



THEEWATERSKLOOF MUNICIPALITY

TENDER NO. ENG 05/2022/23

CONTRACT DOCUMENT

FOR THE

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS

(RETURNABLE DOCUMENT)

Name of Tenderer	
Address (Physical)	
Telephone Number	
Fax Number	
Date	
Signature	
Amount (VAT Included)	
Duration	

NOTE:

1. The Form of Offer and Acceptance (C1.1) of this document (see also Clause C.4.6)

PREPARED BY:

THEEWATERSKLOOF MUNICIPALITY

P O BOX 24

CALEDON

7230

Tel: (028) 214 3300

Fax: (028) 214 1289

November 2022

PART A - INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE THEEWATERSKLOOF MUNICIPALITY					
Bid Number:	ENG 05/2022/23	Closing Date:	15 December 2022	Closing Time:	12:00
Description:	UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (FORM OF OFFER AND ACCEPTANCE).					
Bid Response Documents may be Deposited in the Bid Box NO. 1 situated at:					
MUNICIPAL HEAD OFFICE					
6 PLEIN STREET					
CALEDON					
7230					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	<input type="checkbox"/> Yes <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT <input type="checkbox"/> Yes <input type="checkbox"/> No		
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED? <input type="checkbox"/> Yes <input type="checkbox"/> 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 DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT	SCM		CONTACT PERSON	NIGEL KAYSER	
CONTACT PERSON	SERGIO FRANCIS		TELEPHONE NUMBER	028 214 3300	
TELEPHONE NUMBER	028 214 3300		FACSIMILE NUMBER	028 214 1289	
FACSIMILE NUMBER	028 212 1229		E-MAIL ADDRESS	NigelKa@twk.gov.za	
E-MAIL ADDRESS	SergioFr@twk.gov.za				

PART B - TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

- 1.1 BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
- 1.2 **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE**
- 1.3 THIS BID IS SUBJECT TO THE 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

1. Bidders must ensure compliance with their tax obligations.
2. Bidders are required to submit their unique personal identification number (pin) issued by SARS to enable the organ of state to view the taxpayer's profile and tax status.
3. Application for the Tax Compliance Status (TCS) certificate or pin may also be made via e-filing. In order to use this provision, taxpayers will need to register with SARS as e-filers through the website www.sars.gov.za.
4. Foreign suppliers must complete the pre-award questionnaire in part B:3.
5. Bidders may also submit a printed TCS certificate together with the bid.
6. In bids where consortia / joint ventures / sub-contractors are involved, each party must submit a separate TCS Certificate/Pin/CSD number.
7. Where no TCS is available but the bidder is registered on the central supplier database (CSD), a CSD number must be provided.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO

DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ 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 THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

THEEWATERSKLOOF MUNICIPALITY

TENDER NO. ENG 05/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS

GENERAL TENDER INFORMATION

TENDER ADVERTISED	:	Saturday, 19 November 2022
ESTIMATED CIDB CONTRACTOR GRADING	:	6CE or higher
CLARIFICATION MEETING	:	Wednesday, 30 November 2022 Grabouw Municipal Offices, 1 Arbor Drive, Molteno Park at 10:00am
CLOSING DATE	:	Thursday, 15 December 2022
CLOSING TIME	:	12:00
CLOSING VENUE	:	Tender Box 1 at the Municipal Office, 6 Plein Street, Caledon.
VALIDITY PERIOD OF TENDER	:	90 days

TENDER BOX : *The Tender Documents (which includes the Form of Offer and Acceptance) completed in all respects, plus any additional supporting documentation required, must be submitted in a sealed envelope with the name and address of the tenderer, the tender No. and title and the closing date indicated on the envelope. The sealed envelope must be inserted into the appropriate official tender box before closing time. The onus remains with the tenderer to ensure that the tender is placed in the correct tender box.*

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TENDER

T1 TENDERING PROCEDURES

- T1.1 Tender Notice and Invitation to Tender
- T1.2 Tender Data
- T1.3 Standard Conditions of Tender

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Theewaterskloof Municipality, Directorate: Technical and Infrastructure Implementation Services invites tenders for contract no: **ENG 05/2022/23 – UPGRADING OF GRABOUW BULK WATER SERVICES PH 5.2: BULK WATER RISING MAINS.**

Only tenderers who satisfy the eligibility and responsiveness criteria stated in the Tender Conditions, Tender Data (Clause 2.1) and Special Conditions of Tender (Clause C.4.14) are eligible to submit tenders. It is estimated that tenderers should have a CIDB minimum Construction Industry Development Board (CIDB) grading of 6CE to be eligible to tender.

All bids received shall be evaluated in terms of the Theewaterskloof Municipality Supply Chain Management Policy, read with the Preferential Procurement Regulations of 2017. It is estimated that the 80/20 preference points system will be applicable. Tenders satisfying the qualifying criteria will be evaluated in terms of price and preference.

NB: This tender is also subject to Local Content Criteria as defined by the Department of Trade & Industry. Only locally produced or locally manufactured goods, works and services with the stipulated minimum threshold for local production and content will be considered.

The successful tenderer must also be registered on the Centralized Supplier Database (CSD). Tenderers can register on www.csd.gov.za.

A set of tender documents may be obtained from Theewaterskloof Municipality, Directorate: Technical and Infrastructure Implementation Services from Monday, 21 November 2022 between 07:45 to 13:00 and 13:45 to 16:45, Monday to Thursday and between 07:45 to 13:00 and 13:45 to 15:30 on Fridays. Payment of a non-refundable tender participation fee of R 550.00 (VAT inclusive) is applicable. This is an eligibility criterion and is payable by means of electronic transfer or direct deposit only. Proof of payment of the participation fee should accompany your tender document when submitting it. Enquiries in this regard can be referred to Mr Hanro September at hanrose@twk.gov.za or Henri-John Philander at henri-johnph@twk.gov.za

An electronic version of the tender document for information purposes only can be requested via email from Nigel Kayser at nigelka@twk.gov.za. All **technical queries** relating to this tender may be addressed to Mr Naas Van Zyl, Tel No. 021 686 2550, e-mail: n.vanzyl@lukhozi.co.za.

A compulsory clarification meeting with representatives of the Employer will take place at the Grabouw Municipal Offices, 1 Arbor Drive, Molteno Park on 30 November 2022 starting at 10:00, followed by a site visit. Prospective tenderers who arrive later than 10:15 will not be allowed into the Clarification meeting. Tenderers should be represented at the site visit/clarification meeting by a person who is suitably qualified and experienced to comprehend the implications of the work involved.

The closing time for receipt of tenders is **12:00 on Thursday, 15 December 2022** at the Theewaterskloof Municipality, 6 Plein Street, Caledon. Tenders, in sealed envelopes, marked “**ENG 05/2022/23 – UPGRADING OF GRABOUW BULK WATER SERVICES PH 5.2: BULK WATER RISING MAINS**”, must be placed in Tender Box No. 1, located at the main entrance of Theewaterskloof Municipality, 6 Plein Street, Caledon. Please note that the tender box is open 24/7 and that the deposit slot opening is 5 x 30 cm. Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be accepted.

Tenders must only be submitted on the original tender documentation that is issued from Theewaterskloof Municipality.

Council reserves the right to accept a tender in full, partially or not at all and is not obliged to accept the lowest tender received. Theewaterskloof Municipality reserves the right to scale down on the scope of work in order for the contract value to fit into the available budget for 2022/23 and 2023/24

B. Ngubo
Municipal Manager
Theewaterskloof Municipality
P O Box 24
CALEDON
7230

T1.2 TENDER DATA

The Conditions of Tender are the Standard Conditions of Tender as contained in Annexure B of Department of Public Works Notice 423 of 2019, CIDB Standard for Uniformity (SFU) in Engineering and Construction Works, August 2019.

The Standard Conditions of Tender make several references to the Tender Data. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender. Each clause below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1	Add the following: The Employer is the Theewaterskloof Municipality, represented by the Deputy Director: Technical and Infrastructure Implementation Services
C.1.2	Refer to the CONTENTS of this document for a complete list of tender documents issued by the Employer.
C.1.4	The Employer's Agent is: LUKHOZI CONSULTING ENGINEERS (PTY) LTD OFFICE 111, 1ST FLOOR TIJGERPARK 3 WILLIE VAN SCHOOR DRIVE BELLVILLE 7530 Contact Person: Mr Naas Van Zyl Email: n.vanzyl@lukhozi.co.za Tel: 021 686 2550
C.1.4	The language for communications is English.
C.1.5.4	Add the following: The Employer may reject a tender if, in the opinion of the Employer, the tenderer will be unable to achieve the contract participation goal tendered, in the performance of the contract.
C.1.6	A competitive negotiation procedure or proposal procedure using the two-stage system will not to be used.
C.2.1	Add the following to C.2.1
C.2.1.1	<u>Eligibility Criteria</u> Only those tenderers who substantiate their offer by providing sufficient proof, relevant to each of the following criteria and in terms of the scope of work included in this contract, are eligible to submit tenders: a) Must comply with a CIDB grading of 6CE or higher. Please append the certificate or proof of registration to Schedule T2.1.9 b) Payment of a non-refundable tender deposit of R550.00 (vat inclusive). Please append proof to Schedule T2.1.19

Clause	Data
	<p>c) Attendance of the compulsory clarification meeting. (Signed attendance register) and proof of attendance see Schedule T2.1.21</p> <p>d) In order to be considered for an appointment in terms of this bid, tenderers are required to have completed three (3) projects of a 6CE grading. Tenderers are required to list the projects in Schedule T2.1.8 and append the Engineer's completion certificate (or Employer's completion letter) of each to Schedule T2.1.8. The authenticity of completion certificates / letters appended will be verified with the relevant Engineer / Employer. Please also provide contact details of the Engineers / Employers listed in Schedule T2.1.8.</p> <p>e) Only those tenderers who complies with the minimum threshold for local content will be considered. Refer to T.1.15: certificate of local content declaration.</p> <p>Only those tenderers who are registered with the CIDB, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations, for a 6CE class of construction work, are eligible to have their tenders evaluated.</p> <p>Joint Ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> 1. Every member of the joint venture is registered with the CIDB. 2. The lead partner has a contractor grading of 6CE. 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 6CE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations. <p>Notwithstanding the above, tenderers who are capable of being so registered prior to the evaluation of submissions may be evaluated at the sole discretion of the Employer (the evaluation of tenders shall be deemed to take place when the Employer's Bid Evaluation Committee meets to make a recommendation to the Bid Adjudication Committee).</p>
C.2.2	The Employer will not compensate the Tenderer for any costs incurred for making a tender submission or for attending tender interviews in the office of the Employer or the Employer's Agent.
C.2.7	The arrangements are as stated in the tender notice and invitation to tender. Addenda will be issued to, and tenders will be received only from, those tendering entities appearing on the attendance list.
C.2.12	No alternative offers will be considered.
C.2.13.2	<p>Replace sub-clause C.2.13.2 with the following:</p> <p>Return all returnable documents to the employer after completing them in their entirety, by writing in non-erasable ink.</p>
C.2.13.3	Add the following to C.2.13.3

Clause	Data
	Parts of each tender offer communicated on paper shall be submitted as an original, plus 1 (one) copy.
C.2.13.4	The tender shall be signed by a person duly authorized to do so. Tenders submitted by joint ventures of two or more firms shall be accompanied by the document of formation of the joint venture, authenticated by a notary public or other official deputed to witness sworn statements, in which is defined precisely the conditions under which the joint venture will function, its period of duration, the persons authorized to represent and obligate it, the participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning.
C.2.13.5 C.2.15	<p>Add the following to C.2.13.5:</p> <p>The tender shall be enclosed in a sealed envelope, bearing the correct identification details as below:</p> <p>Tender reference number: ENG 05/2022/23</p> <p>Title of Tender: UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS</p> <p>The employer's address for delivery of tender offers is:</p> <p>Location of tender box:</p> <p>Tender Box No. 1 at the entrance of the municipal head office</p> <p>Physical address:</p> <p>Theewaterskloof Municipality, 6 Plein Street, Caledon, 7230</p> <p>Sealed tenders with the Tenderer's name and address and the endorsement "TENDER ENG 05/2022/23: UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS" on the envelope, must be placed in the appropriate official tender box at the abovementioned address.</p> <p>The tender box is open 24/7 and the deposit slot opening is 5cm x 30cm. The closing time for submission of tender offers is as stipulated in T1.1 Tender Notice and Invitation to Tender.</p>
C.2.13.6	A two-envelope procedure will not be followed (C.3.5).
C.2.14	The Tenderer is required to submit with his tender all returnable schedules. No Tenderer will be allowed to submit documentation or sign any of the schedules after the tender has closed unless specified otherwise in Administrative Criteria.
C.2.15	<p>Add the following to C.2.15.1:</p> <p>The closing time for submission of tender offers is as stipulated in T1.1 Tender Notice and Invitation to Tender. Telephonic, telegraphic, telex, facsimile or e-mailed tender offers shall not be accepted.</p>
C.2.16	The tender offer validity period is 90 days.
C.2.17	Add the following to C.2.17:

Clause	Data
	A tender will be rejected as non-responsive if the tenderer fails to provide any clarification requested by the employer within the time for submission stated in the employer's written request for such clarification. A tender will also be rejected as non-responsive if the tenderer fails, within the time stated in writing by the Employer, to comply with the requirements of C.3.8
C.2.18	<p>Delete the following word in C.2.18.1:</p> <p>"Notarized".</p> <p>Add the following to C.2.18.1:</p> <p>Provide, on written request by the Employer, where the tendered amount inclusive of VAT exceeds R10 million:</p> <ol style="list-style-type: none"> 1. audited annual financial statement for 3 years, or for the period since establishment if established during the last 3 years, if required by law to prepare annual financial statements for auditing; 2. a certificate signed by the tenderer certifying that the tenderer has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days; 3. particulars of any contracts awarded to the tenderer 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; 4. a statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality or municipal entity is expected to be transferred out of the Republic. <p>Each party to a Consortium/Joint Venture shall submit separate certificates/statements in the above regard.</p>
C.2.19	Access to site shall be provided during working hours to tenderers.
C.2.22	Tender documentation submitted will not be returned to the Tenderer.
C.2.23	<p>Add the following:</p> <p>The tenderer is required to submit the following with his tender:</p>
C.2.23.1	<p>Certificate of Contractor Registration (CIDB)</p> <p>The Certificate of Contractor Registration is issued by the Construction Industry Development Board. 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. Append to T2.1.9.</p>
C.2.23.2	<p>Tax Compliance Status Pin Certificate</p> <p>Tenderers shall be registered and in good standing with the South African Revenue Service (SARS) and shall submit documentary evidence in the form of a valid Tax Compliance Status Pin Certificate issued by SARS. Append to T2.1.11 In the event that certificate expires during the construction period, the Contractor must submit a new valid certificate within 14 days after expiry of the certificate.</p>

Clause	Data
	Each party to a Consortium/Joint Venture shall submit a separate valid Tax Compliance Status Pin Certificate.
C.2.23.3	<p>Bargaining Council Certificates</p> <p>Where applicable, a certificate of compliance issued by the relevant Bargaining Council must be submitted. Append to T2.1.22. Each party to a Consortium/Joint Venture shall submit separate certificates in the above regard.</p> <p>When submitting, please ensure that the letter of good standing is from the Bargaining Council.</p>
C.3.2	<p>Add the following to C.3.2:</p> <p>Notwithstanding any requests for confirmation of receipt of Addenda issued, the tenderer shall be deemed to have received such addenda if the employer can show proof of transmission thereof (or a notice in respect thereof) via electronic mail, facsimile or registered post.</p>
C.3.4	<p>The time and location for opening of the tender offers are:</p> <p>Time: Tenders will be opened immediately after the closing time for receipt of tenders, as stated in the Tender Notice and Invitation to Tender</p> <p>Location: Theewaterskloof Municipality Council Chambers, 6 Plein Street, Caledon</p>
C.3.8	<p>Add the following:</p> <p><u>RESPONSIVENESS CRITERIA</u></p> <p>Tenders will be considered non-responsive if, inter alia: (This is a requirement on submission of bid document)</p> <ul style="list-style-type: none"> a) The tenderer does not comply with the eligibility criteria, b) The tenderer has failed to complete and sign the Form of Offer portion of C1.1, c) The tender is not in compliance with the Scope of Work and Specifications, d) The tenderer does not comply with the special conditions of tender, e) The tenderer has failed to comply with the Pricing instructions, f) The tenderer has failed to comply with the Additional Conditions of Tender as specified in Clause C.4.6 <p>Add the following after C.3.8</p> <p><u>ADMINISTRATIVE CRITERIA</u></p> <p>Tenders will be considered non-compliant if, inter alia: (These documents may be requested)</p> <ul style="list-style-type: none"> a) The tenderer has failed to clarify or submit any supporting documentation within the time for submission stated in the employer's written request. b) The tenderer has failed to include, append and sign, where prompted in the Returnable Schedules, any and all additional information requested. c) The tenderer has not submitted a municipal account of where the head office of the company is registered or in case where the premises are leased, the tenderer has not provided a copy of the lease of the premises. The successful contractor will be required to submit updated municipal accounts on a quarterly basis. d) The tenderer has failed to fully complete Schedule T2.1.11 and failed to submit a valid Tax Compliance Status Pin Certificate; a valid Tax Compliance Status Pin Certificate or Pin may be requested; and

Clause	Data
	<p>e) The tenderer has failed to submit a certified valid B-BBEE certificate, QSE or EME affidavit, whereas points were claimed, and a copy of certificate or affidavit was supplied, a certified copy of the valid B-BBEE certificate, QSE or EME Affidavit may be requested.</p> <p>f) The tenderer has failed to submit proof of good standing from the Department of Labour related to good standing with regards to COIDA payments. A certified copy of the proof of good standing may be requested.</p> <p>g) The tenderer has failed to submit proof of good standing with the relevant Bargaining Council (or relevant affiliation). Should such be in place, a certified copy of the proof of good standing may be requested</p> <p>h) The tenderer has failed to submit proof of good standing with the relevant Bargaining Council (or relevant affiliation). Should such be in place, a certified copy of the proof of good standing may be requested</p> <p>i) The tenderer has failed to provide proof of tender participation fee paid; proof of payment of tender participation fee can be requested.</p> <p>j) The tenderer has failed to fully complete the Local content declaration. A fully completed local content declaration may be requested</p> <p>k) The tenderer has failed to append three completion certificates or completion letters to Schedule T2.1.8. Completion certificates or completion letters may be requested</p> <p>l) The tenderer has failed to append the CIDB certificate to Schedule T2.1.9. The CIDB certificate may be requested</p> <p>The Employer reserves the right to accept a tender offer which does not, in the Employer's opinion, materially and/or substantially deviate from the terms, conditions, and specifications of the tender documents.</p> <p>The Employer reserves the right to accept a tender offer which does not, in the Employer's opinion, materially and/or substantially deviate from the terms, conditions, and specifications of the tender documents.</p>
C.3.9.5	<p>Add the following sub-clause C.3.9:</p> <p>Check responsive tender offers for unbalanced unit rates and request tenderers to consider amending and adjusting any rates declared unbalanced by the Employer in accordance with C.4.4 while retaining the total of the prices derived after any correction made in terms of this condition to tender.</p> <p>Reject a tender offer if the tenderer does not correct or accept the correction of arithmetical errors and consider rejection of a tender offer if the tenderer refuses to amend/adjust an unreasonable, unbalanced rate in the manner described above.</p>
C.3.11.2	<p>Add the following after Clause 3.11.1:</p> <p>Tenders shall be evaluated in terms of the Preferential Procurement Regulations 2017. The value of the tender is estimated to not exceed R 50 000 000-00 and therefore the 80/20 system shall be applicable.</p> <p>Method 2: Price and Preference</p> <p>The procedure for the evaluation of responsive tenders is according to Method 2, where the total number of tender evaluation points, $T_{EV} = N_{FO} + N_P$ as detailed below.</p>
C3.11.3	<p>Where</p>

Clause	Data																				
	<p>N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with C.3.11.4</p> <p>N_P is the number of tender evaluation points awarded for B-BBEE Status Level Contribution in accordance with C.3.11.5.</p> <p>Evaluation of tender offers</p> <p>General</p> <p>The municipality reserves the right to appoint the bidder scoring first, second and third highest preference points at any time during the duration of the contract. When the tenderer scoring the highest points cannot perform on the contract, the municipality has the right to purchase from the tenderer scoring the second highest points and if the second highest points scorer cannot perform on the contract, the municipality reserves the right to purchase from the tenderer scoring the third highest points.</p> <p>Contract Value/Price</p> <p>THE 80/20 PREFERENCE POINT SYSTEMS</p> <p>A maximum of 80 points is allocated for price on the following basis:</p> <p style="text-align: center;">80/20</p> $P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$ <p>Where</p> <p> P_s = Points scored for price of bid under consideration P_t = Price of bid under consideration P_{\min} = Price of lowest acceptable bid </p> <p>Points awarded for B-BBEE Status Level of Contribution</p> <p>In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:</p> <table border="1"> <thead> <tr> <th>B-BBEE Status Level of Contributor</th><th>Number of points (80/20 system)</th></tr> </thead> <tbody> <tr><td>1</td><td>20</td></tr> <tr><td>2</td><td>18</td></tr> <tr><td>3</td><td>14</td></tr> <tr><td>4</td><td>12</td></tr> <tr><td>5</td><td>8</td></tr> <tr><td>6</td><td>6</td></tr> <tr><td>7</td><td>4</td></tr> <tr><td>8</td><td>2</td></tr> <tr><td>Non-compliant contributor</td><td>0</td></tr> </tbody> </table> <p>Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency</p>	B-BBEE Status Level of Contributor	Number of points (80/20 system)	1	20	2	18	3	14	4	12	5	8	6	6	7	4	8	2	Non-compliant contributor	0
B-BBEE Status Level of Contributor	Number of points (80/20 system)																				
1	20																				
2	18																				
3	14																				
4	12																				
5	8																				
6	6																				
7	4																				
8	2																				
Non-compliant contributor	0																				

Clause	Data
C3.11.4	<p>accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.</p> <p>Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.</p> <p>A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.</p> <p>A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.</p> <p>Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.</p> <p>A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.</p> <p>A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.</p> <p>If a valid B-BBEE certificate (construction sector scorecard) of EME affidavit is not attached it will be interpreted that the preference points for B- BBEE status level or contribution are not claimed.</p> <p>If a valid B-BBEE certificate (construction sector scorecard) or EME affidavit is attached and if points is not claimed in terms of MBD 6.1 it will be interpreted that the preference points for B- BBEE status level or contribution are not claimed.</p> <p>Please note that the municipality will not request a valid B- BBEE certificate or Sworn Affidavits if such is not attached to the bidders tender at closing date of this tender.</p> <p>Scoring Financial Offers</p>

Clause	Data												
C3.11.5	<p><i>Add the following:</i></p> <p>The financial offer will be scored using Formula 2 (Option 1) where the value of W_1 is:</p> <p>1) 80 points where the financial value inclusive of VAT of one or more responsive tender offers equals or less than R50 000 000-00.</p> <p>For this contract, the financial offers will be scored using Formula 2 (Option 1) where the value of W_1 is: 80 tender evaluation points. Up to a maximum of 100 minus W_1 namely 20 tender evaluation points will be awarded for Preference with responsive tenders scoring points in accordance with the 80 Financial/20 Preference scoring criteria listed below.</p> <table border="1"> <thead> <tr> <th colspan="2">80 Financial/20 Preference</th></tr> <tr> <th>Points</th><th>Description</th></tr> </thead> <tbody> <tr> <td></td><td>FINANCIAL OFFER</td></tr> <tr> <td>80</td><td>PRICE</td></tr> <tr> <td></td><td>PREFERENCES</td></tr> <tr> <td>20</td><td>B-BBEE Status Level Contribution</td></tr> </tbody> </table> <p>Scoring Preferences</p> <p><i>Add the following:</i></p> <p>Points for preferences claimed will be determined in accordance with the Preferential Procurement Regulations, 2017. Points will be awarded to tenderers who are eligible for preferences in terms of Schedule T2.1.14: Preference Points Claim Form (where preferences are granted in respect of B-BBEE Status Level Contribution) which is included in T2.2 Returnable Schedules.</p> <p>The terms and conditions of Schedule T2.1.14: Preference Points Claim Form shall apply in all respects to the tender evaluation process and any subsequent contract.</p>	80 Financial/20 Preference		Points	Description		FINANCIAL OFFER	80	PRICE		PREFERENCES	20	B-BBEE Status Level Contribution
80 Financial/20 Preference													
Points	Description												
	FINANCIAL OFFER												
80	PRICE												
	PREFERENCES												
20	B-BBEE Status Level Contribution												
C.3.13	<p>Add the following to C.3.13:</p> <ul style="list-style-type: none"> a) the tenderer has in his or her possession a valid Tax Compliance Status Pin Certificate issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations. (In the event that certificate expires during the construction period, the Contractor must submit a new valid certificate within 14 days after expiry of the original certificate); b) the tenderer is registered with the CIDB with an appropriate category of registration; c) the tenderer is not in arrears for more than THREE (3) months with municipal rates and taxes and municipal service charges. (Contractors must submit proof of payment of municipal rates and taxes to the Client on a three-monthly basis); d) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; e) the tenderer has not: <ul style="list-style-type: none"> i. abused the Employer's Supply Chain Management System; or 												

Clause	Data
	<p>ii. failed to perform on any previous contract and has been given a written notice to this effect;</p> <p>f) the tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.</p>
C.3.13.2	<p>SCM Related Appeals</p> <p>Clause 53 of the Theewaterskloof Supply Chain Management Policy gives any person whose rights have been affected by such a decision, the right to appeal such decision within 21 days of notification of the decision.</p> <p>Any tenderer wishing to exercise this right, must submit their appeal in writing to the Municipal Manager, marked for the attention of the THEEWATERSKLOOF MUNICIPALITY, 6 Plein Street, CALEDON, 7230. The format of the appeal must:</p> <ul style="list-style-type: none"> • set out the reasons for the appeal; • state in which way the appellant's rights have been affected by the decision; • state the remedy sought, and • be accompanied by a copy of the notification advising the tenderer of the decision of the Supply Chain Management Bid Adjudication Committee. <p>Tenderers are hereby informed also of their right to request reasons for the decision in terms of the Promotion of Administrative Justice Act (No. 3 of 2000).</p> <p>The notification of the decision sent to the successful tenderer is not acceptance of the tender and no rights shall accrue to the successful tenderer in terms of this notification. The successful tenderer will be notified in writing after 21 days of the notification of any final decision (i.e., Acceptance) or of any developments with respect to the appeal process, and if applicable, procedures for the commencement of the work.</p> <p>The consideration of appeals and if necessary, the invalidation of any decision made, shall be dealt with in terms of the Municipality's appeals process and supply chain management policy</p>
C.3.17	The number of paper copies of the signed contract to be provided by the employer is one.
C.4	The additional conditions of tender are:
C.4.1	<p>Compliance with Occupational Health and Safety Act 1993</p> <p>Tenderers are to note the requirements of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2014 issued in terms of Section 43 of the Act. The tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith.</p> <p>The Health and Safety Plan shall cover inter-alia the following details:</p> <p>(1) Management Structure, Site Supervision and Responsible Persons, including a succession plan.</p>

Clause	Data
	<p>(2) Contractor's induction training program for employees, sub-contractors and visitors to the Site.</p> <p>(3) Health and safety precautions and procedures to be adhered to in order to ensure compliance with the Act, Regulations and Safety Specifications.</p> <p>(4) Regular monitoring procedures to be performed.</p> <p>(5) Regular liaison, consultation and review meetings with all parties.</p> <p>(6) Site security, welfare facilities and first aid.</p> <p>(7) Site rules and fire- and emergency procedures.</p> <p>Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements.</p> <p>The Contractor shall prepare and maintain a Health and Safety File in respect of the project, which shall be available for inspection on Site at all times and handed over to the Employer on Final Completion of the project.</p> <p>The Contractor is required to submit to the Employer the Occupational Health and Safety Agreement.</p>
C.4.2.	<p>Eligibility with respect to expanded public works program</p> <p>This Contract does not qualify for consideration as an Expanded Public Works Programme project.</p>
C.4.3.	<p>Claims arising after submission of tender</p> <p>No claim for any extras arising out of any doubt or obscurity as to the true intent and meaning of anything shown on the Contract Drawings or contained in the Conditions of Contract, Scope of Work and Pricing Data, will be admitted by the Employer/Employer's Agent after the submission of any tender and the Tenderer shall be deemed to have:</p> <ol style="list-style-type: none"> 1) inspected the Contract Drawings and read and fully understood the Conditions of Contract. 2) read and fully understood the whole text of the Scope of Work and Pricing Data and thoroughly acquainted himself with the nature of the works proposed and generally of all matters which may influence the Contract. 3) visited the site of the proposed works, carefully examined existing conditions, the means of access to the site, the conditions under which the work is to be done, and acquainted himself with any limitations or restrictions that may be imposed by the Municipal or other Authorities in regard to access and transport of materials, plant and equipment to and from the site and made the necessary provisions for any additional costs involved thereby. 4) requested the Employer or his duly authorised agent to make clear the actual requirements of anything shown on the Contract Drawings or anything contained in the Scope of Work and Pricing Data, the exact meaning or interpretation of which is not clearly intelligible to the Tenderer. <p>Before submission of any tender, the Tenderer should check the number of pages, and if any are found to be missing or duplicated, or the figures or writing indistinct, or if the Pricing Data contain any obvious errors, the tenderer must apply to the Employer/Employer's Agent at once to have the same rectified, as no liability will be</p>

Clause	Data
	admitted by the Employer/Employer's Agent in respect of errors in any tender due to the foregoing
C.4.4	<p>Imbalance in tendered rates</p> <p>In the event of tendered rates or lump sums being declared by the Employer to be unacceptable to it because they are either excessively low or high or not in proper balance with other rates or lump sums, the Tenderer may be required to produce evidence and advance arguments in support of the tendered rates or lump sums objected to. If, after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the tendered rates or lump sums objected to, it may request the tenderer to amend these rates and lump sums along the lines indicated by it.</p> <p>The Tenderer will then have the option to alter and/or amend the rates and lump sums objected to and such other related amounts as are agreed on by the Employer, but this shall be done without altering the tender offer as tendered or, if applicable, the corrected total of prices in accordance with C.3.9.5.</p> <p>Should the Tenderer fail to amend his Tender in a manner acceptable to the Employer, the Employer may reject the Tender.</p>
C.4.5	<p>Use of Local Labour</p> <p>The Contractor is to provide monthly report to Technical and Infrastructure Implementation Services Department stating/showing Local Labour employed during construction as well as contact details. This information will be checked randomly, on a monthly basis by Technical and Infrastructure Implementation Services Department. (Report should include cell number and I.D. number). Refer to T2.1.5</p>
C.4.6	<p>Invalid tenders</p> <p>Tenders shall be considered invalid and shall be endorsed and recorded as such in the tender opening record, by the responsible official who opened the tender, in the following circumstances:</p> <ul style="list-style-type: none"> a) if the tender offer is not submitted on the Form of Offer and Acceptance bound into this tender document (Form of Offer and Acceptance); b) if the tender is not completed in handwritten non-erasable black ink; c) if the offer has not been signed; and d) if the offer is signed, but the name of the tenderer is not stated or is indecipherable. e) The Company's name must not be used as signature.
C.4.7	<p>Negotiations with preferred tenderers</p> <p>The Employer may negotiate the final terms of a contract with tenderers identified through a competitive tendering process as preferred tenderers provided that such negotiation:</p> <ul style="list-style-type: none"> a) does not allow any preferred tenderer a second or unfair opportunity; b) is not to the detriment of any other tenderer; and c) does not lead to a higher price than the tender as submitted. <p>Minutes of any such negotiations shall be kept for record purposes.</p>

Clause	Data
C.4.8	<p>General supply chain management conditions applicable to tenders</p> <p>In terms of its Supply Chain Management Policy, the Municipality may not consider a tender unless the provider who submitted the tender:</p> <p>a) has furnished the Municipality with that provider's:</p> <ul style="list-style-type: none"> • full name; • identification number or company or other registration number; and • tax reference number and VAT registration number, if any; • Certificate of attendance at a compulsory site inspection, where applicable. <p>b) has indicated whether:</p> <ul style="list-style-type: none"> • the provider is in the service of the state, or has been in the service of the state in the previous twelve months; • the provider is not a natural person, whether any of the directors, managers, principal shareholders or stakeholders is in the service of the state, or has been in the service of the state in the previous twelve months; or • whether a spouse, child or parent of the provider or of a director, manager, shareholder or stakeholder referred to above is in the service of the state, or has been in the service of the state in the previous twelve months. <p>Irrespective of the procurement process followed, the Municipality is prohibited from making an award to:</p> <ul style="list-style-type: none"> • a person who is in the service of the state; • a juristic entity of which any director, manager, principal shareholder or stakeholder is in the service of the state; • an advisor or consultant contracted with the Municipality; or • a person, advisor or corporate entity involved with the bid specification committee, or a director of such corporate entity. <p>In this regard, tenderers shall complete T2.1.2, Part T2.1: Returnable Schedules: Compulsory Enterprise Questionnaire. Failure to complete this schedule will result in the tender being declared non-responsive.</p>
C.4.9	<p>Combating abuse of the Supply Chain Management Policy</p> <p>In terms of the Supply Chain Management Policy, the Employer may reject the tender of any tenderer if that tenderer or any of its directors has:</p> <p>a) failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months;</p> <p>b) failed, during the last five years, to perform satisfactorily on a previous contract with the City or any other organ of state after written notice was given to that tenderer that performance was unsatisfactory;</p> <p>c) abused the supply chain management system of the Municipality or has committed any improper conduct in relation to this system;</p> <p>d) been convicted of fraud or corruption during the past five years;</p> <p>e) wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or</p> <p>f) been listed with the Register of Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004) or has</p>

Clause	Data
	<p>been listed on National Treasury's database as a person or juristic entity prohibited from doing business with the public sector.</p> <p>In this regard, tenderers shall complete T2.1.16, T2.1.17 and T2.1.18, Part T2.1: Returnable Schedules: Declaration in terms of the Municipal Finance Management Act and Certificate of Independent Tender Determination. Failure to complete this schedule may result in the tender not being considered.</p>
C.4.10	<p>COIDA payments</p> <p>The Tenderer shall submit to Council a letter from the Department of Labour indicating his good standing with regard to COIDA payments. Refer to Schedule T2.1.25 and append the letter in this regard.</p>
C.4.11	<p>Price Variations</p> <p>The Contract Price shall not be subject to any contract price adjustment, the rates and prices tendered in the bills of quantities shall be final and binding throughout the period of the contract. However, price adjustments for variations in the costs of special materials may be applicable where the Employer/Employer's Agent specifies such materials and the relevant information in the Contract Data.</p> <p>Notwithstanding the above, if, as a result of any extension of time granted, the duration of the contract period exceeds one year, the contract will automatically be subject to contract price adjustment for that period by which the extended contract period exceeds such one year.</p>
C.4.12	<p>Requests for contract documents, or parts thereof, in electronic format</p> <p>The Employer shall not formally issue tender documents in electronic format as contemplated in C.2.13.2 and C.2.13.3 and shall only issue tender documents in hard copy. An electronic version of the issued tender documents may be made available to the tenderer, upon written request in terms of this clause, subject to the following:</p> <ol style="list-style-type: none"> Electronic copies of the contract document, or parts thereof, will only be provided to tenderers who have been issued with the tender documents as contemplated in C.1.2 in hardcopy. The electronic version shall not be regarded as a substitute for the issued tender documents. The Employer shall not accept tenders submitted in electronic format. Tenderers may not complete and submit a printed copy of the electronic version of the tender document or part thereof. Only those tenders that have been completed on the issued hard copy tender document shall be considered. The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic version provided in terms of this clause. The Employer further does not guarantee that the electronic version corresponds with the issued tender documents in all respects. Tenderers are alerted to the fact that electronic versions of the tender documents may not reflect any notices or addenda that amend the tender document. Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender document as contemplated in C.2.11, shall render the tender invalid. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract.

Clause	Data
	f) In requesting the electronic version of the tender document or parts thereof, the tenderer is deemed to have read, understood and accepted all of the above conditions.
C.4.13	<p>Bidders who do not submit a valid B-BBEE Status Level Verification Certificates or are non-compliant contributors to B-BBEE do not qualify for preference points for B-BBEE but should not be disqualified from the bidding process. They will score points out of 90 or 80 for price only and zero (0) points out of 10 or 20 for B-BBEE.</p> <p>(i) A trust, consortium or joint venture must submit a consolidated B-BBEE Status. Level Verification Certificate for every separate bid.</p>
C.4.14	Tenderers must complete T2.3.4: Special Conditions of Tender in the Returnable Schedules.
C.4.15	The local content will be dealt with in terms of all relevant circulars issued by the National Treasury in relation to local content.

T1.3 STANDARD CONDITIONS OF TENDER
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The Standard Conditions of Tender are as per CIDB Standard for Uniformity (SFU) in Engineering and Construction Works, August 2019, Annexure C.

C.1 General

C.1.1 Actions

C.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 C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

C.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.

C.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.

C.1.2 Tender Documents

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

C.1.3 Interpretation

C.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.

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

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

- a) **conflict of interest** means any situation in which:
- someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - incompatibility or contradictory interests exist between an employee and the tenderer who employs 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;

C.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.

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer 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 engineering and construction works specified in the invitation;
- b) funds are no longer available to cover the total envisaged expenditure; or
- c) no acceptable tenders are received.
- d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised

C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.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.

C.1.6.2 Competitive negotiation procedure

C.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 C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.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.

C.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their 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.

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

C.1.6.3 Proposal procedure using the two stage-system

C.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.

C.1.6.3.2 Option 2

C.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.

C.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.

C.2 Tenderer's obligations

C.2.1 Eligibility

C.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.

C.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.

C.2.2 Cost of tendering

C.2.2.1 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.

C.2.2.2 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.

C.2.3 Check documents

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

C.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.

C.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.

C.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.

C.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.

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.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.

C.2.10 Pricing the tender offer

C.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 fourteen (14) days before the closing time stated in the tender data.

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

C.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.

C.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.

C.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.

C.2.12 Alternative tender offers

C.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.

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

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

C.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 identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

C.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.

C.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.

C.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.

C.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.

C.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.

C.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.

C.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.

C.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.

C.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.

C.2.15 Closing time

C.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.

C.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.

C.2.16 Tender offer validity

C.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.

C.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.

C.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. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

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

C.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 C.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.

C.2.18 Provide other material

C.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.

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

C.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.

C.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.

C.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.

C.2.22 Return of other tender documents

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

C.2.23 Certificates

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

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

C.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.

C.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 (3) working 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 collected tender documents.

C.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.

C.3.4 Opening of tender submissions

C.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.

C.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 BBEE status level and time for completion for the main tender offer only.

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

C.3.5 Two-envelope system

C.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.

C.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 BBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.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.

C.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.

C.3.8 Test for responsiveness

C.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.

C.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.

C.3.9 Arithmetical errors, omissions and discrepancies

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

C.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.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.

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

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

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.

- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.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.

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

- a) Open and record tender offers received
- b) Determine whether or not tender offers are complete
- c) Determine whether or not tender offers are responsive
- d) Evaluate tender offers
- e) Determine if there are any grounds for disqualification
- f) Determine acceptability of preferred tenderer
- g) Prepare a tender evaluation report
- h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.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.

C.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;
- d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her 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.

C.3.14 Prepare contract documents

C.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.

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

C.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.

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.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.

C.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.

Annex G

(normative)

Alpha-numerics associated with the Contractor Grading Designations

In terms of Government Gazette 42561, dated 5 July 2019, the tender value range as set out in Table 8 in CIDB Regulation 17 has been amended. Table G1 below reflects the amended values that come into effect on 07 October 2019

Table G1: Contractor grading designations and associated parameters applicable after 7 October 2019

Contractor Grading Designation	Tender Value Range designation	Maximum value of contract that a contractor is considered capable of performing (R)
1 (class of construction works)	1	500 000
2 (class of construction works)	2	1 000 000
3 (class of construction works)	3	3 000 000
4 (class of construction works)	4	6 000 000
5 (class of construction works)	5	10 000 000
6 (class of construction works)	6	20 000 000
7 (class of construction works)	7	60 000 000
8 (class of construction works)	8	200 000 000
9 (class of construction works)	9	No Limit

T2 RETURNABLE DOCUMENTS AND SCHEDULES

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

T2.1 RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION		
T2.1.1	Tendering Entity and Authority of Signatory	Tick if completed and submitted
T2.1.2	Compulsory Enterprise Questionnaire	Tick if completed and submitted
T2.1.3	Contractor's Information	Tick if completed and submitted
T2.1.4	Schedule of Proposed Sub-Contractors	Tick if completed and submitted
T2.1.5	Schedule of estimated Local Labour to be employed on the contract	Tick if completed and submitted
T2.1.6	Preliminary Program	Tick if completed and submitted
T2.1.7	Estimated Monthly Cash-flow	Tick if completed and submitted
T2.1.8	Completion Certificates for Projects	Tick if completed and submitted
T2.1.9	Certificate of Contractor Registration Issued by the CIDB	Tick if completed and submitted
T2.1.10	Certificate of Authority for Joint Ventures	Tick if completed and submitted
T2.1.11	MBD2: Tax Clearance Certificate	Tick if completed and submitted
T2.1.12	MBD4: Declaration of Interest	Tick if completed and submitted
T2.1.13	MBD5: Declaration for Procurement Above R10 Million (VAT Included)	Tick if completed and submitted
T2.1.14	MBD6.1(a): Preference Certificate (80:20)	Tick if completed and submitted
T2.1.15	MBD6.2: Certificate of local content declaration (MBD 6.2)	Tick if completed and submitted
T2.1.16	MBD8: Declaration of Bidder's Past Supply Chain Management Practices	Tick if completed and submitted
T2.1.17	MBD9: Certificate of Independent Bid Determination	Tick if completed and submitted
T2.1.18	Declaration in terms of the MFMA (Act 56 of 2003) in terms of Municipal Rates and Taxes	Tick if completed and submitted
T2.1.19	Proof of Payment of Tender Participation Fee	Tick if completed and submitted
T2.1.20	Financial Standing	Tick if completed and submitted
T2.1.21	Clarification Meeting Certificate	Tick if completed and submitted
T2.1.22	Registration With The Bargaining Council	Tick if completed and submitted
T2.1.23	Letter of Good Standing to Relevant Authorities	Tick if completed and submitted

T2.2 RETURNABLE SCHEDULES REQUIRED FOR PREFERENCE SCORING		
T2.2.1	Broad Based Black Economic Empowerment (BBBEE) Certificate (MBD6.1)	Tick if completed and submitted
T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT (to be attached with submission)		
T2.3.1	Addenda / Notices Issued to Tenderers	Tick if completed and submitted
T2.3.2	Form of Indemnity	Tick if completed and submitted
T2.3.3	Occupational Health and Safety Plan	Tick if completed and submitted
T2.3.4	Special Conditions of Tender	Tick if completed and submitted
T2.3.5	Rates for Special Materials	Tick if completed and submitted
T2.4 OTHER DOCUMENTS AND AFFIDAVITS THAT WILL BE INCORPORATED INTO THE CONTRACT		
All documents contained in T2.1, T2.2 and T2.3 will form part of the offer submitted by the Tenderer and will form part of the Contract if the Tenderer's offer is accepted by the Employer..		

T2.1.1 TENDERING ENTITY AND AUTHORITY OF SIGNATORY

The purpose of this Schedule is to obtain the necessary information about the tendering entity, and to establish authority of the signatory to sign the tender, and any and all other documents and/or correspondence in connection with and relating to the tender, as well as to sign any contract, and any and all documentation, resulting from the award of the tender to the tendering entity.

INSTRUCTIONS FOR COMPLETING SCHEDULE:

Tendering entities may be sole proprietors, partnerships, trusts, companies, close corporations or consortia / joint ventures. Schedule 1 must be completed as follows:

1. If the tendering entity is a sole proprietor, trust, partnership, company or close corporation, complete both this page and Section 1 of this Schedule, and clearly mark Section 2 (both 2.1 and 2.2) as "Not Applicable".
2. If the tendering entity is a consortium or joint venture, then complete both this page and Section 2 (both 2.1 and 2.2) of this Schedule, and clearly mark Section 1 as "Not Applicable".
3. The contact details below must be the officially designated contact addresses which will be used by the *Employer* for any and all communication in regard to this tender, and if the tender is awarded, also during the execution of the contract.

THE TENDERING ENTITY IS: (*Circle the applicable option)

*A Sole Proprietor / Partnership / Trust / Company / Close Corporation / Consortium / Joint Venture.

NAME OF THE TENDERING ENTITY:

.....
(Legally correct full name of the tendering entity)

CONTACT DETAILS:

Physical Address:

.....

.....

..... (Postal Code)

Telephone number:

Mobile number:

Email address:

Schedule 1 continues with Section 1 on the next page.

Section 1: Resolution of board of *Trustees/Directors/Members/Partners

Notes:

1. *Delete which is not applicable.
2. IMPORTANT: This resolution must be signed by ALL the trustees/directors/members/partners of the tendering entity.
3. Should the number of trustees/directors/members/partners exceed the space available below, additional names and signatures must be supplied on a separate page.

RESOLUTION by the *Proprietor/Board of *Trustees/Directors/Members/Partners of:

.....
(Legally correct full name and registration number, if applicable, of the tendering entity)

Taken at On
(Place) (Date)

	Name of Proprietor/Trustee/Director/Member/Partner	Capacity	Signature
1			
2			
3			
4			
5			
6			

(Append separate page if not enough space)

RESOLVED that:

- ☐ The entity submits a bid to the THEEWATERSKLOOF MUNICIPALITY in respect of Tender No: ENG 05/2022/23 : UPGRADING OF BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS
- ☐ *Mr/Mrs/Ms:

in *his/her capacity as:
(Position in the entity)

and who will sign as follows:

AUTHORISED SIGNATURE OF TENDERER

be, and is hereby, authorised to sign the tender, and any and all other documents and/or correspondence in connection with and relating to the tender, as well as to sign any contract, and any and all documentation, resulting from the award of the bid to the entity mentioned above.

Date:.....

