWN BY	PM MAAKE (TCHNICIAN)
CHECKED BY	SM NXUMALO (Pr. Technician)



RUSTERNBURG LOCAL MUNICIPALITY



FAX: (086) 244-8999

HLAYELENI CONSULTING ENGINEERS



RUSTERNBURG LOCAL MUNICIPALITY NORTH WEST PROVINCE REPLACEMENT OF BULK AND RETICULATION WATER PIPELINE IN MERITING 4 & 5 CONCRETE ENCASING AND THRUST BLOCKS

SHEET 1 OF 1(Full signature) 20 / / **AS SHOWN** 20 / / CLIENT DRAWING NUMBER CONSULTANTS RLM/DRW/CTB/067 HCE/DRW/CTB/067