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

Section 2.1: Resolution to enter into Consortium / Joint Venture

Notes:

1. *Delete which is not applicable
2. A separate copy of this Section 2.1 must be duly completed, signed and submitted for each consortium/joint venture partner.
3. IMPORTANT: This resolution must be signed by ALL the trustees/directors/members/partners of the entity entering into the consortium/joint venture.
4. Should the number of representatives exceed the space available below, additional names and signatures must be supplied on a separate page.

RESOLUTION by the *Proprietor/Board of *Trustees/Directors/Members/Partners of:

.....
(Legally correct full name and registration number, if applicable, of the entity)

Taken at On
(Place) (Date)

	Name of Proprietor/Trustee/Director/Member/Partner	Capacity	Signature
1			
2			
3			
4			
5			
6			

(Append separate page if not enough space)

RESOLVED that:

1. The entity submits a bid, in consortium/joint venture with the following entities to the THEEWATERSKLOOF MUNICIPALITY in respect of Tender No ENG 05/2022/23 : UPGRADING OF BULK WATER SERVICES PHASE 5.2 : BULK WATER RISING MAINS

	Full legally correct name of entity	Registration No (if applicable)
1		
2		
3		
4		
5		
6		

(Append separate page if not enough space)

2. *Mr/Mrs/Ms:

in *his/her capacity as:
(Position in the entity)

and who will sign as follows:

AUTHORISED SIGNATURE

be, and is hereby authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the tender described in item 1 above.

3. The entity accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the consortium/joint venture deriving from, and in any way connected with, the contract to be entered into with the Department in respect of the tender under item 1 above.
4. The entity chooses as its domicilium citandi et executandi for all purposes arising from this consortium/joint venture agreement and the contract with the Department in respect of the tender under item 1 above, the physical address and contact details as furnished on the first page of this Schedule.

Date:.....

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

Section 2.2: Resolution to bid as Consortium / Joint Venture

Notes:

1. IMPORTANT. This resolution must be signed by ALL the representatives of the bidding consortium/joint venture.
2. Should the number of representatives exceed the space available below, additional names and signatures must be supplied on a separate page.
3. Enter the entity details and representative details in the same and corresponding numerical sequence into the respective tables below.

RESOLUTION of a meeting of the duly authorised representatives of the following legal entities who have entered into a consortium/joint venture to jointly tender for Tender No: ENG 05/2022/23 :UPGRADING OF BULK WATER SERVICES PHASE 5.2 : BULK WATER RISING MAINS

	Full legally correct name of entity	Registration No (if applicable)
1		
2		
3		
4		
5		
6		

(Append separate page if not enough space)

Held at (Place) (Date) On.....

	Name of authorised representative	Capacity	Signature
1			
2			
3			
4			
5			
6			

(Append separate page if not enough space)

RESOLVED that:

- 4 The abovementioned entities submit a bid in consortium/ joint venture to the THEEWATERSKLOOF MUNICIPALITY in respect of the tender mentioned above.

5 *Mr/Mrs/Ms:

in *his/her capacity as:
(Position in the bidding consortium/joint venture)

and who will sign as follows:

AUTHORISED SIGNATURE OF TENDERER

be, and is hereby, authorised to sign the tender, and any and all other documents and/or correspondence in connection with and relating to the tender, as well as to sign any contract, and any and all documentation, resulting from the award of the tender to the entities in the consortium/joint venture mentioned above.

6 The entities constituting the consortium/joint venture, notwithstanding its composition, shall conduct all business under the name and style of:

.....
(Consortium/joint venture name)

7 The entities to the consortium/joint venture accept joint and several liability with the parties above for the due fulfillment of the obligations of the consortium/joint venture deriving from, and in any way connected with, the contract to be entered into with the Department in respect of the tender mentioned above.

8 Any of the entities to the consortium/joint venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Department 30 days written notice of such intention. Notwithstanding such decision to terminate, the entities shall remain jointly and severally liable to the Department for the due fulfillment of the obligations of the consortium/joint venture as mentioned under item D above.

9 No entity to the consortium/joint venture shall, without the prior written consent of the other entities to the consortium and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the contract with the Department referred to herein.

10 The entities choose as domicilium citandi et executandi of the consortium/joint venture for all purposes arising from the consortium/joint venture agreement and the contract with the Department in respect of the tender mentioned above, the physical address and contact details as furnished on the first page of this Schedule.

Date:.....

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.2 COMPULSORY ENTERPRISE QUESTIONNAIRE

Note: In the case of a consortium/joint venture, separate enterprise questionnaires as per this schedule in respect of each consortium/joint venture partner must be completed and submitted.

Section 1: Name of enterprise: Address of enterprise:																							
Section 2: VAT registration number, if any:																							
Section 3.1: CIDB registration number, if any:	Section 3.2: Central Supplier Database Registration Number:																						
Section 4: Particulars of sole proprietors and partners in partnerships																							
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 33%;">Name*</th><th style="width: 33%;">Identity number*</th><th style="width: 33%;">Personal income tax number*</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>			Name*	Identity number*	Personal income tax number*																		
Name*	Identity number*	Personal income tax number*																					
* Complete only if sole proprietor or partnership and append separate page if more than 6 partners																							
Section 5: Particulars of companies and close corporations Company registration number..... Close corporation number..... Tax reference number.....																							
Section 6: Record of service of the state Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:																							

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

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

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

Append separate page if not enough space

Section 7: Record of spouses, children and parents in the service of the state

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

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

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

Append separate page if not enough space

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

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

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.3 CONTRACTOR'S INFORMATION

COMPLETE AS FULLY AS POSSIBLE, WHERE APPLICABLE

CONTRACTORS, SUPPLIERS AND SERVICES PROVIDERS (PROFESSIONAL AND NON-PROFESSIONAL)

PART ONE

1. NAME OF COMPANY	<input type="text"/>																				
	<input type="text"/>																				
2. ADDRESS: PHYSICAL	<input type="text"/>																				
	<input type="text"/>																				
POSTAL	<input type="text"/>																				
	<input type="text"/>																				
CODE	<input type="text"/>				WEBSITE http	<input type="text"/>															
					E-MAIL	<input type="text"/>															
2.1 PHYSICAL ADDRESS LOCAL AREA (if applicable)	IN	<input type="text"/>																			
		<input type="text"/>																			
CODE		<input type="text"/>																			
CONTACT PERSON (Name & Details)	<input type="text"/>																				
TELEPHONE	<input type="text"/>										FAX	<input type="text"/>									
CELL PHONE	<input type="text"/>																				
3. SECTOR (e.g. Construction)	<input type="text"/>																				
3.1 NATURE OF BUSINESS (e.g. Plumbing)	1.	<input type="text"/>																			
	2.	<input type="text"/>																			
4. REGISTERED AS:	<input type="checkbox"/>	CLOSE CORPORATION	<input type="checkbox"/>	PTY LTD COMPANY	<input type="checkbox"/>	CO-OPERATIVE															
	<input type="checkbox"/>	SOLE TRADER	<input type="checkbox"/>	LTD COMPANY																	
	<input type="checkbox"/>	PARTNERSHIP	<input type="checkbox"/>	NOT REGISTERED																	
4.1 REGISTERED NO. (if applicable)	<input type="text"/>																				
5. VAT REGISTRATION NO. (if applicable) (Attach certified copy)	<input type="text"/>																				
5.1 RATES SERVICES ACCOUNT NO.	<input type="text"/>																				
6. ANNUAL SALES/TURNOVER (Previous financial year)											20	R.....									
											20	R.....									
											20	R.....									
7. TOTAL ASSETS (Previous financial year)											20	R.....									
											20	R.....									
											20	R.....									

8. CURRENT CONTRACTS WITH COUNCIL
CONTRACT NO.

1. 2. 3.

DURATION

APPROXIMATE VALUE R R R

DATES CONTRACTS WERE SIGNED

PAYMENT TERMS

9. PREVIOUS CONTRACTS WITH COUNCIL (Last financial year only)

CONTRACT NO.

APPROXIMATE VALUE R R R

10. NAME AND ADDRESS OF AUDITORS/ACCOUNTING OFFICERS

NAME

ADDRESS

CODE

11. PROFESSIONALS ATTACHED TO THE CONCERN WITH QUALIFICATIONS (Name and Qualification)

Initials	Qualifications	Surname
<input type="text"/>	<input type="text"/>	<input type="text"/>

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Initials	Qualifications	Surname
<input type="text"/>	<input type="text"/>	<input type="text"/>

<input type="text"/>	<input type="text"/>	<input type="text"/>
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<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

PART 2**12. NAMES AND NUMBERS OF DIRECTORS/PARTNERS/MEMBERS - % SHAREHOLDING**

	Initials	Surname	ID Number	Sex	% Holding	*HDI
1.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
6.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

13. INDICATE ON WHICH DATE YOUR BUSINESS STARTED ITS CURRENT TYPE OF BUSINESS

I..... (FULL NAME) HEREBY CERTIFY THAT THE ABOVE
INFORMATION IS TRUE AND CORRECT

.....
SIGNATURE

.....
DATE

(ADDITIONAL INFORMATION MAY BE ATTACHED IF NECESSARY.)

*DEFINITION OF HISTORICALLY DISADVANTAGED INDIVIDUAL (HDI) MEANS A SOUTH AFRICAN CITIZEN.

- WHO, DUE TO THE APARTHEID POLICY THAT HAD BEEN IN PLACE, HAD NO FRANCHISE IN NATIONAL ELECTIONS PRIOR TO THE INTRODUCTION OF THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1983 (ACT NO. 110 OF 1983) OR THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1993 (ACT NO. 200 OF 1993) ("THE INTERIM CONSTITUTION") AND/OR

- WHO IS A FEMALE; AND/OR
- WHO HAS A DISABILITY

PROVIDED THAT A PERSON, WHO OBTAINED SOUTH AFRICAN CITIZENSHIP ON OR AFTER THE COMING INTO EFFECT OF THE INTERIM CONSTITUTION, IS DEEMED NOT TO BE A HDI.

T2.1.4 SCHEDULE OF PROPOSED SUB-CONTRACTORS

We notify you that it is our intention to employ the following Sub-contractors to work on this contract.

If we are awarded the 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.**

Refer to Schedule T2.3.4 – Special Conditions of Tender

No.	Name and Address of Proposed Subcontractor	Nature and Extent of Work	Previous Experience with Subcontractor
1.			
2.			
3.			
4.			
5.			
6.			

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.5 SCHEDULE OF LOCAL LABOUR TO BE EMPLOYED ON THE CONTRACT

DESCRIPTION	NUMBER				TOTAL
DESCRIPTION OF TASK / ELEMENT / TRADE	ARTISANS AND OR SKILLED LABOUR	SEMI-SKILLED LABOUR	LABOURERS	OTHERS	LABOUR / TASK
TOTAL ESTIMATED LOCAL LABOUR:					

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Note: where the same labour is to be re-used on various tasks the total labour/tasks and the total actual labour will differ

T2.1.6 PRELIMINARY PROGRAM

The tenderer shall attach a preliminary programme, to this schedule.

This programme, and all subsequent programmes shall be in the MS Projects format acceptable (approved by the Employer) time/activity form reflecting the proposed sequence, critical path, and tempo of the various activities and the quantities that will be carried out every week under each of the elements, comprising the work for this contract. The programme shall also indicate the point where the tenderer intends to commence work operations and the direction in which the work will proceed. The working hours shall be indicated.

The tenderer shall also take into account the additional requirements stated in the Project Specifications when drawing up the programme.

Details of the preliminary programme shall be appended to this Schedule.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.7 ESTIMATED MONTHLY CASH-FLOW

The Tenderer shall state below the estimated value of work to be completed every month, based on his preliminary programme and his tendered unit rates.

The amounts for Contingencies and Contract Price Adjustment must not be included. The Tenderer must make note of any cash-flow restrictions.

MONTH	VALUE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
TOTAL	

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.8 COMPLETION CERTIFICATES OF SIMILAR PROJECTS

In order to be considered for an appointment in terms of this bid, tenderers are required to have completed three (3) projects of a 6CE grading. Tenderers are required to list the projects in Schedule T2.1.8 and append the Engineer's completion certificate (or Employer's completion letter) of each to Schedule T2.1.8. The authenticity of completion certificates / letters appended will be verified with the relevant Engineer / Employer. Please also provide contact details of the Engineers / Employers listed in Schedule T2.1.8.

Municipality/Employer	Contact Person Name and Number	Project Description	Contract Value	Completion Certificate issue date

Tenderers are reminded to attach Completion certificates to this schedule.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.9 CERTIFICATE OF CONTRACTOR REGISTRATION ISSUED BY CIDB
--

The tenderer should attach to this page either a certificate of Contractor Registration issued by the Construction Industry Development Board or proof of registration in terms of the Construction Industry Development Board Act.

T2.1.10 CERTIFICATE OF AUTHORITY FOR JOINT VENTURES

a) This returnable schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in joint venture and hereby authorize Mr/Ms, authorized signatory of the company, close corporation or partnership, acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature..... Name..... Designation.....
		Signature..... Name..... Designation.....
		Signature..... Name..... Designation.....
		Signature..... Name..... Designation.....

Note: A copy of the Joint Venture Agreement showing clearly the **percentage contribution of each partner** to the Joint Venture shall be appended to this schedule.

T2.1.11 MBD2 : TAX CLEARANCE CERTIFICATE

MBD 2

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

1. In order to meet this requirement, Tenderers are required to complete in full the TCC 0001 form, "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally or on the website www.sars.gov.za. The Tax Clearance Certificate Requirements are also applicable to foreign Tenderers / individuals who wish to submit bids.
2. Applications for the Tax Clearance Certificates may also be made via e-Filing. In order to use this provision, taxpayers will need to register with SARS as e-Fileers through the website www.sars.gov.za
3. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
4. In bids where Consortia / Joint Ventures / Sub-Contractors are involved, each party must submit a separate Tax Clearance Certificate.
5. Tax Compliance Status (TCS) Pin as of 18 April 2016
 - a. In terms of the new Tax Compliance Status System implemented by SARS on 18 April 2016, taxpayers are now able to issue the municipality with a TCS Pin which can be used to verify a bidder's tax status online via SARS E-filing.
 - b. The taxpayer must issue the municipality with the following:

Bidders who are not in possession of an original Tax Clearance Certificate must provide at least 2 of the 3 numbers listed below in order to verify the Tax Clearance Certificate via SARS e-filing.

1.	Tax Reference Number:	
2.	Tax Compliance Status Pin:	
3.	Tax Clearance Certificate Number:	

- c. If a bidder is registered on the Theewaterskloof Municipality Supplier's Database and the Municipality is already in possession of an original tax clearance certificate which is valid on closing date of bid, it **MUST** be indicated as such on this page, whereby the attaching of a new tax clearance certificate to this page will not be needed.
6. Should a Tax Clearance Certificate not be verifiable on the SARS e-filing system, the bidder will be afforded an opportunity to submit a valid, verifiable Tax Clearance Certificate. It will result in the invalidation of the bid, should the bidder fail to provide a valid, verifiable Tax Clearance Certificate.

T2.1.12 MBD4 : DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹
2. Any person, having a kinship with persons in the service of the state¹, 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.
3. 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, shareholder.....

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? YES ☐ / NO ☐

3.8.1 If yes, furnish particulars.

.....

3.9 Have you been in the service of the state for the past twelve months? YES ☐ / NO ☐

3.9.1 If yes, furnish particulars.

.....

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

¹ MSCM Regulations: "In the service of the state" means to be –

(a) a member of –

i) any municipal council;
ii) any provincial legislature; or
iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;

(c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);

(e) a member of the accounting authority of any national or provincial public entity; or

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

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.

- 3.10.1 If yes, furnish particulars.
- 3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? YES ☐ / NO ☐
- 3.11.1 If yes, furnish particulars.
- 3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? YES ☐ / NO ☐
- 3.12.1 If yes, furnish particulars.
- 3.13 Are any spouse, child or parent of the company's directors trustees, managers, principal shareholders or stakeholders in service of the state? YES ☐ / NO ☐
- 3.13.1 If yes, furnish particulars.
- 3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract. YES ☐ / NO ☐
- 3.14.1 If yes, furnish particulars.

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

Full Name	Identify Number	State Employee Number

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

T2.1.13 MBD5: DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

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

1. Are you by law required to prepare annual financial statements for auditing?	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 a municipality or any other service provider in respect of which payment is overdue for more than 30 days?	YES		NO	
3.1. If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.				
3.2. If yes, provide particulars.				
4. 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?	YES		NO	
4.1. If yes, furnish particulars				
4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?	YES		NO	
If yes, furnish particulars				
CERTIFICATION I, the undersigned (name) _____, certify that the information furnished on this declaration form is correct. I accept that the state may act against me should this declaration prove to be false.				
SIGNATURE:		NAME (PRINT):		
CAPACITY:		DATE:		
NAME OF FIRM:				

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.14 MBD6.1(a): PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017 AND CODES OF GOOD PRACTICE

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

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

1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
 - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
- 1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable.
- 1.3 Points for this bid shall be awarded for:
- (a) Price; and
 - (b) B-BBEE Status Level of Contributor.
- 1.4 The maximum points for this bid are allocated as follows:

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

- 1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“prices”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;

-
- 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
 - (i) “**QSE**” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
 - (j) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEM

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

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

Where

- Ps = Points scored for price of bid under consideration
- Pt = Price of bid under consideration
- Pmin = Price of lowest acceptable bid

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

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

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

5. BID DECLARATION

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

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

- 6.1 B-BBEE Status Level of Contributor: = (maximum of 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

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

(Tick applicable box)

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

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

(Tick applicable box)

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

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

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

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:

8.2 VAT registration number:

8.3 Company registration number:

8.4 Type of Company/ Firm

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

[TICK APPLICABLE BOX]

8.5 Describe Principal Business Activities

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

8.6 Company Classification

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

[TICK APPLICABLE BOX]

8.7 Municipal Information

Municipality where business is situated:
Registered Account Number:
Stand Number:

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

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

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

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.15 CERTIFICATE OF LOCAL CONTENT DECLARATION (MBD 6.2)

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

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

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

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

Where

x is the imported content in Rand

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

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

The SABS approved technical specification number SATS 1286:2011 is accessible on http://www.thedti.gov.za/industrial_development/ip.jsp at no cost.

- 1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;

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

Item no	Description	Stipulated minimum threshold %
1	Steel Conveyance, Pipe Fittings and Specials	100%
2	Textile, Clothing, Leather and Footwear (PPE)	100%
3	Plastic Pipes	100%
4	Steel Products and components for Construction	100%
5	Valve Products and Actuators	70%
6	Electrical Cables	90%
7	Cement	100%

3. Does any portion of the goods or services offered have any imported content?

(Tick applicable box)

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

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

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

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used. The rates of exchange tendered by the bidder will be verified for accuracy.

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

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

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

IN RESPECT OF BID NO.

ISSUED BY: (Procurement Authority / Name of Institution):

.....
NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thdti.gov.za/industrial_development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, (full names),

do hereby declare, in my capacity as

.....
of(name of bidder entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
 - (ii) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

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

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

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

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

ANNEXURE C	SATS 1286.2011
Local Content Declaration – Summary Schedule	

(C1) Tender No.	ENG 05/2022/23					NOTE: VAT to be excluded from all calculations
(C2) Tender Description	UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2 : BULK WATER RISING MAINS					
(C3) Designated product(s)						
(C4) Tender Authority	Theewaterskloof Municipality					
(C5) Name of Tendering Entity						
(C6) Tender Exchange Rate	Pula		EU		GBP	
(C7) Specified local content %						

		Calculation of local content						Tender summary			
Tender Item No's	List of Items	Tender Price – each	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)	Tender Quantity	Total tender value	Total exempted imported content	Total imported content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
A2.2	Personal Protective Clothing & Equipment							Sum			
B2	Structural (Cement)							Sum			
B2	Structural (Steel)							Sum			
C1	Pipe Fitting Schedule							Sum			
C2	Pipe Schedule							Sum			
C3	Pipe Valves							Sum			
C4	Pumps							Sum			
D2	Distribution Boards							Sum			
D3, D4, D6, D7	Cables							Sum			
D5	Wireways							Sum			
D8	Standby Generator							Sum			
(C20) Total tender value											
(C21) Total Exempt imported content											
(C22) Total Tender value net of exempt imported content											
(C23) Total Imported content											
(C24) Total local content											
(C25) Average local content % of tender											

SIGNATURE OF TENDERER AS PER LOCAL CONTENT DECLARATION

DATE

ANNEXURE D

SATS 1286.2011

Imported Content Declaration – Supporting Schedule to Annexure C

<i>(D1)</i>	Tender No.	ENG 05/2022/23					NOTE: VAT to be excluded from all calculations									
<i>(D2)</i>	Tender Description	UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2 : BULK WATER RISING MAINS														
<i>(D3)</i>	Designated product(s)															
<i>(D4)</i>	Tender Authority	Theewaterskloof Municipality														
<i>(D5)</i>	Tendering Entity's Name															
<i>(D6)</i>	Tender Exchange Rate	Pula		EU		GBP										

A. Exempted imported content				Calculation of imported content					
Tender item no's	Description of imported content	Local supplier	Overseas supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost
<i>(D7)</i>	<i>(D8)</i>	<i>(D9)</i>	<i>(D10)</i>	<i>(D11)</i>	<i>(D12)</i>	<i>(D13)</i>	<i>(D14)</i>	<i>(D15)</i>	<i>(D16)</i>

Summary	
Tender Quantity	Exempted imported value
<i>(D17)</i>	<i>(D18)</i>

(D19) Total exempt imported value

This total must correspond with Annex C – C21

B. Imported directly by the Tenderer				Calculation of imported content					
Tender item no's	Description of imported content	Unit of measure	Overseas supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost
<i>(D20)</i>	<i>(D21)</i>	<i>(D22)</i>	<i>(D23)</i>	<i>(D24)</i>	<i>(D25)</i>	<i>(D26)</i>	<i>(D27)</i>	<i>(D28)</i>	<i>(D29)</i>

Summary	
Tender Quantity	Total imported value
<i>(D30)</i>	<i>(D31)</i>

(D32) Total imported value by tenderer

ANNEXURE D – Continued										SATS 1286.2011	
Imported Content Declaration – Supporting Schedule to Annexure C											
										NOTE: VAT to be excluded from all calculations	
C. Imported by a 3rd party and supplied to the Tenderer				Calculation of imported content						Summary	
Description of imported content	Unit of measure	Local supplier	Overseas supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3 rd party											
D. Other foreign currency payments			Calculation of foreign currency payments							Summary of Payments	
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender rate of exchange						Local value of payments	
(D46)	(D47)	(D48)	(D49)	(D50)						(D51)	
(D52) Total of foreign currency payments declared by tenderer and/or 3 rd party											
(D53) Total of imported content and foreign currency payments – (D32), (D45) and (D52) above											
SIGNATURE OF TENDERER AS PER LOCAL CONTENT DECLARATION									This total must correspond with Annex C – (C23)		

DATE _____

ANNEXURE E

SATS 1286.2011

Local content Declaration – Summary Schedule to Annexure C

(E1) Tender No.	ENG 05/2022/23	NOTE: VAT to be excluded from all calculations
(E2)Tender Description	UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS	
(E3) Designated product(s)		
(E4) Tender Authority	Theewaterskloof Municipality	
(E5) Tendering Entity's Name		

LOCAL PRODUCTS (Goods, Services and Works)

Description of items purchased	Local suppliers	Value
(E6)	(E7)	(E8)
(E9) Total local products (Goods, service and works)		

(E10) Manpower costs (Tenderer's own manpower cost)

(E11) Factory overheads (Rental, depreciation & amortization, utility costs, consumables, etc.)

(E12) Administration overheads and mark-up (Marketing, insurance, financing interest, etc.)

(E13) Total local content

This total must correspond with Annex C – C24

SIGNATURE OF TENDERER AS PER LOCAL CONTENT DECLARATION

DATE

T2.1.16 MBD8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

Item	Question	Yes	No
4.1	<p><i>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?</i></p> <p>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p>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.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>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)?</p> <p>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.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		

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

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

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

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.17 MBD9: CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

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

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

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

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

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

-
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.18 DECLARATION IN TERMS OF THE MFMA (ACT 56 OF 2003) IN TERMS OF MUNICIPAL RATES AND TAXES
--

NAME OF ENTERPRISE / TENDERER*:

I the undersigned, who warrants that he/she is duly authorized to do so on behalf of the abovementioned enterprise/tenderer, do hereby declare that, to the best of my knowledge, neither the enterprise nor any of its directors, members or partners has:

- a. failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months;
- b. failed, during the last five years, to perform satisfactorily on a previous contract with the Theewaterskloof Municipality or any other organ of state after written notice was given to that tenderer that performance was unsatisfactory;
- c. abused the supply chain management system of the Theewaterskloof Municipality or has committed any improper conduct in relation to this system;
- d. been convicted of fraud or corruption during the past five years;
- e. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
- f. been listed with the Register of Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004) or has been listed on National Treasury's database as a person or juristic entity prohibited from doing business with the public sector.

I acknowledge that any misrepresentation in respect of this declaration may be regarded as reason to cancel any contract arising out of this tender.

* where the entity tendering is a joint venture, each party to the joint venture must sign a declaration in terms of the Municipal Finance Management Act and attach it to this schedule

DOCUMENTARY EVIDENCE IN TERMS OF GOOD STANDING WITH MUNICIPAL RATES AND TAXES AND SERVICE CHARGES SHALL BE ATTACHED TO THIS FORM.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.1.19 PROOF OF PAYMENT OF TENDER PARTICIPATION FEE

The tenderer should attach to this page proof of payment of the tender participation fee as stipulated in the tender advertisement.

T2.1.20 FINANCIAL STANDING

The Tenderer should append proof of bank grading to this schedule

T2.1.21 CLARIFICATION MEETING CERTIFICATE

Note: This site/clarification meeting certificate must be taken along to the meeting, completed and signed by a duly authorised and knowledgeable representative of the tenderer, able to comprehend and interpret site conditions and information conveyed, thereby enabling the tenderer to put forward an informed bid, with full understanding of the factors likely to influence the work and cost thereof. This certificate MUST be countersigned by a representative of the *Employer* at the time of the meeting, failure of which will render the tender non-compliant and invalid. The attendance register at the site/clarification meeting must also be signed by the tenderer's representative.

This is to certify that I,
(Name)

representing:
(Tenderer)

attended the site clarification meeting on:
(Date)

held at:
(Place)

I am sufficiently knowledgeable and experienced to be able to understand all aspects of the tender and work to be undertaken as described in this tender document. I have made myself familiar, as far as is practically possible, with all local conditions, risks, contingencies and other circumstances likely to influence the execution of the work and the cost thereof. I further certify that I am satisfied with the description of the work and explanations given at the clarification meeting and that I understand fully the work to be done, as specified and implied, in the execution of this contract.

SIGNED ON BEHALF OF TENDERER

SIGNED ON BEHALF OF <i>Employer</i>

Name of *Employer's* Representative:

Date:

T2.1.22 REGISTRATION WITH THE BARGAINING COUNCIL

Tenderers should attach to this schedule a copy of their **certificate of compliance** issued by the Bargaining Council for the Civil Engineering Industry (BCCEI).

T2.1.23 LETTER OF GOOD STANDING TO RELEVANT AUTHORITIES

The tenderer should attach to this page a letter from the relevant authorities indicating his good standing with regard to UIF payments and COIDA. Each party to a joint venture or consortium shall submit separate documents

T2.2.1	BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE) CERTIFICATE (MBD6.1)
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The tenderer must attach to this page a certified copy of their valid B-BBEE level of contribution certificate or affidavit in respect of his/her company, close corporation, or partnership. In the case of a joint venture between two or more firms, the tenderer must attach a certified copy of the valid B-BBEE Certificate or Affidavit for each of the joint venture partners

T2.3.1 ADDENDA / NOTICES ISSUED TO TENDERERS

We confirm that the following communications / addenda / notice(s) to tenderers received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer (If no addenda/notices mark schedule NIL, if not enough space, attach additional pages):

ADDENDUM No	DATE	SUBJECT MATTER OF ADDENDUM / NOTICE

Documentary evidence of addenda / notices issued to tenderers indicating proof of receipt must accompany this Schedule.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL)

T2.3.2 FORM OF INDEMNITY

The tenderer must complete this page

THE MUNICIPAL MANAGER
Theewaterskloof Municipality

INDEMNITY

Given by(Name of Company)
of
.....
(registered address of Company) a company incorporated with limited liability according to the
Company Laws of the Republic of South Africa (hereinafter called the Contractor),
represented herein by
..... (Name of Representative) in his capacity as
..... (Designation) of the Contractor is
duly authorised hereto by a resolution dated
To sign on behalf of the Contractor.

WHEREAS THE CONTRACTOR HAS ENTERED INTO A CONTRACT DATED
WITH THEEWATERSKLOOF MUNICIPALITY (HEREINAFTER CALLED THE MUNICIPALITY)
WHO REQUIRE THIS INDEMNITY FROM THE CONTRACTOR FOR THE

CONTRACT: ENG 05/2022/23 – UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAINS

NOW THEREFORE THIS DEED WITNESSES that the Contractor does hereby indemnify and hold harmless the Municipality in respect of all loss or damage that may be incurred or sustained by the Municipality by reason of or in any way arising out of or caused by operations that may be carried out by the Contractor in connection with the aforementioned contract; and also in respect of all claims that may be made against the Municipality in consequence of such operations, by reason of or in any way arising out of any accidents or damage to life or property or any other cause whatsoever; and also in respect of all legal or other expenses that may be incurred by the Municipality in examining, resisting or settling any such claims; for the due performance of which the Contractor binds itself according to law.

SIGNATURE:

THUS DONE AND SIGNED for and on behalf on the Contractor.

At on the day of
In the presence of the subscribing witnesses.

AS WITNESSES

1. (Designation)
2. (Designation)

T2.3.3 OCCUPATIONAL HEALTH & SAFETY PLAN

OCCUPATIONAL HEALTH AND SAFETY ACT (Act No 85 of 1993)

Tenderers are to note the requirements of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2014 issued in terms of Section 43 of the Act. The Tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith.

In this regard the Tenderer shall prepare and attach a Health and Safety Plan in respect of the Works in order to demonstrate the necessary competencies and resources to perform the construction work all in accordance with the Act and Regulations. Such Health and Safety Plan shall cover inter-alia the following details:

- (1) Management Structure, Site Supervision and Responsible Persons including a succession plan.
- (2) Contractor's induction training programme for employees, sub-contractors and visitors to the Site.
- (3) Health and safety precautions and procedures to be adhered to in order to ensure compliance with the Act, Regulations and Safety Specifications.
- (4) Regular monitoring procedures to be performed.
- (5) Regular liaison, consultation and review meetings with all parties.
- (6) Site security, welfare facilities and first aid.
- (7) Site rules and fire and emergency procedures.

Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements.

The Tenderer shall also take into account the additional requirements stated in the Scope of Work when drawing up the Health and Safety Plan for the contract.

Details of the Health and Safety Plan shall be appended to this Schedule.

SIGNATURE:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

Number of additional pages appended by the tenderer to this Schedule:(If nil, enter NIL).

T2.3.4 SPECIAL CONDITIONS OF TENDER

SPECIAL CONDITIONS OF TENDER

A. CONDITIONS APPLICABLE TO THE PROMOTION OF MUNICIPAL LOCAL AND SOCIO-ECONOMIC DEVELOPMENT

For the unskilled labour portion of this tender the Service Provider MUST employ 100% local labourers from Grabouw where upgrade is taking place. Contractor must comply with EPWP requirements for all unskilled labour and to supply the necessary documents to Theewaterskloof Municipality to register them. Complete Schedule T2.1.5 in this regard. The service provider must pay in line with industry related wages

The service provider is required to oversee the transfer of skills to a contractor local to the Theewaterskloof Municipal area. The service provider must subcontract Schedule D of the Bill of Quantities to a local 1CE CIDB registered contractor, on a labour only basis.

Subcontracting: If the Service Provider intends to make use of subcontractors for any other services: Only subcontractors local to Theewaterskloof Municipal area will be accepted. The Service provider must submit substantive evidence and relevant information with its tender proposal per **Schedule T2.1.4**. Should no subcontractors for the service in question be available within the municipal area, the service provider must provide proof of the unsuccessful search for such a subcontractor

Bedding and blanket sand must be sourced within the boundaries of the Municipality

All Construction Equipment that the contractor should lease MUST be from the local Theewaterskloof area, for example, Front Loader/Digger, concrete mixer, compressor, etc. Construction Equipment not available from the Theewaterskloof area must be substantiated by proof of such.

B. CONDITIONS APPLICABLE AFTER CLOSING OF TENDER BUT BEFORE A SELECTED SERVICE PROVIDER IS ANNOUNCED (For information only)

Any additional information upon request must be submitted in writing within 48 hours of receipt.

C. CONDITIONS APPLICABLE AFTER AWARDING OF THE TENDER (For information only)

The service provider must provide the Municipality with a completed list of Local labourers used & Local Spending; with monthly claims.

The aforesaid list must be updated and submitted together with the service providers progress report and monthly invoice, inclusive of the following details:

- a. Salary / wages spent on local employees versus total wages / salary budget at site
- b. Number of local employees employed versus per total workforce at site
- c. Amount spent on local suppliers versus budgeted

Any amendments to the list requires prior approval from the Municipality.

The service provider must provide the Municipality with a certificate confirming payments made to the local EME sub-contractor, if applicable. This certificate must be updated and submitted together with the service providers progress report and invoice.

Any changes in sub-contractors requires prior approval from the Municipality.

I HEREBY DECLARE THAT I WILL COMPLY WITH ALL THE SPECIAL CONDITIONS OF TENDER AS SET OUT ABOVE.

SIGNATURE:

CONTRACT

C1 AGREEMENT AND CONTRACT DATA

- C1.1 Form of Offer and Acceptance
- C1.2a Contract Data (Part 1)
- C1.2b Contract Data (Part 2)
- C1.3 Form of Guarantee (Pro Forma)
- C1.4 Confirmation of Receipt of Contract (Pro Forma)

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:

CONTRACT NUMBER: ENG 05/2022/23

CONTRACT NAME: UPGRADING OF BULK WATER SERVICES PHASE 5.2 : BULK WATER RISING MAINS

The Tenderer, identified in the offer signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the tender schedules, and by submitting this offer has accepted the conditions of tender.

By the representative of the Tenderer, deemed to be duly 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 offered total of the prices inclusive of Value-Added Tax is:

.....
.....
..... Rand (in words)

R..... (in figures)

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

For and on behalf of the Tenderer:

Name

Capacity

Signature Date:

Name and address of tenderer:

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

Witness Name

Witness Signature Date:

ACCEPTANCE

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

The terms of the Contract are contained in:

- Part C1: Agreements and Contract data (which includes this agreement)
- Part C2: Pricing data
- Part C3: Scope of work
- Part C4: Site Information and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

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

The Tenderer shall, within two weeks after receiving a completed copy of this agreement including the schedule of deviation (if any), contact the Employer's Agent (whose details are given in the Contract data) to arrange the delivery of any securities, bonds, guarantees, proof insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract data at or just after, the date this Agreement comes into effect. Failure to fulfil any of 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 (5) working days of the date of such receipt, notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding Contract between the parties.

For and on behalf of the Employer:

Name
Capacity
Signature Date:

Name and address of employer:

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

Witness Name
Witness Signature Date:

SCHEDULE OF DEVIATIONS

Notes:

- 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.
- 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 be the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.
- 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.
- 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.

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, be the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Subject
Details
.....
Subject
Details
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Subject
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Subject
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By the duly authorized representatives signing this schedule of deviations, the Employer and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the returnable schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

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

C1.2a CONTRACT DATA (PART 1)

The General Conditions of Contract for Construction Works, Third Edition, (2015) published by the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House, 1685, are applicable to this Contract and are obtainable from www.saice.org.za. Copies of these Conditions of Contract may be obtained at the Tenderer's own cost from the SAICE (Tel: 011-805 5947).

The following Contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract.

Clause	Description
1.1.1.5	The Commencement Date shall be the date on which the Contractor receives a copy of the signed Form of Offer and Acceptance and schedule of deviations if applicable.
1.1.1.13	The Defects Liability Period is 12 Months, measured from the date of the Certificate of Completion.
1.1.1.14	The time for achieving Practical Completion is 12 calendar months, inclusive of the 28 day period referred to in Clause 5.3.2 below, and inclusive of non-working days referred to in Clause 5.8.1 below, but exclusive of special non-working days (Clause 5.8.1). The operation and maintenance section of the works will commence at practical completion and will run continuously for a period of 12 months where after the Works have been handed over to the end user.
1.1.1.15	The Employer is THEEWATERSKLOOF MUNICIPALITY.
1.1.1.16	The Employer's Agent is Lukhozi Consulting Engineers (Pty) Ltd represented by an employee duly authorised to do so. Add the following to the clause: Any reference to the term "Engineer" in this Contract shall mean "Employer's Agent" and vice versa.
1.1.1.17	Add the following to the clause: Any reference to the term "Engineer's Representative" in this Contract shall mean "Employer's Agent's Representative" and vice versa.
1.1.1.26 1.1.1.27	The pricing strategy is Re-measurement Contract.
1.2.1	Add the following to the clause: 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 and telephone number of the Employer is: THEEWATERSKLOOF MUNICIPALITY 6 PLEIN STREET CALEDON 7230 Contact Person: Mr Nigel Kayser Email: Nigelka@twk.gov.za Tel: 028 214 3300

Clause	Description
1.2.1.2	<p>The address and telephone number of the Employer's Agent is:</p> <p>LUKHOZI CONSULTING ENGINEERS (PTY) LTD OFFICE 111, 1ST FLOOR TIJGERPARK 3 WILLIE VAN SCHOOR DRIVE BELLVILLE 7530</p> <p>Contact Person: Mr Naas Van Zyl Email: n.vanzyl@lukhozi.co.za Tel: 021 686 2550</p>
2.4.1	<p>The following additional clause applies: -</p> <p>In the event of any discrepancy or conflict between any parts of the Contract Documents, the order of precedence shall be as follows:</p> <ol style="list-style-type: none"> 1. Project Particular Specifications 2. Special Conditions of Contract 3. General Conditions of Contract 4. Conditions of Tender 5. Generic Specifications 6. Contract Drawings 7. Bill of Quantities
3.2.3	<p>The Engineer is, in terms of his appointment by the Employer for the design and administration of the Works included in the Contract, required to obtain the specific approval of the Employer for the execution of the following duties:</p> <p>3.2.3.1 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 10.1 of these conditions.</p> <p>3.2.3.2 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 valuation 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.</p> <p><i>3.2.3.3 The approval of any claim submitted by the Contractor in terms of Clause 10.1.</i></p>
3.2.4	<p>Add the following to the clause:</p> <p>The Employer has appointed an independent Health and Safety Agent (HSA) on this Contract in terms of the Construction Regulations, 2014 as promulgated in terms of section 43 of the Occupational Health and Safety Act, 1993.</p> <p>The Contractor shall prepare a Health and Safety Plan in accordance with the Site Specific Health and Safety Specification and submit such to the appointed HSA for legal compliance assessment and verification / approval prior to any works commencing.</p>

Clause	Description
3.2.5	<p>Add the following additional sub-clause:</p> <p>The Employer's Agent shall have the authority to suspend, without any additional cost, portions of the Works if there are any acceptance test results outstanding (including level control), as required in terms of the relevant standardised or project specific specifications.</p>
3.2.6	<p>The following additional clause applies:-</p> <p>The Employer or the Employer's Agent under delegated authority, reserves the right to obtain the services of consultants on any matter pertaining to this contract; the employment of such consultants forms no part of this contract; a consultant's advice and/or documentation is to be followed only if the Employer's Agent or the Employer's Agent Representative so instructs</p>
4.3.1	<p>Add the following to the clause:</p> <ul style="list-style-type: none"> • The Contractor shall comply with the: • Basic Conditions of Employment Act, Act No 75 of 1997; • National Environmental Management Act, Act 107 of 1998; • The Basic Conditions of Employment Act, Act No 75 of 1997; • Occupational Health and Safety Act, Act No 85 of 1993; • Construction Regulations 2014; • Health and Safety Specification prepared by the Employer in terms of the Construction Regulations 2014; • Environmental Management Programme; and • Any and all other relevant applicable laws, regulations, statutory provisions and agreements.
5.3.1	<p>The documentation required before Commencement of the Works are:</p> <ul style="list-style-type: none"> • Health and Safety Plan (Refer to clause 4.3) • Environmental Management Plan • Initial Programme (Refer to clause 5.6) • Security (Refer to clause 6.2) • Insurance (Refer to clause 8.6) • CV of Contracts Manager (Refer to clause 4.12) • CV of Construction Manager/ Site Agent (Refer to clause 4.12) • CV of Occupation Health and Safety Officer (SACPMP) (Refer to clause 4.12) • Letter of Good Standing with the Civil Engineering Bargaining Council
5.3.2	<p>The Contractor is required, within 28 days of the Commencement Date, to submit the documents listed in Contract Data clause 5.3.1 to the Employer's Agent for his approval.</p>
5.4.2	<p>Access to and possession of the Site shall not be exclusive to the Contractor, but as set out in section C3.4. Site Usage.</p> <p>The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.</p>
5.7.3	<p>Add the following to the clause:</p>

Clause	Description																								
	No such instruction by the Employer's Agent 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.																								
5.1.1 5.8.1	<p>The non-working days are Sundays.</p> <p>The special non-working days are:</p> <p>All gazetted public holidays falling outside the year end break; and</p> <p>The yearend break commencing and ending on dates published by SAFCEC.</p>																								
5.8.1.5	<p>Add the following new sub-clause:</p> <p>The cost of supervision by the Employer's Agent or his representatives outside of normal working hours (Monday to Friday) shall be to the Contractor's account.</p> <p>A minimum of 48 hours notification of intent to work outside normal working hours shall be regarded as sufficient notice as set out in 5.8.1.</p>																								
5.12.2.2	<p>Add the following to the clause:</p> <p>Abnormal Rainfall</p> <p>The extension of time to be granted for abnormal rainfall shall be calculated by the formula:</p> $V = (N_w - N_n) + \frac{R_w - R_n}{20}$ <p>Where:</p> <p>V = Extension of Time in calendar days in respect of the calendar month under consideration</p> <p>Nw= Actual number of days during the calendar month under consideration on which a rainfall of 10 mm and more has been recorded</p> <p>Rw= Actual total rainfall in mm recorded during the calendar month under consideration</p> <p>Nn= Average number of days, derived from rainfall records, on which rainfall of 10 mm and more has been recorded during the relevant calendar month as per the data tabulated hereinafter</p> <p>Rn= Average total rainfall in mm for the relevant calendar month, derived from rainfall records, as tabulated hereinafter</p> <p>Where the extension of time due to abnormal rainfall has to be calculated for portion of a calendar month, pro rata values shall be used. Should V be negative for any particular month and should its absolute value exceed the corresponding value of N_n, then V shall be taken as being equal to minus N_n. The total extension of time to be granted shall be the algebraic sum of all the monthly extensions provided that if this total is negative then the extension of time to be granted for abnormal rainfall shall be taken as zero. The rainfall records applicable in respect of this Contract are those recorded at the Weather Station nearest to the site and shall be used for calculating the extension of the Time for Completion on account of abnormal rainfall.</p> <table><tr><th>MONTH</th><th>N_n</th><th>R_n</th></tr><tr><td>January</td><td>0.2</td><td>9.9</td></tr><tr><td>February</td><td>0.3</td><td>12.9</td></tr><tr><td>March</td><td>0.6</td><td>17.1</td></tr><tr><td>April</td><td>1.5</td><td>45.8</td></tr><tr><td>May</td><td>2.9</td><td>74.6</td></tr><tr><td>June</td><td>3.4</td><td>94.5</td></tr><tr><td>July</td><td>3.1</td><td>92.0</td></tr></table>	MONTH	N _n	R _n	January	0.2	9.9	February	0.3	12.9	March	0.6	17.1	April	1.5	45.8	May	2.9	74.6	June	3.4	94.5	July	3.1	92.0
MONTH	N _n	R _n																							
January	0.2	9.9																							
February	0.3	12.9																							
March	0.6	17.1																							
April	1.5	45.8																							
May	2.9	74.6																							
June	3.4	94.5																							
July	3.1	92.0																							

Clause	Description		
	August	2.5	73.2
	September	1.4	46.7
	October	0.8	31.6
	November	0.6	21.5
	December	0.3	15.5
	TOTAL	17.6	535.3
5.13.1	The penalty for failing to complete the whole of the Works is R 5000 per calendar day.		
5.14.1	The requirements for Practical Completion are: All pipelines and structures are complete; the Employer's Agent has been provided with all relevant test results including as-built levels and positions; the sewage can flow through from the start to the outlet without damming or flooding; and all related reinstatement of existing services are complete.		
5.16.3	The latent defect period is 10 years for civil works. The latent defects period shall commence on the date of the Final Approval Certificate.		
6.2	Delete clauses 6.2.1 to 6.2.3 and replace with the following: 6.2.1 The security to be provided by the contractor shall be a Fixed Performance Guarantee of 10% of the Contract Sum plus retention of 10% of the value of the Works, subject to a 5 % limit of retention as stated in 6.10.3. The Fixed Performance Guarantee shall be from an Insurance Company or Financial Institution that is registered with the Financial Services Board in terms of the Financial Intelligence Centre Act. The Fixed Performance Guarantee shall be jointly and severally bound with the Contractor, in accordance with the provisions of the Form of Guarantee. Any other form of security including a Retention Money Guarantee is not permitted. 6.2.2 The Fixed Performance Guarantee shall be submitted within the time period stated in clause 5.3.2 and shall be provided strictly in accordance with the Pro Forma contained in C1.3. 6.2.3 The Contractor shall ensure that the fixed performance guarantee remains valid and enforceable until the issue of the Certificate of Completion.		
6.8.1	Should the rated tendered be unrealistically high or low, the Employer's Agent may instruct the contractor to balance the rates while the contract sum will stay firm, before commencement of construction. The revised balanced rates will be final and binding. And the value of the payment certificates is to be calculated in accordance with the revised rates and/or prices of the tender throughout the period of the Contract		

Clause	Description
6.8.2	Contract Price Adjustment is not applicable to this contract.
6.10.1.5	The percentage advance on plant and materials not yet built into the Permanent Works is 80 %.
6.10.3	The percentage retention shall be 10 % of payments due, up to the "Limit of retention money" which shall be 5 % of the Contract Sum.
8.6.1.1.2	Not required.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is 5% (five percent) of the value of the damage and/or loss.
8.6.1.3	The limit of indemnity for liability insurance is R 20 000 000 (In words Twenty Million Rand).
8.6.1.4	Ground support insurance is required.
9.2.1	Delete "or" at the end of Clause 9.2.1.3.7 and add the following three Clauses after Clause 9.2.1.3.8: 9.2.1.3.9 Has failed to provide the required insurances or fixed performance guarantee within the prescribed time; 9.2.1.3.10 Has committed a corrupt or fraudulent act during the tender process or the execution of the Contract; or 9.2.1.3.11 Has benefitted from an official or other role player committing any corrupt or fraudulent act during the tender process or in the execution of the Contract.
10.5.1	Dispute resolution shall be by ad-hoc adjudication.
10.5.3	The number of Adjudication Board Members to be appointed is one (1).
10.7.1	The determination of disputes which are unresolved in terms of Clause 10.5.3 shall be by arbitration.

C1.2b CONTRACT DATA (PART 2)

Clause	Description																																	
1.1.1.9	The name of the Contractor is: 																																	
1.2.1.2	The address of the Contractor is: 																																	
6.5.1.2.3	The percentage allowance to cover overhead charges is 10%.																																	
6.8.3	<div>The Contractor is to list below any special materials on which any increase or decrease in price must be considered separately from the Contract Price Adjustment formula:</div> <table border="1"><thead><tr><th>Type of Material</th><th>Unit</th><th>Rate or Price</th></tr></thead><tbody><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></tbody></table>	Type of Material	Unit	Rate or Price																														
Type of Material	Unit	Rate or Price																																

C1.3 FORM OF GUARANTEE (PRO FORMA)

PERFORMANCE GUARANTEE

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:

"Employer's Agent" means:

"Works" means:

"Site" means:

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

"Contract Sum" means: The accepted amount inclusive of tax of R.....

Amount in words:

"Guaranteed Sum" means: The maximum aggregate amount of R.....

Amount in words:

Type of Performance Guarantee: Fixed

"Expiry Date" means: Date of issue of the Certificate of Completion

CONTRACT DETAILS

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

1. FIXED PERFORMANCE GUARANTEE

1.3 Where a fixed Performance Guarantee has been selected. The Guarantor's liability shall be limited to the amount of the Guarantee Sum.

-
- 1.4 The Guarantor's period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.
- 1.5 The Employer's Agent 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.
2. **CONDITIONS APPLICABLE TO FIXED PERFORMANCES GUARANTEES:**
- 2.3 The Guarantor hereby acknowledges that:
- 2.3.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be constructed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.
- 2.3.2 Its obligation under this Performance Guarantee is restricted to the payment of money.
- 2.4 Subject to the Guarantor's maximum liability referred to in 1.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 2.2.1 to 2.2.3:
- 2.4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent 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 2.2.2;
- 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 2.2.1 and the sum certified has still not been paid;
- 2.4.3 A copy of the aforesaid payment which entitles the Employer to receive payment in terms of the Contract of the sum certified in 2.2.
- 2.5 Subject to the Guarantor's maximum liability referred to in 1.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
- 2.5.1 The Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 2.3; or
- 2.5.2 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 2.3; and
- 2.5.3 The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provision liquidation court order.
- 2.6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 2.2 and 2.3 shall not exceed the Guarantor's maximum liability in terms of 1.1.

-
- 2.7 Where the Guarantor has made payment in terms of 2.3, 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 the Performance Guarantee shall bear interest at the prime overdraft rate by 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.
- 2.8 Payment by the Guarantor in terms of 2.2 or 2.3 will only be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 2.9 Payment by the Guarantor in terms of 2.3 will only be made against the return of the original Performance Guarantee by the Employer.
- 2.10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may consider fit and the Guarantor shall not have right to claim his from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 2.11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 2.12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 2.13 This Performance Guarantee, with the required demand notices in terms of 2.2 or 2.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 2.14 Where the 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 of section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the magistrate's Court.

Signed at

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

C1.4 CONFIRMATION OF RECEIPT OF CONTRACT (PRO FORMA)
--

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

The (day) of (month) (year)

At (place)

It is hereby agreed that the official commencement date of the Contract will be:

The (day) of (month) (year)

For and on behalf of the Contractor:

Name

Capacity

Signature Date:

Witness Name

Witness Signature Date:.....

C2 PRICING DATA

C2.1 Pricing Instructions

C2.2 Bill of Quantities

C2.3 Summary of Bill of Quantities

C2.1 PRICING INSTRUCTIONS

C2.1.1 PREAMBLE TO THE BILL OF QUANTITIES

- C2.1.1.1 The method of measurement published by the South African Bureau of Standards in Clause 8 of the Standardised Specifications for Civil Engineering Construction is applicable, subject to the variations and amendments contained in the section “Applicable SABS 1200 standardised specifications”.
- C2.1.1.2 Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Bill, the requirements of the Standardised or Scope of Work, as applicable, shall prevail.
- C2.1.1.3 A payment reference column is provided in the Bill of Quantities to assist the Tenderer when pricing this tender. Certain items may not have a payment reference and the onus is on the Tenderer to refer to the relevant specifications as stated above to ensure that the item is priced correctly. If in doubt the Tenderer shall preferably seek clarification or else qualify any assumptions made.
- C2.1.1.4 The clauses in a specification in which further information regarding the bill item can be obtained appear under “Payment” column in the Schedule. The reference clauses indicated are not necessarily the only sources of information in respect of bill items. Further information and specifications may be found elsewhere in the Contract documents. Standardised Specifications are identified by the letter or letters which follow SABS in the SABS 1200 series of specifications, e.g. G for SABS 1200 G.
- C2.1.1.5 Unless otherwise stated, items are measured nett in accordance with the drawings, and no allowance is made for waste.
- C2.1.1.6 The quantities set out in the Bill of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Employer’s Agent from time to time. The Contract Price for the completed Contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.
- C2.1.1.7 The Bills of Quantities must be completed by the insertion of rates / prices in accordance with the instruction described in the items above. As this Contract is a re-measurable Contract and not a Lump Sum Contract, a blank bill of quantities with only a lump sum amount will not be accepted.
- C2.1.1.8 The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.
- C2.1.1.9 Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items.

- C2.1.1.10 A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered or where a word or phrase such as “included” or “provided elsewhere” will be accepted as a rate of nil (R0,00) having been entered against such items and covered by the other prices or rates in the Schedule. Any work executed to which such a pay item applies, shall be measured under the appropriate items in the Bill of Quantities and valued at a rate of nil (R0,00). The rate of nil shall be valid irrespective of any change in the quantities during the execution of the Contract.
- C2.1.1.11 Except where rates only are required, the Tenderer shall insert all amounts to be included in his total tendered price in the “Amount” column and show the corresponding total tendered price.
- C2.1.1.12 All prices or rates inserted in the Bill of Quantities shall EXCLUDE VAT. Provision has been made on the Summary Page, of the Bill of Quantities, for the addition of VAT.
- C2.1.1.13 Arithmetical errors of responsive tenders will be corrected in terms of the Standard Conditions of Tender.
- C2.1.1.14 The units of measurement described in the Schedule/Bill of Quantities are metric units. Abbreviations used in the Schedule/Bill of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1 000 kg)
m ²	=	square metre	No.	=	number
m ² .pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	MegaNewton
m ³	=	cubic metre	MN.m	=	MegaNewton-metre
m ³ .km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
ℓ	=	litre	Prov sum	=	Provisional sum
kℓ	=	kilolitre	%	=	per cent
MPa	=	Mega Pascal	kW	=	kilowatt

I HEREBY DECLARE THAT I WILL COMPLY WITH ALL THE PRICING INSTRUCTIONS.

SIGNATURE:

C2.2	BILL OF QUANTITIES
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TENDER NO.: 1005/2022/23**UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN****SCHEDULE A : PRELIMINARY AND GENERAL****SECTION A1 : PRELIMINARY AND GENERAL**

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
A1		SECTION A1 : PRELIMINARY AND GENERAL					
A1.1	8.2.1	FIXED CHARGE ITEMS					
A1.1.1	8.3.1 PSA8.3.1	Contractual requirements	Sum	1.00			
	8.3.2 8.3.2.3	Establishment of facilities on the Site					
A1.1.2	8.3.2.1 PSA 8.3.2.1 PSAB8.4	Facilities for Engineer as listed in PSAB 3.2	Sum	1.00			
A1.1.3	8.3.2.2 PSA8.8.2	Facilities for Contractor including offices, storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, plant, water supplies, electric power, communications, setting out of Works, security, dealing with traffic and access	Sum	1.00			
A1.1.4	8.3.3	Other fixed-charge obligations	Sum	1.00			
A1.1.5	8.3.4	Removal of Site establishment on completion	Sum	1.00			
A1.2	8.2.2	TIME RELATED ITEMS					
A1.2.1	8.4.1	Contractual requirements	Sum	1.00			
	8.4.2 8.4.2.3	Operation and maintenance of facilities on the Site for duration of construction except where otherwise stated					
A1.2.2	8.4.2.1 PSA 8.3.2.1 PSAB8	Facilities for Engineer as for Item A1.1.2	Sum	1.00			
A1.2.3	8.4.2.2 PSA8	Facilities for Contractor as for Item A1.1.3	Sum	1.00			
A1.2.4	8.4.3	Supervision for duration of construction	Sum	1.00			
A1.2.5	8.4.4	Company and Head Office overhead costs for the duration of the Contract	Sum	1.00			
A1.2.6	8.4.5	Other time-related obligations	Sum	1.00			
A1.3	PSA8.5	SUMS STATED PROVISIONALLY BY THE ENGINEER					
A1.3.1		Allow For Cost of additional material testing to be undertaken at the request of the Engineer	Prov. Sum	1.00	10,000.00	10,000	00
A1.3.2		Contractor's overheads, charges and profit on Item A1.3.1 (State % and extend as an amount)	%	10,000.00			
A1.3.3		Provisional sum for Community Liaison Officer	Prov. Sum	1.00	60,000.00	60,000	00
A1.3.4		Contractor's overheads, charges and profit on Item A1.3.3 (State % and extend as an amount)	%	60,000.00			
A1.4	8.7 PSA8.7	DAYWORK					
Total Carried Forward							

TENDER NO.: 1005/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN**SCHEDULE A : PRELIMINARY AND GENERAL****SECTION A1 : PRELIMINARY AND GENERAL**

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		Labour					
A1.4.1		Skilled labour	h	32.00			
A1.4.2		Semi-skilled labour	h	32.00			
A1.4.3		Unskilled labour	h	64.00			
		Materials					
A1.4.4		Allow for net cost of goods or materials actually used	Prov. Sum	1.00	10,000.00	10,000	00
A1.4.5		Percentage mark-up on Item A1.4.4 (State % and extend as an amount)	%	10,000.00			
		Plant					
A1.4.6		Motor grader	h	16.00			
		Minimum power: 93 kW (Similar to "Cat 120B")					
		Manufacturer					
		Model					
A1.4.7		Excavator	h	16.00			
		Minimum power: 75 kW (similar to "Cat 215")					
		Manufacturer					
		Model					
A1.4.8		T.L. Backactor	h	16.00			
		Minimum power: 50 kW (Similar to "Case 580G")					
		Manufacturer					
		Model					
A1.4.9		Front-end loader	h	10.00			
		Minimum power: 60 kW (similar to "Cat 920")					
		Manufacturer					
		Model					
A1.4.10		Self-propelled single drum vibrating roller	h	16.00			
		Minimum mass: 5 000 kg					
		Manufacturer					
		Model					
A1.4.11		Self-propelled pneumatic roller	h	10.00			
		Minimum mass: 19 t					
Total Carried Forward							

TENDER NO.: 1005/2022/23**UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN****SCHEDULE A : PRELIMINARY AND GENERAL****SECTION A1 : PRELIMINARY AND GENERAL**

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
A1.4.12		Manufacturer					
		Model					
		Vibrating pedestrian roller	h	10.00			
		Minimum drum width: 0,39 m Minimum power: 3,7 kW					
A1.4.13		Manufacturer					
		Model					
		Vibrating plate compactor	h	32.00			
		Minimum power: 2 kW					
A1.4.14		Manufacturer					
		Model					
		Platform truck	h	2.00			
		Minimum load mass : 4 t					
A1.4.15		Tip truck	h	16.00			
		Minimum load mass: 10 t Minimum load capacity: 6m3					
A1.4.16		Water tank truck, with sprinkler	h	10.00			
		Minimum capacity: 10 kl					
A1.4.17		Compressor complete with two hand-held tools and attachments	h	10.00			
		Minimum capacity: 7 m3/minute					
		Manufacturer					
		Model					
A1.4.18		Centrifugal pump, 150 mm dia, with hoses	h	8.00			
		Manufacturer Model					
A1.4.19		Sludge pump, 100 mm dia, with hoses	h	8.00			
		Manufacturer Model					
A1.4.20		Generating set	h	10.00			
		Minimum output power: 10 kW					
		Manufacturer					
		Model					
Total Carried Forward							

TENDER NO.: 1005/2022/23

SCHEDULE A : PRELIMINARY AND GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
A1.4.21		Allow for all-inclusive cost of hired plant	Prov. Sum	1.00	10,000.00	10,000	00
A1.4.22		Percentage mark-up on Item A1.4.21 (State % and extend as an amount)	%	10,000.00			
A1.5	8.8	TEMPORARY WORKS					
	PSA8.9	Dealing with water:					
		Trenches and pipeline structures					
A1.5.1		Fixed costs	Sum	1.00			
A1.5.2		Time-related costs	Sum	1.00			
A1.6	8.8.4 PSA8.8.4.1	EXISTING SERVICES					
A1.6.1	PSA8.8.4.2, PSA 8.8.4.3	Locating, protection, alteration and relocation of existing services carried out by authorities	Prov. Sum	1.00	15,000.00	15,000	00
A1.6.2		Percentage adjustment on Item A1.6.1 for Contractor's overheads and profit (state % and extend as an amount)	%	15,000.00			
A1.6.3	8.8.4 c) PSA8.8.4.1	Excavation by hand in soft materials to expose services not shown on the drawings or known services that are further than 3.0m from the position indicated on the drawings	m³	30.00			
A1.6.4		Supply or hire of specialist equipment	Prov. Sum	1.00	10,000.00	10,000	00
A1.6.5		Percentage adjustment on Item A1.6.4 for Contractor's overheads and profit (state % and extend as an amount)	%	10,000.00			
Total Carried Forward To Summary							

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C2 Pricing Data

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SCHEDULE A : PRELIMINARY AND GENERAL

SECTION A2 : OCCUPATIONAL HEALTH AND SAFETY

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
A2		SECTION A2 : OCCUPATIONAL HEALTH AND SAFETY					
		OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND THE CONSTRUCTION REGULATIONS, 2014 (H&S Requirements and Procedures)					
A2.1	PSA8.12	PART A - OHS ACT COMPLIANCE - HEALTH & SAFETY PLAN & FILE					
A2.1.1		Prepare and compile H&S plan as per the Site Specific Health and Safety Specifications (Scope of Work), OHS Act & Regulations	Sum	1.0			
A2.1.2		Allow for the preparation and compilation of a Site Specific Health and Safety File, and a Health and Safety Working File.	Sum	1.0			
A2.2	PSA8.12	PART B - OHS ACT COMPLIANCE - IMPLEMENTATION OF THE HEALTH & SAFETY PLAN					
		Personal Protective Clothing & Equipment					
A2.2.1		Foot protection (Steel toe cap, gum boots, etc.)	Sum	1.0			
A2.2.2		Clothing (overalls depicting Contractors company name / identification.)	Sum	1.0			
A2.2.3		Gloves (leather, PVC, latex, acid resistant, etc.)	Sum	1.0			
A2.2.4		Head protection: hard-hats, colour coded – Supervisory (Red) Labour (Green) First aid (Blue) Sun shield, etc.)	Sum	1.0			
A2.2.5		Visibility (Luminous high visibility safety vests / jackets / bibs, head gear, etc.).	Sum	1.0			
		Barricading / Hoarding (Supply, install & removal)					
A2.2.6		Construction perimeter (fence, shade netting, corrugated iron, shutter board, etc.)	Sum	1.0			
A2.2.7		Trench and Manhole Excavations	Sum	1.0			
A2.2.8		Roads & Road reserves - Pre-warning (danger tape, orange "shark" netting, cones, delineators, temporary road signs etc.)	Sum	1.0			
		Health and Safety Control and Training					
A2.2.9		Provide a full time competent Construction Health and Safety Officer on site to assist in the control of all health and safety aspects on site.(CR 8(5)) The safety officer must be SACPCMP registered.	Sum	1.0			
A2.2.10		Induction Training (employees, visitors, subcontractors, local residence / home owners)	Sum	1.0			
Total Carried Forward							

SCHEDULE A : PRELIMINARY AND GENERAL

SECTION A2 : OCCUPATIONAL HEALTH AND SAFETY

[illegible]

SECTION A3 : TRAFFIC ACCOMMODATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
A3		SECTION A3 : TRAFFIC ACCOMMODATION					
	COLTO, PSA 8.8.2	This section, and all its payment references, shall refer to Section 1500 of the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998)					
	15.00	ACCOMMODATION OF TRAFFIC					
A3.1	15.01	Accommodating traffic and maintaining temporary deviations	Sum	1.00			
	15.02	Earthworks for temporary deviations					
A3.2		(a) Shaping of temporary deviations (minimum 2.5m walkway for pedestrian diversion route)	km	0.1			
	15.03	Temporary traffic-control facilities (all temporary road signs be frame and/or stand mountable ballasted with sandbags i.e. portable/movable):					
A3.3		(a) Flagmen	man-day	60.00			
A3.4		(b) Portable STOP and GO-RY signs	No.	2.0			
A3.5		(c) Temporary traffic-control signals as shown on the drawings and controlled manually by operator (refer to drawings 4430/TA/01 & 4430/TA/03)	No.	2.0			
A3.6		(e) Road signs, R- and TR-series, (size = 900mm)	No.	3.00			
A3.7		(f) Road signs, TW-series, (size = 900mm)	No.	10.00			
A3.8		(g) Road signs, STW-, DTG-, TGS- AND TG-series (excluding delineators and barricades)	m²	8.3			
		(h) Delineators (DTG50J) (size indicated):					
A3.9		(ii) Mounted back to back	No.	20.00			
A3.10		(iii) Base (including ballast)	No.	20.00			
A3.11		(i) Moveable barricade/road sign combination (1800 x 300 / 900 dia.)	No.	4.0			
		(l) Movable barriers:					
A3.12		(i) Supply to site, initial placement and removal from site of commercial concrete barriers (new jersey barriers)	m	50.0			
A3.13		(ii) Dismantling and re-erecting barriers during the works (new jersey barriers)	m	150.0			
A3.14		(iii) Danger tape	m	200.0			
		Penalty to be deducted for non-compliance with requirements for accommodation of traffic:					
A3.15		(a) Time related penalty	hours	1.00	1,000.00	Rate Only	
Total Carried Forward To Summary							

TENDER NO.: 1005/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SCHEDULE A : PRELIMINARY AND GENERAL

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
A1	SECTION A1 : PRELIMINARY AND GENERAL	
A2	SECTION A2 : OCCUPATIONAL HEALTH AND SAFETY	
A3	SECTION A3 : TRAFFIC ACCOMMODATION	
Total Carried Forward To Summary Of Schedules		

SCHEDULE B : BULK WATER RISING MAIN

SECTION B1 : SITE CLEARANCE AND EARTHWORKS

[illegible]

TENDER NO.: 1005/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SCHEDULE B : BULK WATER RISING MAIN

SECTION B2 : TRENCH EXCAVATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
B2		SECTION B2 : TRENCH EXCAVATION					
	8.3.2 PSDB 8.3.2	Excavate in all materials for single pipe trenches, backfill, compact and dispose of surplus material for bulk water rising main up to 500mm diameter					
		Over and Up to					
B2.1		0,0 m 1,0m	m	25.0			
B2.2		1,0 m 2,0m	m	1,300.0			
B2.3		2,0 m 3,0m	m	100.0			
	8.3.2(b)	Extra-over items B2.1 to B2.3 incl. for:					
B2.4		Intermediate excavation	m³	75.0			
B2.5		Hard rock material	m³	75.0			
		Shore trench opposite or next to existing bulk water pipeline or where directed by the Engineer, for depths:					
		Over and Up to					
B2.6		1,5 m 2,5 m	m	25.0			
B2.7		2,5 m 3,5 m	m	25.0			
B2.8		Excavate and dispose of unsuitable material from trench bottom	m³	150.0			
B2.9		Excavation by hand to expose existing services	m³	50.0			
	8.3.3	Excavation ancillaries					
	8.3.3.1	Make up deficiency in backfill material:					
B2.10		By importation from commercial or off-site sources selected by Contractor	m³	150.0			
	8.3.5 PSDB 8.3.5	Existing services that intersect or adjoin a trench					
	8.3.5 a)	Services that intersect a trench:					
B2.11		Sewer pipeline	No.	10.0			
B2.12		Existing water pipe	No.	10.0			
B2.13		Cables	No.	10.0			
B2.14		Stormwater	No.	10.0			
	8.3.5 b)	Services that adjoin a trench:					
B2.15		Sewer pipeline	m	130.0			
B2.16		Existing water mains	m	750.0			
B2.17		Cables	m	300.0			
B2.18		Stormwater	m	50.0			
Total Carried Forward To Summary							

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SCHEDULE B : BULK WATER RISING MAIN

SECTION B3 : BEDDING (PIPES)

[illegible]

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
B4		SECTION B4 : MEDIUM PRESSURE PIPELINES					
	8.2.1 PSL8.2.1	Supply, lay, joint, bed (bedding for flexible pipes) pipes, and test, complete with couplings and including disinfection:					
B4.1		500mm diameter HDPE PE100 PN10	m	1,400.0			
	8.2.2	Extra over Items B4.1 for the supplying, laying, jointing, bedding and testing of specials :					
		HDPE PE100 PN16 bends					
B4.2		500mm diameter 22.5°	No.	2.0			
B4.3		500mm diameter 45°	No.	2.0			
B4.4		500mm diameter 90°	No.	7.0			
		End caps:					
B4.5		500mm diameter HDPE	No.	4.0			
	8.2.11 PSL 8.2.11	Anchor/thrust blocks and pedestals:					
B4.6		500mm diameter x 22.5° bend	No.	2.0			
B4.7		500mm diameter x 45° bend	No.	2.0			
B4.8		500mm diameter x 90° bend	No.	7.0			
		Ancillaries					
		Markers:					
B4.9	PSL 8.2.17	Pipeline route markers	No.	15.0			
		Valve Chambers					
B4.10		Construct Air Valve, Scour Valve and Meter Chambers complete as per details	Sum	1.0			
B4.11		Supply and install valves, fittings and accessories as required for the Air Valve, Scour Valve and Meter Chambers	Prov. Sum	1.0	1,000,000.00	1,000,000	00
B4.12		Contractor's overheads, charges and profit on Item B4.11 (State % and extend as an amount)	%	1,000,000.00			
Total Carried Forward To Summary							

TENDER NO.: 1005/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SCHEDULE B : BULK WATER RISING MAIN

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
B1	SECTION B1 : SITE CLEARANCE AND EARTHWORKS	
B2	SECTION B2 : TRENCH EXCAVATION	
B3	SECTION B3 : BEDDING (PIPES)	
B4	SECTION B4 : MEDIUM PRESSURE PIPELINES	
Total Carried Forward To Summary Of Schedules		

SCHEDULE C: REINSTATEMENT WORKS

[illegible]

SCHEDULE C : REINSTATEMENT WORKS

[illegible]

SCHEDULE C : REINSTATEMENT WORKS

[illegible]

SCHEDULE C : REINSTATEMENT WORKS

[illegible]

SCHEDULE C : REINSTATEMENT WORKS

[illegible]

TENDER NO.: 1005/2022/23**UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN****SCHEDULE C : REINSTATEMENT WORKS****SECTION C6 : STORMWATER RETICULATION**

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
C6		SECTION C6 : STORMWATER RETICULATION					
C6.1	SABS 1200DB PSA8.8.4.1 PSA8.10	TRENCH EXCAVATION					
	8.3.2 PSDB8.3.2	Excavate in all materials for trenches, backfill, compact and dispose of surplus material for pipes up to 500mm diameter for depths:					
		Over and Up to					
C6.1.1		0,0 m 1,0 m	m	10.00			
C6.1.2		1,0 m 2,0 m	m	10.00			
C6.1.3	8.3.2 PSDB8.3.2	Extra-over Items C6.1.1 to C6.1.2 for hard rock excavation	m³	5.0			
C6.2	SABS 1200LB PSLB8.1.3 PSLB8.1.6	BEDDING					
	8.2.2.3	Supply only of bedding by importation from commercial sources:					
C6.2.1		Selected granular material	m³	5.00			
C6.2.2		Selected fill material	m³	5.00			
C6.3	SABS 1200LE	STORMWATER DRAINAGE					
		Pipes					
	8.2.1 PSLE8.2.1 PSLE8.2.2	Supply, lay, bed (bedding Class C), cut end units and joint concrete pipes Class 100D with interlocking joints:					
C6.3.1		450 mm diameter	m	20.0			
C6.3.2	PSLE8.2.15	Connection to existing stormwater manhole/catchpit	No.	2.00			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
C7		SECTION C7 : SEWER RETICULATION					
C7.1	SABS 1200DB PSA8.8.4.1 PSA8.10	TRENCH EXCAVATION					
	8.3.2 PSDB8.3.2	Excavate in all materials for trenches, backfill, compact and dispose of surplus material for pipes up to 500mm diameter for depths:					
		Over and Up to					
C7.1.1		0,0 m 1,0 m	m	25.00			
C7.1.2		1,0 m 2,0 m	m	25.00			
C7.1.3	8.3.2 PSDB8.3.2	Extra-over Items C7.1.1 to C7.1.2 for hard rock excavation	m³	5.0			
C7.2	SABS 1200LB PSLB8.1.3 PSLB8.1.6	BEDDING					
	8.2.2.3	Supply only of bedding by importation from commercial sources:					
C7.2.1		Selected granular material	m³	20.00			
C7.2.2		Selected fill material	m³	20.00			
C7.3	SABS 1200LD	SEWER RETICULATION					
	8.2.1 PSLD8.2.1	Supply, lay, joint, bed, (bedding for flexible pipes) and test uPVC (Class 34, heavy duty, solid wall) pipes					
C7.3.1		110 mm diameter	m	20.00			
C7.3.2		160 mm diameter	m	30.00			
		Sundries					
C7.3.3	8.2.11 PSLD8.2.11	Connection to existing sewer at manholes including flexible joints and make good all benching	No.	1.0			
C7.4		MANHOLES					
	8.2.3 8.2.5 PSLD8.2.3	Construct manhole to Drawing No. complete, with heavy duty PCC roof slab and heavy duty PCC cover, complete for depths:					
		Over and Up to					
C7.4.1		0,5 m 1,0 m	No.	1.0			
C7.4.2		1,0 m 1,5 m	No.	1.0			
C7.4.3		1,5 m 2,0 m	No.	1.0			
Total Carried Forward							

SCHEDULE C : REINSTATEMENT WORKS

[illegible]

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
C1	SECTION C1 : SITE CLEARANCE, EARTHWORKS AND LAYERWORKS	
C2	SECTION C2 : KERBING AND CHANNELLING	
C3	SECTION C3 : ASPHALT BASE AND SURFACING	
C4	SECTION C4 : PAVING	
C5	SECTION C5 : ANCILLARY ROADWORKS	
C6	SECTION C6 : STORMWATER RETICULATION	
C7	SECTION C7 : SEWER RETICULATION	
Total Carried Forward To Summary Of Schedules		

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SECTION D1 : SITE CLEARANCE AND EARTHWORKS

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SCHEDULE D : EXISTING RISING MAIN REPAIRS

[illegible]

SCHEDULE D : EXISTING RISING MAIN REPAIRS

[illegible]

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
D1	SECTION D1 : SITE CLEARANCE AND EARTHWORKS	
D2	SECTION D2 : PIPELINE REPAIRS	
D3	SECTION D3 : ASPHALT BASE AND SURFACING	
Total Carried Forward To Summary Of Schedules		

TENDER NO.: 1005/2022/23

UPGRADING OF GRABOUW BULK WATER SERVICES PHASE 5.2: BULK WATER RISING MAIN

SUMMARY OF SCHEDULES

SCHEDULE	DESCRIPTION	AMOUNT (RAND)
A	SCHEDULE A : PRELIMINARY AND GENERAL	
B	SCHEDULE B : BULK WATER RISING MAIN	
C	SCHEDULE C : REINSTATEMENT WORKS	
D	SCHEDULE D : EXISTING RISING MAIN REPAIRS	
	SUBTOTAL	
1	10% Contingency SUBTOTAL	
2	15% VAT	
Total		

C2.3 SUMMARY OF BILL OF QUANTITIES

Section	Description	Price
A	Preliminary And General	
A1	Preliminary And General	R
A2	Occupational Health And Safety	R
A3	Traffic Accommodating	R
B	Bulk Water Rising Main	
B1	Site Clearance	R
B2	Trench Excavation	R
B3	Reservoir Fencing	R
B4	Medium Pressure Pipelines	R
C	Reinstatement Works	
C1	Site Clearance, Earthworks and Layerworks	R
C2	Kerbing and Channelling	R
C3	Asphalt Base and Surfacing	R
C4	Paving	R
C5	Ancillary Roadworks	R
C6	Stormwater Reticulation	R
C7	Sewer Reticulation	R
C8	Water Reticulation	R

SUBTOTAL OF PRICED ITEMS

R

PROVISIONAL ALLOWANCE FOR CONTINGENCIES (10%)

R

NET CONTRACT PRICE

R

VALUE ADDED TAX (15% of Net Contract Price)

R

CONTRACT SUM (CARRIED TO C1.1 FORM OF OFFER)**R**

C3	SCOPE OF WORK
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C3.1 Description of the Works

C3.2 Engineering

C3.3 Procurement

C3.4 Construction

C3.5 Management

C3.6 Specifications for Civil Infrastructure

C3.7 Health and Safety Requirements and Procedures

C3.8 Environmental Management Requirements and Procedures

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The Employer embarked on a phased upgrading of the Grabouw Bulk Water Supply System. Four of the five phases have been completed. The objective is to provide a dedicated rising main from the Grabouw Water Treatment Works (WTW) to the Steenbras Reservoir under Phase 5. A dedicated rising main to the Steenbras Reservoir eradicates the need for continuous maintenance on the existing rising main.

C3.1.2 OVERVIEW OF THE WORKS

The Employer, Theewaterskloof Municipality, has identified the need to upgrade the existing rising main from the Grabouw (WTW) to the Steenbras Reservoir.

The rising main route starts at the WTW and runs within the Old Cape Road (Main Road) road reserve. Thereafter, it continues on a rural road past Umyezo Wama Apile High School before entering the Steenbras Reservoir property. Existing services are expected along the entire rising main route. The Works include reinstatement of all disturbed services and surfaces.

C3.1.3 EXTENT OF THE WORKS

This Contract includes:

- The construction of a 1400 m long 500mm diameter HDPE PE100 PN10 rising main;
- 15 no. of route marker posts;
- Install repair couplings along existing 315mm diameter uPVC class 16 pipeline
- The supply and installation of one air valves with chambers;
- The supply and installation of one scour valve with a chamber;
- Investigation of existing services in the area
- Reinstatement of existing services

C3.1.4 LOCATION OF THE WORKS

Grabouw is located within the Theewaterskloof Municipality, Western Cape, approximately 80 km from Cape Town. The proposed pipeline will be located within the existing road reserves within the established urban area of Grabouw.

Access to the site coming from Cape Town is via the N2 past Sir Lowry's Pass, turning left onto Old Cape Road. The site is accessible straight from Old Cape Road.

Refer to drawing 1652-01-WAT-001 revision T0 in Appendix A for a Locality Plan

C3.1.5 TEMPORARY WORKS

The Contractor will be required to design and build the temporary works including scaffolding, formwork, lateral support of excavations, shoring of the pipe trenches and dewatering of the excavations. Refer to C4 Site Information.

C3.1.5.1 Other Services (i.e. Telkom, Electricity, etc.)

The Contractor shall ensure that the position of all existing services affected by the Works have been verified before construction works commences and should it be necessary to lower or relocate any service, the Contractor will be required to make the necessary arrangements with the relevant service provider and to advise the Engineer accordingly.

C3.1.5.2 Survey Beacons and Benchmarks

The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons. If damage or disturbance of any such pegs or beacons is caused by the operations of the Contractor or his subcontractors, the pegs are to be replaced by a Registered Land Surveyor at the cost of the Contractor. Information regarding the position of all such pegs will be made available to the Contractor by the Engineer.

The Contractor is to ensure that no spoil is placed over erf pegs or benchmarks and that these are adequately protected for the full duration of the Contract.

Where disturbances of boundary pegs are unavoidable due to excavation or other operations adjacent to the pegs, the Contractor shall advise the Engineer or his Representative immediately, and agreement is to be reached that the disturbance of the peg is unavoidable and a strict record of such disturbed pegs is to be kept. Such pegs are to be replaced by a Registered Land Surveyor as described above and the Contractor is to submit proof of the cost of replacement of pegs. The Contractor will be reimbursed on a basis pro-rata to the total cost of peg replacement determined on completion of the Works.

C3.1.5.3 Protection of Existing Works

The Contractor shall take all necessary steps to ascertain the location of existing services before commencing any section of the works and shall exercise the greatest care when working in the vicinity of such services. No more than three weeks and not less than one week before commencing his operations in any area, the Contractor shall request in writing from the Engineer the latest available drawings showing the location of services already installed. The Contractor will also be responsible for contacting the various service providers, arranging a meeting and verifying all known as well as possible unknown services on site.

The Contractor shall take all necessary steps to protect any existing works whatsoever against damage which may arise as a result of his operations on Site. The Contractor shall bear the cost of the repair of damage to any service, the possible existence of which could reasonably have been ascertained by him in good time.

Where the Contractor is responsible for damage for which repairs must be carried out by the Employer or an outside Authority, the costs of these repairs will be recovered by means of a deduction from the Contractor's monthly Payment Certificate. The Employer will attend to the payment of monies due to outside authorities, should the Contractor not make direct payment, to the outside authorities, timeously.

C3.1.5.4 Tidying up of the Works

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

Upon completion of the Works or any portion thereof, the ground, fences, gates and any structures that have been interfered with are to be carefully restored to their original condition and all rubbish, tools, tackle, plant and material must be removed so as to leave the Site in a clean and orderly condition. No additional payment shall be made for work set out above.

C3.2 ENGINEERING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

The Employer is responsible for the design of the Permanent Works.

The Contractor is responsible for the design of the Temporary Works.

Permanent works include:

Concept, feasibility and overall process	Employer
Basic engineering and detail layout to tender stage	Employer

Final design for construction stage:

Civil Works	Employer
Preparation of record drawings	Employer / Contractor

The Contractor is responsible for the design of the Temporary Works (refer to C3.1.5).

Temporary works include:

Site Establishment	Contractor
Formwork and scaffolding	Contractor
Shoring / lateral support and dewatering	Contractor

C3.2.2 EMPLOYER'S DESIGN

The entire Permanent Works have been designed by the Engineer.

C3.2.3 DESIGN BRIEF AND PROCEDURES

C3.2.3.1 Design Brief

There are no permanent works that need to be designed by the Contractor.

C3.2.3.2 Design Procedures

The Contractor shall take all statutory requirements, as well as the Health and Safety Specification and Environmental Management Specification into consideration when designing all Temporary Works.

C3.2.4 DRAWINGS

The drawings listed below are included on the attached CD in order to give an overview of the contract, refer to the contents page for the relevant annexure.

Drawing No	Description	Rev	Sheet Size
General Drawings			
1652-01-GEN-001	Locality Plan	T0	A4
1652-01-GEN-002	Key Plan and Typical Cross Sections	T0	A0
1652-01-GEN-003	Reinstatement Details		
1652-01-GEN-004	Contractors Nameboard	T0	A3
Civil Drawings			
1652-01-WAT-400	Key Plan and Longitudinal Section	T0	A0
1652-01-WAT-401	Grabouw Bulk Water Layout Plan and Longitudinal Section 0 – 800m	T0	A0
1652-01-WAT-402	Grabouw Bulk Water Layout Plan and Longitudinal Section 800 – 1400m	T0	A0
1652-01-WAT-403	Grabouw Bulk Water Layout Plan and Longitudinal Section 1400 – 2025m	T0	A0
1652-01-WAT-404	Bulk Water Typical Details	T0	A0

Additional construction drawings will be issued to the Contractor by the Engineer / Employer on the commencement date and from time to time as required.

C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

The works shall be executed in accordance with the conditions attached to preferences granted in accordance with the Preferencing Schedule (**T2.1.14**, T2 Returnable Documents and Schedules)

C3.3.2 SUB-CONTRACTING

The service provider is required to oversee the transfer of skills to a contractor local to the Theewaterskloof Municipal area. The service provider must subcontract Schedule D of the Bill of Quantities to a local 1CE CIDB registered contractor, on a labour only basis.

If the Service Provider intends to make use of subcontractors: Only subcontractors local to Theewaterskloof Municipal area will be accepted. The Service provider must submit substantive evidence and relevant information with its tender proposal per **Schedule T2.1.4**. Should not subcontractors for the service in question not be available within the municipal area, the service provider must provide proof of the unsuccessful search for such a subcontractor

C3.3.2.1 Subcontracting procedures

Where provisional sums or prime costs items have been provided in the Bills of Quantities, and where the work or items to which the allowances relate are to be executed/supplied by sub-contractors/suppliers, then the following selection process shall be followed in respect of the required sub-contractors/suppliers:

Where the monetary allowance is less than or equal to R200 000, the Contractor shall invite three quotations from suitably qualified sub-contractors/suppliers for the required work or items. The selection of the three sub-contractors/suppliers shall be in consultation with, and to the approval of the Engineer. The evaluation of the quotations received must include a preference points system as described in C.3.11 of the Tender Data.

Where the monetary allowance is in excess of R200 000, an open competitive tender process shall be followed in respect of the selection of a sub-contractor/supplier for the required work or items. In such circumstances, tender documentation will be prepared by the Engineer in consultation with and to the approval of the Contractor, invitations to tender will be advertised in the media by the Engineer on behalf of the Contractor, and a sub-contractor/supplier will be selected from the responses received, by the Contractor and Engineer in consultation. The evaluation of the offers received must include a preference points system as described in F.3.11 of the Tender Data. The Contractor must satisfy him/herself that the selected sub-contractor/supplier can meet the requirements of the sub-contract /supply agreement and may, on reasonable grounds, elect not to employ a particular sub-contractor/supplier.

In both instances above (less than or equal to R200 000 or in excess of R200 000), the contractual relationship between the Contractor and sub-contractor/supplier shall be as described in clause 4.4.3 of the General Conditions of Contract.

C3.3.3 EMPLOYMENT OF LOCAL LABOUR

The maximum possible number of workers is to be employed from the labour database provided by the Employer of the currently unemployed persons in the local community of **Grabouw**.

Key personnel are defined as supervisors and skilled labourers without whom a specific task cannot be executed. As far as possible these people should impart their management and other skills to individuals within the local workforce who show a keen interest and display a willingness to learn.

A monthly report on employment of local labour in relation to other employees must be submitted for information of the Employer. **Refer to T2.3.4 – Special Conditions of Tender.**

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATION

C3.4.1.1 Applicable SANS standards

The SABS 1200 Standardised Specifications for Civil Engineering Construction read in conjunction with the SABS 0120 Code of Practice for use with standardised specifications for Civil Engineering Construction and Contract Documents apply.

C3.4.1.2 Applicable national and international standards

The following Standardised Specifications for Civil Engineering Construction, as amended in the Scope of Work, form part of the Contract Documents:

COLTO 1500	1998	Accommodation of Traffic
SABS 1200 A	1986	General
SABS 1200 AB	1986	Engineer's Office
SABS 1200 C	1980 (as amended 1982)	Site Clearance
SABS1200 D	1988 (as amended 1990)	Earthworks
SABS1200 DA	1988 (as amended 1990)	Earthworks (Small Works)
SABS1200 DB	1989	Earthworks (Pipe Trenches)
SABS1200 DE	1984	Small Earth Dams
SABS1200 DM	1981	Earthworks (Roads; Subgrade)
SABS1200 GA	1982	Concrete (Small Works)
SABS 1200 L	1983	Medium Pressure Pipelines
SABS1200 LB	1983	Bedding (Pipes)
SABS1200 LC	1981	Cable Ducts
SABS1200 LD	1982	Sewers
SABS1200 LE	1982	Stormwater Drainage
SABS 1200 LK	1983	Valve Installations
SABS1200 M	1996	Roads (General)
SABS1200 ME	1981	Subbase
SABS 1200 MFL	1996	Base (Light Pavement Structures)
SABS1200 MH	1996	Asphalt Base and Surfacing
SABS1200 MJ	1984	Segmented Paving
SABS1200 MK	1983	Kerbing and Channelling
SABS1200 MM	1984	Ancillary Roadworks

The term "project specifications" appearing in any of the SABS 1200 Standardised Specifications shall be replaced with the term "Scope of Work".

The variations and additions of the Standardised Specifications are provided in C3.6.

C3.4.1.3 Particular / Generic specifications

The following additional specifications included in this volume are applicable to this contract:

Annexure C	: Site Specific Health & Safety Specification and Baseline Risk Assessment
Annexure D	: Environmental Management Programme
Annexure F	: Traffic Accommodation Plan

C3.4.1.4 Certification by recognized bodies

Not applicable.

C3.4.1.5 Agrément certificates

Not applicable.

C3.4.2 PLANT AND MATERIALS

C3.4.2.1 Plant and materials supplied by the Employer

The Employer will not provide plant or materials for this Contract.

C3.4.2.2 Materials, samples and shop drawings

Any material that shall comply with the requirements of a South African National Standard specification in terms of this Contract, shall bear the official SABS mark, should the material be available with such mark.

C3.4.3 CONSTRUCTION EQUIPMENT

C3.4.3.1 Requirements for equipment

All equipment used on this Contract shall comply with the requirements of the Occupational Health and Safety Act (1993) and the Construction Regulations (2014).
[and the Environmental Management Plan].

C3.4.3.2 Equipment provided by the Employer

The Employer will not provide equipment for this Contract.

C3.4.4 EXISTING SERVICES

Refer to C3.1.5, C4.3 and PSA5.4.

C3.4.5 SITE ESTABLISHMENT

C3.4.5.1 Service and facilities provided by the Employer

No services or facilities will be provided by the Employer.

C3.4.5.2 Facilities provided by the Contractor

C3.4.5.2.1 Water supply

The Contractor shall make his own arrangements, and pay all installation and consumption charges, for the supply of water required.

C3.4.5.2.2 Power supply

There is no power available on site. The Contractor shall be responsible for providing on site, at his own cost, the power required.

C3.4.5.2.3 Camps and depot

The Contractor may erect his site offices and storage depot within the boundaries of the area indicated by the Engineer.

The Contractor shall submit a general layout drawing to a scale of not less than 1:200 to the Engineer for approval before any work on the camp or offices is commenced.

No housing is available, and the Contractor shall make his own arrangements to house his employees and transport them to and from the Site. All arrangements for housing workmen shall be made in accordance with and subject to applicable regulations and requirements.

C3.4.5.2.4 Sanitary conditions

The Contractor shall supply chemical toilets for use by his workmen. The number of toilets shall be based on one toilet per fifteen personnel on site. Under no circumstances will the Contractor's staff be allowed to use public toilet facilities.

Unhygienic habits and other behaviour that may cause contamination of any part of the Works or the surrounding areas are strictly prohibited. The Contractor shall ensure that sanitary conditions prevail throughout the Site and that all his workmen are aware of, and comply with, this rule.

C3.4.5.2.5 Disposal sites

Unless instructed otherwise, the Contractor shall dispose all surplus material from the site at a Municipal Solid Waste Disposal Facility.

The Contractor shall inform the Employer's Agent in writing of any other site he proposes to use. Use of the alternative disposal site may only be used if approved by the Engineer in writing.

C3.4.5.3 Storage and laboratory facilities

Storage and laboratory facilities are not required.

C3.4.5.4 Other facilities and services

No other facilities or services are required.

C3.4.5.5 Vehicles and equipment

The Contractor shall provide for the use of the Engineer, maintain and service, as applicable, the following facilities as specified in SANS 1200AB and PSAB:

- two nameboards,
- two furnished office,
- one conference room,
- latrine and ablution facilities,
- covered carport for two vehicles,
- survey equipment,
- two survey assistants as and when required,
- a site instruction book,
- protective clothing, safety equipment, and medical facilities,
- printer/scanner/photocopier with consumables and paper,

-
- laptop with software,
 - digital camera with rechargeable batteries,
 - cellphone with R500 airtime monthly,
 - LTE wifi router with 25GB data monthly, and

Unless specified otherwise, on completion of the Works these facilities shall revert to the Contractor who shall remove them from the site.

The term "use of the Engineer" will be deemed to include, as appropriate, use by the Engineer's staff and the Engineer's Representative and his staff.

C3.4.5.6 Advertising rights

Not applicable.

C3.4.5.7 Notice boards

The Contract notice board shall be manufactured, installed, maintained and removed in accordance with PSAB 3.1.

C3.4.6 SITE USAGE

Access to the site shall be restricted to the Contractor, Employer, Engineer and their personnel, agents or Subcontractors. The Contractor shall control entry to the site and shall report unauthorised entry to the Engineer.

C3.4.7 PERMITS AND WAY LEAVES

Planning Way Leaves have been applied for from Eskom, Telkom and Theewaterskloof Municipality. The Contractor will be required to communicate with the above service providers while on site.

C3.4.8 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS

The Contractor shall expose and survey the position and level of all structures and pipelines that will be connected into, and shall provide this information to the Engineer before commencing excavation.

C3.4.9 INSPECTION OF ADJOINING PROPERTIES

The condition of the existing roads shall be assessed and recorded by video and/or photography before commencing construction.

C3.4.10 WATER FOR CONSTRUCTION PURPOSES

Refer to C3.4.5.2.1.

C3.4.11 SURVEY CONTROL AND SETTING OUT OF THE WORKS

Before commencement of work, the Contractor shall liaise with the Engineer to establish and verify the position and level of benchmarks. The Contractor shall record the exact position of all erf pegs on a marked-up print of the site.

On completion of the Contract, the pegs that have been unavoidably disturbed will be replaced by the Employer. Pegs which have, in the opinion of the Engineer, been disturbed due to the negligence of the Contractor, will be replaced at the Contractor's cost.

The Contractor is to verify positions of existing services by doing a Ground Penetrating Radar survey. The Contractor is to take extra care not to damage existing services.

C3.4.12 FEATURES REQUIRING SPECIAL ATTENTION

C3.4.12.1 Health and Safety

Refer to C3.10.

C3.4.12.2 Continuous operation of existing services

All existing services shall be maintained in operation, unless prior arrangements have been made with the relevant authority and written permission for an interruption of the service has been granted and adequate notice has been given to the affected residents.

C3.4.12.3 Sanitary conditions

Unhygienic habits and other behaviour that may cause contamination of any part of the Works or the surrounding areas are strictly prohibited. The Contractor shall ensure that sanitary conditions prevail throughout the Site and that all his workmen are aware of, and comply with, this rule.

C3.4.12.4 Neatness of the site

The general neatness and tidiness of the residential areas of, are of concern.

The Works are in an environmentally sensitive area. The Contractor shall, therefore, on a day to day basis, keep the area of the Works in a condition acceptable to the Engineer.

C3.4.12.5 Temporary fences

The Contractor shall erect temporary fences where required for the execution of the Works, where shown on the drawings and in place of existing fences which have to be temporarily relocated.

All fences shall be maintained during construction.

Temporary fences shall be suitable for preventing stock on adjacent properties from wandering.

The cost of the erection, maintenance and removal of temporary fencing will be deemed to be covered by the rates for the establishment of facilities for the Contractor (Items A1.3 and A2.3).

C3.4.12.6 Pipelines across farmland

No construction shall be commenced in any camp containing livestock until arrangements have been made with the owner to have them removed and they have been removed. The Contractor shall ensure that any gate opened by him is attended until it is closed.

C3.4.12.7 Dust control

The wind speed at the site is known to reach gale force strength on a regular basis. Since the site is situated in an established residential area, such winds will lead to nuisance to the surrounding residents. The Contractor shall take preventative measures to control dust arising from the site. Such measures will include, but not be limited to, watering, placing tarpaulins on exposed areas, placing thatch grass on exposed areas, as appropriate, or instructed by the Engineer.

C3.4.12.8 Continuous operation of the existing works

Most of the construction works takes place at existing works (water and sewage works and service reservoir). Other than for connection purposes these works must always remain in operation. The Contractor shall ensure that, wherever possible, the Employer's personnel have unhindered access to, and use of, all parts of the existing works always, as necessary.

The Contractor's operations shall also be carried out in such a way as to minimize the formation of dust and the fouling of water in the existing works.

The Contractor shall provide enough notice to the Engineer when he intends to interrupt the operations of the existing works in order to effect connections with the new works. Approval for such work will be given only when the timing of the work is suitable to the Employer.

C3.4.12.9 Connection to existing services

All connections to the existing water and sewerage systems shall be undertaken in a manner and at times to be approved by the Engineer. It is anticipated that this work may have to be done at night in order to minimise inconvenience to users. No claims for additional payment will be considered in this regard.

C3.4.12.10 Community Liaison Officer

The Contractor shall employ a Community Liaison Officer (CLO) for the duration of construction. The function of the CLO is to represent the local community and to assist the Contractor, the Employer and the Engineer with their communication with the community and vice versa.

The Community Liaison Officer's duties will be:

- to be available on site daily during the normal working hours as stated in the Contract.
- to communicate daily with the Contractor and the Engineer to determine the labour requirements regarding numbers and skill, to identify possible labour disputes and to assist in their resolution.
- to attend all meetings in which the community and/or labour is present or is required to be represented. He/she will attend the first part of the monthly site meeting to report on the local community and labour involvement.
- to identify, screen and nominate labour from the community in conjunction with the PWC in accordance with the Contractor's requirements.

-
- to inform local labour of their conditions of temporary employment, to ensure their timeous availability and to inform local labourers timeously when they will be relieved.
 - to attend disciplinary proceedings to ensure that hearings are fair and reasonable.
 - to consult on all decisions regarding local problems and any matters of importance that, in any way, be of relevance to the Contract.
 - to keep a daily written record of his/her interviews and community liaison.

The Contractor shall pay the CLO fortnightly, and will be paid by certification in the monthly certificates of payment. The CLO shall be paid at the prevailing minimum wage at the time of his appointment. The Contractor will be paid for his overheads and profit in a separate item in the Bill of Quantities.

C3.5 MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS**C3.5.1.1 Applicable SANS and SABS standards**

As specified in Clause C3.4.

C3.5.1.2 Particular or Generic specifications

As specified in Clause C3.4.

C3.5.1.3 Planning and programming

The Contractor's programme shall be submitted in electronic and hard copy format in bar chart format. In addition to the requirements of the General Conditions of Contract, the Contractor's programme shall show:

- a) the various activities on a time scale, including those of Subcontractors,
- b) the start date, completion date and programmed duration of each activity
- c) anticipated production rates in m/week, m³/day, etc
- d) critical path activities and their dependencies,
- e) key dates in respect of work to be carried out by others and information to be provided by the Engineer and/or others,

If any change to the critical path occurs, the Contractor shall as soon as practicable notify the Engineer in writing. The Contractor's programme and method statement will not be accepted as the basis for claims for additional compensation without due reference to all relevant associated factors.

The Contractor shall make allowance for the following when preparing his programme:

- expected weather conditions and their effects,
- known physical conditions or artificial obstructions,
- searching for, dealing with and carrying out alterations to the existing services,
- the accommodation of public access and traffic,
- the provision and implementation of the health and safety plan in terms of the Construction Regulations of the Occupational Health and Safety Act.
- the design of the elevated tank and stand including the acceptance hereof by the engineer,
- the design of the of the foundation for the elevated storage tank,
- the design, testing and approval of the concrete mixes,
- the reasonable requirements and programmes of the mechanical and electrical Contractors including but not limited to the preparation of detailed designs, shop drawings, acceptance hereof, lead times for purchases and delivery and installation of equipment, etc.,
- the restrictions on the length of trench open at any one time as specified.

The Contractor shall review his progress every month and should progress lag behind the latest approved programme by more than 2 weeks, he shall submit a revised programme for approval, with a method statement indicating how he will make up the lost time. If, in the opinion of the Engineer, such revised programme will not make up the lost time, the Engineer will have the right to instruct the Contractor to reorganize his resources and his work to ensure an acceptable programme. Claims for additional payment for costs incurred due to such reorganisation will not be accepted.

C3.5.1.4 Sequence of the works

The Contractor shall programme his work so that:

1. The Ground Penetrating Radar survey is done and shared with the Engineer before any construction on the rising main takes place.
2. All pipework (including sewer and water erf connections) crossing a road is to be completed prior to proceeding with the construction of any road layers above the insitu layer.
3. The Contractor shall arrange his programme in such a manner that the work is completed from one side. He shall therefore complete his trench excavations, pipelaying and backfilling in one area before commencing with trench excavations in an adjacent area.

C3.5.1.5 Software application for programming

The Contractor shall prepare the programme with proprietary software that uses the critical path method of network analysis and can display the programme in a bar chart format, amongst others. The software shall be compatible with Microsoft Project.

C3.5.1.6 Methods and procedures

The Works shall be executed in accordance with the Contract, and all relevant statutory requirements.

C3.5.1.7 Quality plans and control

Quality control shall be carried out in accordance with the requirements of the Standardised Specifications for Civil Engineering Construction, the Scope of Work and the General Conditions of Contract as amended in the Contract Data.

The Contractor shall provide the Engineer 48 hours notice when he requires the inspection/testing of parts of the Works. Failure to notify the Engineer or to provide adequate test results (including level control and setting out information) will be regarded as test results that do not comply with the specified requirements. Payment for such parts of the Works, and all subsequent parts of the Works that would be affected by such non-compliance will not be certified until adequate test results are provided.

C3.5.1.8 Health and Safety

Refer to C3.10.

C3.5.1.9 Environmental Management

Refer to C3.11.

C3.5.1.10 Accommodation of traffic on public roads occupied by the Contractor

Refer to PSA 5.

C3.5.1.11 Other Contractors on site

The Contractor shall provide adequate working space for the Sub-Contractors.

C3.5.1.12 Testing, completion, commissioning, and correction of defects

Quality control shall be carried out in accordance with the requirements of the Standardised Specifications for Civil Engineering Construction, the Scope of Work and the General Conditions of Contract as amended in the Contract Data.

C3.5.1.13 Recording of weather

Refer to the Contract Data

C3.5.1.14 Format of communications

All contractual communications shall be in writing. Verbal instructions will only be regarded as instructions from the Engineer if confirmed in writing.

C3.5.1.15 Key personnel

Key personnel shall be on site full-time during working hours. Key personnel may only be substituted with a person who has equal or better qualifications and experience.

C3.5.1.16 Management meetings

Monthly site meetings will be held on site, in the Contractors site office. The dates of these meetings will be agreed at the Inaugural Meeting.

C3.5.1.17 Forms for contract administration

The Contractor, Employer and Engineer shall operate and maintain their separate contract administration procedures and documentation.

C3.5.1.18 Electronic payments

Payment of monthly certificates will be made by electronic transfer to the bank account stated on the Contractor's tax invoice.

C3.5.1.19 Daily records

The Contractor shall keep daily records of the activities on site, key milestones achieved, plant and labour, deliveries and removals of key materials and equipment, weather conditions, delays, dayworks and visitors, amongst others.

C3.5.1.20 Bonds and guarantees

The Guarantee shall be lodged with the Engineer.

C3.5.1.21 Payment certificates

Payment certificates shall be in the format required by the Engineer. Payment certificates shall be submitted monthly, on a date to be agreed with the Engineer at the Inaugural meeting.

A cession of ownership, in the required format shall be submitted with each payment certificate when a claim is made for materials on site.

The Contractor shall provide the reports as specified in C3.3.5 with his monthly statement.

C3.5.1.22 Permits

Not applicable.

C3.5.1.23 Proof of compliance with the law

Refer to requirements of the Scope of Works and all relevant legislation.

C3.5.1.24 Insurance provided by the Employer

Refer to the Contract Data.

C3.6 SPECIFICATIONS FOR CIVIL INFRASTRUCTURE
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The following variations and additions to the SABS1200 Standardised Specifications for Civil Engineering Construction apply to this Contract. The prefix “PS” denotes a reference to the Standardised specification. The letters and clause number following the prefix denote a reference to the specific clause in the specific Standardised specification.

An asterisk (*) placed next to the PS clause heading denotes the inclusion of an additional clause that does not appear in the Standardised specification.

The term “project specification” used in the Standardised Specification shall mean “Scope of Works”.

PSA GENERAL (SABS 1200 A)**PSA 2 INTERPRETATIONS****PSA 2.3 Definitions and abbreviations**

“SABS” shall mean “SANS”, except for references to the official SABS mark.

PSA 2.8 Items in Schedule of Quantities**PSA 2.8.1 Principle**

In the fourth line of Clause 2.8.1, after the word "specification", add: "or in the measurement and payment clause of the standard specification or Scope of Works".

PSA 3 MATERIALS**PSA 3.1 Quality**

Where applicable, materials shall bear an official standardization mark. Where it is specified that a material shall comply with the requirements of a SABS specification, the material shall bear the official SABS mark, unless the Contractor can prove that such material is not available with the mark.

PSA 4 PLANT**PSA 4.1 Silencing of plant**

Replace the reference to “Machinery and Occupational Safety Act, 1983 (Act No.6 of 1983) with “Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

PSA 4.2 Contractor’s offices, stores and services

The Contractor’s offices, buildings, sheds, stores and other facilities erected for the purposes of the contract shall be fenced off and shall be kept in a neat and tidy condition at all times.

No personnel may reside on the site, except for night-watchmen.

The Contractor shall provide one chemical toilet for every 15 workers, which shall be easily accessible to workers at all areas of the site and shall be effectively screened from public view. The Contractor shall strictly enforce the use of the toilets and shall ensure that the toilets are serviced/replaced on an acceptable, regular basis.

The Contractor shall provide a first aid cabinet fully equipped and maintained with at least the minimum contents as listed in the Annexure (Regulation 3) to the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993). The Contractor shall also provide personal protective equipment and facilities as required by Regulation 2 of the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

PSA 5 CONSTRUCTION

PSA 5.1 Survey

PSA 5.1.1 Setting out of the Works

In addition to the requirements of Clause 5.1.1, the Contractor shall check the positions and levels of all setting out pegs and benchmarks before commencing any construction and advise the Engineer of any discrepancies.

PSA 5.2 Watching, Barricading and Lighting

The Contractor shall comply in all aspects with the requirements of the Occupational Health and Safety Act (Act 85 of 1993). Refer also to PSA5.10.

PSA 5.3 Protection of structures

Replace the reference to “Machinery and Occupational Safety Act, 1983 (Act No.6 of 1983) with “Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

PSA 5.4 Protection of overhead and underground services

Existing services are known to exist along the route of the Grabouw Bulk Water Main. The approximate position of known services is shown on the drawings according to the best information available. It is also likely that other services that are not shown on the drawings exist along the route. Neither the employer nor the Engineer gives any warranty for the accuracy or completeness of the information provided.

***PSA 5.4.1 Locating existing services**

As existing services can seldom be reliably located from drawings, the Contractor shall locate all existing services with the co-operation of the relevant authority, and carefully excavate by hand, expose and survey such services before commencing any excavation. The requirements of Clauses 4.4 and 5.1.2.2 of SABS 1200D shall also apply. If the information regarding any existing service as given in the drawings is missing, incomplete or incorrect, the Contractor shall, as soon as the service has been located, submit details of the exact location, depth and type of service in writing to the Engineer. This procedure shall also be followed for services not shown on the drawings, but which may reasonably be anticipated by an experienced contractor to be present on, under, over or within the Site.

The Contractor shall locate the position of the control points of the services (valves, manholes, switches, etc) and shall have readily available the equipment necessary to shut-off and isolate any such service as well as spare parts in the event of potentially damaging the service, before commencing any excavation. The Contractor shall liaise with the relevant officials of the affected authorities or controlling bodies for the temporary suspension of any service during construction.

***PSA 5.4.3 Alterations and repair of existing services**

Unless specified otherwise by the Engineer, the Contractor shall not carry out alterations to services, or repairs of damaged services. Where any such alteration or repair become necessary, the Contractor shall immediately inform the Engineer, who will make arrangements for the alterations or repair to be carried out by the owner of the service or instruct the Contractor to make such arrangements.

***PSA 5.4.4 Disconnection procedure**

Before carrying out any work that involves the disconnection of a service to a property, the Contractor shall serve written notice on the resident/occupier and/or owner of every property, at least 3 working days before any temporary disconnection, advising the nature, time and duration of the disconnection.

***PSA 5.9 Safeguarding and accommodation of traffic**

Temporary traffic signs shall be erected at all diversions.

The number and layout of the traffic signs shall comply with the Site Manual entitled "Safety at Roadworks in Urban Areas", as published by the Department of Transport. It shall also comply with the South African Road Traffic Signs Manual Chapter 13.

Traffic signs shall have a yellow background with either a red or black border.

The existing roads within and around the Site shall remain operational throughout the Contract period. To this end the Contractor shall provide and maintain all temporary works, temporary road signs, temporary bridges, culverts, barriers, kerb ramps, flagmen, drums, lighting, deviations and all other incidentals that are necessary to maintain the normal, safe and easy flow of all vehicular and pedestrian traffic.

Temporary road signs and road markings shall comply with the Site Manual entitled "Safety at Roadworks in Urban Areas", as published by the Department of Transport. Road signs shall have a yellow background with either a red or black border.

The Contractor shall accommodate and maintain through traffic, traffic at crossings and vehicle access to houses and buildings at all times, unless the closing of streets and thoroughfares has been approved by the local authority.

PSA 5.10 Drawings

Construction drawings and additional detailed information will be made available to the Contractor as and when required by him. Tender drawings shall not be used for construction.

PSA 7 TESTING**PSA 7.2 Approved laboratories**

In addition to the approved laboratories stated in Clause 7.2, a testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract, will also be regarded as an approved laboratory.

PSA 8 MEASUREMENT AND PAYMENT**PSA 8.3.1 Contractual Requirements**

Add to sub-clause 8.3.1 :

"In addition, the sum tendered shall cover all initial costs incurred in complying with the requirements of the Special Conditions of Contract.

PSA 8.3.2.1 Facilities for Engineer (Clauses 8.3.2.1 and 8.4.2.1)

The sums tendered for Items A1 and A2 shall cover the costs of providing and maintaining all the facilities as detailed in Clause 3.4.5.5 of the Scope of Works.

PSA 8.4.1 Contractual Requirements

Where the Engineer has awarded an extension of time, the Time-Related Items will be adjusted in accordance with the following formula:

$$\text{Sum of Tendered amounts for Time Related Items} \times \frac{\text{Extension of Time awarded by Engineer}}{\text{Tender contract period}}$$

For the purposes of applying this formula "Extension of Time" will exclude the Contractor's December/January close-down period, if applicable. The abovementioned adjustment of the payment for Time-Related Items shall be made in the Completion Payment Certificate and shall be the only payment for additional Time-Related costs irrespective of the actual period required to complete the Contract including its authorised extensions.

In the case of fixed price contracts, the amount by which the Time-Related Items are adjusted will not be subject to the Contract Price Adjustment formula. In the case of contracts subject to Contract Price Adjustment, the amount by which the Time-Related items are adjusted shall be subject to the Contract Price Adjustment formula.

PSA 8.4.2 Adjusted Payment for Time-Related Items

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

$$\text{Sum of Tendered amounts for Time Related Items} \times \frac{\text{Extension of Time authorised by variation order}}{\text{Tender contract period}}$$

*For the purposes of applying this formula "Extension of Time" will exclude the Contractor's December/January close-down period, if applicable.

The abovementioned adjustment of the payment for Time-Related Items shall be made in the Completion Payment Certificate and shall be the only payment for additional Time-Related costs irrespective of the actual period required to complete the Contract including its authorised extensions.

In the case of fixed price contracts, the amount by which the Time-Related Items is adjusted shall not be subject to the Contract Price Adjustment formula.

PSA 8.4.5 Other Time-related Obligations

Provision of Security Personnel Unit: month

This item shall cover the cost of providing such security personnel the Contractor deems appropriate, taking cognizance of the location of the site and the historical record of incidents of crime in the area.

PSA 8.5 Sums stated provisionally by Engineer

Insert after the last sentence of Clause 8.5:

"Payment will be made on the basis of the sums actually paid for such work."

PSA 8.6 Prime cost items

Insert before the last sentence of Clause 8.6:

"Payment will be made on the basis of the sums actually paid for such goods or materials."

PSA 8.7 Daywork

Provisional items for Daywork are scheduled as follows:

Labour at hourly rates for skilled, semi-skilled and unskilled labourers.

Material as a Provisional Sum with a percentage allowance on the net cost.

The Contractor's own plant at hourly rates for various types. The rates for the Contractor's own plant shall be all inclusive, covering the cost of plant operators, consumable stores, fuel and maintenance.

Hired plant as a Provisional Sum with a percentage allowance on the net cost. The Contractor will be paid the actual net cost of plant hired by him for Daywork and in addition will be paid a percentage allowance on the net cost of such hire, which allowance will cover the Contractor's own overhead costs and profit.

PSA 8.8.1 Main access

The sum tendered shall cover the cost of constructing and maintaining the main access road and, unless the access road is specified to be handed over in good condition, the removal of the road and the reinstatement of the area on completion.

PSA 8.8.2 Dealing with traffic

A specific item has been included in the Schedule of Quantities to allow the Contractor to cover the costs of accommodating traffic on the adjacent roads at all times.

The sum shall cover the effect on the Contractor's programme, delay in the works, damage to or loss of a deviation, supply, erection and moving and re-erection of all necessary traffic signs, drums, barricades, the provision of flagmen and any other operation or equipment, plant or labour necessary.

Payment under this item will be made on a pro-rata basis to the duration of the contract.

PSA 8.8.4.1 Dealing with existing services

The cost of locating and exposing existing services by careful excavation will be held to be included in the rates for excavation.

Where it is necessary for the Contractor to locate and expose existing services that are not shown on the drawings, or where the existing service is found to be further than 3m from the position indicated on the drawings, the cost of locating and exposing such services will be measured by volume. The rate shall cover all costs of materials, labour and plant, including specialist detecting equipment, required to locate and expose the service.

PSA 8.8.4.2 Existing services

A Provisional Sum is included in Item A5.1.1 of the Schedule of Quantities for work on existing services by the relevant authorities.

The Contractor shall pay for work ordered by the Engineer and carried out by the relevant authorities, such as locating, protecting or diversion of existing services. The Contractor shall arrange with the relevant authority for invoices to be addressed to him. The Contractor will be paid in Item A5.1.1 upon submission of proof of payment of the relevant authority's invoice.

The Contractor's costs in connection with work carried out by service authorities will be measured and paid separately under Item A5.1.2 as a percentage of the actual amount paid, excluding VAT. The percentage shall cover the costs of all administrative and supervisory costs and profit, as well as the cost of the Contractor's liaison and aid to the authorities in locating and protecting the abovementioned services and any other costs resulting from the work of the authorities.

PSA 8.8.4.3 Alterations to existing services

Alterations to existing services made by the Contractor will be measured and paid under the relevant scheduled items. The length of a service that is re-laid will be measured in its final position.

The sums or rates shall cover the cost of excavation and backfilling, lifting, recovery of the existing service and laying of the service in the new position and any other related work and materials such as new rubber ring seals, packing, etc., required to complete the alteration. New material required to make up shortfalls resulting from a longer route or damage caused, beyond the control of the Contractor, during recovery, and other work carried out by the Contractor in making permanent alterations for which no scheduled items apply will be measured and paid under Item A4: "Daywork".

***PSA 8.9 Dealing with water**

The sums tendered for Items A7.4.1 and A7.4.2 shall cover all costs with regard to the preventive measures that must be taken with regard to water and the repair of damaged portions of the Works, including the control of surface water, precautions against flooding, drainage and removal of ground water in the trenches, the protection of the road prism for the proper execution of the Works.

PSA 8.10 Freehaul and overhaul *

Notwithstanding any clauses in the Standardized Specifications dealing with transport, freehaul and/or overhaul, no measurement or payment will be made for overhaul. All haulage will be regarded as freehaul and the cost thereof will be deemed to be covered by the rates for the provision or disposal of the applicable material.

PSA 8.11 Miscellaneous items *

The sum or rate for any item which refers to this clause shall cover the cost of all materials, labour and plant required to execute and complete the work as specified, described in the Bill of Quantities or shown on the drawing(s), including the Contractor's overheads and profit.

***PSA 8.12 Compliance with OHS Act and The Construction Regulations**

Unit: sum

The sums tendered shall cover all costs associated with compliance with all the requirements of the OHS Act, Regulations (including the Construction Regulations 2014) and the Employer's Site-Specific Health and Safety Specifications, at all times for the full duration of the Contract.

Both fixed charge and time related items in this regard have been allowed, measurement shall be as per clause 8.2.1. and 8.2.2 of SABS 1200A.

PSAB ENGINEER'S OFFICE (SABS 1200 AB)**PSAB 3 MATERIALS****PSAB 3.1 Name boards**

The Contractor shall supply, erect and maintain two name boards in accordance with Clause 3.1. The details to be printed on the name board will be provided at commencement.

PSAB 4 PLANT***PSAB 4.5 Protective clothing**

The Contractor shall provide and replace all personal protective equipment that may be required by the Engineer, his site staff and his visitors.

***PSAB 4.6 Survey equipment**

The Contractor shall provide the following survey equipment for use exclusively by the Engineer:

- 1 x total station, with tripod,
- 1 x engineer's automatic level with tripod,
- 1 x level staff with staff bubble,
- 2 x ranging rods,
- 1 x builder's spirit level of length 900 mm,
- 1 x steel tape of length 30 m,
- 1 x pocket tape of length 5 m,
- 1 x rectangular mirror, 300 mm x 225 mm, mounted on protective backed frame,
- 1 x elliptical mirror, 225 mm x 150 mm, similarly protected,
- 1 x elliptical mirror, 150 mm x 100 mm, similarly protected,
- 1 x 6 V, 8-cell torch with spare batteries, and
- all steel and wood pegs, concrete, hammers, picks, etc., that the Engineer may require.

The Contractor shall provide proof, at any stage of the Contract, that the survey instruments have been serviced and calibrated by an acceptable institution within the last three months and shall, throughout the period of construction, service and maintain all survey equipment and he shall insure same and indemnify the Employer and the Engineer against all claims for loss, breakage or theft of such equipment.

PSAB 5 CONSTRUCTION**PSAB 5.1 Name boards**

The name board(s) shall be erected within 14 days of the Commencement date in the positions directed by the Engineer. The Contractor shall submit the signwriter's proof of the name board to the Engineer for his approval before commencing the signwriting. Any damage to the name board shall be repaired within 14 days of a written instruction by the Engineer.

All name boards and Contractor's advertising and notice boards shall be removed prior to the issue of the Certificate of Completion.

PSAB 5.5 Survey Assistants

The Engineer's Representative will occasionally need the assistance of a survey labourer to help with testing, survey, etc., envisaged at approximately 2 hours (non-consecutive) per week.

PSAB 5.6 Site instruction book

The Contractor shall supply and maintain a carbon triplicate book as a site instruction book. This book shall be kept on Site and shall be accessible to both the Contractor and the Engineer at all times.

It shall be used by the Contractor for providing the Engineer with any information regarding the construction of the Works which may be requested, and giving notification in writing of inspections, drawings, etc, required by the Contractor, and by the Engineer for the purpose of writing day-to-day instructions and confirming any verbal information or instructions given to the Contractor.

One copy of each site note issued shall remain in the book.

PSAB 8 MEASUREMENT AND PAYMENT

PSAB 8.2.3 Survey Assistant

Payment for the survey assistant shall be at the tendered daywork rates for the hours worked in assisting the Engineer's Representative.

***PSAB 8.3 Telephone and 3G data card**

The provisional sum under Item A3.1.1 provides for payment of the cost of calls and data that exceed R 1 000.00 per month, and, in addition, a commission on the amount paid under Item A3.1.1, will be paid under Item A3.1.2.

PSAB 8.4 Photocopying machine

The rates tendered for Items A1.2 and A2.2 shall include for the cost of installation, rental costs and consumable materials.

PSC SITE CLEARANCE (SABS 1200 C)**PSC 3 MATERIALS****PSC 3.1 Disposal of material**

The Contractor shall dispose of all cleared vegetation, rubble and construction waste at the site described in C3.4.5.2.5, unless instructed otherwise by the Engineer.

PSC 5 CONSTRUCTION**PSC 5.1 Areas to be cleared and grubbed**

The Contractor shall ensure that the areas cleared and grubbed are kept to the minimum area necessary for the execution of the Works.

The Contractor shall clear and grub the area required for the Works, areas on which material will be stockpiled for later use and areas where material is to be dumped and spread, unless instructed otherwise by the Engineer.

PSC 5.2 Cutting of trees

The Contractor shall not remove trees with a trunk girth of more than 1m without the written permission of the Engineer.

PSC 5.6 Conservation of topsoil

Topsoil shall be removed from the cleared areas up to a depth of 150 mm (if available) and stockpiled on approved sites for later reuse. Until required for spreading, the stockpiles of topsoil material shall be stabilized by watering or other approved means.

PSC 8 MEASUREMENT AND PAYMENT**PSC 8.2.1 Clear and grub**

The rate tendered for clearing and grubbing shall cover the cost of disposal of the material at the Disposal Site by approved means at places indicated by the Engineer. Site clearance for pipe trenches will not be measured where such trenches lie within the carriageway of any road.

PSC 8.2.7 Dismantle and remove pipelines, etc

In addition to the requirements of Clause 8.2.7, the rate shall cover the cost of locating the pipeline and any additional costs of excavation and backfilling not covered by other normal rates for excavation and backfilling under SABS 1200 DB.

PSC 8.2.8 Demolish and remove structures, etc

In addition to the requirements of Clause 8.2.8 the rate shall cover the cost of excavation and demolition of the scheduled unit, salvaging and delivery of metal fittings, complete removal of all rubble from the Site, and the supply of material for and backfilling of the voids so formed, including compaction, all to the satisfaction of the Engineer.

PSC 8.2.10 Removal and conservation of topsoil

The rate tendered for the removal of in situ topsoil shall, in addition to the items listed in Clause 8.2.10, also cover the cost of stabilizing, watering and protecting the stockpiles of topsoil.

PSD EARTHWORKS (SABS 1200 D)

PSD 2 INTERPRETATIONS

PSD 2.3 Definitions

Replace the definition of "restricted excavation" with:

"Notwithstanding the definition in Clause 2.3, and irrespective of the method of excavation employed by the Contractor, all excavation for above the level of will be regarded as "bulk excavation". All excavations below this level and or outside the envelope of the will be regarded as "restricted excavation"."

PSD 3 MATERIALS

PSD 3.1 Classification for excavation purposes

PSD 3.1.1 Method of classifying

Replace the third sentence of Clause 3.1.1 with

"The classification will be based on the Engineers inspection of the material to be excavated and on the criteria given in PSD3.1.2".

PSD 3.1.2 Classes of excavation

Notwithstanding Clause 3.1.2, intermediate excavation and boulder excavation (class A and B) will be classified as soft excavation.

Replace 3.1.2 c) 2) with:

In the case of restricted excavation of trenches for pipeline, hard rock excavation shall be excavation in material that cannot be efficiently removed by a 30 tonne excavator equipped with a rock bucket

PSD 5 CONSTRUCTION

PSD 5.1 Precautions

PSD 5.1.1.2 Safeguarding of excavations

All excavations irrespective of depth (up to a max of 3.0m) and within 4.0m of any existing structure are to be shored, propped, supported, etc in accordance with this clause.

PSD 5.2 Methods and procedures

PSD 5.2.1.2 Conservation of topsoil

Until required for spreading, the stockpiles of topsoil material shall be stabilized by watering or other approved means.

Topsoil shall not be stockpiled higher than 2,0m. Care shall be taken to prevent the compaction of topsoil in any way especially by vehicles.

PSD 5.2.2.3 Disposal

The Contractor shall remove all surplus and/or unsuitable material from excavations and clearing and grubbing operations and dispose of it at the site described in C3.4.5.2.5, unless instructed otherwise by the Engineer.

Should the Engineer instruct the disposal of selected material on the Site, the coarsest material shall be placed at the bottom and covered with finer material, with the finest material at the top. The surface profile of the material shall be shaped to free draining slopes. The disposal site shall be finished off to the satisfaction of the Engineer.

PSD 5.2.3.2 Backfilling against structures

In addition to the requirements of Clause 5.2.3.2, the backfill material shall be placed and compacted on all four sides of the structure in equal layer heights, to prevent overturning or sliding.

***PSD 5.2.4.6 Reinstatement of disturbed areas**

Where the Site has been disturbed by construction activities, and the Engineer has instructed that these areas shall be reinstated, the reinstatement shall, after the final grading defined in Clause 5.2.4.1 of SABS 1200D, include the spreading of thatch grass over the surface at a rate sufficient to prevent wind erosion, as approved by the Engineer.

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.3.6 Overhaul

Notwithstanding Clause 8.3.6, PSA 8.10 shall apply.

PSD 8.3.10 Topsoiling

In addition to the provisions of Clause 8.3.10, the rate for topsoiling shall cover the cost of watering, and stabilising the topsoil on slopes to avoid erosion and slipping where necessary, to the approval of the Engineer.

***PSD 8.3.14 Extra-over payment for excavation classification**

The unit rate for soft excavation shall cover the cost of excavation in all classes of excavation except hard rock. An extra-over item has been scheduled for excavation in hard rock. The rate for the extra-over item shall include all costs associated with excavation of rock, over and above the cost of soft excavation.

***PSD 8.3.15 Reinstatement of disturbed areas**

The rate shall cover the cost of final trimming and preparation of the disturbed areas, and the supply and installation of thatch grass over the areas.

PSDB EARTHWORKS (PIPE TRENCHES) (SABS 1200 DB)

PSDB 3 MATERIALS

PSDB 3.1 Classes of excavation

Delete the contents of Clause 3.1 and replace with the following:

“The classification of excavation shall be as specified in PSD3.1”.

For trench excavation that is required to be carried out using labour intensive methods the excavation of material will, for purposes of measurement and payment, be classified as specified in PSD3.1.2.

PSDB 3.5 Backfill material

Delete the contents of Clause 3.5(b) and replace with the following:

“Materials used in the reinstatement of trenches beneath or within a new roadway, up to underside of the road layers, shall be 37,5mm basecourse quality material conforming to SABS 1200 MF compacted in 150mm layers to 98% of mod. AASHTO max. density.”

PSDB 3.6 Materials for reinstatement of road and paved areas

The reinstatement of existing road layers shall be executed with materials that comply with the following:

Subbase: G5 or material with PI maximum 10. CBR at least 45 at 95% of mod. AASHTO max. density.

Base: G4 or material with PI maximum 6. CBR at least 80 at 98% of mod. AASHTO max density.

Surfacing: Commercial cold mix asphalt surfacing as specified in Clause 3.6.4.

Gravel wearing course: PI 10-14. The size of the aggregate shall not exceed 40 mm. CBR at least 45 at 95% of mod. AASHTO max. density.

PSDB 3.7 Selection

Notwithstanding Clause 3.7, the Contractor is required to use selective methods of excavating. The Contractor shall selectively remove and keep separate topsoil, unsuitable material, and material suitable for reuse as backfill, selected fill, selected granular material or for other use as ordered by the Engineer.

***PSDB 3.8 Geotextile blanket**

The Contractor shall use "Bidim" or "Kaymat" or similar approved geotextile.

PSDB 5 CONSTRUCTION

PSDB 5.1 Precautions

PSDB 5.1.2.3 Sloping ground

On slopes steeper than 1:4, the Contractor shall excavate by hand. No additional payment will be certified for such excavation.

PSDB 5.2 Minimum base widths

The minimum base width for flexible pipes shall be as follows:

External diameter of pipe barrel (mm)		Minimum base width (mm)
Over	Up to and including	
-	50	400
50	110	600
110	300	800
300	450	1,000

Otherwise the provisions of clause 5.2 shall apply.

PSDB 5.1.4 Existing services that intersect or adjoin trenches

Where the proximity of existing services or the lack of space prohibits the use of a mechanical excavator for trench excavation, the Engineer may order or permit the use of hand excavation. No additional payment will be certified for such excavation, as any additional costs will be held to be covered in the rates.

PSDB 5.4 Excavation

Add:

“The excavation of trenches across a concurrently constructed carriageway shall commence after the subgrade layer has been accepted. The pipe/duct shall be laid and the trench backfilled to the acceptable requirements, including density testing before the construction of the next layer may commence”.

PSDB 5.5 Trench bottom

Should the Engineer consider the trench bottom to be unstable, he may instruct the Contractor to replace unsuitable material with a 19 mm single-sized crushed stone layer in order to provide a stable platform for the placing of the pipe bedding. The stone layer shall be 150mm thick over the full width of the trench, and shall be wrapped in a geotextile blanket with 150mm overlap at the joint.

PSDB 5.6 Backfilling

PSDB 5.6.2 Material for backfilling

The Contractor shall ensure that all excavated material is kept within the pipe servitude until backfilling is complete. The toe of the heap of excavated material next to the trench shall be kept a minimum of 500mm from the edge of the trench, and this strip shall be kept clear of excavated material at all times.

PSDB 5.6.3 Disposal of Soft Excavation Material

Delete the contents of Clause 5.6.3. and replace with the following:

“Excess material arising from the excavations will be disposed of at a designated tip site. The rate for spoiling of excess material shall include for the loading and carting of material, and the off-loading at the tip site. The Contractor shall be responsible for all charges levied at the tip site. The current charges applicable may be obtained from the Municipality’s Cleansing Division.

Where topsoil is encountered this will be set aside on site and re-used later.”

PSDB 5.6.6 Completion of backfilling

Within the residential areas, the length of trench open at any one time shall not exceed 100 m per pipe-laying team or 200m in total, whichever is the greater.

If in the opinion of the Engineer, insufficient progress is being made with the backfilling of trenches, the Engineer may order that no further excavation may take place until the backfilling of trenches has caught up. No additional payment will be made for any delay that this may cause.

PSDB 5.7 Compaction

PSDB 5.7.2 Areas subject to traffic loads

All trenches within the road reserves will be considered to be subject to traffic loads and the backfill material and compaction in these trenches shall comply with the requirements of PSDB3.5 and 5.7.2.

***PSDB 5.11 Railway line crossing**

At least one month prior to the planned crossing, the Contractor shall make all the necessary arrangements through the Engineer, with Spoornet, for the crossing.

PSDB 7 TESTING

PSDB 7.1 Density testing

In addition to clause 7.1 the Contractor shall also carry out density tests to determine the compaction of the trench bottom. The Contractor will be required to carry out as many density tests that are necessary to achieve the required material control, with a minimum testing frequency of:

- Every 100m on the trench bottom
- Every 50m on the bedding
- Every 50m on the backfill

Notwithstanding Clause 7.1, the Contractor will be responsible for the cost of all testing.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.3.2 Excavation

Notwithstanding Clause 8.3.2, the rate for excavation in all materials shall cover the cost of excavation in all classes of excavation, except hard rock. An extra-over item has been scheduled for excavation in hard rock. The rate for the extra-over item shall include all costs associated with excavation of rock, over and above the cost of excavation in all materials.

The rates for excavation of trenches shall also cover the cost of the activities with respect to areas subject to traffic loads as set out in Clause 8.3.3.3, the cost of accommodation of traffic and all costs of density testing to be borne by the Contractor.

PSDB 8.3.3.1 Deficiency in Backfill Material

Add the following to sub-clause 8.3.3.1(c):

The rate shall also include for compaction of base course quality backfill as per PSDB 3.5.

PSDB 8.3.5 Existing services that intersect or adjoin a pipe trench

Add the following item at the end of the clause:

- “v) all hand excavation that may be necessary, whether ordered by the Engineer or elected by the Contractor.”

PSDB 8.3.8 Excavation using labour intensive methods*

Notwithstanding Clause 8.3.2, the tendered rate shall cover the additional cost of excavation by hand in pickable material.

PSDB 8.3.9 Crushed stone bedding layer and geotextile blanket *

Where the use of a layer of crushed stone in the trench bottom has been authorized by the Engineer, it will be measured by volume according to the length, the specified thickness of the layer, and the specified trench width.

The rate shall cover the cost of all additional excavation, preparation of the trench bottom, removal and disposal of unsuitable material, the supply and placing of a layer of stone.

Where the Engineer has authorized the use of geotextile filter blanket, this will be measured by area according to the specified thickness, specified trench width and the net length.

The rate shall include the cost of supply, placing and wastage as a result of overlap and over excavated trench widths.

PSDM EARTHWORKS (ROADS, SUBGRADE) (SABS 1200 DM)**PSDM 1 SCOPE**

The construction of road verges, including where such construction extends beyond the road reserve, shall be carried out under this specification.

PSDM 2 INTERPRETATIONS**PSDM 2.1 Supporting specifications**

Delete from Clause 2.1(c) "or SABS 1200 DA, as applicable" and throughout the specification delete all reference to SABS 1200 DA.

PSDM 3 MATERIALS**PSDM 3.1 Classification for excavating purposes**

Replace Clause 3.1 with:

"All cut to fill, cut to spoil, borrow to fill, and excavations for drains will be classified according to PSD3.1".

PSDM 5 CONSTRUCTION**PSDM 5.1 Precautions****PSDM 5.1.2 Accommodation of traffic**

The requirements of PSA 5.10 shall apply.

PSDM 5.2 Methods and procedures**PSDM 5.2.3 Treatment of the road bed****PSDM 5.2.3.3 Treatment of roadbed**

Add the following to clause (a) :

"The depth of compaction shall be 150mm. Where road bed preparation takes place in sand the in-situ sand layer is to be watered and compacted to 100% of mod. AASHTO max. density. The surface of the in-situ sand layer is to be firm and smooth in order to receive the subsequent S.S.G. or subbase layer, as the case may be. To this end the Engineer may order that unnecessary construction traffic remain off the finished in-situ sand layer until the subsequent layer has been completed."

PSDM 5.2.4.2 Placing and compaction

Material used for filling behind kerbs above subgrade level and below sidewalk base or gravel surfacing shall be of selected subgrade quality. This material shall be compacted to at least 93% of mod. AASHTO max. density (100% in the case of sand). The Contractor may however, at his own additional expense, construct all or portion of this fill using subbase material rather than selected subgrade material.

PSDM 5.2.8 Transport

Notwithstanding Clause 5.2.8, Clause PSA 8.10 shall apply.

***PSDM 5.2.9 Trimming and grading of verges**

During the initial earthworks the verge width shall be cut or filled to approximately the final level and shall be kept trimmed and tidy during construction of the works. After completion of the road layers, including the surfacing, and after construction of the necessary kerbs, including the satisfactory backfilling behind the kerb, the verge shall be trimmed off to the lines and levels shown on the drawings or as specified

The verge material shall consist of that material which would normally occur at that position or depth when in cut and shall not be contaminated by foreign materials such as bricks, basecourse material, horticulturally inferior materials from trench excavations, etc. Verges in fill conditions are to consist of the material as specified for the fills and similarly not be contaminated with foreign materials.

Over those sections of verge where grass is to be planted or where the Engineer deems it necessary to spread topsoil, he may instruct the Contractor at the stage of the major earthworks operation to work to levels altered from those shown on the drawings.

Topsoil may be provided from stockpiles on site in which case the Contractor shall load, transport and spread as ordered by the Engineer. In the case of topsoil provided and imported by the Contractor the quality of the topsoil shall be approved of by the Engineer beforehand.

The Contractor shall be responsible for taking the necessary precautions and measures to control the dust nuisance which may arise due to his operations on the verge, whether from the natural ground surface or topsoil layer, until the verge is accepted by the Engineer.

***PSDM 5.2.10 Dimension and level control and process control**

The Contractor shall submit to the Engineer records of dimension and level control and/or process control prior to requesting the Engineer to carry out any routine tests and/or inspections.

A sample form can be obtained from the Engineer.

***PSDM 5.2.11 Requesting of tests**

Tests and Inspections of the works will only be carried out by the Engineer once the appropriate test/inspection request forms have been fully completed.

Test/inspection request forms can be obtained from the Engineer.

PSDM 7 TESTING

PSDM 7.3.2 Routine inspection testing

Notwithstanding Clause 7.3.2 and Table 2, no single test result which is below the specified density will be accepted.

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.3 Scheduled items

The rates for treatment of road-bed (8.3.3), cut and borrow to fill (8.3.4) and selected layer (8.3.5), shall also cover the cost of density testing.

PSDM8.3.4(a) Cut to Fill, Borrow to Fill

Add to Clause 8.3.4(1) the following:

“Where fill material is borrowed from trench excavations the rate shall include the selection from the sides of trenches, transporting, if necessary, stockpiling, preparing, processing, shaping (including forming side channels and benching if applicable), watering, mixing, compacting to the densities specified and finishing the slopes of fills.”

PSDM 8.3.12 Overhaul

Notwithstanding Clause 8.3.12, Clause PSA 8.10 shall apply.

PSDM 8.3.13 Surface Finishes

Add to Clause 8.3.13 the following Clause (c):

“The major earthworks required to bring the verge to the required level and the additional depth of excavation or reduction in fill height as ordered for the topsoil operation shall be measured and paid for under the appropriate excavation item.

Only the following verge item will be measured and paid for separately.

The unit of measurement for trimming and grading of verges shall be per square metre.

The rate tendered for the above item shall include for all things necessary to complete the work as specified.”

PSDM 8.4 Importation of material

The rate for selected subgrade material imported from commercial sources shall cover the cost of supply, transport, placing and compaction of the selected subgrade layer as specified.

***PSDM 8.5 Existing services that cross roadworks**

PSA8.8.4 shall apply.

***PSDM 8.6 Verges**

The cost of constructing verges shall be included in the rates tendered for the construction of the subgrade.

***PSDM 8.7 Selected fill to sidewalks above subgrade level**

The selected fill to sidewalks above subgrade level will be measured by volume of material in place after compaction by the method of average end areas.

The rate shall cover the cost of the supply of all material as though it were selected subgrade material, loading, transporting, off-loading, spreading, placing, compacting, the supply of all labour, supervision, tools and equipment and for any other operation or thing necessary for the proper execution of the work.

PSGA CONCRETE (SMALL WORKS) (SABS 1200 GA)

PSGA 3 MATERIALS

PSGA 3.2 Cement

PSGA 3.2.1 Applicable specifications

Notwithstanding Clause 3.2.1, the specification for cements shall be SABS EN 197.

Cement Grade CEM I 42,5N shall be used. Pulverised fly ash (PFA) shall comply with SABS1491-2.

PSGA 3.3 Water

Only potable water may be used for mixing concrete. Other clean water may be used for curing concrete.

PSGA 3.4 Aggregates

The maximum aggregate size shall be 19mm. Plums are not permitted.

PSGA 4 PLANT

PSGA 4.2 Mixing plant

When the concrete is mixed on site, an approved rotary mixer, suitable in size for a batch containing cement in increments of one sack of 50kg, shall be used. The Contractor's method of batching of the ingredients shall be to the approval of the Engineer's Representative

PSGA 4.3 Vibrators

All concrete shall be vibrated.

PSGA 5 CONSTRUCTION

PSGA 5.1 Reinforcement

PSGA 5.1.3 Cover

Notwithstanding Clause 5.1.3, the cover to reinforcement shall be as shown on the drawings and bending schedules, and shall not be less than 40mm.

PSGA 5.2 Formwork

A 20mm chamfer shall be formed on the edges of all exposed concrete.

PSGA 5.2.1 Classification of finishes

The finish to all exposed concrete shall be smooth. The finish to buried or backfilled concrete surfaces that are more than 500mm below finished ground level shall be rough.

PSGA 5.4 Concrete

PSGA 5.4.1.4 Prescribed mix concrete

Prescribed mix concrete shall be mixed in the proportions as set out in Clause 8.4.1.

PSGA 5.4.1.5 Strength concrete

The concrete mix design for strength concrete must be prepared by an approved concrete laboratory or supplier and the results of actual test mixes must be submitted for approval together with 7-day and 28-day strength test results. The Contractor shall bear the costs of determining the proportions of the mix and making and testing cubes for this purpose. If the Contractor submits reliable test records of concrete made from the same materials and mix proportions which he proposes to use, then the Engineer may waive all or part of the strength tests required above to verify that the concrete mix design which the Contractor proposes to use is satisfactory.

No concrete shall be cast until the mix designs have been approved by the Engineer.

Any mix for use in the wall or floor of a water-retaining structure shall have a water/cement ratio not exceeding 0.5, shall contain not less than 325kg cement per cubic metre of concrete and the proportions of the various aggregates shall be such as to produce a density of at least 2,400kg/m³.

In order to facilitate increasing the workability of concrete in the fresh/plastic state, to ensure watertightness without increasing the water/cement ratio, the Engineer may approve the use of an additive. The workability of concrete shall be assessed by means of the slump test. The slump shall be between 30 and 40 mm.

PSGA 5.4.2 Batching

All strength concrete shall be weigh batched.

PSGA 5.4.7 Curing and protection

Concrete shall be wet cured with water by ponding such as to maintain it in a continuously wet condition. Where the surface to be cured is to receive further concrete, and wet curing cannot be achieved by ponding, the concrete shall be wet cured by continuous sprinkling/spraying.

As an alternative, at the Engineers discretion, curing may be carried out by the application of a curing compound. In this case, a white pigmented natural resin based liquid curing compound complying with ASTM C309 74 Type 2 Class B, may be used.

PSGA 5.4.8 Concrete surfaces

All unformed concrete surfaces shall be wood float finished, unless specified otherwise.

Where wood-floating is ordered or scheduled, the surface shall first be given a finish as specified in Clause 5.4.8.2 and, after the concrete has hardened sufficiently, it shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screeding marks.

Where steel-floating is specified or scheduled, the surface shall be wood floated except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

Where broom-swept finish is specified, the surface shall be wood floated and thereafter swept transversely (to the direction of the roadway paving) with a stiff bristle broom to produce an approved non-skid finish.

PSGA 6 TOLERANCES

PSGA 6.4 Permissible deviations

Degree of Accuracy II in Clause 6.4 shall apply.

PSGA 7 TESTING

PSGA 7.1 Facilities and frequency of sampling

PSGA 7.1.2 Frequency of sampling

One sample shall consist of three concrete test cubes. For each sample taken the position in the structure shall be recorded where the batch represented by that sample is placed.

The Contractor shall carry out his own testing during the construction of the Works to ensure that the concrete complies with the specification. The Engineer will carry out such check testing as he requires, and the Contractor shall render any assistance necessary in taking samples and carrying out tests.

PSGA 7.2 Testing

***PSGA 7.2.4 Watertightness test**

The watertightness of the pipe lines shall be tested as follows:

The Contractor shall seal all pipes and openings below the top (emergency) water level with approved waterproofing materials. The structure shall then be filled to the top (emergency) water level with clean water and shall be allowed to remain filled for a period of three days. Any loss of water which may occur during this saturation period shall be made up by filling the structure to top water level on a daily basis. At the beginning of the test, the water level shall be recorded by the Engineer and the structure shall be left undisturbed for a period of not less than seven days. The structure shall be considered watertight if the drop in level, excluding losses due to evaporation, does not exceed 10 mm in seven (three) days and if there is no visible leakage.

In the event of leakage being evident at any stage of the filling or testing or in the event of the Engineer considering the final degree of watertightness to be unsatisfactory, the Contractor when ordered by the Engineer shall discontinue such filling or testing and shall, at his own expense, take approved steps immediately to identify the exact cause and location(s) of the leak and to rectify the leakage to the satisfaction of the Engineer. The Works will not be certified complete until the structure has been proved by testing to be watertight to the satisfaction of the Engineer.

PSGA 8 MEASUREMENT AND PAYMENT

PSGA 8.1.2 Reinforcement

Notwithstanding the method of measurement for reinforcement specified in Clauses 8.1.2.1 and 8.1.2.2, reinforcement will be measured and paid as scheduled.

The unit of measurement for steel reinforcement will be the ton of reinforcement for each size bar. Clips, ties, separators, stools and other steel used for the positioning of reinforcement will not be measured unless shown on the bending schedules. The cost of such steel will be deemed to be included in the rates for reinforcing steel.

PSGA 8.1.3 Concrete

The rates for concrete shall also cover the use of dolomitic aggregate where prescribed, the cost of the preparation of design mixes by an approved laboratory, submission for approval by the Engineer, the cost of testing concrete, cost of non-designated joints, finishing of unformed surfaces as specified in PSGA 5.4.8.

PSGA 8.9 Watertightness test

The watertightness test will be paid by a lump sum separately for each structure.

The sum shall cover the cost of all labour, equipment and materials (including water) to carry out the tests, as specified in PSGA 7.2.4, to rectify faults and to achieve a test result to the satisfaction of the Engineer.

PSHA STRUCTURAL STEELWORK (SUNDRY ITEMS) (SABS 1200 HA)

PSHA3 MATERIALS

PSHA 3.1 Structural steel

Structural steelwork shall be Grade 300WA.

PSHA 3.4 Stainless steel*

All stainless steel items shall be Grade 316 material.

PSHA5 CONSTRUCTION

PSHA 5.2.6 Handrails

The handrails shall be manufactured by an approved manufacturer specializing in such work and shall be of galvanized steel tubing of nominal thickness 2,6 mm and of normal outside diameter at least 34 mm.

Stanchions shall be manufactured preformed in one piece and shall be at least 42 mm nominal outside diameter. The bases of the stanchions shall be preformed to suit the situation in which they are to be installed, and the stanchions and spheres shall be preformed to suit right angled or other angled intersections as shown on the drawings.

Stanchions shall be spaced at intervals not exceeding 2,0 m. All joints shall be welded after the erection of handrails.

PSHA 5.2.11 Corrosion protection *

*C This clause is only required if galvanizing of the relevant items has not been specified elsewhere.

The open grid flooring panels, ladders and screens shall be galvanized in accordance with the requirements of Subclause 5.9 of SABS 1200 HC.

PSHA 5.2.10 Protective treatment

*C (This should only be used for minor work in mild conditions and when SABS 1200 HC is not part of the Contract.)

All mild steel items not suited for hot-dip galvanizing shall receive the following treatment, unless otherwise scheduled, at the shop of an approved painting subcontractor.

All internal and external surfaces shall be blast cleaned to Swedish Standard SIS 05/59/00 Sa 2 1/2 with an anchor profile between 45 and 75 micrometres. The surface shall be moisture-free of soluble salts and airborne contaminants, and shall be painted with a twin pack polyamide cured high build epoxy coating to a minimum dry film thickness of 300 micrometres. The first coat of paint shall be applied within 2 hours of blast cleaning. The time period between subsequent coats shall be in accordance with the paint manufacturer's requirements.

***PSHA 5.2.11 Type M protection**

Steelwork shall be cleaned to Sa 2½ finish and, within four hours of final cleaning, be primed with alkyd resin-based primer and finished with two coats of gloss alkyd resin-based enamel paint. Primed steelwork shall be kept covered and protected until erected in its permanent position.

PSHA 5.3.7 Repairs to paint

Where site cutting and/or welding is required, the area for a distance of 50 mm on either side of the weld or cut shall be cleaned of all coatings, the cutting and/or welding carried out, the weld deslagged, all flux and weld spatter removed, the steelwork ground down to at least Sa 2 1/2 and painted as specified herein. On arrival on site, and both before and after erection, all items of steelwork shall be examined for damage to the paintwork, and damaged areas degreased, derusted and repaired. The damaged area shall be ground down to at least Sa 2 1/2.

The surrounding paintwork which is still intact shall be feathered for a distance of 20 mm beyond the damaged area. The whole shall then be repainted as specified herein. Under no circumstances will the use of wire brushes be permitted for the removal of rust or other contaminants.

PSHA 8 MEASUREMENT AND PAYMENT

PSHA 8.3.6 Corrosion protection

Notwithstanding the requirements of Subclause 8.3.6, corrosion protection (painting and galvanizing) will not be measured separately, the prices tendered for the steel items being held to include for the cost of corrosion protection as specified.

***PSHA 8.3.7 Penstocks**

Penstocks will be measured by number. The rate shall cover the cost of supply, delivery, corrosion protection, grouting in of anchor bolts and complete installation of penstocks with frames.

***PSHA 8.3.8 Grids**

Grids will be measured by number. The rate shall cover the cost of supply, delivery, corrosion protection, grouting in of anchor bolts and complete installation of grids.

***PSHA 8.3.9 Hand stops**

Hand stops will be measured by number. The tendered rate shall cover the cost of supply, delivery, corrosion protection and complete installation of gates and frames.

PSL MEDIUM-PRESSURE PIPELINES (SABS 1200 L)**PSL 1 SCOPE**

Add to Clause 1.1 "Drawings numbered L1, L2 and L3 are withdrawn and replaced by the Construction Drawings."

PSL 2 INTERPRETATIONS**PSL 2.1 References*****PSL 2.1.3 Drawings**

Drawings numbered L1, L2 and L3 are withdrawn and replaced by the Construction Drawings.

PSL 3 MATERIALS**PSL 3.1 General**

Pipes for water mains shall be

high density polyethylene (HDPE) Class 10, type PE100 pipes complying with the requirements of SABS ISO 4427. HDPE pipes shall be joined using of the "Plasson" compression type, or equivalent, approved couplings which have a polypropylene body, nut and compression ring with rubber O ring. ALT. HDPE pipes shall be joined using fusion welding techniques or "Frialen" or equivalent, approved electro-fusion fittings.

Subject strictly to the requirements of Clause 3.1 pipes may be offloaded and strung out in the servitude.

All pipes, specials and valves arriving on site shall be marked clearly with the item number appearing in the Bill of Quantities. Furthermore, the nuts, bolts, washers and other ancillary equipment for each individual item shall be kept separate in a bag which shall also bear the respective reference number of that item. The cost of such marking will be held to have been included in the rates tendered for the items.

The Contractor shall satisfy the Engineer that the manufacturers' recommendations for transporting, handling, stacking, storing and installing pipes, pipe fittings, sealing rubbers etc. are being followed. The Engineer shall be given the opportunity to inspect all materials immediately prior to installation and shall have the right to reject any materials which, in his opinion, have suffered damage which may impair the long-term durability or strength of said items.

Pipes and specials shall be protected against damage during all stages of manufacture, delivery, storage and handling. The ends of all steel pipes and specials shall be protected against denting. Steel pipes shall be transported and stacked in such a manner that the pipe barrel is not deformed by more than 2% of its diameter. Dents which cause a protrusion of more than 1 mm on the inside of the steel special, may result in the special being rejected.

PSL 3.3 Cast iron pipes, fittings and specials

Cast iron specials shall be used with HDPE mains, and shall be provided with standard couplings, unless otherwise specified or shown on the drawings.

All cast iron fittings and specials shall be class 16 and shall be coated according to PSL 3.9.1.

PSL 3.4 Steel pipes, fittings and specials

PSL 3.4.1 General

Steel pipes and fittings shall comply with SABS 719 Grade B and have a minimum thickness of 4.5mm.

The steel pipes shall be manufactured exclusively at the works of such manufacturers as may be approved by the Engineer and at only one works unless otherwise agreed by the Engineer in writing.

All steel pipes and specials shall be clearly marked with the grade and thickness of the steel, the series number of the pipe or special, the item number in the Bill of Quantities, the nominal diameter and the working pressure.

If applicable, the drilling pattern shall be stamped on all flanges.

PSL 3.4.4 Steel fittings and specials

The ends of plain ended specials which join onto HDPE pipework shall be fitted with 150 mm wide collars and machined to the OD of the HDPE pipes of the diameter specified.

PSL 3.7 Other types of pipes

PSL 3.7.1 PVC-U Pipes

In addition to Clause 3.7.1, solvent welded joints or fittings shall not be used.

***PSL 3.7.3 Specials for PVC-U pipes**

All specials (except flanges) shall be suitable for working pressure of not less than 1,600kPa.

Standard specials such as tees, flange adaptors, reducers etc. for PVC-U pipelines shall be fabricated from cast iron. Unless otherwise shown on the drawings, all bends shall be PVC-U.

PSL 3.8 Jointing materials

PSL 3.8.3 Flanges and accessories

Flanges shall comply with SABS 1123 and have a minimum working pressure of 1,600kPa. Holes shall be drilled to Table 1600/3 of SABS 1123.

Any item of pipework or special or valve, of which the flanges are incorrectly drilled, will be rejected. The reaming of bolt-holes to oversized dimensions to enable a particular item to fit will not be allowed.

All flanges shall be provided complete with bolts, nuts and washers compliant with SABS 135, and 2mm thick rubber insertions. The insertion piece shall cover the full face of the flange between the ID and OD.

PSL 3.8.4 Loose Flanges

With regard to Clause 3.8.4 the following standard shall apply :

"Bolts and nuts shall comply with requirements of SABS 135".

PSL 3.9 Corrosion protection

Unless otherwise specified or indicated on the drawings, all bolts, nuts and washers shall be hot-dip galvanized to SABS 763 after threading. All bolts, nuts and washers within water retaining structures or exposed to rain water shall be fabricated from stainless steel.

PSL 3.9.1 CI Pipes

Cast iron pipes, specials, fittings and valves shall be protected internally and externally according to Clause 3.9.1.

PSL 3.9.2 Steel pipes and specials

All steel pipes and specials shall be hot dip galvanised after fabrication, in accordance with the Clause 3.9.2.1 and the requirements of SABS 763 for heavy duty applications. Further machining, cutting or welding after hot-dip galvanizing will not be allowed.

PSL 3.9.2.2(b)(2) Polyamide-cured epoxy system

The internal and external surfaces of the fitting shall be grit blasted to at least SIS Standard Sa 3 with an anchor profile between 45 micrometres (minimum) to 75 micrometres (maximum). Thereafter the complete fitting including the flange faces but except for the sealing areas and bolt holes shall be coated with a two-pack solvent-free epoxy paint in accordance with Clause 3.9.2.2(b)(2), applied by means of a hot airless machine to a total dry film thickness of not less than 250 micrometres.

Alternatively, an approved sintered epoxy powder to a total dry film thickness of at least 450 micrometres may be applied after cleaning as specified above in accordance with Clause 3.9.2.2(b)(4).

The above specified painting shall be applied after the fitting has passed its hydraulic test. The sealing area of the flanges shall be treated with an approved zinc rich primer.

All damaged paint areas (if any) caused by the transport and handling of the fitting shall be repaired in accordance with the above specification, prior to installation. Any damaged paint area caused by the installation of the fittings shall also be repaired as specified above. The grinding down of the damaged area to Sa 2 1/2 and the feathering of the edges are an acceptable alternative to re-blast cleaning.

PSL 3.9.2.2(b)(4) Fusion bonded epoxy

Fusion bonded epoxy (FBE) coating shall comply with the provisions of SABS 1217 as for a Type 2 powder coating, and may only be carried out by an applicator that is approved by the Engineer.

The entire surface to be coated must be free of dust and moisture and must comply with the provisions of Clause 4.1.1 of SABS 1217.

The total dry film thickness shall be at least 400 micrometres (+ 50 micrometres). The sealing area of the flanges shall be treated to a dry film thickness of 150 micrometres (+ 25 micrometres) (i.e. masked off before the second coat is applied).

The painting shall be such that all trimmings are covered by paint for a distance of at least 5 mm to discourage bi-metal corrosion. No field repairs of damaged paint areas (if any) are allowed. Should any damage of the coating occur, the fitting shall be re-coated in the applicators workshop.

PSL 3.9.6 Corrosive Soil

All buried flanged joints, saddles, bolts and nuts shall be protected by means of Denso paste and then wrapped to give a covering of at least three layers of Denso impregnated tape or other means of inhibiting corrosion approved by the Engineer. Denso tape must be carefully moulded over the paste and fitting to expel all air pockets.

PSL 3.10 Valves

Delete the contents of this Clause and replace by:

"Two types of valves are acceptable:

- a) Wedge gate type valve,
- b) Resilient seal gate type valve.

Valves shall comply with the requirements of SABS 664 1989 as amended, and shall bear the SABS quality mark. A test certificate as per Clause 3.5.20 of compliance with SABS 664 will be acceptable.

Valves shall display the following features;

- A minimum of 250 microns coating of fusion bonded epoxy or Rilsan Nylon 11.
- Class 16
- Anti-clockwise closing
- Non-rising spindle type with cap.
- May have spigotted, socketted or flanged end connections. When flanged valves are specified, the drilling shall be to Table 16/11 of BS 4504".
- In the case of resilient seal valves, valve gates shall be fully EPDM rubber lined, internally and externally and the spindle shall be Grade 316 Stainless Steel or equivalent with a double o-ring seal."

PSL 3.10.1 Gate valves

Gate valves shall comply with SABS 664 and shall bear the SABS mark, the trade name and the nominal diameter and class of the valve. A test certificate as per Clause 3.5.20 of compliance with SABS 664 will be acceptable.

Gate valves shall be resilient seal ("RSV") Class 16, clockwise closing, with non-rising spindle, and shall be drop-tight when tested in accordance with BS 5163. The direction of closing must be shown clearly on the valve. The design of the stuffing box shall be such that the O-rings can be replaced while the valve is in service without having to remove the valve dome. Valve gates shall be fully EPDM rubber lined, internally and externally and the spindle shall be Grade 316 Stainless Steel or equivalent with a double o-ring seal."

Gate valves shall be fitted with cap-tops (Alt) handwheels and shall be either flanged or spigotted or socketed, as scheduled. Gate valves shall be supplied with couplings and all materials necessary for complete installation.

PSL 3.10.3 Air valves

25mm and 50mm (where scheduled) double acting air valves "Ventomat RBX" (or similar, approved), suitable for a working pressure of 1 600 kPa, shall be used.

Each air valve or air valve branch shall be fitted with a separate brass gate valve that closes clockwise, and, if required, an extension pipe.

***PSL 3.10.4 Check valves**

Check (reflux or non-return) valves shall be "AVK" or similar, approved. Check valves shall close immediately the velocity in the pipeline is zero, in order to prevent any reversal of flow.

PSL 3.11 Manholes and surface boxes

PSL 3.11.6 Surface boxes

Delete the contents of this Clause and replace by:

"For non-trafficked areas, surface boxes are to be the thermoplastic type as per Engineer's Department Standard Detail Drawing No PSL 2/1. For trafficked areas surface boxes are to be cast iron type as per Engineer's Department Standard Detail drawing no. PSL 2/2".

PSL 5 CONSTRUCTION

PSL 5.1 Laying

PSL 5.1.1 General

The centreline of the pipeline shall normally be 2,5m from the road reserve boundary inside the road reserve. The pipeline is to be laid continuously and leaving gaps for fittings will not be allowed.

HDPE pipes shall be handled, transported, stored and laid strictly in accordance with the manufacturer's instructions.

PSL 5.1.3 Keeping pipelines clean

In addition to the requirements of Clause 5.1.3, the Contractor shall ensure that both ends of all pipes and specials strung out above ground along the line of the trench are closed by means of an adequately fixed plastic cap or other approved material, in order to prevent the ingress of foreign material.

Unless otherwise directed by the Engineer, the Contractor shall, when filling the pipeline with water for the first time, use suitable pipe pigs driven by a flush of water to aid the cleaning of all sections of the pipeline(s). If necessary, the pig shall be passed through a section more than once. If necessary, the Contractor shall install special temporary fittings in the pipeline for the insertion and recovery of the pigs. Such temporary fittings shall be removed after the pipeline has been cleaned to the satisfaction of the Engineer. The Contractor shall satisfy the Engineer that every pig inserted into the pipeline is recovered after use.

PSL 5.1.4 Depths and cover

Water pipelines shall be laid to the levels indicated on the drawings. Where no such levels are provided, the following cover shall be provided:

Water mains under roads	:	Minimum cover of 1.0m measured from the finished road level to the crown of the pipe. Maximum cover of 1.25m
Water mains elsewhere	:	Minimum cover 500mm, maximum cover 1.25m
Erf connections	:	Minimum cover 450mm, maximum cover 600mm

PSL 5.1.4.3 Minimum clearance between services

Where the minimum clearance between services would be less than that specified in Clause 5.1.4.3, the water main shall be laid beneath the service crossed, at an invert level which allows for the clear space as specified. The water main shall be laid horizontally at this level for a distance of at least 1.0 m on either side of the centreline of the service crossed and the transition to the specified cover levels obtained as specified in Clause 5.1.4.2.

The Contractor may, at his own expense, increase the cover levels by a maximum of 200 mm. No decrease in cover level or clear space between pipe barrels as specified will be permitted unless otherwise instructed by the Engineer in writing.

PSL 5.3 Setting of valves, specials and fittings

All valves and hydrants shall be positioned so that the valve spindle or hydrant outlet is directly opposite an erf boundary or splay corner peg to within 150 mm, and directly above the main, or as otherwise dimensioned on the drawing.

The Contractor shall ensure that upon completion of the Works, all gate valves in the reticulation (other than scour valves) are, unless otherwise instructed by the Engineer, in the "open" position.

PSL 5.6 Valve chambers

Delete the references to drawings L1, L2 and L3 in Clauses 5.6.1 and 5.6.2 and replace with "the construction drawings".

Surface boxes shall be painted with two coats of white (valves) or bright yellow (hydrants) oil paint on an approved undercoat.

Markers for valves, fire hydrants and water pipelines are to be supplied and installed by the Contractor at each valve, hydrant and bend on main pipelines. The markers shall be manufactured in accordance with the drawings.

PSL 5.7 Manholes

PSL 5.7.1 General

In order to avoid damage to pipes due to differential movement where the pipes enter chambers or other structures, all pipes built, cast or grouted into such structures shall be provided with flexible connections to the details shown on the drawings.

PSL 5.10 Disinfection of pipelines

Notwithstanding the requirements of Clause 5.10, the Contractor shall disinfect the pipelines before connecting into the reticulation.

***PSL 5.11 Connection into existing main**

Where shown on the drawing or ordered, the Contractor shall cut into the existing water main and connect in the new main.

Before commencing the excavation of pipe trenches in the vicinity of a proposed connection, the Contractor shall excavate for, expose, survey and record the position and level of the connection point on the existing water main.

The Contractor shall be responsible, through the Engineer, for liaison with the Municipality (or relevant authority) to arrange for turning off the water in order to carry out the connection. These arrangements shall be made at least 5 working days prior to the proposed connection date so that affected consumers can be notified in advance.

The Contractor may cut into the existing water main only after he has received a written instruction from the Engineer to do so.

Before the connection is made, the new pipes must be laid to within 2.0m of the connecting point, and must be temporarily blanked off, anchored, tested and disinfected.

All connections of new pipelines to the existing water network will be carried out by the Theewaterskloof Municipality once all new pipework has been laid, successfully tested and disinfected. Valves on the existing network may only be opened or closed by the Theewaterskloof Municipality. The Contractor shall make arrangements with the relevant officials for the connection at least 7 days in advance.

The Contractor shall arrange all the necessary work involved with the connections, including liaising with the Municipality, locating existing services, breaking out anchor blocks (if necessary), and removal of existing pipe fittings and couplings.

***PSL 5.12 Maintenance and repairs during defects liability period**

Should leaks or defects develop during the Defects Liability Period they will be rectified by the Municipality at the Contractor's expense. This will include the cost of re-testing and subsequent disinfection.

PSL 6 TOLERANCES

PSL 6.2 CONTROL POINTS

Add: "Valves shall be located as indicated on the plan layout opposite the boundary peg of the erf, and to within a longitudinal tolerance of 100mm."

PSL 6.3 Alignment (plan and level)

Add to last sentence : ", provided this does not result in a reversal of the grade of the pipeline."

PSL 7 TESTING

PSL 7.3 Standard hydraulic pipe test

PSL 7.3.1 Test pressure and time of test

Testing of water mains shall be carried out after the installation of erf connections up to and including the meter assembly. The stopcock shall be open for the test and a temporary end cap shall be fitted to the outlet end of the assembly. The permissible leakage rate specified in Clause 7.3.3 shall be that applicable to the length of water main only, and the length shall therefore not include the length of erf connections.

The Contractor's test equipment shall be connected directly to the flange of a hydrant tee and not through the hydrant's screwed outlet, or through a specially adapted end cap, or a short length of pipe.

Notwithstanding Clause 7.3.1.2 and Clause 7.3.1.3, the test pressure for field testing shall be:

1.35MPa for Class 9 PVC-U , Class 10 HDPE pipes;

1.80MPa for Class 12 PVC-U and Class 12 HDPE pipes.

Delete Clause 7.3.1.4.

In addition to the requirements of Clause 7.3.1.5 water used to fill the reticulation and during testing shall be water drawn from the Municipal mains and transported in a clean container. Test sections shall be filled from the lowest point of the test section, by a suitably sized pump with sufficient head to lift the water to the highest point of the test section. Test sections may not be filled at the highest point of the test section. The bleeding off of air trapped within the reticulation shall only be carried out via the fire hydrants, erf connections or at the prescribed connection points to the existing reticulation by a bleeder system fitted to the end caps, or a bleeder system fitted to a short length, say 500mm, of a pipe included at the end of the new reticulation.

***PSL 7.3.1.6 Pressure test of existing main**

Add to Clause 7.3.1.1: "The Contractor's test equipment shall be connected directly to the flange of a hydrant tee not through the hydrant's screwed outlet or through a specially adapted end cap or a short, discardable pipe. Alterations may have to be made to the Contractor's test equipment to allow the placing of a Water Division's "in line" check pressure gauge. If necessary, this will be requested by the Engineer prior to the start of a leakage test. Upon the successful conclusion of a leakage test, the removal of the Contractor's equipment from the tee and the fitting of the hydrant (supplied by Contractor) will be done by the Water Division when connecting the new reticulation."

Delete the contents of Clause 7.3.1.2 and replace by: "The test pressure for the field testing shall be 1,35 MPa for Class 9 uPVC, Class 10 HDPE pipes and Class C AC pipes; 1,8 MPa for Class 12 uPVC and Class 12 HDPE pipes and Class D AC pipes."

Delete Clause 7.3.1.3 and 7.3.1.4.

Add to Clause 7.3.1.5; "Water used by the Contractor to fill the reticulation and during testing shall be water drawn from the Municipal mains and transported in a clean container. A metered connection may be installed by the Water Division upon the request of the Contractor and upon the payment of the prescribed fee. The bleeding off of air trapped within the reticulation shall only be carried out via the hydrants, erf connections or at the prescribed connection points to the existing reticulation by:

- a) a bleeder system fitted to the end caps, or
- b) a bleeder system fitted to a short length, say 500mm, of a pipe included at the end of the new reticulation.

The Water Division will remove and return the end caps and short length of pipe to the Contractor once the new reticulation is connected.

PSL 7.3.3 Permissible Leakage Rates

Delete in Clause (a) the figure of "0,075" and replace by:

"0,0161 for Class C, AC pipes

0,0186 for Class D, AC pipes"

Add: "See standard drawings PSL 5/1, PSL 5/2, PSL 5/3 and PSL 5/4 for tables of permissible leakage rates for uPVC, mPVC, AC and HDPE pipes. When testing reticulations made up of different types of pipes, the arithmetical sum of the respective calculated leakage rates for the various pipe types, diameters and lengths shall be taken as the maximum allowable leakage. Alternatively the Contractor may request that each section be tested separately in which case the additional tests, witnessing and connecting fees shall be at his expense."

***PSL 7.5 Testing and repairs during defects liability period**

Should leaks or defects develop during the Defects Liability Period they will be rectified by the Municipality at the Contractor's expense. This will include the cost of re-testing and subsequent disinfection. During the Defects Liability Period the Municipality may carry out further pressure tests on the whole or part of the new reticulation and any necessary remedial work will be carried out by the Municipality at the Contractor's expense.

***PSL 7.3.4 Witnessing of a Successful Leakage Test by an Official of the Water Division**

The Contractor shall take note that the Engineer's Representative is required to ensure that an official of the Water Division witnesses a successful leakage test of the whole new reticulation being put forward for acceptance. Visits to site of this official to witness the test after the initial visit will be charged at a rate determined by the Municipal Water Division.

This amount shall be payable directly to the Municipality by the Contractor prior to each subsequent visit.

***PSL 7.3.5 Removal of Test Equipment**

Upon the successful completion of the leakage test the new reticulation will be deemed to be Municipal property and the Contractor shall not carry out any work on the pipes apart from the disconnection of his pump (but not his flange and pipe system from the hydrant tee), the completion of the backfilling to the pipeline and construction of the hydrant and valve chambers. The Water Division will connect in the new reticulation as soon as possible and the Contractor shall supply such materials, pipes and specials as detailed by the Engineer. The completion of backfill at the connection points and the surface restoration/reinstatement shall be carried out by the Contractor.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.1 General

Notwithstanding Clause 8.1, no payment will be made for depths of excavation in excess of those specified or shown on the drawings, unless ordered in writing by the Engineer.

PSL 8.2.1 Supply, lay and bed pipes complete with couplings

In addition to Clause 8.2.1, the rates for supplying, laying and bedding pipes shall also cover:

- i. the cost of work covered by Clause 8.2.4,
- ii. cleaning and disinfecting the pipeline as specified in Clause 5.10 and PSL5.1.3 including the provision and removal of temporary fittings required for the insertion and recovery of the pegs,
- iii. testing the pipelines, including the supply of all water
- iv. the cost of testing in short sections in accordance with PSL7.3.1.

The rates for the supplying and laying of metal pipes shall include for the cost of corrosion protection as specified.

Notwithstanding Clauses 8.2.7 and 8.2.15, the rates for pipes, valves, specials and couplings shall also cover the cost of mortar lining and sheathing, mortar encasing, wrapping and all other corrosion protection as specified.

Up to a maximum of 75% of the measured lengths of pipes will be certified for payment until such lengths have successfully passed the field test.

PSL 8.2.3 Supplying, fixing and bedding of valves

The rate shall cover the cost of the supply and installation of all materials from and including the tee (and its joints) on the main up to and including the hydrant outlet and a 0.2m length of flanged 100mm diameter steel pipe between the tee and the gate valve.

PSL 8.2.11 Anchor/thrust blocks and pedestals

Notwithstanding Clause 8.2.11 anchor/thrust blocks and pedestals will be measured by number of each type.

The rate shall cover the cost of excavation, concrete, formwork and steel reinforcement (allowing for 0.1t of high tensile steel per cubic metre of concrete).

PSL 8.2.14 Manholes

Where a pipe is to be built into an existing structure, the rate shall cover the cost of casting in the pipe with flexible couplings and cutting out and making good the hole.

***PSL 8.2.16 Connection(s) to existing water main**

Connections to existing pipework will be measured by number of connection points.

The rate shall cover the cost of locating, exposing and backfilling the water main, liaising with the Municipality (authority concerned) to arrange for turning off the water, cutting into the pipe, dealing with water, cutting pipes to fit, including turning if necessary, dealing with water, and the supply and fitting of long collar repair couplings to complete the connection and, if required, the temporary sealing and anchoring of pipe ends for testing purposes and subsequent removal of seals and anchors. The specials required to make the connection will be measured separately.

***PSL 8.2.17 Markers**

Valve, hydrant and pipeline markers will be measured by the number of each type.

The rate shall include for the cost of supply and installation of the markers in the verge as shown on the drawings.

***PSL 8.2.19 Pressure testing of the existing rising main**

The initial test will be measured and paid by lump sum. The sum shall cover all the costs of isolating the main and preparing for and performing the initial test as specified in PSL7.3.1.6.

Any subsequent tests will be measured by the number of additional tests ordered by the Engineer. The rate shall cover all the costs of performing an additional test.

Materials used for carrying out repairs on the existing system as a result of such test(s) will be measured and paid as Dayworks.

***PSL 8.2.18 Connection to Mains**

An item will be allowed in the Schedule of Quantities for the connection to existing mains by the Municipal Water Division after acceptance of the reticulation.

PSLB BEDDING (PIPES) (SABS 1200 LB)**PSLB 3 MATERIALS****PSLB 3.1 Selected granular material**

Replace Clause 3.1 with the following:

“Selected granular material shall be a granular, free-draining, non-cohesive material with a grading analysis that shows 100% passing a 9.5 mm sieve and less than 5% passing a 0.425mm sieve. The Compactability Factor shall not exceed 0.4.”

PSLB 3.2 Selected fill material

Where rock or expansive clay is encountered in the trench bottom, the material in the selected fill blanket shall be selected granular material.

PSLB 3.4 Selection

Notwithstanding any references to the contrary in Clause 3.4, the Contractor is required to use selective methods of excavating. The Contractor shall selectively remove and keep separate topsoil, unsuitable material, and material suitable for reuse as backfill, selected fill, selected granular material or for other use as ordered by the Engineer.

PSLB 5 CONSTRUCTION**PSLB 5.2.2 Class B and Class C bedding**

Concrete pipes shall be bedded as specified for rigid pipes with Class C bedding unless otherwise shown on the drawings or ordered by the Engineer.

PSLB 5.3 Placing and compacting of flexible pipes

All PVC-U and HDPE water pipes, sewers and erf connections shall be classified as flexible pipes.

PSLB 7 TESTING**PSLB 7.1 Density testing**

Density tests shall be as per PSDB7.1.

PSLB 8 MEASUREMENT AND PAYMENT**PSLB 8.1.3 Volume of bedding materials**

Where the minimum base widths specified in PSDB 5.2 apply, then the volume of bedding material shall be computed from the specified minimum base width.

In addition to Clause 8.1.3, additional bedding required for overbreak, and the volume of bedding material displaced by the pipe will not be measured for payment.

PSLB 8.1.6 Freehaul

Notwithstanding any references to 0.5km freehaul in Clauses 8.2.1, 8.2.2 and 8.2.5, Clause PSA 8.10 shall apply.

PSLC CABLE DUCTS (SABS 1200 LC)

PSLC 2 INTERPRETATIONS

PSLC 2.4 Abbreviations

Replace the term “GPO” with “Telkom”.

PSLC 3 MATERIALS

PSLC 3.1 Ducts

Notwithstanding this clause, the following pipes shall be used for cable ducts:

Electricity ducts shall be uPVC class 51 sewer pipes which shall comply with the relevant requirements of SABS 791, complete with end caps and draw wires.

Irrigation ducts shall be smooth bore, black, HDPE cable conduit, “Kabelflex” or similar approved, complete with push fit couplings, rubber sealing rings, end caps and draw wires.

Data and communication ducts shall be smooth bore, green, Telkom approved HDPE cable conduit, “Kabelflex” or similar approved, complete with push fit couplings, rubber sealing rings, end caps and draw wires.

PSLC 3.2 Bedding

Bedding shall comply with PSLB 3.1.

PSLC 3.3 Backfill

Material used for backfill of trenches under carriageways shall be subbase quality material that complies with Clause 3.2.1 of SABS 1200 ME.

PSLC 5 CONSTRUCTION

PSLC 5.1 Excavation of trenches

The classification of excavation shall be as specified in PSD 3.1.

PSLC 5.1.1 Trench widths and depths

Ducts shall be installed at the positions shown on the drawings, according to Drawing LC-1 of SABS 1200LC, unless shown otherwise on the drawings, or as ordered by the Engineer. Ducts shall be installed across carriageways at right angles to the centreline of the road. All ducts across carriageways shall have a minimum cover of 1.0m between the finished road surface and the crown of the duct. Ducts shall extend beyond the back of the kerb, walkway or edge of road, as applicable, by a minimum of 1.0m.

Where ducts are installed in areas other than road carriageways, the minimum cover shall be as stated in Clause 5.1.1.2.

In the case of electricity ducts for high tension electricity cables, the base width of the trench shall be the diameter of the duct with 150mm side allowance, subject to a minimum base width of 500mm. Where two or more ducts are laid in the same trench the minimum base width shall be the sum of the diameters plus 150mm side allowance and a minimum spacing of 100mm between ducts.

PSLC 5.3 Duct laying

PSLC 5.3.3 Draw wire

The Contractor shall install 3mm nominal diameter draw wires in all ducts.

PSLC 5.3.4 Draw pits

The connection of the cable duct to the draw pit shall be properly sealed to prevent the ingress of water or sand into the draw pit

***PSLC 5.3.5 Sealing of ducts**

The ends of Telkom ducts shall be sealed to prevent the ingress of sand, dirt and water during construction, and on completion of the duct. This shall be carried out by wrapping the end of the duct with 250micron plastic sheeting fastened with tie wire or cable ties.

The ends of electricity ducts shall be sealed with approved end caps.

PSLC 5.6 Laying of cables with other services

Where Telkom ducts are laid alongside water pipelines, a minimum clearance of 500mm between the pipe/duct shall be maintained.

Where Telkom and low voltage electricity cables are to be laid alongside each other in the same trench, a minimum clearance of 300mm shall be maintained between the ducts.

PSLC 5.7 Crossings of Telkom and electricity ducts

Notwithstanding Clause 5.7, the distance between Telkom and electricity ducts/cables shall be the maximum possible, but not less than 300mm in all directions. Where this cannot be achieved, then 50mm thick, Grade 20MPa/13mm concrete slabs shall be inserted between the ducts.

PSLC 5.8 Road Crossings

Delete the last sentence and replace with:

"The duct(s) shall extend a distance of at least 0,5m beyond the back face of the kerb or the edge of the road, as applicable."

PSLC 5.10 Position to be marked

Marking of ducts is required on both sides of the carriageway.

The position, type and number of all ducts shall be marked by imprinting a letter "E", "W", "T", "C" for electricity, water, Telkom and communication services respectively, into the wet concrete of extruded or insitu kerbs and channels, directly above the end of each duct or group of ducts. The imprint shall be 5mm deep and 100mm high. After the letters have been printed, the number of ducts laid shall be painted next to the symbol. The symbol and number shall be painted with an approved red paint. The letter and number shall be painted with an approved red paint.

Where there is no kerb or channel, or where precast kerbs are used, the duct shall be marked with a Grade 20MPa/19mm concrete marker 150mm x 150mm x 300mm long with the appropriate letter imprinted on the square face. The marker shall be placed hard up against the edge of the road surface, level with the verge.

***PSLC 5.11 Data drawpits**

The drawpits and pipe junction boxes for the data cables shall be constructed by the Contractor to the dimensions and details shown on the drawings.

PSLC 8 MEASUREMENT AND PAYMENT

PSLC 8.2.2 Excavation

Notwithstanding Clause 8.2.2, the classification of excavation shall be as specified in PSD 3.1, and extra-over payment will only be made for hard rock excavation.

PSLC 8.2.5 Supply, lay, bed and prove ducts

In addition to Clause 8.2.5, the rate for supply, lay, bed and prove ducts shall include:

- i. the provision of subbase quality backfill material in accordance with PSLC 3.3
- ii. the compaction in road reserves (Clause 8.3.3.3 of SABS 1200DB)
- iii. the cost of sealing the duct ends and supplying and installing the end caps.

PSLC 8.2.10 Concrete encasement

The concrete encasement will be measured by the volume of concrete, excluding the volume occupied by the ducts, based on the specified trench width.

The rate shall cover the cost of the supply and casting of the concrete to the duct encasement including any formwork as necessary.

PSLD SEWERS (SABS 1200 LD)**PSLD 3 MATERIALS****PSLD 3.1 Pipes, fittings and joints**

Sewers shall be constructed with uPVC class 34 (heavy duty – minimum hoop stiffness 300kPa) pipes and fittings. Sewer erf connections shall be constructed with 110mm diameter uPVC class 51 (normal duty – minimum hoop stiffness 100kPa) pipes and fittings. uPVC pipes and fittings shall comply with the relevant requirements of SABS 791. Structured wall uPVC pipes will not be acceptable.

PSLD 3.5 Manholes, chambers, etc.**PSLD 3.5.1 Bricks**

Bricks used in sewerage infrastructure shall be burnt clay engineering bricks, with a compressive strength of 28 MPa minimum, that comply with the requirements of SABS 227.

PSLD 3.5.2 Precast concrete sections

Precast concrete chamber sections, cover slabs and lids shall be manufactured from dolomitic aggregates. Joints between concrete chamber sections shall be sealed according to the drawings.

PSLD 3.5.4 Concrete

Dolomitic aggregate shall be used in the manufacture of the precast concrete chamber sections, leveling rings and roof slabs, and for all cast insitu concrete, mortar, benching and plaster used in manholes.

PSLD 3.5.7 Step irons

Step irons are not required in manholes.

PSLD 3.5.8 Manhole covers and frames

Approved precast concrete heavy duty roof slabs shall be used in all areas subject to traffic loads, i.e. in the road carriageways, verges and service lanes. Approved precast concrete medium duty roof slabs shall be used in all other areas.

Approved precast concrete manhole covers (heavy duty and/or medium duty, to match the roof slab class) shall be used in all areas other than road carriageways.

PSLD 3.6 Marker posts

Erf connection markers shall be 40mm diameter HDPE class 10 pipes, which protrude 300mm above finished ground level, with a 200mm wide strip at the top of the marker painted yellow.

PSLD 5 CONSTRUCTION**PSLD 5.2.3 Method**

In addition to clause 5.3, PVC-U pipes shall be offloaded, stacked and protected in accordance with the manufacturer's instructions. PVC-U pipes shall be stacked on a levelled and well supported base that will prevent the bending of pipes. Pipes in storage shall be covered with suitable tarpaulins to prevent thermal expansion and contraction, and to prevent ultraviolet damage.

Sewer pipes shall be laid by suspending the pipe from a crane to the correct level, and inserting the pipe spigot into the socket with a turbor. An excavator may not be used to push/pull the pipe spigot into the socket.

A foxhole shall be excavated at the socket of both the pipe being laid and also the pipe that it is being jointed to.

***PSLD 5.4.1 Connection into Existing Manholes**

An appropriate item has been allowed in the Schedule of Quantities to cover all costs connected with the making of this connection.

PSLD 5.6 Manholes, inspection chambers, etc

Manholes shall be 1000mm nominal diameter precast concrete sections and shall be installed according to the manufacturer's specifications. The flexible connections to the manholes shall be as shown on the drawings.

A sample manhole shall be completed at the start of construction. Once the sample manhole has been approved by the Engineer, it will be used as a standard for all other manholes.

Manholes shall not be backfilled without the written approval of the Engineer.

PSLD 5.6.1 General

Replace the word "brick" in Clauses (a) and (b) with "cast insitu concrete."

PSLD 5.6.2.3 Benching

Replace this clause with: "All benching and sloping concrete in the manhole floor shall be constructed in accordance with the drawings. Benching may only be constructed after the manhole and adjacent sewers have been backfilled."

***PSLD 5.6.7 Finished cover levels**

Unless otherwise ordered by the Engineer or dimensioned explicitly on the drawings, the cover level of the manholes shall be installed:

flush with the final surface of a carriageway, footway, paved area, verge or service lane
150 mm above the finished ground level for manholes situated at the midblock position
600 mm above ground level in undeveloped open space.

PSLD 5.6.5 Precast concrete manholes

Precast concrete sections shall be placed such that there is no misalignment of the shaft and such that the shaft is truly vertical. The first section shall be bedded firmly in the base while the concrete is wet. The first precast section shall not rest on the crown or collar of a sewer. The precast concrete section shall be cut to suit the sewer with an angle grinder, and under no circumstances shall holes be knocked out by hammer.

Joints between precast concrete sections shall be sealed with a bitumastic sealant. The sealant shall be placed on the top of the section before placing the next section above it. The external surface of the joint shall be thoroughly cleaned and a double layer of self adhesive polyethylene tape shall be wrapped around the joint.

***PSLD 5.6.8 Manhole repair**

The Contractor may attempt to rectify infiltration visible in the manhole channels, pipe ends or benching by applying proprietary waterproofing products approved by the Engineer, on the external surfaces of the manhole only. Should such attempt prove to be unsuccessful in the opinion of the Engineer, the Contractor shall demolish the base and rebuild the manhole.

PSLD 5.9 Connecting sewers

PSLD 5.9.1 Location and Details

Delete the words "Drawing LD 7 or Drawing LD 8" as applicable and replace by :

"The relevant Municipal Standard Detail Drawings."

PSLD 5.9.2 Marker posts

Before backfilling the erf connection, and while the end of the erf connection is still exposed, the marker post shall be installed immediately in front of the end cap. The post shall extend from the crown of the erf connection at the end cap, vertically above its centreline to a point 300mm above finished ground level, or as otherwise specified by the Engineer.

***PSLD 5.9.4 Connection to existing sewer/manhole**

The Contractor shall determine the exact position and existing invert level at the proposed connection point before excavating pipe trenches upstream of the connection point. Any discrepancy between the position and level on site and the design data shall be brought to the attention of the Engineer immediately.

The Contractor shall under no circumstances connect the new reticulation into an existing sewer or manhole without the prior written instruction of the Engineer. This instruction will only be given after acceptance, by the Engineer, of the sewers and manholes of the new reticulation upstream of the connection point.

After receiving the Engineer's approval of the proposed operation the Contractor shall interrupt or divert the sewage flow, expose the existing sewer, cut into the pipe, remove the debris, connect the new pipe into the old and make good, and backfill.

***PSLD 5.9.5 Erf connections**

Erf connections shall be constructed according to the type and details shown on the drawings. Erf connections shall be situated 1.3m alongside the erf boundary as indicated on the drawings. The ends of the erf connections shall extend 1,0m into the erf, and shall be sealed with end caps and marked according to PSLD 5.9.2.

Where erf connections are built into manholes, the benching and channels shall be constructed in accordance with the drawings.

PSLD 6 TOLERANCES

PSLD 6.2 Overall centre line control and manhole location

Replace " $\pm 300\text{mm}$ " in the second line with " $\pm 150\text{mm}$ ".

PSLD 6.3 Manhole invert levels

Replace " $\pm 50\text{mm}$ " in the second line with " $\pm 25\text{mm}$ ".

***PSLD 6.6 As-Built information**

The Contractor shall submit "As-Built" levels, distances between manholes and the grades of pipelines for which he requires payment at the time he submits his monthly payment claim. A sample form is obtainable from the Engineer.

PSLD 7 TESTING

PSLD 7.1 General

PSLD 7.1.6

An air test followed by a water test shall be carried out. A torch and mirror test shall be carried out on all pipe lengths, in both directions.

PSLD 7.2 TESTS AND ACCEPTANCE/REJECTION CRITERIA

PSLD 7.2.6 Watertightness of manholes

The Engineer may request a watertightness test of any manhole. The watertightness test shall be conducted as follows:

The pipe ends shall be sealed with temporary end caps.

Infiltration : The excavation surrounding the manhole shall be flooded to approximately the top of wall level and this depth of water shall be maintained for at least 48 hours. The manhole will have satisfied the test requirements provided there is no sign of infiltration of water into the manhole.

Exfiltration : The manhole shall be filled with water to the top of wall level and this depth maintained for at least 24 hours. Water shall be added to maintain this level. At the end of the subsequent 24 hour period the drop in water level shall be measured. The manhole will have satisfied the test requirement provided the drop is less than 75mm per metre in depth of the manhole measured from channel invert to the original height of the water. A shorter testing time may be allowed at the discretion of the Engineer, subject to a minimum of 3 hours, in which case a 'drop in level' pro rata to the time tested shall be used.

***PSLD 7.2.7 Torch and mirror test**

For the pipeline to be acceptable the visibility of the plug/reflector shall be at least 50% of its area.

***PSLD 7.2.8 CCTV Inspection**

The Contractor shall perform closed circuit television inspection (CCTV) as a post-construction method to determine if the pipeline has been installed as required, all joints have been properly joined welded and the beads properly removed, and to inspect the lateral erf connections to the main sewer. The CCTV system shall have a tractor mounted rotating lens camera with articulating head, capable of pan and rotate. The system shall be capable of recording onto DVD and shall be equipped with an inclinometer. Each joint and erf connection shall be scanned 360 degrees. The camera shall be operative in 100% humidity conditions. Lighting for the camera shall minimize reflective glare. Lighting and camera quality shall be suitable to provide a clear, in focus picture of the entire periphery of the pipe for all conditions encountered during the work. Focal distance shall be adjustable through a range from 75mm to infinity. The remote reading distance counter shall be accurate to one percent (1%) over the length of the particular section being inspected. The camera, television monitor and other components of the color video system shall be capable of producing a minimum of 500 line resolution. All such inspections shall be performed by personnel trained to locate and identify breaks, obstacles and lateral erf connections by closed circuit color television.

Documentation consisting of a color video DVD, a written report detailing the condition of the mainline and joints, and a colour thematic map indicating the location of the main sewer and the lateral erf connections shall be submitted to the Engineer for approval prior to final payment

The newly installed pipe shall be visibly free of defects, which may affect the integrity or strength of the pipe. If in the opinion of the Engineer such defects exist, the pipe shall be repaired or replaced at the Contractor's expense. Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness shall not be used and shall be removed from the site.

Post construction DVDs, reports and thematic maps shall be submitted to the Engineer for review prior to final payment. Should any portion of the inspection DVDs be of inadequate quality or coverage, as determined by the Engineer, the Contractor shall re-inspect the unacceptable portion at no additional expense to the Employer. All original DVDs shall remain the property of the Employer.

***PSLD 7.2.9 Acceptance criteria**

The acceptance of the pipe length or manhole will depend upon whether it satisfies the criteria set out in SABS 1200 LD clauses 6 and 7 and the PS clauses above.

Only tests carried out on the pipelines after completion of the backfilling to ground level (excluding surface restoration) and completion of the construction of manholes to roof height, including benching, will be considered for acceptance purposes.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2.1 Supply, lay, joint, bed and test pipeline

Up to a maximum of 75% of the measured lengths of pipes will be certified for payment until such lengths have successfully passed the field test.

In addition to Clause 8.2.1, the rate for supply, lay, bed and testing of pipelines shall include all test methods specified in PS LD 7.

PSLD 8.2.3 Manholes, inspection chambers

In addition to the requirements of Clauses 8.2.3, 8.2.4 and 8.2.5, the rate for manholes shall include the cost of supplying and installing the manhole complete, the supply, laying and jointing of channels as for a through manhole, the supply and installation of manhole roof slabs and medium duty precast concrete manhole covers and frames.

For the purpose of measurement and payment, the depth of a manhole, inspection chamber, etc, is defined as the depth from the cover level to the invert level of the manhole, inspection chamber, etc.

Extra-over items for heavy duty roof slabs and covers and frames have been scheduled.

PSLD 8.2.6 Erf connections

Notwithstanding the requirements of Clause 8.2.6, excavation in hard rock will be measured separately in accordance with the requirements of Clause 8.3.2(b) of SABS 1200 DB.

In addition to Clause 8.2.6, the rates for the various types of erf connections shall also cover the cost of supply and installation of the bends, end cap and erf connection marker, recording locations, laying the connection pipeline to 1.0m within the erf, and testing.

An extra-over item has been scheduled for sewer erf connections where the length of the erf connection measured from the centerline of the main sewer to a point 1.0m into the erf, exceeds the standard 2.3m by 700mm. The unit of measurement is the linear metre. The extra-over rate shall cover the cost of additional excavation in soft materials, backfilling, bedding, disposal of surplus material, and the supply and laying of additional erf connection pipeline.

PSLD 8.2.11 Connection to existing sewer

Connections that merely entail connecting up to existing pipe ends will be measured by number.

The rates shall cover the cost of location, excavation, exposure and surveying of the positions and levels of the connecting points, cutting into and the making good of the existing works, removal and disposal of debris, the cutting, fitting and building in of the new pipes, the additional cost of building the new manhole on the existing sewer, as applicable, and any other costs of completing the connection as specified in PSLD 5.9.4, including dealing with the sewage flow.

***PSLD 8.2.13 Watertightness of manholes**

Watertightness tests of manholes will be measured by number, per type (infiltration or exfiltration). Payment will be made only for successful testing. The cost of retesting failed tests will be to the Contractors account.

***PSLD 8.2.14 Terminal manholes**

An extra-over item has been scheduled for the construction of terminal manholes.

The tendered rate shall cover the additional benching, corrosion protection measures, and all other additional labour, plant and materials necessary to complete the terminal manhole to the details shown on the drawings.

PSLE STORMWATER DRAINAGE (SABS 1200 LE)**PSLE 3 MATERIALS****PSLE 3.1 Culvert units and pipes**

All pipes for stormwater reticulation shall be reinforced concrete pipes, Class D with interlocking joints.

Portal culverts (box culverts) shall consist of precast rectangular reinforced concrete culverts Type 1, Class C in accordance with SABS 986 with precast base slabs or alternatively a cast in situ base in accordance with SABS 1200 GA.

PSLE 3.4 Manholes, catchpits and accessories**PSLE 3.4.1 Bricks**

Bricks used in stormwater structures shall be burnt clay engineering bricks, having a nominal compressive strength of 28MPa, and complying with the requirements of SABS 227.

PSLE 3.4.4 Step irons

Step irons shall be manufactured of copolymer polypropylene with a 12mm diameter high tensile steel core.

PSLE 3.5 Geofabric blanket

The joint wrapping shall be a Bidim A2 or similar approved geotextile.

PSLE 5 CONSTRUCTION**PSLE 5.2 Bedding and laying****PSLE 5.2.2 Pipe culverts**

Pipes with interlocking joints, where they pass under roads and also on curved pipelines in verges, shall be wrapped with two layers of hessian soaked in cementitious grout. The wrapping shall be 400mm wide and placed centrally over each joint.

Where pipes are cut, the cut ends shall be made good with an epoxy concrete mix to prevent the corrosion of the reinforcement.

PSLE 5.2.5 Precast invert slabs

Notwithstanding Clause 5.2.5(b), the bedding material shall be as specified in PSLB 3.1, 150mm thick and compacted to 100% of mod AASHTO max. density.

PSLE 5.5 Catchpits, manholes, inlets and outlet structures**PSLE 5.5.6 Benching**

The concrete render to be applied on top of the benching shall be mixed in the proportions of 1 part cement, 2 parts sand and 3 parts 7mm concrete stone, by mass. The sand proportion may be varied between 1.5 and 2.5 to obtain ideal workability.

***PSLE 5.5.9 Step irons**

Clause 5.6.3 of SABS 1200 LD shall apply to stormwater manholes.

***PSLE 5.5.10 Connection to existing stormwater manhole/catchpit**

There are some cases where the proposed stormwater drainage system reticulation intersects the existing stormwater system. The Contractor shall determine the exact position and existing invert level at the proposed connection point before excavating pipe trenches upstream of the connection point. Any discrepancy between the position and level on site and the design data shall be brought to the attention of the Engineer immediately.

The Contractor shall under no circumstances connect the new reticulation into an existing stormwater pipe or manhole without the prior written instruction of the Engineer. This instruction will only be given after acceptance, by the Engineer, of the stormwater pipes and manholes of the new reticulation upstream of the connection point.

After receiving the Engineer's approval of the proposed operation the Contractor shall interrupt or divert the stormwater flow, expose the existing stormwater pipe, cut into the pipe, remove the debris, connect the new pipe into the old and make good, and backfill.

PSLE 5.5.11 Subsurface drains

Subsurface drains shall be constructed where and as shown on the drawings, or ordered by the Engineer.

The Contractor shall connect the subsurface drains into the stormwater system by means of 100mm diameter unperforated PVC pipes.

PSLE 6 TOLERANCES**PSLE 6.3 Manholes and catchpits*****PSLE 6.3.3 Pipes into manholes/catchpits**

Pipes may protrude up to 300mm into a manhole/catchpit. This will only be permitted if it means that the pipe does not have to be cut. The "dead space" formed at the end of the manhole is to be suitably benched off to prevent the collection of silt and rubbish.

***PSLE 6.7 As-built details**

The Contractor shall submit "As-Built" levels, distances between manholes and the grades of pipelines to the Engineer on successful completion of the testing.

PSLE 8 MEASUREMENT AND PAYMENT**PSLE 8.2.1 Supply and lay concrete pipe culverts**

In addition to Clause 8.2.1, the rates shall cover the cost of providing the pipes and jointing materials, transporting, laying, bedding, jointing, wrapping joints with geotextile filter blanket, if required, caulking the lifting eyes, cutting on site, waste and building into manholes, catchpits and headwalls".

PSLE 8.2.2 Supply and lay portal and rectangular culverts

In addition to Clause 8.2.2, the rates shall cover the cost of wrapping joints with geotextile filter blanket.

PSLE 8.2.8 Supply and install manholes, catchpits, and the like

In addition to Clause 8.2.8, the rate shall include the supply and installation of step irons in accordance with PSLE 3.4.4.

Notwithstanding Clause 8.2.8, the rate shall include excavation in all materials, including disposal of surplus, and backfilling with approved material, that is additional to that measured under the item for pipe trench excavation (see Clause 8.3.2 of SABS 1200 DB)".

Notwithstanding Clause 8.2.8(c), manholes, catchpits, and the like will be scheduled by separate items for each type of structure for various depth categories, in increments of 0.5m.

For the purposes of measurement and payment, the depth of a manhole, catchpit, and the like, is defined as the depth from the cover level to the invert level of the manhole, catchpit, etc.

***PSLE 8.2.14 Headwalls**

Notwithstanding Clauses 8.2.3, 8.2.4 and 8.2.5, headwalls will be measured by number, separately for various pipe diameters.

The rate shall cover the cost of excavation and backfilling, concrete and formwork, brickwork, cutting and building the pipes, stone and all other costs involved in constructing the complete unit as detailed on the drawings.

***PSLE 8.2.15 Connection to existing stormwater manhole/catchpit**

Connections made into existing manholes, catchpits or junction boxes will be measured by number. The rate shall include for all labour and materials required for breaking into, cutting the pipes, disposal of rubble, laying of pipe, benching where necessary and, in the case of catchpits, the cost of the supply and installation of inlet kerbs, and making good around the pipe and all necessary reinstatement around the manhole on completion of the connection.

***PSLE 8.2.16 Subsurface drains**

Subsurface drains will be measured by the length of drain constructed.

The rate tendered for the subsurface drain shall cover the cost of excavation, disposal of surplus material, supply of all material, labour, plant and incidentals to complete the construction of the subsurface drain as shown on the drawings.

PSM ROADS (GENERAL) (SABS 1200 M)

PSM 5 CONSTRUCTION

***PSM 5.1 Pavement design**

The design of the road layerworks is indicated on the drawings.

PSM 6 TOLERANCES

***PSM.6.4 Level control**

The Contractor shall submit at the time of requesting acceptance of a road layer, a record of the surface levels of that section, taken at chainages to coincide with the level pegs.

PSM 7 TESTING

PSM 7.1 General

The random sampling method of TMH 5, for the spotting of positions, for field density testing will not necessarily be applied by the Engineer.

Density testing shall be carried out where, in the opinion of the Engineer, the density of the compacted layer is in question. The Contractor shall present the full width of the layer, between the stated linear chainages, for acceptance. Only in exceptional cases will partial widths of a layer be accepted for testing.

PSM 7.2 Process control

Process control carried out by the Contractor shall be executed by an independent, SANAS accredited laboratory approved by the Engineer.

PSM 7.3 Routine inspections and tests

Notwithstanding the requirements for minimum densities for single tests, as set out in the relevant standardized specification, no lot for which any single test result is below the specified density will be deemed to comply with the requirements for density.

All requests for acceptance of a layer shall be submitted to the Engineer in writing, specifying the exact location of the section and type of layer, accompanied by the level control information under PSM 6.4. On receipt of all these details the Engineer will arrange for the necessary inspections and tests to satisfy himself that the layer complies with the specification.

The Contractor shall backfill the test holes left in the layer with a similar material to that of the layer tested and compact the material to a similar density. Concrete shall not be used.

The Contractor shall not proceed with the placing of material for the next layer until he has received the written approval of the tested layer and section, from the Engineer.

PSM 7.4 Compaction control

The Contractor shall provide a copy of the calibration certificate of the Troxler equipment with each report.

PSM 8 MEASUREMENT AND PAYMENT**PSM 8.2 Inspection and Testing of a Road Layer**

The cost of refilling and compacting the density test holes shall be included in the rate tendered for the construction of that layer.

***PSM 8.2.1 Routine inspection and testing**

The Contractor shall bear all costs of all (routine and re-testing of failed tests) tests carried out by the Engineer at the request of the Contractor or as specified for process control.

PSME SUBBASE (SABS 1200 ME)**PSME 3 MATERIALS****PSME 3.2 Physical properties****PSME 3.2.1 Subbase material**

With reference to Clause d(ii) and d(iii), the Regional Factor for this area is 0.60 and the required minimum CBR value for subbase material is thus 45.

The subbase layer shall consist of a G4 layer unless shown otherwise on the drawings.

PSME 3.2.2 Gravel shoulder and wearing course material

In Clause 3.2.2(b) delete the words "used in gravel shoulders".

PSME 3.3 Stabilizing agents

The stabilizing agent shall be as specified in Clause 3.3.1.

PSME 5 CONSTRUCTION**PSME 5.4 Placing and compaction****PSME 5.4.1 Placing**

The subbase layer shall be 150mm thick unless shown otherwise on the drawings.

PSME 5.7 Transport**PSME 5.7.2 Overhaul**

Notwithstanding Clause 5.7.2, Clause PSA 8.10 shall apply.

***PSME 5.8 Sidewalks**

The wearing course or base (subbase quality material) to sidewalks shall have a nominal thickness of 75 mm or as directed by the Engineer and shall be placed on selected subgrade material. Prior to the placing of the wearing course or base the surface of the subgrade shall be treated with an approved total weed killer to the satisfaction of the Engineer.

PSME 6 TOLERANCES**PSME 6.1 Dimensions, levels, etc****PSME 6.1.1 General**

For layers, constructed of subbase quality material, on which the bituminous surface will be placed, the tolerance for dimensions and level shall be as set out in SABS 1200 MF Clauses 6.1.2 to 6.1.6 inclusive.

PSME 7 TESTING**PSME 7.2 Process control and routine inspection and testing****PSME 7.2.2 Routine inspection and testing**

Notwithstanding Clause 7.2.2 and Table 3, no single test result which is below the specified density will be accepted.

PSME 8 MEASUREMENT AND PAYMENT

PSME 8.3.5 Processing by stabilization

The processing of material will be measured by volume in accordance with Clause 8.3.5. The rate tendered shall also cover all the costs of the operations.

The provision of the stabilizing agent will be measured by volume. The rate shall cover the work in accordance with Clause 8.3.8.

PSME 8.3.10 Overburden

Notwithstanding Clause 8.3.10, Clauses 8.3.4(b) and (c) of SABS 1200 D will apply.

***PSME 8.3.11 Sidewalks**

Gravel wearing course or base (subbase quality material) to sidewalks will be measured by volume based on the widths shown on the drawings on the nominal specified thickness.

The rate shall cover the cost of the supply of all material and the construction of the base as specified including for all labour and plant, etc., and the supply and application of the weed killer.

PSMF BASE (SABS 1200 MF)

PSMF 3 MATERIALS

PSM 3.3 Physical and chemical properties

The base shall be a 150mm thick G1 material obtained from commercial sources, which complies with Clause 3.3.

PSMF 3.3.2 Graded crushed stone

In Clause 3.3.2 insert “for 37.5mm stone” after the words “SABS 1083”.

PSMF 5 CONSTRUCTION

PSMF 5.9 Transport

Notwithstanding Clause 5.9, Clause PSA 8.10 shall apply.

PSMF 5.4.4.2 Compaction

Delete 98% and replace with 100%.

PSMF 6 TOLERANCES

PSMF 6.1 Dimensions, levels, etc.

PSMF 6.1.2 Grade

Delete the contents of Clauses (a) and (b) and replace with “The height of the edge of the channel above the top of the completed base is not less than the minimum thickness of asphalt surfacing, i.e. 5mm less than the specified thickness.” (See SABS 1200 MH 6.3.4)

PSMF 6.1.5 Cross-section

Replace “25mm” in Clause 6.1.5 with “15mm”.

PSMF 7 TESTING

PSMF 7.3 Routine inspection and testing

Notwithstanding Clause 7.3.2 and Table 4, no single test result shall be below 99% of mod. AASHTO max. density for a specified density of 100%.

PSMH ASPHALT BASE AND SURFACING

PSMH 1 SCOPE

This specification applies to continuously graded asphalt.

PSMH 3 MATERIALS

PSMH 3.1(b) Prime

The prime used shall be COLPRIME E.

PSMH3.4.2 Surfacing

The bituminous binder for the asphalt surfacing shall be an acceptable grade of penetration grade bitumen that complies with the applicable requirements of SABS 307.

PSMH3.5.6 Grading

The grading of combined aggregate for surfacing shall be as specified for “medium, continuously graded” in Table 2 of Clause 3.5.6 for asphalt surfacing 40mm thickness or more. The grading of combined aggregate for surfacing shall be as specified for “fine, continuously graded” in Table 2 of Clause 3.5.6 for asphalt surfacing less than 40mm thickness.

PSMH 4 PLANT AND EQUIPMENT

PSMH 4.2 Binder distributor

Add to Clause 4.2:

“The Civil Engineer’s Representative may in certain instances authorise the application of the prime coat by means of a hand operated sprayer which may only be done in bellmouths. The Contractor shall submit, in writing, his intended methods to ensure that the temperature and rate of application requirements will be achieved, before authority is given. The continuation of this authority is dependent upon satisfactory results being achieved.”

PSMH 5 CONSTRUCTION

PSMH 5.1 General requirements

PSMH 5.1.1 Preparation of surface

Add to Clause:

- (b) “Where the previously primed surface has become unsuitable the Civil Engineer’s Representative may order a tack coat to be applied prior to the bituminous surface being applied.”

PSMH 5.1.5 Weather Limitations

***PSMH 5.1.5.1 Prime and tack coat**

Add new Clause:

- (d) “When the moisture content of the upper 50mm of the base course is greater than 50% of OMC.”

PSMH 5.1.7 Rates of application and tolerances

The MC-30 prime shall be applied at a rate of 0,7 l/m².

PSMG 5.5 Design of asphalt

PSMH 5.5.1 General

Add the following to Clause 5.5.1:

A continuously graded medium mix is required. The A-E2 or A-P1 COLTO Mix Wa.

PSMH 5.5.5 Bituminous binder content

The bituminous binder shall be at least 5.5%.

PSMH 6 TOLERANCES

PSMH 6.3 Dimensions, levels, etc

PSMH 6.3.6 Smoothness

Degree of Accuracy I shall apply.

PSMH 6.3.5 Cross-section

Add to Clause 6.3.5 :

"Notwithstanding these allowances, at no place shall the level of the top of the asphalt surface fall below that of the adjacent low side concrete channel".

PSMH 7 TESTING

PSMH 7.1 Mix Design

Mix designs shall be submitted to the Civil Engineer at least four weeks before the programmed date of the start of production.

PSMH 7.2.4 Density testing

Delete the second sentence, viz.: "Not moredensity" and replace with: "The density of all cores shall be equal to, or greater than the 95% Marshall Density, for the lot to be acceptable."

PSMH 8 MEASUREMENT AND PAYMENT

PSMH 8.4.2 Computation of Quantities

Add to Clause 8.4.2:

Notwithstanding the provisions of this clause, the unit of measurement for asphalt surfacing shall be the square metre of surface area."

PSMJ SEGMENTED PAVING (SABS 1200 MJ)**PSMJ 3 MATERIALS****PSMJ 3.1 Units****PSMJ 3.1.2 Class, strength and type**

The concrete block paving units (CBP) shall be 80 mm thick Class 25, Type S-A (fully interlocking) with chamfers, with natural grey colour slate/charcoal or similar approved colour pigments penetrating at least 5mm below top surface, for road and parking surfaces, and 60 mm thick Class 25, Type S-C (no interlock), with red or similar approved colour pigment penetrating at least 5mm below top surface, for walkways.

PSMJ 3.3 Sand for bedding and jointing

Samples of the proposed bedding sand and jointing sand shall be submitted to the Engineer for approval, complete with grading analysis and road indicator tests.

No paving or trial sections shall commence until the proposed bedding sand and filling sand have been approved by the Engineer in writing. Failure to meet this requirement will result in the rejection of any paving.

PSMJ 4 PLANT**PSMJ 4.2 ROLLER**

Heavy duty steel rollers may not be used.

PSMJ 5 CONSTRUCTION**PSMJ 5.1 Preparation****PSMJ 5.1.1 New work****PSMJ 5.1.1.1 General**

Add the following to the end of the first sentence: "...of this specification, to Degree of Accuracy I."

PSMJ 5.1.1.2 Depressions

Shallow depressions in the subbase shall be scabbled to ensure a minimum 50mm thickness of filling.

PSMJ 5.4 Laying of units

CBP units shall be laid in a herringbone pattern. The principle lines of the pattern shall be straight, and parallel to the main kerbs on straight tangents. Patterns on horizontal curves shall follow the line of one tangent through the curve, with a cut joint at the start of the other tangent.

Under no circumstances may the joint width between two units be less than 2mm. Joints shall not be filled with jointing sand until the initial vibration of the units has been completed and the levels checked.

PSMJ 5.5 Filling gaps in unit pattern

Delete the contents of this clause and replace with the following:

"Gaps shall not be filled with concrete. The use of cut CBP units less than 25% of the full unit size is not permitted. CBP units alongside an edge restraint may be re-aligned (re-orientated) along the edge restraint to eliminate the need to cut CBP units longitudinally and to avoid small and slender units. The gap between the units and the edge restraints shall be 2-6mm.

CBP units shall be cut. No chopping or breaking of units will be permitted."

PSMJ 5.7 Joint filling

Both the jointing sand and the CBP units shall be dry when jointing sand is spread. Jointing sand shall not be washed into the joints.

Where ordered by the Engineer, jointing sand shall be stabilised with cement. Stabilised jointing sand shall be mixed at a ratio of one part cement to ten parts sand by mass (1:10), which shall be thoroughly mixed dry, brushed dry into the joints, vibrated, then lightly sprayed with water to activate the cement.

***PSMJ 5.8 Re-filling of joints**

Two months after the opening of the paving area to traffic, the joints shall be re-filled with jointing sand in accordance with Clause 5.7 and PSMJ 5.7, to replace lost sand.

PSMJ 6 TOLERANCES

PSMJ 6.2 Permissible deviations

Category I degree of accuracy shall apply, except for c) 2) (i) (vertical deviation from 3m straight line at kerbs, channels, gullies, manholes and other edge restraints) where the tolerance shall be +10,-0.

PSMJ 7 TESTING

PSMJ 7.2 Trial section

The trial section shall be prepared in a location identified by the Engineer.

PSMJ 8 MEASUREMENT AND PAYMENT

PSMJ 8.2.1 Provision of edge restraints

Notwithstanding this Clause, edge restraints will be measured for payment under SABS 1200 MK Kerbing and channelling.

PSMJ 8.2.2 Construction of paving complete

In addition to clause 8.2.2, the rate for the construction of paving shall cover the cost of re-filling the joints as specified in PSMJ 5.8.

PSMJ 8.2.3 Cutting units to fit edge restraints

Delete the word "raking" in the first sentence of this Clause.

Add the following : "The cutting of units to suit radii greater than 1.0m shall be classified as straight cutting."

PSMK KERBING AND CHANNELLING (SABS 1200 MK)

PSMK 3 MATERIALS

PSMK 3.2.1 General

Delete the contents of Clause 3.2.1 and replace with the following:

“Refer to the Municipal Standard Detail Drawings for kerb and channel details.”

PSMK 3.8 Curing compound

In addition to Clause 3.8, the curing compound shall be the resin based white pigmented type.

PSMK 3.9 Bedding material

Notwithstanding Clause 3.9, Grade 10MPa/19mm concrete shall be used as the bedding material.

PSMK 5 CONSTRUCTION

PSMK 5.1 Excavation and bedding

Delete the first paragraph viz. “Trenches for grade.”

PSMK 5.2 Precast concrete kerbing and channelling

Notwithstanding Clause 5.2, the minimum thickness of bedding material is 50mm.

***PSMK 5.2.1 Precast concrete kerbing and cast-in-situ concrete channeling**

After the precast kerbs have been laid the formwork for the channeling shall be set up. Expansion joints shall be provided at approximately 8m intervals, i.e. opposite the joint between the kerbs. The principles of Clause 5.4 shall apply to the construction of cast-in-situ channeling.

PSMK 5.11 Transition sections and inlet and outlet structures

The Contractor shall construct transition kerbs to the details shown on the drawings.

PSMK 5.13 Junction with existing kerb and channel

The Engineer will indicate the length of existing kerb and channel to be removed in each case. The exposed road layer surface shall be made good before proceeding with the preparation for the new kerb.

PSMK 6 TOLERANCES

PSMK 6.1 Concrete kerbing and channeling

Replace the allowance of “0, - 10” in Clause (b)(1) with “ ± 10 ” and add to the item “provided the layer thicknesses are not prejudiced.”

PSMK 7 TESTING

PSMK 7.2 Cast insitu and extruded kerbing and channeling

PSMK 7.2.2.2 Alternative tests

Notwithstanding Clause 7.2.2.2, the average crushing strength shall be 25 MPa (30 for industrial areas).

PSMK 8 MEASUREMENT AND PAYMENT

PSMK 8.1.1 Basic principles

Replace the second sentence of Clause 8.1.1 with: "Deduction from the linear length of the kerbing will be made for catchpit structures and motor-slopes. These items will be measured separately.

Transition kerbs between different types of kerb and channel or on either side of catchpits, will be measured by the number of each type, extra over the respective types of kerbing and channelling. The rate shall cover the additional cost of constructing the transition length in in-situ concrete and with kerbing and channelling units as necessary.

PSMK 8.2.1 Concrete kerbing

The rate for precast kerbing shall include for the concrete bedding and backing shown on the drawings.

PSMK 8.2.3 Variation of Tests on Extruded Kerbing

Add: "If the coring and testing is carried out via the Municipal Road Laboratory the Contractor will be debited with the cost of the test when the measured compressive strength is less than 20 MPa."

PSMK 8.2.6.1 Ancillaries

Add to Clause 8.2.6.1: "The unit of measurement of the 2 metre length of kerb and channel transition between mountable and barrier type kerb and channel and between mountable or barrier type and the precast support kerb at the catchpit shall be per number."

***PSMK 8.2.13 Junction with existing kerb and channel**

The unit of measurement for tying new kerb and channel into existing shall be per metre and shall include for all plant, labour and materials necessary to complete the junction.

PSMK 8.2.14 Picking up and relaying existing kerbs, etc.

Picking up and relaying of existing kerbs, etc. will be measured separately by length.

The rate for picking up existing kerbs, etc. shall cover the cost of picking, handling and stacking units for reuse, as well as the cost of replacing any kerbs, etc. broken by the Contractor during the execution of the Works.

In addition to the applicable requirements of Clause 8.2.1 the rate for relaying shall also cover the cost of the complete reconstruction of the kerbs, etc. using recovered material.

PSMM ANCILLARY ROADWORKS (SABS 1200 MM)**PSMM 3 MATERIALS****PSMM 3.1 Guardrails, posts, and reflector plates****PSMM 3.1.1 Guardrails**

The material used for guard rails shall be galvanised mild steel.

PSMM 3.1.2 Posts and spacer blocks**PSMM 3.1.2.1 Timber**

Timber posts shall be manufactured from SA Pine or gum poles.

PSMM 3.1.2.2 Steel

Steel posts for guard rails shall be manufactured as shown on the drawings, or instructed by the Engineer.

PSMM 3.2 Road signs**PSMM 3.2.1 General**

If required, give full details of the provision that is to be made in supports to ensure safe breakaways in emergencies.

PSMM 3.2.2 Structural steel

All structural steel, including steel tubes shall be hot dipped galvanized.

***PSMM 3.2.12 Street Name Boards**

Street name boards shall be as specified on the Municipal Standard Detail Drawings PSMM 53.

PSMM 3.3 Road-marking materials**PSMM 3.3.3 Road studs**

Road studs shall be the reflecting type, and shall match the colour of the road marking on which they are installed for the relevant direction of travel, except that where they are installed on white barrier (no-overtaking) lines, they shall be red.

PSMM 5 CONSTRUCTION

PSMM 5.1 Guardrails

PSMM 5.1.2 Painting of guardrails

PSMM 5.1.2.1 Guardrail elements

Guardrails shall not be painted.

PSMM 5.1.2.2 Timber elements

Timber posts and spacer blocks shall be painted as set out below:

Surface preparation:

All dirt, peeling or cracking paint, and other foreign matter shall be removed by wire brushing, scraping, approved wax-free flushable paint remover, or other approved means. All checks, shakes, knot-holes and knot cavities shall be puttied up flush and, when relevant, the surface allowed to dry before painting is started. The moisture content of the timber shall be not more than 200 g/kg at the time of applying the first coat.

Primer:

One coat of wood primer shall be applied.

Finishing:

Two coats of high gloss enamel black colour (or of the colour ordered) shall be applied.

PSMM 5.2 Road signs

PSMM 5.2.1 Manufacture of supports and backing plates and boards

PSMM 5.2.1.2 Backing plates and boards

Backing plates and boards for road sign faces shall be manufactured from aluminium plate, aluminium extrusion, or a composite of these.

PSMM 5.2.1.6 Galvanizing

All structural steel, including steel tubes shall be hot dipped galvanized. Galvanized items shall not be painted.

PSMM 5.2.2 Painting

PSMM 5.2.2.4 (d)(2)Finishing coat

The colour of the finishing coat shall be one of, or a combination of the colours specified in clause 3.2.8.2.

PSMM 5.2.2.5 c)Painting of signs

PSMM 5.2.2.6 Painting of concrete

The finishing coats shall consist of an approved textured plastics film, applied by means of a sponge roller or in the manner recommended by the manufacturer and approved by the Engineer.

PSMM 5.3.6 Road Studs

Add:

Holes for the shank of the road studs shall be drilled; hammering with a moil point to create the hole will not be accepted. The Contractor shall provide the Civil Engineer with a method statement detailing how the holes will be drilled and road studs fastened and may only proceed once the Civil Engineer has approved the method statement.

***PSMM 5.5 Street Name Boards**

Poles shall be erected at the positions shown on the drawings and name blades attached as ordered. The correct spelling of the names of the streets, etc. to appear on the blades will be supplied in writing by the Engineer.

PSMM 8 MEASUREMENT AND PAYMENT**PSMM 8.3.2 Provision and application of retro-reflective material**

Details of the retro-reflective background, symbols, characters and legend are scheduled on the drawings.

C3.7 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

C3.7.1 APPLICABLE SPECIFICATIONS

The Contractor shall comply with the Occupational Health and Safety Act (Act No. 85 of 1993) (OHS Act) and the Construction Regulations, 2014 as amended. In addition, the Contractor shall comply with the Employer's Health and Safety Specification.

The following site-specific specifications shall apply:

Annexure C	:	Site Specific Health & Safety Specification
Annexure C	:	Site Specific Baseline Risk Assessment

C3.7.2 GENERAL PROVISIONS

In terms of the provisions of Section 37(2) of the Occupational Health and Safety Amendment Act, 1993 (Act 85 of 1993) hereinafter referred to as the Act, the following arrangements and procedures shall apply between the Contractor and the Employer to ensure compliance by the Contractor with the provisions of the Act:

- A. The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all relevant provisions of the Act and the Regulations promulgated in terms of the Act.
- B. The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations on the Contractor will be fully complied with.
- C. The Contractor accepts liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations.
- D. The Contractor agrees that any duly authorised officials of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to monitor that the Contractor has conformed to his undertakings as described in paragraphs (i) and (ii) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or any appropriate records or safety plans held by the Contractor.
- E. The Contractor shall be obliged to report forthwith to the Employer and Engineer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing, to the Employer and Engineer, of such investigation, complaint or criminal charge.
- F. The Contractor shall furthermore, in compliance with Constructional Regulations 2014 to the Act acquaint himself with the requirements of the Employer's Health and Safety Specification, and prepare a suitably and sufficiently documented health and safety plan as contemplated the Construction Regulations 2014 for approval by the Employer or his assigned agent. The Contractor shall always be responsible for full compliance with the approved plan as well as with the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

-
- G. The Employer, or his assigned agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations 2014, to monitor that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with the requirements of these Regulations shall entitle the Engineer, at the request of the Employer or his agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages incurred as a result of such suspension, until such time that the Employer or his agents are satisfied that the issues in which the Contractor has been in default have been rectified.
 - H. The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in Volume 1 and 2, the Bill of Quantities, the Drawings, and in the Employers' Health and Safety Specification.
 - I. The Contractor shall always ensure that his operations do not endanger any member of the public.

C3.7.3 PROTECTION OF THE PUBLIC

The Contractor shall always ensure that his operations do not endanger any member of the public. As the area is adjacent to a residential area the Contractor shall take special precautions to prevent public access to any danger areas on the Works, e.g. by temporary barricades and/or fencing.

C3.7.4 BARRICADES AND LIGHTING

The Contractor shall comply with the Occupational Health and Safety Act (1993), the Construction Regulations and the Employers Health and Safety specification provided in the Appendix.

C3.7.5 TRAFFIC CONTROL ON ROADS

Refer to PSA5.10.

C3.7.6 MEASURES AGAINST DISEASE AND EPIDEMICS

Refer to C3.4 and the Construction Regulations for sanitary requirements.

C3.7.7 AIDS AWARENESS

Refer to the Health and Safety Specifications

C3.8 ENVIRONMENTAL MANAGEMENT REQUIREMENTS AND PROCEDURES
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C3.8.1 APPLICABLE SPECIFICATIONS

The Contractor shall comply with the Environmental Management Programme.

The following site-specific specifications shall apply:

Annexure D : Environmental Management Programme
Environmental Authorisation
Water Use Licence

C3.8.2 FIRES AND BURNING OF VEGETATION

No fires may be lit except at places approved by the relevant authority. The Contractor shall ensure that the fire hazard on and near the Site is reduced to a minimum and shall take immediate and effective steps to extinguish any fire that may break out. Burning of vegetation and trees cleared from the Site and/or any other material may only be done on site if permitted in writing by the relevant authority, and shall then be strictly controlled by a competent supervisor, shall be carried out strictly in accordance with any directions given and shall be carried out solely at the risk of the Contractor.

C3.8.3 PRESERVATION OF FLORA AND FAUNA AND SOIL CONSERVATION

The Contractor shall:

- take all precautions to prevent the erosion of soils and/or loss of or injury to domestic and other animals from any lands used or occupied by the Contractor;
- refrain from destroying, removing or clearing trees, timber and scrub to any extent greater than is necessary for the execution of the Contract,
- take care to cause the minimum of disturbance to the fauna and flora.
- erect temporary fences on the servitude lines during the construction period to prevent loss of fauna. The fences shall be removed as soon as construction and testing are complete.
- take precautions to keep the risk of fire to a minimum,
- arrange that timber for firewood be obtained only from such places as may be approved by the Engineer;
- take such measures as to ensure that his employees are aware of all laws and restrictions governing the hunting, disturbing, capturing or destroying of animals and birds in the vicinity of the camp or the Works or the taking of fish from any water ; and
- prohibit all firearms from the site and temporary camps.

C3.8.4 INDIGENOUS FOREST

Oak, palm, yellowwood, stinkwood, blackwood, wild olive trees, and other trees that have a high commercial value in the timber trade, are defined as "valuable indigenous trees" for the purposes of this Contract and shall not be damaged in any way. Other than as specifically directed by the Engineer, felling of valuable indigenous trees is strictly forbidden.

C4 SITE INFORMATION

C4.1 SCOPE

The documentation included in this section describes the site as at the time of tender to enable the Tenderer to price his tender and to decide upon his method of working and programming. Only actual information about the physical conditions on the site and its surroundings has been included in this section, and the interpretation thereof is the responsibility of the Tenderer.

For the purposes of this Contract, the Contractor will be deemed to have carried out his own investigations at tender stage, and fully acquainted himself with the site conditions, whether such investigations have been carried out or not.

C4.2 GEOTECHNICAL INVESTIGATION

Trial holes have been excavated and DCP tests have been taken in the positions indicated in the drawings. One soil sample has been analysed. The results of these investigations are presented in the following pages.

The level of the groundwater-table in the area changes with the seasons and in the winter months it can be expected to rise to just below ground surface level. Even in the drier months the Contractor may find ground water in the deeper excavations.

Excavation levels for roads may be below the water-table during the rainy season.

The information regarding the subsurface conditions and materials on the Site is provided in good faith for the Contractor's convenience as an indication of the conditions likely to be encountered. Neither the Employer nor the Engineer offer any guarantee that the information is representative of the whole site, or that the same conditions will prevail during construction.

The provision of such information shall not be regarded as in any way limiting, or detracting from, the Contractor's responsibilities in terms of the General Conditions of Contract and the Scope of Works.

The Contractor will be held to have satisfied himself as to the subsurface conditions to be encountered and to have allowed accordingly in his tendered rates.

C4.3 EXISTING SERVICES

The site is crossed by services which include sewage pipes with erf connections, stormwater pipes, water pipes with erf connections, overhead and underground telecommunication cables and overhead and underground power cables.

I HEREBY DECLARE THAT I WILL COMPLY WITH THE SCOPE OF WORK AND SPECIFICATIONS LISTED HEREIN:

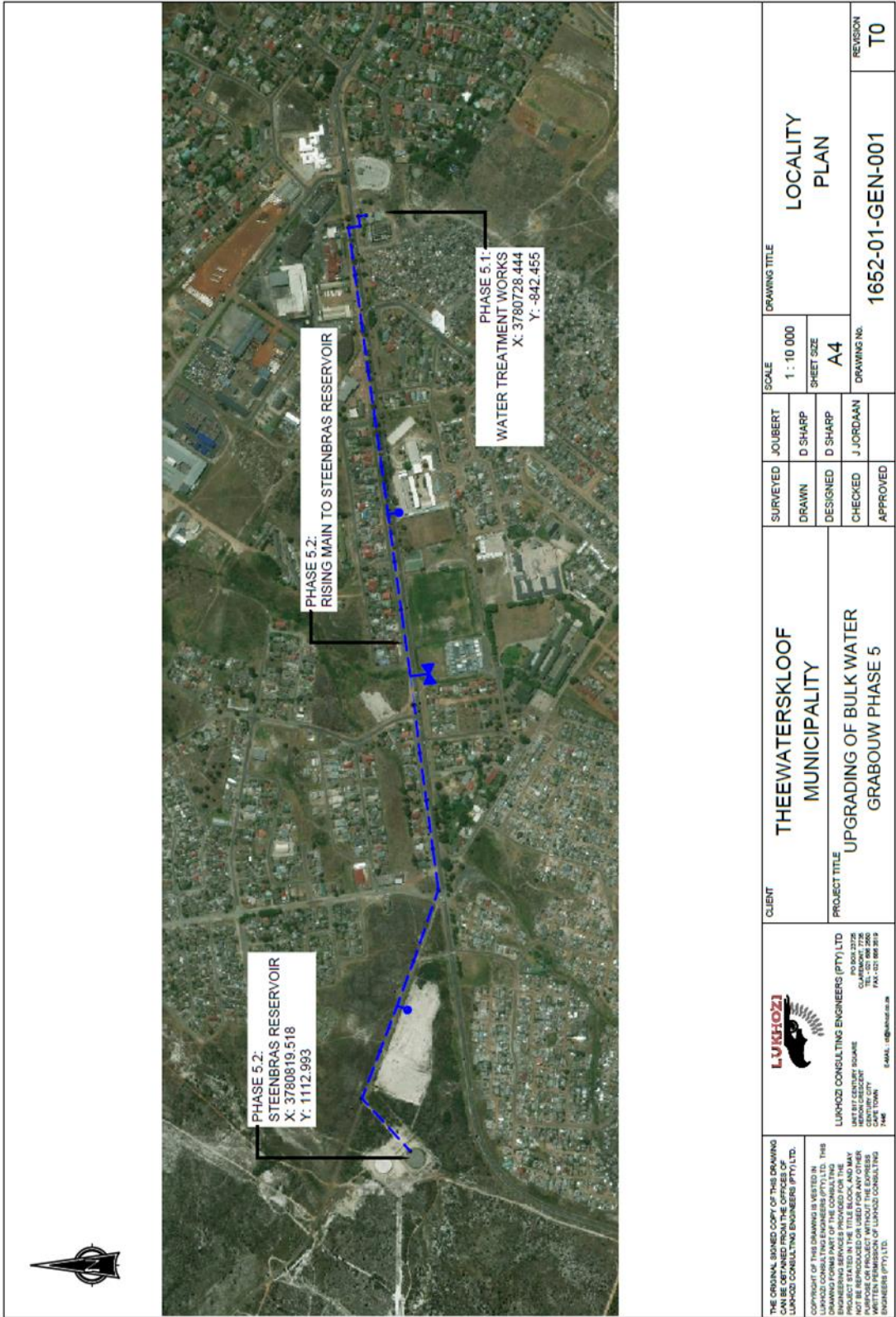
SIGNATURE :

C5 ANNEXURES

Annexure A	Locality Plan
Annexure B	Contract Name Board
Annexure C	1. Site Specific Baseline Risk Assessment 2. Site-Specific Health and Safety Specification
Annexure D	1. Environmental Management Programme 2. Environmental Authorisation 3. Water Use Licence
Annexure E	Geotechnical Report- available on request
Annexure F	Community Liason Officer Contract
Annexure G	Traffic Accommodation Plan
Annexure H	Tender Drawings

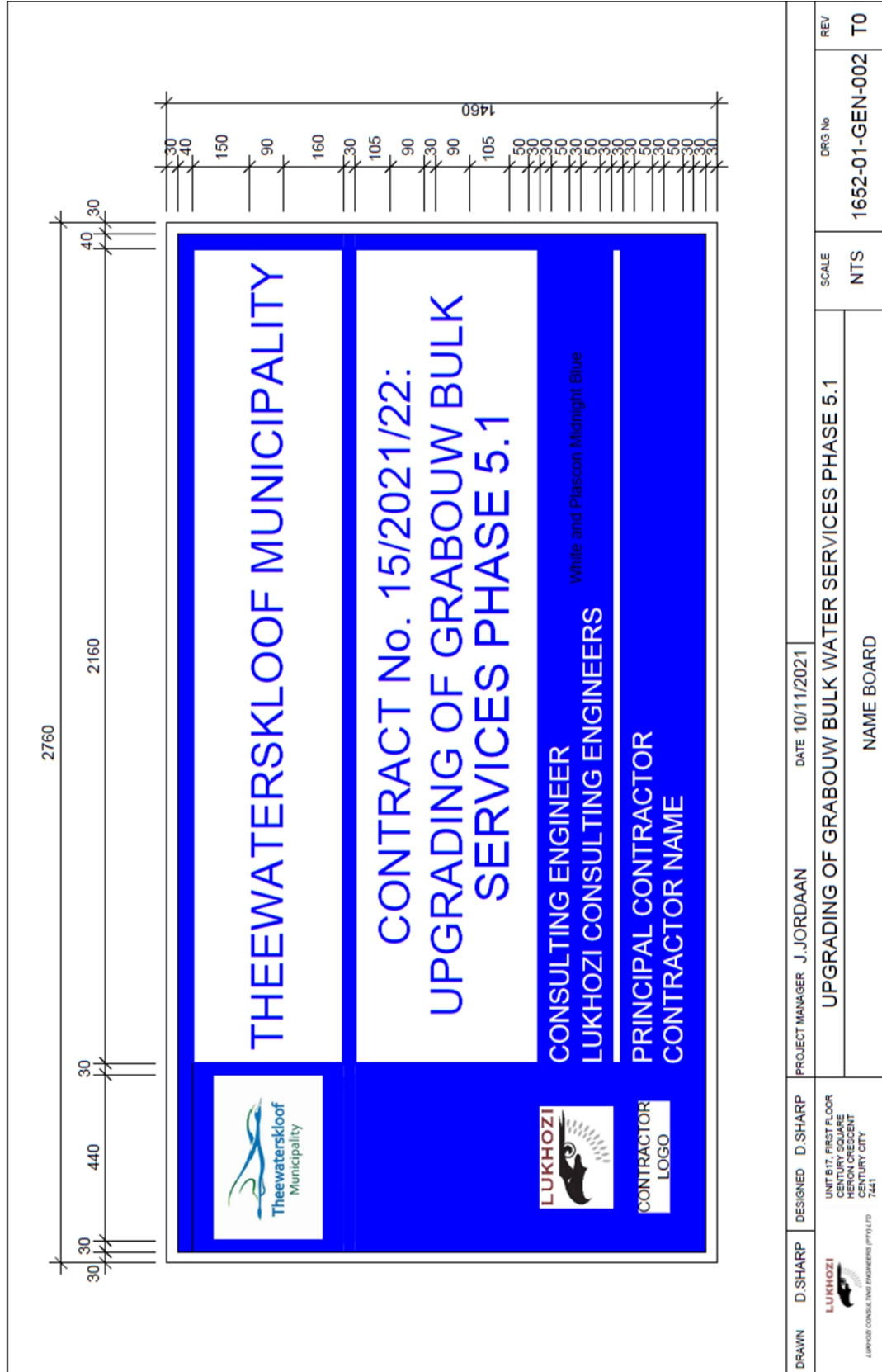
ANNEXURE A

LOCALITY PLAN



ANNEXURE B

CONTRACT NAME BOARD



ANNEXURE C

1. SITE SPECIFIC BASELINE RISK ASSESSMENT

2. SITE-SPECIFIC HEALTH AND SAFETY SPECIFICATION



Project Health and Safety Specification

In terms of Construction Regulations 2014

Project Client

THEEWATERSKLOOF MUNICIPALITY

Description of Project Works

CONSTRUCTION OF BULK WATER RISING MAIN

Project Location

**FROM THE GRABOUW WATER TREATMENT
WORKS TO THE STEENBRAS RESERVOIR**

Preparation Date

OCTOBER 2021

Project Health and Safety Specification developed by:

Mark Winter PrCHSA, (SACPCMP)
Safe Working Practice (Cape Town) Pty Ltd
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PROJECT HEALTH AND SAFETY SPECIFICATION

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- Annexure G** Safety Specification and Baseline Risk Assessment Issue Register



1.0 SPECIFIC PROJECT INFORMATION

1.1 INTRODUCTION AND DEFINITIONS

THE REQUIREMENTS OF THE CONSTRUCTION REGULATIONS 2014 (AND GUIDANCE NOTES OF 2017) HAVE BEEN IN EFFECT SINCE 7TH AUGUST 2014. THE REGULATIONS PLACE LEGAL DUTIES UPON PRINCIPAL CONTRACTORS AND CONTRACTORS. ALTHOUGH THIS HEALTH AND SAFETY SPECIFICATION INCLUDES MUCH OF THE CONTENT OF THE REGULATIONS, THE CONTRACTOR WILL BE DEEMED TO BE FAMILIAR WITH THE REQUIREMENTS OF THESE REGULATIONS, AND OTHER ASSOCIATED HEALTH AND SAFETY REGULATIONS, AND TO HAVE FACTORED IN ALL THE DUTIES PLACED UPON CONTRACTORS AND PRINCIPAL CONTRACTORS IN THE TENDER. A COPY OF THE REGULATIONS CAN BE VIEWED ON THE DEPARTMENT OF LABOUR'S WEBSITE.

PLEASE NOTE THAT THE TERMS "CONTRACTOR" AND "PRINCIPAL CONTRACTOR" HAVE THE SAME MEANING AS THAT IN THE CONSTRUCTION REGULATIONS AND ARE USED INTERCHANGEABLY IN THIS DOCUMENT, I.E., REFERENCES TO "CONTRACTOR" REFER TO PRINCIPAL CONTRACTOR AND/OR CONTRACTOR AS THE REGULATIONS PERTAIN TO THEIR FUNCTIONS.

This Health and Safety Specification contains clauses that are generally applicable to construction activities, as well as imposing pro-active controls associated with activities that impact on Health and Safety as it relates to work on site. Compliance to the requirements of the Occupational Health and Safety Act 1993 is an additional requirement of this Health and Safety Specification and is part of the Contractor's responsibility. The Client, and/or their agents, will monitor that all Contractors comply with the requirements of such legislation.

ALL REFERENCES TO CLIENT IN THIS HEALTH AND SAFETY SPECIFICATION ALSO REFER TO SAFETY AGENT, WHERE SO APPOINTED.

Definitions (as per the Construction Regulations 2014) applicable to this Health and Safety Specification:

"agent" means a competent person who acts as a representative for a Client;

"angle of repose" means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on the surface, rather than sliding or crumbling away;

"bulk mixing plant" means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

"client" means any person for whom construction work is being performed;

"competent person" means a person who has, in respect of the work or task to be performed, the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act;

"construction manager" means a competent person responsible for the management of the physical construction processes and the coordination, administration, and management of resources on a construction site;

"construction site" means a workplace where construction work is being performed;



"construction supervisor" means a competent person responsible for supervising construction activities on a construction site;

"construction vehicle" means a vehicle used as a means of conveyance for transporting persons or material, or persons and material, on and off the construction site for the purposes of performing construction work;

"construction work" means any work in connection with -

- the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

"construction work permit" means a document issued in terms of regulation 3;

"contractor" means an employer who performs construction work;

Note:

a) Includes organisations and or self-employed person that contracts with a client, principal contractor, or a contractor to carry out construction work.

"demolition work" means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;

"design" in relation to any structure, includes drawings, calculations, design details and specifications;

"designer" means a competent person who-

- prepares a design;
- checks and approves a design;
- arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
- designs temporary work, including its components;
- an architect or engineer contributing to, or having overall responsibility for a design;
- a building services engineer designing details for fixed plant;
- a surveyor specifying articles or drawing up specifications;
- a contractor carrying out design work as part of a design and building project; or
- an interior designer, shop-fitter, or landscape architect;

"ergonomics" means the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and methods to design in order to optimise human well-being and overall system performance;

"excavation work" means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

"explosive actuated fastening device" means a tool that is activated by an explosive charge and that is used for driving bolts, nails, and similar objects for the purpose of providing fixing;

"fall arrest equipment" means equipment used to arrest a person in a fall, including personal equipment, a body harness, lanyards, deceleration devices, lifelines, or similar equipment;

"falsework" means a combined system of formwork and support work;

"formwork" means temporary or permanent shutters used to form wet concrete into elements of a structure, and includes both horizontally and vertically placed shutters;

"fall prevention equipment" means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guard-rails, screens, barricades, anchorages or similar equipment;



"fall protection plan" means a documented plan, which includes and provides for -

- all risks relating to working from a fall risk position, considering the nature of work undertaken;
- the procedures and methods to be applied in order to eliminate the risk of falling; and
- a rescue plan and procedures;

"fall risk" means any potential exposure to falling either from, off or into;

"health and safety file" means a file, or other record containing the information in writing required by these Regulations;

"health and safety plan" means a site, activity or project specific documented plan in accordance with the Client's health and safety specification;

"health and safety specification" means a site, activity or project specific document prepared by the Client pertaining to all health and safety requirements related to construction work;

"material hoist" means a hoist used to lower or raise material and equipment, excluding passengers;

"medical certificate of fitness" means a certificate contemplated in regulation 7(8);

"mobile plant" means any machinery, appliance or other similar device that is able to move independently, and is used for the purpose of performing construction work on a construction site;

"National Building Regulations" means the National Building Regulations made under the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008;

"person day" means one normal working shift of carrying out construction work by a person on a construction site;

"principal contractor" means an employer appointed by the Client to perform construction work;

"Professional Engineer or Professional Certificated Engineer" means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);

"Professional Technologist" means a person holding registration as a Professional Engineering Technologist in terms of the Engineering Profession Act, 2000;

"provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations, 2003;

"scaffold" means a temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

"shoring" means a system used to support the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation;

"structure" means-

- any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- any falsework, scaffold or other structure designed or used to provide support or means of access during construction work; or
- any fixed plant in respect of construction work which includes installation, commissioning, decommissioning, or dismantling and where any construction work involves a risk of a person falling;



"support work" means the temporary structure erected to support the formwork before the casting of a concrete element of a structure.

"suspended platform" means a working platform suspended from supports by means of one or more separate ropes from each support;

"temporary works" means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work;

"the Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"tunnelling" means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral.

Reference should be made to the following documentation in conjunction with this Safety Specification (including existing surveys, drawings, and reports):

- Tender documents
- Drawings

IMPORTANT NOTE:

This Health and Safety Specification has been prepared to comply with the requirements of the Construction Regulations 2014.

1.2 BACKGROUND TO THE HEALTH AND SAFETY SPECIFICATION

Historically, the Construction Industry has had a poor health and safety record. Due to the complex and potentially dangerous operations being undertaken, there is a high risk of incidents, accidents, and injuries. In many instances poor adherence to the Act and Regulations has resulted in severe consequences for Health and Safety performance. The Client is determined that the highest Health and Safety standards will prevail throughout the Contract and that there will be full commitment from all parties involved.

To achieve this goal the Client has arranged for the preparation of this Health and Safety Specification. The Health and Safety Specification sets out guidelines and minimum levels of awareness and guidance for Health and Safety requirements for the project. Contractual responsibility for adhering to these requirements rests with the Contractors. All employees are encouraged to be pro-active in compliance.

The Client is committed to ensuring the highest Health and Safety standards for all work undertaken within the Contract.

Contractors as employers are fully responsible and accountable for compliance with all Health and Safety requirements.

IMPORTANT NOTE:

Compliance with the Occupational Health and Safety Act and Regulations shall not be limited to this Health and Safety Specification and definitions contained in this document.

Contractors shall be conversant with the requirements and effects of Health and Safety legislation upon their activities, in particular the Construction Regulations, 2014, and the Occupational Health and Safety Act, 1993, and to have made adequate resource in their tender submission to comply with all legislative requirements.

Failure to comply with the requirements of this Safety Specification will result in severe sanction and the severity of the sanction will depend on the severity of the noncompliance.



The Contractor's personnel will be responsible for the auditing of the implementation of the Health and Safety Specification and maintaining the document control and record systems associated with the Health and Safety Specification. The Client will arrange for Health and Safety audits to be conducted on site on their behalf to monitor health and safety compliance by contractors.

1.3 PURPOSE OF THE HEALTH AND SAFETY SPECIFICATION

The purpose of this site-specific Health and Safety Specification is to comply with legal requirements and to provide health and safety information about specific project risks known by the Client, Designer and Safety Agent to be applicable to this project. This document also provides minimum health and safety requirements, standards, and expectations that the contractor must adhere to.

The Contractor must take into account all information in this specification and ensure that their tenders include adequate resource and competence to deal with the matters detailed herein so that all relevant contents are dealt with in a way which is in compliance with legislation and the ethical concerns for the safeguarding of employees, contractors and other persons affected by the construction activities. Please note that a detailed OHS bill of quantities must be provided by the contractor on all Construction Work Permit projects. The Bill of Quantities will form part of the Construction Work Permit application presented to Department of Labour for approval.

The Health and Safety Specification will be implemented during construction of the works and any construction activity that the Client has control over.

This will also assist in ensuring that all the costs related to the compliance with Occupational Health Act 85 of 1993 and the Construction Regulations 2014, as well as this Health and Safety Specification, are taken into consideration at Tender stage.

No advice, approval of any document required by the Health and Safety Specification such as hazard identification and risk assessment action plans or any other form shall be construed as an acceptance by the Client of any obligation that absolves the Contractor from achieving the required level of performance and compliance with legal requirements.

Further, there is no acceptance of liability by the Client which may result from the Contractor failing to comply with the Health and Safety Specification unless the Client has issued an instruction to any requirement, i.e. the Contractor remains responsible for achieving the required performance levels.

1.4 IMPLEMENTATION OF THE HEALTH AND SAFETY SPECIFICATION

This Health and Safety Specification forms an integral part of the Contract, and Contractors shall make it an integral part of their Contracts with other Contractors and Suppliers. Contractors employed by the Client are to ensure that the provisions of the Health and Safety Specification are applied both on the site and in respect of all off site activities relating to the project, in particular in transport activities and project dedicated off site fabrication works.

The Contractor shall enforce the provisions of the Health and Safety Specification amongst all Contractors and suppliers for the project.

The Contractor shall sign the acknowledgment on the last page of this safety specification that he/she has familiarized him/herself with the content of the Health and Safety Specification and shall comply with all obligations in respect thereof.

The successful Contractor will be required to compile a Health and Safety Plan based on the requirements of the Occupational Health Act 85 of 1993 and these Specifications, which will need to be approved by Client (or their appointed safety agent) prior to commencement with construction work.



1.4.1 Client Duties

In terms of the Construction Regulations 2014 the Client (or their Agent, where appointed) has legal duties. Where an Agent (refer to “definitions” section of this document) is appointed in terms of this project, these Health and Safety duties assigned will also apply.

All references to “Client” will apply to their appointed “Safety Agent”, where so appointed, in this Health and Safety Specification.

The Client must:

- Prepare a baseline risk assessment for the construction work
- Prepare a suitable, sufficiently documented, and coherent site specific Health and Safety specification for the intended construction work, based on the baseline risk assessment
- Include the health and safety specification in the tender documents
- Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures
- Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely
- Take reasonable steps to ensure co-operation between all contractors appointed by the Client to enable each of those contractors to comply with the regulations
- Ensure, before work commences, that every principal contractor is registered and in good standing with the compensation fund, or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act no 130 of 1993)
- Appoint each principal contractor in writing for the project, or part thereof
- Discuss and negotiate with the principal contractor the contents of the principal contractor’s safety plan and thereafter finally approve that plan for implementation
- Ensure that a copy of the principal contractor’s health and safety plan is implemented and maintained
- Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days
- Ensure that a copy of the health and safety audit report is provided to the principal contractor within 7 days after the audit
- Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the principal contractor’s health and safety plan for site
- Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely
- Ensure that the health and safety file is kept and maintained by the principal contractor.
- Where the Client requires additional work to be performed as a result of a design change or error in construction due to the actions of the Client, the Client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.
- Where more than one principal contractor is appointed, the Client must take reasonable steps to ensure co-operation between all principal contractors and contractors to ensure compliance with the Regulations
- Where the Client has appointed a Safety Agent for the project, their details for this project are contained in the Project Directory section of this health and safety specification.

1.4.2 Designer Duties

It must be noted that the Designer also has Health and Safety duties assigned in terms of the Construction Regulations. Where the contractor fulfils a design function in terms of this project (refer to “definitions” section of this document), these duties will also apply. Please refer to Regulation 6 of the Construction Regulations 2014.



Please note that the designer of temporary works must ensure that:

- all temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- the designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- the loads caused by the temporary works and any imposed loads are clearly indicated in the design.

1.5 PROJECT DIRECTORY		
Project Client	Theewaterskloof Municipality	Tel: 028 214 3300
Contact Person	Nigel Kayser	Email: NigelKa@twk.org.za
Project Manager	Lukhozi Consulting Engineers	Tel: 041 363 1984
Contact Person	Jacques Jordaan	Cell: 083 557 7167 e-mail: j.jordaan@lukhozi.co.za
Civil Engineer	Lukhozi Consulting Engineers	Tel: 041 363 1984
Contact Person	Jacques Jordaan	Cell: 083 557 7167 e-mail: j.jordaan@lukhozi.co.za
Mechanical Engineer	Lukhozi Consulting Engineers	Tel: 043 721 1321
Contact Person	Bruce Maliti	Cell: 073 796 9069 e-mail: b.maliti@lukhozi.co.za
Electrical Engineer	Lukhozi Consulting Engineers	Tel: 021 686 2550
Contact Person	Jaundre Duvenhage	Cell: 083 861 9407 e-mail: j.duvenhage@lukhozi.co.za
Construction Safety Agent	Safe Working Practice (Cape Town) Pty Ltd	Tel: 021 701 0470
Contact Person	Mark Winter	Cell: 071 603 2213 e-mail: markw@safepractice.co.za



OTHER PARTIES DIRECTORY	
Department of Labour for submission of Annexure 2: Notification of Construction Work WESTERN CAPE – Fezeka Ngalo	Tel: 021 441 8158 e-mail: fezeka.ngalo@labour.gov.za Cell: 083 365 0681
Department of Labour http://www.labour.gov.za/Contacts/Labour-centres/Pages/defaults.aspx BELLVILLE P. O. Box 1789 Bellville 7535	Tel: 021 441 8158 e-mail: fezeka.ngalo@labour.gov.za Cell: 083 365 0681
Telecommunications, Water, Gas and Electricity Contractor to apply for and refer to wayleave information from service providers for the nature and location of services. Refer all queries Project Manager.	
COVID-19 Hotlines National Coronavirus Hotline Provincial Coronavirus Hotline	Tel: 0800 029 999 Tel: 021 928 4102

1.6 PROJECT DETAILS
Description of Works Phase 5 - Construction of a dedicated rising main from the Grabouw Water Treatment Works to the Steenbras Reservoir, including, <ul style="list-style-type: none">• Install new 500 mm diameter rising main - approximately 2024 m in length along with associated excavations and backfilling• Re-establishing roads, sidewalks and verges• Tie-in connection at reservoir• Provision for re-establishing links between 2 existing reservoirs• Tie-in connection at WTW pump station• Provision for secure fencing around reservoirs• Provision for secure manhole cover replacements This description of the works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract.
Anticipated Construction Duration 6 months.
Provisional Start Date July 2022



Provisional Completion Date TBA.
Construction Work Permit Required for the Project? No
1.7 EXISTING ENVIRONMENT
Hazards particular to this project by virtue of location: <ul style="list-style-type: none">• There are several existing water services along the proposed pipeline route. These include an existing 250 AC gravity pipeline.• The route of the works goes through existing residential and commercial areas – members of public and vehicular traffic present. There may be community facilities• Live services (underground, ground and overhead services will be present in the area of the works.• There may be security risks in areas of the works.
Overhead, Above Ground and Underground Services crossing the site: <p>Overhead: Principal Contractor to protect against damage and risks to safety of workforce and public.</p> <p>Underground: There are several existing water services along the proposed pipeline route. These include an existing 315 Ø uPVC Rising Main and 250 AC gravity pipeline. In addition to the existing services information, plans have been submitted to the municipality for the installation of an underground fibre network.</p> <p>Ground level: Yes, street lighting present.</p> <p>Service Drawings available: Yes.</p> <p>Wayleaves required: Yes</p> <p>Permits required: TBA</p> <p>Isolations required: TBA</p>
Existing structures on site and surrounding land use (with a significant impact on Health & Safety): <p>The existing area consists of residential and commercial properties. There may be community facilities present too. Ou Kaapse Way is a busy thoroughfare and the area of the Steenbras Reservoir is unfenced and abutted by informal residential properties.</p>
Existing ground conditions and ground survey report: <ul style="list-style-type: none">• Geotechnical report done in May 2021. 10 test pits were dug by hand along the proposed route.• No health/safety issues known regarding quality of ground water.• Geotechnical queries to be referred to project manager.• A seasonal water table may be present.• The Grabouw area is comprised mostly of sandstone rock and dense sandstone soils.



Existing Traffic Systems

Condition: Existing two way surfaced roads for the most part.

Restrictions to access: None known.

Speed restrictions: Usual urban speed limits apply.

1.8 AVAILABLE DRAWINGS

Refer to tender documentation.

1.9 PROJECT HEALTH AND SAFETY REQUIREMENTS

Significant health and safety hazards identified by Client, Designer and Safety Agent:

Use of delivery or support trucks used for the delivery and removal of material and equipment on open roadways – plant must be effectively separated from members of public and unauthorised personnel. Flag persons wearing high visibility clothing to be in place as required. Exclusion zone to be in operation when the support vehicles are in use next to the roadways.

Any **plant** that will be moving in or around the road must be made visible at all times. Parking of this plant must be strictly monitored by the contractor at all times. Use flag persons as applicable. Plant must be effectively separated from members of public and unauthorised personnel.

Members of the public and road traffic – the site is located in an existing mixed residential and commercial area running through the business district of Grabouw and then on through residential areas to the reservoir. The pipeline is in the median of the road for the most part and crosses Ou Kaapseweg about 8 times. Sidewalks will be affected. The site works will present safety issues regarding risks to members of public and road traffic. The health and safety of members of public and road users must be a priority at all times and all necessary steps must be taken to prevent unauthorised entry to site and to protect members of the public from any dangers associated with the construction works being undertaken. Existing roads will remain open during works. This is a critical hazard to traffic/members of public and to workers in the road who must have high visibility clothing on at all times. Safety of road users and workers is crucial and must be managed by Principal Contractor. The Principal Contractor is responsible for the directional signage to divert pedestrian members of the public and road users. Where applicable - flag persons to control traffic with red flags and to have high visibility clothing on at all times. A traffic accommodation plan will be required.

Noise and Dust control: Measures to be put in place by the appointed contractor to minimize the dust and noise on site. Contractor must take sufficient steps to reduce the production of noise and dust.

Warning Notices: Construction warning signage must be prominently displayed to avoid access to site areas by unauthorised persons.

Electrical work may only be undertaken after the requisite isolations and permits have been obtained and all required safety measures are in place. All required personal protective equipment must be worn. Live commissioning may only be undertaken by trained and competent contractor's personnel who are authorised and supervised by competent personnel provided by the contractor, and, if so identified, the project client and professional team.

Risk of fires caused by construction works and / or Smoking – ensure correct measures are in place for fire control to ensure no fires will break out. Fire extinguishing equipment to be readily available at all times especially during high risk activities. The smoking of cigarettes is also to be monitored and adequate smoking areas and smoking control measures to be put in place

Live services – services present in the works areas. All necessary precautions must be taken to prevent accidental contact with these services. All services to be treated as live.

Use of hazardous – MSDS to be available. Contractor must exercise caution as there is always a potential for fires. Suitable fire extinguisher to be in place at all times. Gloves and suitable respiratory protection must be provided and worn as well as other appropriate personal protective equipment (PPE) required by risk assessments. Bitumen not to be sprayed in adverse conditions.

Presence of Asbestos – There are several existing water services along the proposed pipeline route. These include an existing 315 Ø uPVC Rising Main and 250 AC gravity pipeline. Works with asbestos must be done in strict accordance with the Asbestos Abatement Regulations of 2020.

Lifting Operations – all operators must provide copies of their up to date competency and medical certificates and driver's license. Loads must be slung by person with appropriate training and competence. Daily plant inspection registers to be completed and records kept in the safety file. Valid load test certificates and record of inspections by competent personnel must be available and maintained throughout the project. Rotating amber lights and reverse alarms to be active when operating all plant on site. Plant must be effectively separated from members of public and unauthorised personnel. Use trained flag persons as applicable. Exclusion zone under lifting operations to be enforced as applicable. Particular attention must be paid to lifting operations in windy conditions.

Excavations – max depth of 2.5m - sloping and/or shoring to be used – method statement to be in place. All workers must receive induction prior to commencement of works. Excavations must sloped to a safe repose. If sloping is not possible, it must be adequately supported, braced and maintained by a competent person (shored) so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them. Support mechanisms to be of sufficient design, durability and strength to prevent any excavation edges from collapsing. **Excavations must be backfilled by end of each shift as far as is reasonably practicable.** If this cannot be done then appropriate safety measures must be put in place by the contractor to prevent unauthorised entry to excavations, including barriers and warning signage. Ensure there is a safe distance between employees and plant when digging excavations.

- ALL EXCAVATIONS MUST HAVE A MINIMUM OF ORANGE PLASTIC BARRIER MESH IN PLACE.
- Red & white danger tape is not permitted for securing excavated areas.
- Excavated soil is to be placed at a sufficiently safe distance from the excavation itself.
- Water seepage / water table management into excavated areas due to high subsurface water table is to be management by the Principal Contractor.

Note contents of Geotech report for this Grabouw contract - It is expected that most of the proposed new pipeline will be situated at a depth of approximately 1,00 - 2,00 m bgl. Excavation within the fill and transported sandy soils can be classified as "soft excavation" in terms of SANS 1200 D earthworks excavation classification. Conventional earth moving equipment is expected to provide the most economical means of excavation within these soils. Excavation by hand is also relatively easy within 1,00 m bgl. Excavation within cobbles and very soft sandstone rock is also expected to classify as "soft rock excavation". However, due to limited depth excavated during the field investigation, consistency of deeper lying soil and rock is unknown. Allowance will need to be made to accommodate "intermediate to hard rock" excavation as well as for "boulder class b" excavation. Excavations deeper than 1,50 m but not exceeding 2,50 m will require shoring or battered sidewalls for safety purposes. Excavation sidewalls within the transported soils would need to be battered to an angle of not more than 40° to the horizontal.

Under wet conditions, shoring or sandbagging may also be required to control ravelling within the upper loose materials.

Confined spaces (manholes / chambers) – up to 2.5m in chambers and manholes – confined space work must be monitored by a competent appointed person. Prior to entry, ensure that confined space is sufficiently ventilated. Oxygen levels to be tested in confined space to ensure that it is safe for entry. Personal protective equipment to be worn (such as proper masks) if air supply insufficient or not of sufficient quality. Emergency procedures to be in place. Sufficient training must take place in use of equipment prior to any works commencing in such confined space. Permit system to be in place to declare confined space safe for entry.

Risk of criminal activities (and protest action) – area of the works may carry the risk of crime with potential risk (and protest action) to contractors. The safety of the workers must be taken into consideration. Emergency procedures must form part of induction training. Contractor must ensure safe entry into the area and vacate the area immediately in event of incidents and notify professional team.

COVID-19 – The Principal Contractor is to review and implement measures for the safety management, hygiene & health procedures, protocols and practices, informing employees, monitoring and compliance with all Governmental Decrees regarding the management of the COVID-19 situation.

The Principal Contractor is to review at least the following, but not limited to, information.

- What is COVID-19?
- How does COVID-19 spread?
- What are the symptoms of COVID-19?
- When should testing for COVID-19 occur?
- How can COVID-19 infection be prevented?
- COVID-19 and Stigma's or false information – What is true and what is false?

The below national and international information sources are recommended for review.

World Health Organization

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

The Department of Health (Republic of South Africa)

<http://www.health.gov.za/index.php/outbreaks/145-corona-virus-outbreak/465-corona-virus-outbreak>

The National Institute for Communicable Diseases (Republic of South Africa)

<http://www.nicd.ac.za/diseases-a-z-index/covid-19/frequently-asked-questions/>

The Principal Contractor is recommended to be able to demonstrate/implement the below:

- Workplace safe work procedure and risk assessments.
- Hygiene protocols:
 - Washing of hands – How, why and when.
 - The use of hand sanitizers – How, why and when.
 - Disinfecting of surfaces and workplace cleanliness – How, why and when.
- Social distancing within the workplace – How, why and when.
- Communication with employees:
 - Employee and external contractor inductions.
 - Awareness training.
- Safety signage in at least 3 languages – English, Afrikaans & Xhosa.
- Additional control measures:
 - Employee thermometer testing.
 - Provision of PPE – gloves, masks, etc...
 - Handwashing sessions – company wide.



- Employee health monitoring.

Strict COVID 19 control measures by the Principal Contractor is to be implemented.

Other construction hazards that the contractor can reasonably expect are as follows:

Bricklaying
Compacting and Filling
Compactor Operations
Cutting Off Disc
Electric Tools and Electrical Installations
Flammable Liquids / Gas
Hazardous Substances
Hot Works
Hand tools
Manhole Rings and Pipes Storage
Manual Handling of General Items
Plant/Vehicle and Equipment Operation
Site Strip
Steel Fixing
Temporary Works
Troxler Use

NOTE: Please refer to end of this Health and Safety Specification for the baseline risk assessment for these hazards and risks.

ACTIVITIES REQUIRING APPROVED METHOD STATEMENTS (FOR HEALTH AND SAFETY & COVID-19)

Pre-Construction Phase Method Statements

- Site establishment

Construction Phase Method Statements

- The detection and protection of existing services.
- Traffic accommodation plan
- Work with Asbestos

ACTIVITIES REQUIRING PERMITS (FOR HEALTH AND SAFETY PURPOSES)

Permit to Dig: Where applicable, Principal Contractor to approach service providers.

Permit to Enter Excavations: The Principal Contractor is to formally manage all excavation work.

Road Works Permit: The Principal Contractor to liaise with the professional team.

Permit to Work with Electricity: Where applicable, Principal Contractor to approach service providers.

Confined Space Permit: The Principal Contractor is to formally manage all confined space work.

Hot Works Permit: The Principal Contractor is to formally manage all hot work.



Permit to Work under Power Lines: The Principal Contractor is to formally manage all works under power lines, as applicable.

Blasting: n/a

Temporary Works: The Principal Contractor is to formally manage all temporary work.

COVID 19 (Travel Permit): None foreseen (As per government regulations).

CONTRACTOR SAFETY OFFICER PROVISION

Records of safety audits undertaken by the Contractor's Safety Officer must be kept on site in the safety file and nonconformances reported by the Safety Officer to the Contractor's management team. All nonconformances identified by the Safety Officer and client's safety agent must be investigated and corrective action taken by the Contractor to prevent re-occurrence.

Please note that as from 7th August 2018 the safety officer must be professionally registered with the SACPCMP. Proof of registration with the SACPCMP must be provided.

If registered as a Candidate proof of mentorship and weekly visits by mentor must be available on site.

The requirement for this site is that a part time Safety Officer be appointed by the Contractor for the duration of the project, conducting at least fortnightly safety audits.

MEDICAL CERTIFICATE OF FITNESS (ANNEXURE 3)

The contractor must ensure that their employees on site have a valid medical certificate of fitness, specific to the construction work being performed, issued by an occupational health practitioner in the form of an Annexure 3 template.

MANAGEMENT AND SUPERVISION OF CONSTRUCTION WORK

A principal contractor must, in writing, appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate competent person must be appointed by the principal contractor. Proof of an all-inclusive assessment by the Principal Contractor of the Construction Manager's Competency in construction management and health and safety competency must be available in the Safety File.

The Construction Manager, Alternate Construction Managers, Assistant Construction Managers, and designated construction supervisor/s must, as a minimum, have training in Legal Liability, Construction Regulation 2014 and the OHS Act and Regulations.

TRAFFIC MANAGEMENT AND TRAFFIC SAFETY OFFICER PROVISION

The Traffic Management Plan will be prepared by the Traffic Engineer and be approved by the Project Manager and, as required, the Traffic Chief as per the National Road Traffic Act, No. 93 of 1996. The Traffic Safety Officer (TSO) must have training as per Unit Standard 14561 or similar.

- The principal contractor is to implement the Plan before the start of works. A full time TSO will be required on site.
- Note that new jersey barriers may need to be provided for works in the road and usual trench barricading where the works are within the sidewalks or verges.
- Please note that at least one road lane should be open during business hours. At no time should the entire road be closed off. The civil specifications require that one section of pipeline be completed before moving on to another section. This is to prevent multiple open trenches along the route. (See section PSA 5.9 in the Civil Specifications).



ENVIRONMENTAL CONDITIONS

Contractor must take into account adverse weather conditions on site activities and implement control measures to mitigate risk. This includes risk of exposure to excessive heat, cold, rain, lightning and wind.

The open nature of the site works will not preclude any of the above.

ARRANGEMENTS FOR ACCESS, PARKING, DELIVERIES, ETC.

Off existing roads. Residents must have access to their properties at all times as well as emergency vehicles.

All service providers must sign a 37.2 Mandatory Agreement and must be inducted before they can be allowed on site.

ARRANGEMENTS FOR SITE CAMP, ABLUTIONS AND YARD, INCLUDING FOR COVID-19

Site camp location and set up

- | | | |
|---------------------------------------|---|--------------------------------------|
| • Restrictions / requirements: | } | |
| | } | |
| • Storage areas: | } | Contractor to advise in consultation |
| | } | with Engineer / Professional Team |
| | } | |
| • Security: | } | |

Ablutions and Welfare Arrangements

Contractor to supply ablutions and facilities in line with the Construction Regulations 2014, refer to section 2.31 of this health and safety specification regarding the below. Toilets should be provided with built in facilities for hand washing. Please note further that COVID-19 control measures form an important part of ablutions provision on site ref soap and water/hand sanitiser, signage, etc:

- | | | |
|------------------------------|---|--|
| • Toilets: | } | |
| | } | |
| • Washing facilities: | } | Contractor to provide as per Regulations |
| | } | |
| • Drinking Water: | } | |
| | } | |
| • Shelter: | } | Contractor to provide as per Regulations |
| | } | |
| • Showers: | } | |

Mobile site facilities requirements:

A camping toilet/mobile toilet will be required for sites that cannot facilitate a permanent location for ablution units and must be available for each gender per location.

The use of a camping toilet must be prepared and setup correctly with additional anchors and available toiletries prior to each working day and to be first priority when changing location of works along a set working path.

Teams are to ensure that the toilets are cleaned correctly and suitable for easy and hygienic uses and recorded on a daily register.



PROTECTION OF SITE AGAINST UNAUTHORISED ACCESS BY PUBLIC (INCLUDING FOR COVID 19)

Excavation Fencing: Note that excavations accessible to public, or adjacent to public roads / thoroughfares, must have (1) barrier / fence of at least 1m in height, and (2) warning illuminants at night or when visibility is poor, or have other suitable precautionary measures if of both these are not practicable.

- Orange plastic barrier mesh fencing is to be used at the minimum during excavation.
- Excavations are to be sufficiently fenced off if they are to be left open. Wherever possible, all excavations are to be backfilled at the end of each shift.
- Excavations are to be conducted in no more than 100m sections – this is to limit unnecessary risk with unsupervised excavations.
- Note requirements regarding protection of excavations in and alongside public roads.

General Fencing of Site: Note that construction sites in built up areas adjacent to public walkway must be fenced off and have controlled access points with the correct signs to indicate the site office for any relevant enquiries.

- Site camp / site yard is to be fenced off with 1.8m fence panels and be access controlled.
- Work areas to be fenced off with orange plastic barrier mesh fencing.
- Please note requirements of the traffic management plan with respect to barricading of site.

Warning Notices: Construction warning signage must be prominently displayed to avoid unauthorised access to site and to warn of dangers associated with construction works.

Look Outs: TBA

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Client requires the Contractor to ensure that employees (and others under his/her control) wear the following minimum PPE:

Overalls: Yes.

Safety Harnesses: n/a.

Hard Hats: Yes, as per risk assessment.

Reflective Vests: Yes.

Goggles / gloves / ear defenders / respiratory protection: Yes, as per risk assessment.

Safety Footwear: Yes.

Specialist Equipment (e.g. for confined Spaces): TBA



COVID-19 PPE:

Disposable Gloves: As per COVID 19 Risk Assessment.

Disposable Overall: As per COVID 19 Risk Assessment.

Respiratory Protection (i.e. any face mask endorsed by Department of Labour): As per COVID 19 Risk Assessment and/or Government Regulations.

Eye Protection (i.e. goggles or face shield that fully covers the front and side of the face): As per COVID 19 Risk Assessment and/or Government Regulations.

HAZARDOUS SUBSTANCES

The following materials and substances have, or may have, to be used in the works and are identified as potentially posing special health and / or safety hazards during the project. Appropriate measures will need to be specified for their control:

Cement – Fuels (Petrol & Diesel) – Oils

1.10 INTERFACE AND RESTRICTIONS BY CLIENT

Contractor must note that the following Client activities will continue during construction:

- No client activities noted.
- The surrounding area remains accessible to the general public.
- Client's personnel may require access to the reservoirs during the works for maintenance or inspection purposes.

The following Client safety rules and/or requirements are to be observed:

All workers are to receive induction prior to commencement of work on site.

Other safety rules and requirements to be advised at induction.

Please also refer to tender document.

The following were highlighted by the client:

- PPE to be worn at all times.
- Public safety to be a priority at all times.
- Toilets to be utilized for urinating. Not against poles, structures, in bushes etc. (Fines to be issued for non-compliance)

Restrictions on times, access or other restrictions by Client

Please refer to tender document.

Other restrictions may be advised at induction.

The following were highlighted by the client:

- Work hours are as per tender.
- Road closures only allowed as per traffic management plan and only allowed by prior permission of the Professional Team.
- No work to occur on Saturdays, Sundays or Public holidays. Permission is to be sought otherwise from the Professional Team.



1.11 Project Close Out

The Health and Safety files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project in the form of a consolidated safety file. The following list is an example of what should be included but is not exhaustive. The Safety Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are responded to. Documentation would include all health and safety related records from the start of the project. All records to be in hard copy or electronic format and submitted to the Safety Agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

Consolidated Health and Safety close out file requirements include:

- Health and safety specification (most recent version)
- Principal Contractor's health and safety plan/s
- Site safety organograms
- Legal appointments
- Notification to Department of Labour of commencement of work / Construction Work Permit
- Workman's Compensation Letters of Good Standing for the project
- Full safety files for all contractors as well as their close out reports
- List of all contractors who worked on site
- Letters of safety plan approval of contractors by the Principal Contractor
- Mandatory agreements (section 37.2 agreements)
- Incident and accident records / Occupational Disease records
- Contractor Nonconformance records
- Safety agent's audit reports
- Safety Officer reports
- Method Statements
- Risk assessments
- Safe work procedures
- Medical surveillance certificates of fitness. Medical records are to be kept according to the Occupational Health and Safety Act, as amended.
- All temporary works drawings (suspended beams/scaffolds, etc.)
- Copies of test results, policies, and procedures for environmental monitoring (silica, noise, dusts, etc.)
- Detailed registers of all material used
- Copies of all Checklists completed

1.12 SAFETY FILE RETURN TO CLIENT

The consolidated Health and Safety Files for the Project is to be handed over by the Principal Contractor to the Client upon Project Completion in either hard copy or electronic format.



2.0 FURTHER REQUIREMENTS

2.1 Duties of Principal Contractor / Contractor in terms of Construction Regulations 2014

A Principal Contractor must:

- provide and demonstrate to the Client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the Client's documented health and safety specifications, *which* plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;
- open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the Client, the Client's Safety Agent, or a Contractor; and
- on appointing any other contractor, in order to ensure compliance with the provisions of the Act –
 - provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications pertaining to the construction work which has to be performed;
 - ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;
 - ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;
 - ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
 - appoint each contractor in writing for the part of the project on the construction site
 - take reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site;
 - ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
 - stop any contractor from executing construction work which is not in accordance with the Client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
- where changes are brought about to the design and construction, make available sufficient health and safety information and appropriate resources to the contractor to execute the work safely;
- discuss and negotiate with the contractor the contents of their health and safety plan and finally approve that plan for implementation;
- ensure that a copy of both the principal contractor and contractor's health and safety plan is available on request to an employee, an inspector, a contractor, the Client, or the Client's Safety Agent;



- hand over a consolidated health and safety file to the Client upon completion of the construction work, to include a record of all drawings, designs, materials used and other similar information concerning the completed structure;
- in addition to the documentation required in the health and safety file include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done;
- ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

A contractor must prior to performing any construction work-

- provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the Client's health and safety specification and provided by the principal contractor, which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;
- open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, and which must be made available on request to an inspector, the Client, the Client's Safety Agent or the principal contractor;
- before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
- co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act;
- as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

Where a contractor appoints another contractor to perform construction work, the duties that apply to the principal contractor will apply to the contractor as if he or she were the principal contractor.

A principal contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

No contractor may allow or permit any employee or person to enter any site unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the Client, the Client's Safety Agent or the Principal Contractor.



A contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3 (a template of which can be found in the Construction Regulations, 2014).

2.2 Management and Supervision of Construction Work

A principal contractor must, in writing, appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor. Proof of all-inclusive assessment of the Construction Manager's Competency in construction management and H & S competency must be available in the Safety File. The Construction Manager must, as a minimum, have a Construction Regulation course. No contractors may be left unsupervised on site by the principal contractor.

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

Where the construction manager has not appointed assistant construction managers, or, in the opinion of an inspector, a sufficient number of such assistant construction managers have not been appointed, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector, and those assistant construction managers must be regarded as having been appointed.

No construction manager appointed in terms of the Regulations may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

A contractor must, after consultation with the Client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site. Proof of all-inclusive assessment of the Construction Supervisor's competency in construction supervision and H&S competency must be available in the Safety File. The Construction Supervisor must, as a minimum, have a supervision course as per Unit Standard 262845 (Civil Engineering), 119080 (Building Construction) and 262884 (Civil Engineering).

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor, and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties.

Where the contractor has not appointed such an employee, or, in the opinion of an inspector, a sufficient number of such employees have not been appointed, that inspector must instruct the employer to appoint the number of employees indicated by the inspector.



No construction supervisor appointed may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent employees have been appropriately designated on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

2.3 Notification of Intention to Commence Construction Work

The Contractor shall notify the Provincial Director of the Department of Labour of the intention to commence construction work at least 7 days prior to the works commencing if the intended construction work will:

- Include excavation work
- Include work at height where there is a risk of falling
- Include the demolition of a structure, or
- Include the use of explosives to perform construction work.

If the construction work involves construction of a single storey dwelling for a Client, and such Client will be residing in such dwelling upon completion, the Contractor must also notify the Provincial Director of the Department of Labour at least 7 days before the works commence.

This must be done on a form similar to an Annexure 2 (template of which can be found in the Construction Regulations, 2014). A copy of the notification letter to the Provincial Director shall be forwarded to the Client for record purposes.

2.4 Construction Work Permit

Not thought to be applicable to this project.

2.5 Assignment of Contractor's Responsible Persons to Manage Health and Safety on Site

The Contractor shall submit management and supervisory appointments as well as any relevant appointments in writing (as stipulated by the Construction Regulations 2014 and the Occupational Safety and Health Act 1993), prior to commencement of work (refer to **Annexure B** at the end of this Health and Safety Specification).

2.6 Competency for Contractor's Responsible Persons

The Contractor's responsible persons shall be competent in health and safety and be familiar with the Occupational Health and Safety Act 1993, and applicable regulations. Valid proof of pertinent health and safety courses attended by such persons will be required to be presented to the Client.

2.7 Compensation of Occupational Injuries and Diseases Act 130 of 1993 (COIDA)

The successful Contractor shall submit to the Client a valid letter of good standing with the Compensation Insurer prior to appointment.

2.8 Occupational Health and Safety Policy

The Contractor shall submit their Health and Safety Policy, prior to construction commencement, signed by the Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented within the company operations. The Policy must be communicated to all employees and proof thereof must be available in the Safety File.

2.9 Health and Safety Organogram

The Contractor shall submit an organogram, prior to construction commencement, outlining the Health and Safety Site Team that will be assigned to the project, if successful with the tender. In cases where appointments have not been made, the organogram shall reflect the position. The organogram shall be updated when there is a change in the site team.

2.10 Risk Assessments

Baseline Risk Assessment

The Client shall cause a baseline risk assessment to be conducted by a competent person before the design process and tender process commence, and the assessed risks shall form part of the health and safety specifications.

The Contractor must, before commencement of any construction work, and during construction work, have risk assessments performed by a competent person appointed in writing, which risk assessments form part of the health and safety plan to be applied on the site and must include:

- The identification of the risks and hazards to which persons may be exposed to;
- An analysis and evaluation of the risks and hazards identified; based on a documented method
- A documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- A monitoring plan; and
- A review plan

The Contractor must ensure that, as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated, and addressed in a risk assessment.

The Contractor must ensure that all employees under his control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures and/or control measures **before any work commences** and thereafter **at the times determined in the risk assessment monitoring and review plan of the relevant site.**

The Principal Contractor must ensure that all contractors are informed regarding any hazard that is stipulated in the risk assessment **before any work commences** and thereafter **at the times determined in the risk assessment monitoring and review plan of the relevant site.**

The Contractor must consult with the health and safety committee or with a representative trade union or representative group of employees if no health and safety committee exists, on the monitoring and review of the risk assessments for the site.

The Contractor must ensure that copies of risk assessment for this site are available on site for inspection purposes by interested parties (inspector, the Client, Client's Safety Agent, any contractor, any employee, a representative trade union, a health and safety representative or safety committee member.

A Contractor must review the relevant risk assessment where changes are effected to the design and/or construction that result in a change to the risk profile, or when an incident has occurred.

Preventative measures must first address the elimination of the hazard or risk. Should PPE be required to reduce risk, the equipment or clothing to be used must be SABS approved.



In general, the Contractor must ensure that the Risk Assessment involves identifying the hazards present in a work activity on site. This is followed by an evaluation of the extent of the risk involved taking into account those precautions already being taken.

The following general principle should be followed when conducting a risk assessment:

- All relevant risks and/or hazards should be systematically addressed;
- The risk assessment should address what actually happens in the workplace during the work activity;
- All employees and those who may be affected must be considered, including maintenance staff, security guards, visitors, and Contractors;
- The risk assessment should highlight those groups and individuals who may be required to work alone or who have disabilities;
- The risk assessment process should take into account the existing safety measures and controls.
- The level of detail on a risk assessment should be appropriate to the level of risk.

2.11 Health and Safety Representative(s)

The Contractor shall ensure that Health and Safety Representative(s) is/are elected and trained to carry out his / her functions. The Safety Representative(s) must be democratically nominated, elected, and appointed in writing. The Health and Safety Representative(s) shall carry out regular inspections, keep records and report to the supervisor to take appropriate action. The Safety Representative(s) shall attend Health and Safety Committee Meetings. The Health and Safety Representative shall be part of the team that will investigate incidents, accidents, and non-conformances. The Safety Representative(s) must be (a) full time employee(s) who is/are acquainted with conditions and activities at that workplace or section thereof. The Safety Representatives must have Safety Representative training and must be capable of performing their duties.

2.12 Health and Safety Committee

Where two or more health and safety representatives have been appointed on site, the Contractor shall ensure that monthly health and safety meetings are held with such representatives and minutes are kept on record. Meetings must be organized and chaired by the Contractor's Health and Safety Committee Chairperson. Minutes of these meetings must be available for the employees of the contractor to refer to.

PLEASE NOTE THAT THE SAFETY AGENT MAY REQUIRE THAT THE PRINCIPAL CONTRACTOR CONVENES A SAFETY COMMITTEE MEETING ON SITE IN THE INTERESTS OF HEALTH AND SAFETY ON SITE. SUCH COMMITTEE MEETING MAY REQUIRE ATTENDANCE OF CONTRACTORS SAFETY OFFICERS/SAFETY REPRESENTATIVES, CONSTRUCTION SUPERVISION AND THE SAFETY AGENT.

2.13 Medical Certificate of Fitness

The contractor must ensure that their employees on site have a valid medical certificate of fitness, specific to the construction work being performed, issued by an occupational health practitioner in the form of an Annexure 3 template (refer to the Construction Regulations 2014 on the Department of Labour website for a sample of this form).

Employees required to perform work at heights or from fall risk position must be medically fit to perform such work, such employee's medicals must specify "Fall Risk" or "Working at heights" in the exposure section of the annexure 3 template.



2.14 Health and Safety Training

The Contractor shall quarterly conduct a training needs analysis to ascertain what health and safety training is required. A plan of action should be devised and forwarded to the Client for records. Once the identified people have attended the training, the Contractor must provide the Client with copies of certificates obtained.

2.14.1 Induction

No Contractor may allow or permit any employee or person to enter site unless they have undergone health and safety induction training pertaining to the hazards prevalent on site at the time of entry. This includes visitors to site. The Contractor must ensure that visitors to site have the necessary protective equipment (PPE). A copy of attendance registers of all employees who attend inductions shall be kept.

2.14.2 Awareness

The Contractor shall conduct periodic toolbox talks on site, weekly or before any hazardous work takes place. The talks shall cover the relevant activity and an attendance register must be signed by all attendees. This record of who attended and the content of the topic will be kept on the site health and safety file as evidence of training.

2.15 Competency

After the Contractor has identified the training to be conducted as part of the competency requirement, and based on Risk Assessment, he shall send the relevant persons on appropriate courses and keep certificates of training for reference. Familiarity with the Health and Safety Act and Regulations is an integral part of the definition of competence. All training must be conducted by an accredited training provider and the certificates must display the applicable unit standards and the expiry dates thereof.

2.16 General Record Keeping

The Contractor shall keep and maintain Health and Safety records to demonstrate compliance with the Health and Safety Specification and the Occupational Health and Safety Act. The contractor shall ensure that all records of incidents, spot fines, training, etc. are kept on site. All documents shall be available for inspection by the Client, or the Department of Labour's Inspectors.

2.17 General Inspection, Monitoring and Reporting

The Contractor shall carry out inspections as required by this Health and Safety Specification, as well as by health and safety legislation.

2.18 Emergency Procedures

The Contractor shall submit a detailed Emergency Procedure for approval by the Client prior to commencement on site. The procedure shall detail the response plan including the following:

- List of key personnel;
- Details of emergency services;
- Actions or steps to be taken in the event of the emergency; and
- Information on hazardous materials / situations, including each material's hazardous potential impact or risk on the environment or human and measures to be taken in the event of an accident.

Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, dangers as a result of riot / service delivery protests / intimidation, etc. The Contractor shall advise the Client in writing of any on-site emergencies, together with a record of action



taken, within 24 hours of the emergency occurring. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and available to site personnel.

2.19 First Aid Box and First Aid Equipment

The Contractor shall provide first aid box/es and appoint, in writing, First Aider(s) for this project in line with the results of the Contractor's risk assessment for the project, this health and safety specification as well as the provisions of the General Safety Regulations. The appointed First Aider(s) are to be sent for accredited first aid training before starting on site. Valid certificates are to be kept on site.

- First Aid box/es must be adequately stocked at all times, accessible and be controlled by a qualified First Aider.
- Perishables to be checked and replaced when expired.
- Stock per content list as per the General Safety Regulations Annexure.
- Signage to be in place.
- To be numbered and sealed with name of first aider on or above the First aid box.
- Dressing logbook to be available in the first aid box.
- If more than 5 employees are present, there must be a first aid box available.
- Register to be checked by a Competent person.

If required by the Client, the Contractor shall have a stretcher on site to be used in case of a serious incident.

2.20 Accident / Incident Reporting and Investigation

The Contractor shall, in addition to the prescribed requirements of the Occupational Health and Safety Act and General Safety Regulations, investigate, record, and report all Section 24 reportable incidents to the Client within 24 hours of the incident occurring. Incident investigations shall be conducted by the Contractor's appointed Accident Investigator – this Investigator must be a competent person or persons who have sufficient knowledge to carry out an investigation.

In the event of a fatality or a permanent disabling injury the Contractor must submit proof of reporting of incident to Department of Labour as well as proof of preventative measures to the Client. The Client reserves the right to conduct investigations into any incidents that they deem fit and the Contractor is required to provide full co-operation in this regard.

2.21 Hazards and Potential Situations

The Contractor shall immediately notify other Contractors of any hazardous or potentially hazardous situations, which may arise during performance of the activities.

2.22 Occupational Health and Safety Signage

The Contractor shall ascertain and provide adequate on site health and safety signage. This signage shall include, but shall not be limited to, Hard Hat / Helmet Area; Safety Shoes to be worn on site; Dust Masks to be worn in areas where there might be exposure to excessive dust; Ear Plugs / Muffs to be worn where there might be noise exposure over 85 dB; Gloves; Safety Goggles; Safety Harness, Workers in Excavation, traffic management, etc. The Contractor shall be responsible to maintain the quality and replacement of signage. Signage must comply with the requirements of SABS.

2.23 Management of Contractors by Principal Contractor

The Principal Contractor shall ensure that all contractors under his control are complying with the respective Health and Safety Plans, as well as Health and Safety Legislation.

2.24 Stacking of Materials

In addition to the provisions for the stacking of articles in the General Safety Regulations, 2003, the contractor must ensure that –

- a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site;
- adequate storage areas are provided;
- there are demarcated storage areas; and
- storage areas are kept neat and under control.

2.25 Housekeeping and General Safeguarding on Construction Sites

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, promulgated by Government Notice No. R. 2281 of 16 October 1987, ensure that suitable housekeeping is continuously implemented on each construction site, including-

- the proper storage of materials and equipment;
- the removal of scrap, waste and debris at appropriate intervals;
- ensuring that materials required for use, are not placed on the site so as to obstruct means of access to and egress from workplaces and passageways;
- ensuring that materials which are no longer required for use, do not accumulate on and are removed from the site at appropriate intervals;
- ensuring that waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out in the regulations;
- ensuring that construction sites in built-up areas adjacent to a public way are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorized persons; and
- ensuring that a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under or fencing off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe in the case of danger or possibility of persons being struck by falling objects.

2.26 Construction Vehicles and Mobile Plant

A contractor must ensure that all construction vehicles and mobile plant-

- are of an acceptable design and construction;
- are maintained in a good working order;
- are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- are operated by a person who-
 - has received appropriate training, is certified competent and in possession of proof of competency and is authorised in writing to operate those construction vehicles and mobile plant;
 - has a medical certificate of fitness to operate those construction vehicles and mobile plant, issued by an occupational health practitioner in the form of Annexure 3.
- have safe and suitable means of access and egress;
- are properly organized and controlled in any work situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- are prevented from falling into excavations, water, or any other area lower than the working surface by installing adequate edge protection, which may include guard-rails and crash barriers;
- are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- are equipped with an acoustic warning device which can be activated by the operator;



- are equipped with an automatic acoustic reversing alarm;
- are equipped with fire extinguishers (2.5 – 4.5 kg); and
- are inspected by the authorised operator or driver on a daily basis using a relevant checklist prior to use and that the findings of such inspection are recorded in a register kept in the construction vehicle or mobile plant.

A contractor must ensure that-

- no person rides or is required or permitted to ride on a construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- every construction site is organized in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
- the traffic routes are suitable for the persons, construction vehicles or mobile plant using them, are sufficient in number, in suitable positions and of sufficient size;
- every traffic route is, where necessary, indicated by suitable signs;
- all construction vehicles and mobile plant left unattended at night, adjacent to a public road in normal use or adjacent to construction areas where work is in progress, have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- all construction vehicles or mobile plant when not in use, have buckets, booms, or similar appendages, fully lowered, or blocked, controls in a neutral position, motors stopped, wheels chocked, brakes set, and ignition secured;
- whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- tools, material, and equipment are secured and separated by means of a physical barrier in order to prevent movement when transported in the same compartment with employees;
- vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- all construction vehicles or mobile plant travelling, working, or operating on public roads comply with the requirements of the National Road Traffic Act, 1996.
- all plant and vehicles are to be fitted with amber rotating beacons and reverse alarms.
- ALL construction site vehicles must be inspected daily especially if it has dangerous "items" (fuel, explosives, etc.) on vehicle, completed inspection registers must also be available for inspection.
- the vehicles must resemble the original manufacturer's product. Levers, alarms, and amber lights to be fitted to construction vehicle for notification of vehicle.
- fire extinguishers, signage, and licence disc to be correctly mounted and displayed.
- when the vehicle is stationary no key to be left in or on vehicle or plant.
- Drip tray must be present when stationary.

2.27 Electrical Installations and Machinery on Construction Sites

A contractor must, in addition to compliance with the Electrical Installation Regulations and the Electrical Machinery Regulations, ensure that –

- before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;
- the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing for that purpose;
- all temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site; and
- all electrical machinery is inspected by the authorized operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.

2.28 Use and Temporary Storage of Flammable Liquids on Construction Sites

A contractor must, in addition to compliance with the provisions for the use and storage of flammable liquids in the General Safety Regulations, 2003, ensure that –

- where flammable liquids are being used, applied, or stored at the workplace concerned, it is done in a manner that does not cause a fire or explosion hazard, and that the workplace is effectively ventilated;
- no person smokes in any place in which flammable liquid is used or stored, and the contractor must affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
- an adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognized symbolic signs;
- only the quantity of flammable liquid needed for work on one day is taken out of the store for use;
- all containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, are removed from the construction site and safely disposed of;
- where flammable liquids are decanted, the metal containers are bonded and earthed; and
- no flammable material, including cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids
- proper containers are to be used for fuel. Marked and labelled as per the content.
- diesel on site; more than 800 litres must have a certificate, fire safe certificate. Locked in a ventilated, secure area with a drip tray and have a designated, responsible person to use it.

2.29 Water environments

Not thought to be applicable to this project.

2.30 Fire precautions on Construction Sites

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, ensure that –

- all appropriate measures are taken to avoid the risk of fire;
- sufficient and suitable storage is provided for flammable liquids, solids, and gases;
- smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
- in confined spaces and other places in which flammable gases, vapours or dust can cause danger-
 - only suitably protected electrical installations and equipment, including portable lights, are used;
 - there are no flames or similar means of ignition;
 - there are conspicuous notices prohibiting smoking;
 - oily rags, waste, and other substances liable to ignite are without delay removed to a safe place; and
 - adequate ventilation is provided;
- combustible materials do not accumulate on the construction site;
- welding, flame cutting, and other hot work are done only after appropriate precautions have been taken to reduce the risk of fire;
- suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;
- the fire equipment contemplated above is inspected by a competent person, who has been appointed in writing for that purpose, in the manner indicated by the manufacturer thereof;
- a sufficient number of workers are trained in the use of fire-extinguishing equipment;
- where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;
- the means of escape is kept clear at all times;



- there is an effective evacuation plan providing for all -
 - persons to be evacuated speedily without panic;
 - persons to be accounted for; and
 - plant and processes to be shut down; and
- a siren is installed and sounded in the event of a fire.

2.31 Construction Employees' Facilities

A contractor must, in terms of the Construction Regulations 2014, provide:

- Shower facilities after consultation with the employees or employees' representatives, or at least one shower facility for every 15 persons;
- at least one sanitary facility for each sex and for every 30 workers;
- Toilets to be within walking distance
- Hygiene registers to be completed
- Proof of safe disposal of effluent waste disposal certificates to be obtained
- changing facilities for each sex;
- and sheltered/shaded eating area.
- Protection from the Elements and raised off the ground.
- Every employer shall provide sanitary facilities at the workplace in accordance with the provisions of Parts F, P and Q of the National Building Regulations.
- Sufficient clean water for all employees. 500ml to each employee every hour.

A contractor must provide reasonable and suitable living accommodation for the workers at construction sites who are far removed from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

2.32 Fall protection

Not thought to be applicable to this project.

2.33 Temporary works

A contractor must appoint a temporary works designer in writing to design, inspect and approve the erected temporary works on site before use.

A contractor must ensure that all temporary works operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose.

A contractor must ensure that-

- all temporary works structures are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the structure that the structure is not designed to withstand;
- all temporary works structures are done with close reference to the structural design drawings, and where any uncertainty exists the structural designer should be consulted;
- detailed activity specific drawings pertaining to the design of temporary works structures are kept on the site and are available on request to an inspector, other contractors, the Client, the Client's Safety Agent, or any employee;
- all persons required to erect, move, or dismantle temporary works structures are provided with adequate training and instruction to perform those operations safely;
- all equipment used in temporary works structure are carefully examined and checked for suitability by a competent person, before being used;
- all temporary works structures are inspected by a competent person immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least on a daily basis until the temporary works structure has been removed and the results have been recorded in a register and made available on site;

- no person may cast concrete, until authorization in writing has been given by the competent person contemplated above;
- if, after erection, any temporary works structure is found to be damaged or weakened to such a degree that its integrity is affected, it is safely removed or reinforced immediately;
- adequate precautionary measures are taken in order to-
 - secure any deck panels against displacement; and
 - prevent any person from slipping on temporary works due to the application of release agents;
- as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;
- upon casting concrete, the temporary works structure is left in place until the concrete has acquired sufficient strength to safely support its own weight and any imposed load, and is not removed until authorization in writing has been given by the competent person
- the foundation conditions are suitable to withstand the loads caused by the temporary works structure and any imposed load in accordance with the temporary works design.
- provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level;
- a temporary works drawing, or any other relevant document includes construction sequences and methods statements;
- the temporary works designer has been issued with the latest revision of any relevant structural design drawing;
- a temporary works design and drawing is used only for its intended purpose and for a specific portion of a construction site; and
- the temporary works drawings are approved by the temporary works designer before the erection of any temporary works.

No contractor may use a temporary works design and drawing for any work other than its intended purpose.

2.34 Excavation

A contractor must-

- ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose; and
- evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

A contractor who performs excavation work-

- must take reasonable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- may not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where-
 - the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
 - such an excavation is in stable material: Provided that-
 - permission has been given in writing by the appointed competent person contemplated above upon evaluation by him or her of the site conditions; and
 - where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations is decisive and such a decision must be noted in writing and signed by both the competent person and the professional engineer or technologist, as the case may be;
- must take steps to ensure that the shoring or bracing contemplated above is designed and constructed in a manner that renders it strong enough to support the sides of the excavation in question;

- must ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it may cause its collapse and consequently endangers the safety of any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;
- must ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken to ensure the stability of such building, structure or road and the safety of persons;
- must cause convenient and safe means of access to be provided to every excavation in which persons are required to work, and such access may not be further than six metres from the point where any worker within the excavation is working;
- must ascertain, as far as is reasonably practicable, the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed, and must before the commencement of excavation work that may affect any such service, take the steps that are necessary to render the circumstances safe for all persons involved;
- must ensure that every excavation, including all bracing and shoring, is inspected-
 - daily, prior to the commencement of each shift;
 - after every blasting operation;
 - after an unexpected fall of ground;
 - after damage to supports; and
 - after rain,
 by the competent person, in order to ensure the safety of the excavation and of persons, and those results must be recorded in a register kept on site and made available on request to an inspector, the Client, the Client's Safety Agent, any other contractor or any employee;
- must cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be –
 - adequately protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable; and
 - provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor, or have resort to any other suitable and sufficient precautionary measure where this is not practicable;
- must ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety Regulations, 2003, are complied with by any person entering any excavation;
- must, where the excavation work involves the use of explosives, appoint a competent person in the use of explosives for excavation, and must ensure that a method statement is developed by that person in accordance with the applicable explosive's legislation; and
- must cause warning signs to be positioned next to an excavation within which or where persons are working or carrying out inspections or tests.

2.35 Demolition Work

Not thought to be applicable to this project for the most part except for very minor demolition (there may need to be the odd manhole-type structure that needs to be demolished here and there).

2.36 Tunnelling

Not thought to be applicable to this project.

2.37 Scaffolding

Not thought to be applicable to this project.



2.38 Bulk mixing plant

Not thought to be applicable to this project, contractor to advise safety agent if this is not correct.

2.39 Rope Access Work

Not thought to be applicable to this project.

2.40 Hazardous Chemical Substances (HCS)

In addition to the requirements in the HCS Regulations, the principal contractor must provide proof in the Health and Safety Plan that:

- Material Safety Data Sheets (MSDS's) of the relevant materials / hazardous chemical substances are available prior to use by the contractor. All MSDS's shall be available for inspection by the agent at all times.
- Risk assessments are done at least once every 6 months.
- Exposure monitoring is done according to OESSM and by an Approved Inspection Authority (AIA) and that the medical surveillance programme is based on the outcomes of the exposure monitoring.
- How the relevant HCS's are being/going to be controlled by referring to:
 - Limiting the amount of HCS
 - Limiting the number of employees
 - Limiting the period of exposure
 - Substituting the HCS
 - Using engineering controls
 - Using appropriate written work procedures
- The correct PPE is being used.
- HCS are stored and transported according to SABS 072 and 0228.
- Training with regards to these regulations was given.

The Health and Safety plan should make reference to the disposal of hazardous waste on classified sites and the location thereof (where applicable).

The First Aider must be made aware of the MSDS and trained in how to treat HCS incidents appropriately.

2.41 Noise Induced Hearing Loss

Where noise is identified as a hazard the requirements of the NIHL regulations must be complied with and the following must be included / referred to in the Health and Safety Plan:

- Proof of training with regards to these regulations.
- Risk assessment done within 1 month of commencement of work.
- That monitoring carried out by an AIA and done according to SABS 083.
- Medical surveillance programme established and maintained for the necessary employees.
- Control of noise by referring to:
 - Engineering methods considered
 - Admin control (number of employees exposed) considered
 - Personal protective equipment considered/decided on
- Describe how records are going to be kept for 40 years.



2.42 Explosives and Blasting

Not thought to be applicable to this project.

2.43 Personal Protective Equipment (PPE)

The Contractor shall carry out PPE or clothing needs analysis in accordance with his risk assessment, to determine the necessary PPE or clothing to be used during construction. The Contractor shall make provision to keep adequate quantities of appropriate, SABS approved PPE or clothing on site at all times.

The Contractor must ensure that personnel are trained in the correct use of PPE to be used.

The Contractor must ensure that lost, stolen, worn out or damaged PPE is replaced as required and receipt signed for by employees on site.

2.44 Asbestos

The Contractor shall ensure that all asbestos work is done only by registered "Asbestos Contractor" as prescribed by the Asbestos Abatement Regulations, 2020. The Contractor shall submit an Asbestos Certificate from Department of Labour which refer to the prescribed requirements. The Contractor shall notify The Client if there are any asbestos materials to be used on site.

"asbestos clearance certificate" means a written document verifying that the regulated asbestos fibre concentration in the air meets the clearance indicator;

"type 1 asbestos work" means:

(a) painting of asbestos cement products in a manner that does not require surface preparation and does not cause the release of asbestos fibres; or

(b) the removal of less than 10 square metres of asbestos cement products or equivalent gutters and piping or asbestos insulating board, where removal work may not be repeated on the same site within a period of six months; and does not require registration as a registered asbestos contractor with the chief inspector;

"type 2 asbestos work" means:

(a) the repair or encapsulation of asbestos cement products in a manner that does not require surface preparation; or

(b) the removal of asbestos cement products or asbestos insulating board; and, requires registration as a type 2 registered asbestos contractor with the chief inspector;

"type 3 asbestos work" means:

(a) the removal, repair or encapsulation of any asbestos and asbestos-containing material; and, requires registration as a type 3 registered asbestos contractor with the chief inspector;

Besides the requirements listed above, should asbestos be identified as a hazard at the workplace, the contractor must, as per AAR 2020, include the following in the health and safety plan/file and must be implemented on site:

- An asbestos risk assessment must be carried out, as far as is reasonably practicable, immediately by a competent person and thereafter at intervals not exceeding 24 months.
- If asbestos-containing materials are identified a written asbestos management plan for the workplace must be prepared by a competent person.
- Train Employees, visitors and persons who may have incidental asbestos exposure to asbestos.
- The Chief Director: Provincial Operations must be notified as per the Annexure 2 when asbestos work will be done, at least seven days prior to commencement of work.



- The contractor may only undertake the type of asbestos work for which they are registered by the chief inspector.
- Must appoint an occupational health and safety representative as contemplated in section 17 of the Act.
- Submit the approved plan of work to the Chief Director: Provincial Operations at least seven days prior to commencement of asbestos work.
- Appoint an asbestos removal supervisor for each asbestos work site.
- Adhere to the repair or removal methodology and associated control measures provided in the plan of work approved for that specific asbestos work.
- Ensure that the employee medical and training records are available on site for inspection and validation.
- Keep employee information for a minimum period of 50 years.
- For type 2 and type 3 asbestos work, ensure that air monitoring is in place.
- All asbestos contractor employees must be put under medical surveillance.
- Close off all asbestos containing or affected areas.
- The contractor must provide the required PPE, washing facilities and decontamination facilities as per the type of asbestos work.
- A document must be obtained from the asbestos disposal site for all asbestos waste removed from the workplace; all asbestos waste is disposed of only on sites specifically designated for this purpose
- When all asbestos is removed an inspection must be done by and approved inspection authority and an asbestos clearance certificate issued.
- Comply with the Prohibitions in regulation 24.

2.45 Pressure Vessels (Including Gas Bottles)

The Contractor shall comply with Pressure Vessel Regulations, including:

- Providing competency and awareness training to the operators;
- Providing PPE or clothing;
- Providing and maintain appropriate signage in areas where pressure vessels are used, as applicable;
- Inspect equipment regularly and keep records of inspections;
- Providing appropriate firefighting equipment (Fire Extinguishers).
- Under pressure vessels to have the following in place;
 - Service date
 - Seals on valves with no leaks and not broken
 - flash arrestors
 - Should be stored and chained together
 - Oxygen / Acetylene bottles to have clips
 - Signage to be visible
 - Gauges in working condition and be visible
 - Permits for use
- Pressure equip Regs 6. (1) The user shall ensure that the pressure equipment is operated and maintained within its design and operating parameters.

2.46 Fire Extinguishers and Fire Fighting Equipment

The Contractor shall provide adequate, regularly serviced fire extinguishers located at strategic points on site. The Contractor shall keep spare serviced portable fire extinguishers. The Contractor shall have adequate persons trained or competent to use the Fire Fighting Equipment.

Safety signage shall be posted up in all areas where fire extinguishers are located.

2.47 Lifting Machinery and Tackle

The Contractor shall ensure that lifting machinery and tackle is inspected before use and on a monthly basis. The Contractor shall have lifting machinery and tackle inspector who will inspect the equipment at intervals required by the Driven Machinery Regulations, taking into account that:



- All lifting machinery and tackle have a safe working load clearly indicated
- Regular inspection and servicing is carried out
- Records are kept of inspections and of service certificates
- Thorough examinations are carried out by competent personnel at the frequencies required by legislation
- There is proper supervision in terms of guiding the loads which includes a trained banks man to direct and check lifting tackle if it is safe for use
- Forklift to be inspected every year and lift plan every 2 years
- Load test certificate to be no older than 6 months
- Sufficient props to be used and max weight to be displayed
- Slings to be checked with regard to integrity, chains, serial numbers, checked for tears, cuts links and all other materials
- Hooks to be oiled, not in a fixed position and closed to prevent materials from slipping/falling off
- Lifting equipment must be used for the scope of work carried out

2.48 Ladders and Ladder work

The Contractor shall ensure that all ladders are numbered and inspected regularly keeping record of inspections. It should be noted that Aluminium ladders are preferred to wooden ladders.

2.49 General Machinery

The Contractor shall comply with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing and training those that use machinery and enforce compliance.

2.50 Portable Electrical Tools

The Contractor shall ensure that use and storage of all explosive actuating fastening devices and portable electrical tools are in compliance with relevant legislation.

The Contractor shall consider that:

- A competent person undertakes routine inspections;
- Only authorised persons use the tools;
- There are safe working procedures applied;
- Awareness training is carried out and compliance is enforced at all times; and
- PPE and clothing is provided and maintained.

2.51 High Voltage Electrical Equipment

The Contractor shall ensure that, where the work is under, on or near high-voltage electrical equipment the Electrical Installation Regulations, together with safety instructions (Regulations of the Owner of the Equipment) are complied with. Such equipment includes:

- Eskom and the Local Authority equipment
- The Contractor's own power supply; and
- Electrical equipment being installed but not yet taken over from a Contractor by The Client.

2.52 Public Health and Safety

The Contractor shall ensure that each person working on or visiting a site, and the surrounding community, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimize those dangers. Appropriate health and safety signage shall be posted at all times.



2.53 Night Work

The Contractor shall not undertake any night work without prior arrangement and a written permit from the Client. The Contractor shall ensure that adequate lighting is provided for all night work and failure to do so shall result in work being stopped.

2.54 Environmental Conditions and Flora and Fauna

The Contractor must be mindful of adverse weather conditions upon the health and safety of the workforce. This includes inclement weather, strong wind, heat stress, extreme cold, etc. The Contractor's risk assessment process must take into account the risks associated with such weather conditions. The same is true when working in an environment where there is a risk to employees' health and safety from presence of poisonous flora, or wildlife (including bees, snakes, etc). The Contractor's risk assessment process must take these risks into account.

2.55 Occupational Health

Exposure of workers to occupational health hazards and risks are quite common in any work environment, especially in construction. Occupational health hazards and risks exposure is a major problem and all Contractors are to ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards and risks.

The occupational hazards and risks may enter the body in three ways:

- Inhalation through breathing e.g. cement dust;
- Ingestion through swallowing maybe through food intake;
- Absorption through the skin (pores) e.g. painting or use of thinners.

The contractor is required to ensure that all his personnel are medically fit prior to being allowed onto the work site.

All Contractors should ensure that Occupational Hygiene surveys are conducted as per the Occupational Health and Safety Act to ensure employees are not exposed to hazards. Risk Assessments should identify areas where surveys are to be conducted.

2.56 Suspended Platforms

Not thought to be applicable to this project.

2.57 Material Hoists

Not thought to be applicable to this project.

2.58 Explosive Actuated Fastening Device

Not thought to be applicable to this project.

2.59 Confined Spaces

Confined space work must be closely monitored by a competent person appointed by the contractor, to include, but not restricted to, ensuring that the confined space is sufficiently ventilated prior to entry. Oxygen levels to be tested in confined space to ensure that it is safe for entry. Permit system to be in place to declare confined space safe for entry prior to entry. PPE must be worn (such as proper masks) if air supply is insufficient or not of sufficient quality.



Sufficient training must take place in use of all confined space monitoring and access equipment prior to any works commencing in such confined space. It is strongly recommended that a tripod and winch system be in place to afford easy access and egress and for emergency evacuation from the confined space (manholes and chambers). Please also refer to GSR5 on safety requirements for Work in Confined Spaces.

General safety Regulations 5.

(1) An employer or a user of machinery shall take steps to ensure that a confined space is entered by an employee or other person only after the air therein has been tested and evaluated by a person who is competent to pronounce on the safety thereof, and who has certified in writing that the confined space is safe and will remain safe while any person is in the confined space, taking into account the nature and duration of the work to be performed therein.

(2) Where the provisions of sub regulation (1) cannot be complied with the employer or user of machinery, as the case may be, shall take steps to ensure that any confined space in which there exists or is likely to exist a hazardous gas, vapour, dust or fumes, or which has or is likely to have, an oxygen content of less than 20 per cent by volume, is entered by an employee or other person only when-- (a) subject to the provisions of sub regulation (3), the confined space is purged and ventilated to provide a safe atmosphere therein and measures necessary to maintain a safe atmosphere therein have been taken; and (b) the confined space has been isolated from all pipes, ducts and other communicating openings by means of effective blanking other than the shutting or locking of a valve or a cock, or, if this is not practicable, only when all valves and cocks which are a potential source of danger have been locked and securely fastened by means of chains and padlocks.

(3) Where the provisions of sub regulation (2)(a) cannot be complied with, the employer or user of machinery shall take steps to ensure that the confined space in question is entered only when the employee or person entering is using breathing apparatus of a type approved by the chief inspector and, further, that—

(a) the provisions of sub regulation (2) (b) are complied with;

(b) any employee or person entering the confined space is using a safety harness or other similar equipment, to which a rope is securely attached which reaches beyond the access to the confined space, and the free end of which is attended to by a person referred to in paragraph (c);

(c) at least one other person trained in resuscitation is and remains in attendance immediately outside the entrance of the confined space in order to assist or remove any or persons from the confined space, if necessary; and

(d) effective apparatus for breathing and resuscitation of a type approved by the chief inspector is available immediately outside the confined space.

(4) An employer or user of machinery shall take steps to ensure that all persons vacate a confined space on completion of any work therein.

(5) Where the hazardous gas, vapour, dust or fumes contemplated in sub regulation (2) are of an explosive or flammable nature, an employer or user of machinery shall further take steps to ensure that such a confined space is entered only if –

(a) the concentration of the gas, vapour, dust or fumes does not exceed 25 per cent of the lower explosive limit of the gas, vapour, dust or fumes concerned where the work to be performed is of such a nature that it does not create a source of ignition; or

(b) such concentration does not exceed 10 per cent of the lower explosive limit of the gas, vapour, dust or fumes where other work is performed.

2.60 Alcohol and drugs (GSR 2)

1. A contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a site.

2. No employee shall be under the influence of or have in his or her possession or partake of or offer any other person intoxicating liquor or drugs.



3. An employer or a user, as the case may be, shall, in the case where a person is taking medicines, only allow such person to perform duties at the site if the side effects of such medicine do not constitute a threat to the health or safety of the person concerned or other persons at such site.

2.61 COVID-19 (PLEASE NOTE THAT THIS SECTION IS CONSTANTLY UNDER REVIEW)

This section is based on the requirements of Government Gazette No 43257 dated 29th April 2020, and the latest Disaster Management Act 2002.

The importance of the management and control of this virus by contractors on site is paramount.

For this reason no work is permitted on site until the contractor has submitted proposals in their safety plan to the safety agent and professional team on how the risk of COVID-19 transmission on site will be managed by the contractor (monitoring and implementation of control measures through administrative, physical and other control measure).

DEFINITIONS (*Disaster management Act of 2002*)

'adequate space' means not more than one person per one and a half metres of floor space;

'Alert Level' means the determination made under sub regulation 3(2);

'clinical case' means a patient that presents with clinical signs and symptoms of COVID-19;

'COVID -19' means the Novel Coronavirus (2019- nCov2) which is an infectious disease caused by a virus that has previously not been scientifically identified in humans, which emerged during 2019 and was declared a global pandemic by the WHO in 2020;

'Criminal Procedure Act' means the Criminal Procedure Act, 1977 (Act No 51 of 1977);

'enforcement officer' includes a member of the South African Police Service, the South African National Defence Force. metro police. traffic officers, immigration inspectors; and a peace officer as defined in section 1 of the Criminal Procedure Act;

'essential services' means the services listed in Annexure D;

'face mask' means a cloth face mask or homemade item that covers the nose and mouth, or another appropriate item to cover the nose and mouth;

'gathering' means any assembly, concourse or procession in or on -
(a) any public road, as defined in the National Road Traffic Act, 1996 (Act No. 93 of 1996); or
(b) any other building, place or premises. including wholly or partly in the open air, and including, but not limited to, any premises or place used for any sporting, entertainment, funeral, recreational, religious, or cultural purposes; but excludes a workplace and a place of residence for those persons ordinarily residing at the residence;

'health protocols' means the COVID-19 health protocols determined by the Director General of Health;

'head of an institution' means the accounting officer of a public institution and the chief executive officer or the equivalent of a chief executive officer of a private institution;

'institution' means any public or private institution, including a sole practitioner and any other business owned and operated by a single person, that is engaged in the supply or distribution of a good or service as set out in the Table 1, or which regulates such supply or distribution, including



professional regulatory bodies designated in directions made in terms of regulation 4 of the Regulations;

'isolation' means separating a sick individual with a contagious disease from healthy individuals that are not infected with such disease in a manner that aims to prevent the spreading of infection or contamination;

'national state of disaster' means the national state of disaster declared by Government Notice No. R. 313 of 15 March 2020;

'quarantine' means the restriction of activities or separation of a person, who was or may potentially have been exposed, to COVID-19 and who could potentially spread the disease to other non -exposed persons, to prevent the possible spread of infection or contamination to healthy individuals;

'the Act' means the Disaster Management Act, 2002 (Act No. 57 of 2002); and
'WHO' means the World Health Organisation.

Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several Coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered Coronavirus causes Coronavirus disease COVID-19.

COVID 19 is a viral pandemic that has and is causing a great deal of damage to human health, countries' economies and health systems and has led to lock downs, work stoppages and restriction of movement that threatens the existence of many jobs, as well as the way we conduct our normal working and social lives.

In response to the pandemic the government has passed legislation and guidance for employers and employees in the work environment.

People can catch COVID-19 from others who have the virus. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than one meter away from a person who is sick.

Please refer to Annexure A for details on the criteria that must be considered in the contractor's safety plan response.

2.62 General Practices when Working at Heights

- No Homemade structures or ladders will be permitted on the project.
- Trestle tables are not to be fully extended and must be fully boarded, no drums to be used.
- Surroundings to be clear of rubble.
- Fall protection, fall prevention, and fall rescue plans to be in place and communicated to site employees.
- Ladders to be structurally sound and not broken and in accordance to GSR 13A.
- Only competent persons may be allowed to work at heights
- Correct personal protective equipment to be used (safety harness and lanyard) and edge protection / life lines to be used.
- Anchor points to be in place and determined by an engineer. Anchor points must be pull tested prior to use.
- GSR (6) 6. No employer shall require or permit any person to work in an elevated position and no person shall work in an elevated position, unless such work is performed safely from a ladder or

scaffolding, or from a position where such person has been made as safe as if they were working from scaffolding.

- Construction regulation 10 of 2014 to be implemented when working at heights and to prevent any person from falling from heights.
- Employees required to perform work at heights or from fall risk position must be medically fit to perform such work, such employee's medicals must specify "Fall Risk" or "Working at heights" in the exposure section of the annexure 3 template.

2.63 Traffic Management

All traffic signs must be displayed as per the traffic management plan.

Size of signs used must be as per the traffic management drawings and all signs to be visible and in good condition.

- Traffic accommodation Plan issued must be approved by the professional team.
- Plans for signage deployment must be in order and must be placed correctly.
- Traffic accommodation plan must be submitted and must be suitable for the tasks being performed.
- Traffic plan must be implemented and controlled by the sites Responsible Person and flag persons.
- As applicable, road marking buggies/vehicles must be protected by escort vehicles front and rear.

2.64 Ventilation and Lighting in the Work Place

Every employer shall cause every workplace in his undertaking to be lighted in accordance with the illuminance values specified in the Schedule to the General Safety Regulations:

Provided that where specialised lighting is necessary for the performance of any particular type of work, irrespective of whether that type of work is listed in the Schedule or not, the employer of those employees who perform such work shall ensure that such specialised lighting is available to and is used by such employees.

The Contractor must ensure that:

- the average illuminance at any floor level in a workplace within five meters of a task is not less than one fifth of the average illuminance on that task;
- glare in any workplace is reduced to a level that does not impair vision;
- lighting on rotating machinery in such that the hazard of stroboscopic effects is eliminated; and
- luminaires and lamps are kept clean and, when defective, are replaced or repaired forthwith.

With a view to the emergency evacuation of indoor workplaces without natural lighting or in which persons habitually work at night, every employer shall, in such workplaces, provide emergency sources of lighting which are such that, when activated, an illuminance of not less than 0.3 lux is obtained at floor level to enable employees to evacuate such workplaces: Provided that where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance shall be not less than 20 lux.

The contractor must ensure that the emergency sources of lighting prescribed above:

- are capable of being activated within 15 seconds of the failure of the lighting prescribed by subregulation (1);
- will last long enough to ensure the safe evacuation of all indoor workplaces;
- are kept in good working order and tested for efficient operation at intervals of not more than three months; and

- where directional luminaires are installed, these are mounted at a height of not less than two meters above floor level and are not aimed between 10° above and 45° below the horizontal line on which they are installed.

The contractor must ensure that all rooms, stairways, passageways, gangways, basements, and other places where danger may exist through lack of natural light, to be lighted such that it will be safe.

The contractor must ensure that every workplace in his undertaking is ventilated either by natural or mechanical means in such a way that –

- the air breathed by employees does not endanger their safety;
- the time-weighted average concentration of carbon dioxide therein, taken over an eight-hour period, does not exceed one half per cent by volume of air;
- the carbon dioxide content thereof does not at any time exceed three per cent by volume of air;
- the prescribed exposure limits for airborne substances therein are not exceeded; and
- the concentration therein of any explosive or flammable gas, vapour or dust does not exceed the lower explosive limit of that gas, vapour, or dust.

2.65 Nuclear Density Gauge (Troxler)

The use of a Troxler on site must be in line with the SANS 3001 of March 2014. The SANS consists of 5 sections

The in-situ density of road construction materials is only determined in civil engineering using indirect methods such as the nuclear density gauge and sand replacement methods.

This method forms part of a set of methods used to operate nuclear gauges, and includes the following:

- a) administration, handling, and maintenance (see SANS 3001-NG1);
- b) validation of standard calibration blocks (see SANS 3001-NG2);
- c) calibration of a nuclear gauge (see SANS 3001-NG3);
- d) verification of a nuclear gauge (see SANS 3001-NG4);
- e) in situ density determination using a nuclear gauge (see SANS 3001-NG5)

When used Troxlers must be:

- Stored in a dedicated, lockable area and must have a warning signage displayed.
- Must only be transported in a dedicated vehicle with the required signage displayed and by an authorised employee that has been appointed in writing.
- Must have a Troxler Calibration Certificate in place.
- Must have a Troxler Technician Appointment on file and signed and proof of competency within the safety file.

2.66 Ergonomics Regulation of 2019

"competent person" in relation to ergonomics, means a person who– (a) has in respect of the work or task to be performed the required knowledge, training and experience in ergonomics and, where applicable, qualifications specific to ergonomics: provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2008 (Act No. 67 of 2008), those qualifications and that training must be regarded as the required qualifications and training; and (b) is familiar with the Act and the applicable regulations made under the Act;

"ergonomic risk" means a characteristic or action in the workplace, workplace conditions, or a combination thereof that may impair overall system performance and human well-being;

"ergonomic risk assessment" means a programme, process, or investigation to identify, analyse, evaluate and prioritise any risk from exposure to ergonomic risks associated with the workplace;

"ergonomics" means the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance;

The ergonomics regulations will apply to any employer or self-employed person who carries out work at the workplace who may expose any person to an ergonomic risk in the work place and any designer, manufacturer, importer or supplier of machinery, plant, or work systems for the work place.

An employer must, before the commencement of any work that may expose employees to ergonomic risks, have an ergonomic risk assessment performed by a competent person.

The ergonomic risk assessment must be done at intervals not exceeding two years and must include the following;

- a complete hazard identification and all persons who may be affected by the ergonomic risk.
- how employees may be affected by the ergonomic risks;
- the analysis and evaluation of the ergonomic risks;
- the prioritisation of ergonomic risks.

An employer must review the relevant ergonomic risk assessment if:

- such assessment is no longer valid;
- control measures are no longer effective;
- technological or scientific advances allow for more effective control methods;
- there has been a change in –
 - the work methods;
 - the type of work carried out; or
 - the type of equipment used to control the exposure; and
 - an incident occurs or medical surveillance reveals an adverse health effect, where ergonomic risks are identified as a contributing factor.

An employer must ensure that an employee is placed under medical surveillance, which is overseen by an occupational medicine practitioner, if–

- the ergonomic risk assessment referred to in regulation 6 indicates the need for the employee to be placed under medical surveillance; or
- an occupational health practitioner recommends that relevant employees must be under Medical surveillance, in which case the employer may call upon an occupational medicine practitioner to ratify the appropriateness of such recommendation.

An employer must ensure that the medical surveillance consists of–

- in the case of a new employee, an initial health examination before the employee commences employment or within 30 days of commencement of such employment;
- a periodic health examination informed by the ergonomic risk assessment, at intervals specified by an occupational medicine practitioner, but not exceeding two years; and
- an exit health examination informed by the ergonomic risk assessment.

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Both the Client and the Contractor have a duty in terms of health and safety legislation to do all that is reasonably practicable to make members of the public and others being affected by the construction processes aware of possible risks and put preventative measures in place to mitigate the risks. The public and/or visitors shall go through a brief health and safety induction detailing hazards and risks they may be exposed to and what measures are in place to control these hazards and risks.



OTHER HEALTH AND SAFETY SPECIFICATION REQUIREMENTS

The contractor must be aware of the following additional requirements:

What	When	Output
Awareness training (Toolbox Talks)	At least weekly and before hazardous work is carried out	Attendance Register
Health and Safety Committee Meetings	Monthly	Minutes signed by the employer (Contractor) covering: a) Health and Safety Representative Checklist b) Safety report from Safety Officer and Safety Agent
Health and Safety Reports	Monthly	Report covering: a) Incidents/Accidents and Investigations b) Non-conformance c) Health and Safety Training d) HIRA Updates e) Internal and External Audits
General Inspections	As per Health and Safety Specification and OHSA	Report on Health and Safety Specification and OHSA compliance: a) Scaffolding b) Lifting Machinery c) Excavation
General Inspections	Monthly	Covering: a) Firefighting Equipment b) Portable Electrical Equipment c) Ladders
Record keeping	Ongoing	Covering: a) General complaints b) Fines c) General incidents d) MSDS e) Surveillance Medicals f) Inspection Register g) Dept of Labour Notices
Permits	Before commencement with certain activities	As stipulated by the Health and Safety Specification and the OHSA / Construction Regulations

Key:

OHSA – Occupational Health and Safety Act, 1993



ANNEXURE A – REQUIREMENTS FOR THE SAFETY PLAN ASSESSMENT (INCLUDING COVID 19 REQUIREMENTS)

The Contractor must note that the information below is pertinent to the compilation of their safety plan response to this site-specific safety specification and it would be preferred if the Safety Plan is written in the order of the assessment documented below.

No	Item	Notes
1	Project Directory	Please state details of Project Client, Project Manager/Principal Agent, Safety Agent, Consulting Engineer, etc. (Name, address, contact details).
2	Contractors Directory	Please indicate if you will be using Contractors on this project, if yes, include their details, trade, and FEM details.
3	Other Parties Directory	Please indicate contact details for any services applicable (electricity, water, etc.) as well as Department of Labour and Emergency Services.
4	Project Safety Statement	The Project Safety Statement must be included in the Safety Plan.
5	Health and Safety standards for the project (OHS Act, construction regulations, basic conditions of employment, etc.)	Health and Safety standards must be included in the Safety Plan.
6	Project Particulars	Scope of works must be included in the Safety Plan. This is critical.
7	Existing environment – Structures and Surroundings, Services (Electrical, Water, Sewerage, etc.), Traffic Arrangements, Parking, Access to Site, Storage of Plant and Materials	Please include these items in the plan. The items must be Site Specific, the location of services and services that will be affected must be mentioned.
8	Management Structure for safety on the Project	A structured organogram with names of the responsible people must be included.
9	Appointed Persons, Supervision	The required appointments must be identified. A list of the appointed persons must be included in the Safety Plan.
10	Security Procedures	Please indicate if a security company will be appointed and include the contact information in the Safety Plan.
11	Registers list and inspection frequency	A list of the Inspection Registers that will be on file must be included in the Safety Plan.
12	Design Co-ordination	Please indicate your procedure for implementation of design changes by designer on the project, and the procedures for liaison and implementation of temporary works design on the project.
13	Contractor Co-ordination	Mention must be made of how Contractors will be co-ordinated on site to ensure that they work together and not adversely affected health and safety.



No	Item	Notes
14	Housekeeping, stacking and storage	Housekeeping policies and procedures must be included in the Safety Plan.
15	Waste Disposal Arrangements	Waste disposal arrangements procedures must be included in the Safety Plan.
16	Noise and dust control	Please indicate if any noisy operations (more than 85 decibels) will be carried out and what measures will be used to reduce noise exposure to workforce.
17	Training Requirements	Training requirements must be identified and recorded.
18	Plant and Equipment	A list of plant and equipment to be used on site must be included in the Safety Plan.
19	Safety Monitoring Arrangements	The name, contact details and SACPCMP registration status of the Safety Officer must be included in the Safety Plan. State how often the Safety officer will be on site (note safety specification requirement in section 1.7).
20	Information for Contractors	State how information will be given to Contractors on site.
21	Consultation/communication arrangements with Employees	State how information will be given to employees e.g. notice board.
22	Selection of Contractors Procedures	Principal contractor must state what health and safety procedures they will use to assess the competence and resources of their contractors on site.
23	Activities with risk to Health and Safety (Risk Assessment)	A Baseline Risk Assessment must be included in the Safety Plan, it must address the Risks identified in the Safety Specification as well as the risk of any other hazards that the Principal Contractor is aware of that are relevant to the site.
24	Hazardous Substances	Must be listed in the Safety Plan and addressed in the Risk Assessment.
25	First Aid and Medical Procedures	Please indicate name of first aider, position of first aid box, location of nearest medical facility and emergency numbers.
26	Fire and Emergency Procedures	List of emergency telephone numbers must be drawn up and included in the Safety Plan. The position of Fire Extinguishers, Assembly Point location, fire drill frequencies, numbers of fire marshals, etc.
27	Accident and Incident Reporting and investigation	State the Accident and Incident Reporting and investigation procedures of your company.
28	Welfare and Site Facilities	Elaborate on toilets and eating areas, water provision, COVID-19 ablution provision, how will workers be protected during wet weather conditions etc.
29	Site Rules	The Site Rules must be included in the Safety Plan.
30	Personal Protective Equipment	The necessity must be identified by Risk Assessments, the required PPE for site risks and COVID-19 control measures.
31	Health & Safety File arrangements	Please indicate arrangements for the return of the Health and Safety File to the safety agent at the end of the project.



No	Item	Notes
32	Method Statements/Safe System of Works	A list of Method Statements/Safe System of Works must be included in Safety Plan for all High-risk activities. PLEASE NOTE THAT THIS IS PARTICULARLY RELEVANT FOR COVID-19. NO WORK MAY COMMENCE UNLESS COVID-19 RISKS AND CONTROL MEASURES HAVE BEEN APPROVED BY THE PROFESSIONAL TEAM. REFER TO SECTION 2.61 OF THIS SAFETY SPECIFICATION.
33	Permits and wayleaves	List of activities that Principal Contractor anticipates will require permits and wayleaves (including those stated in the safety specification) to be included.
34	Fall Prevention and Protection Plan and Fall Rescue Plan	A copy of the Fall Prevention and Protection Plan, fall rescue plan and fall risk assessment must be included in the Safety Plan.
35	Demolition method statement	A copy of the Demolition Method Statement must be included in the Safety Plan.
36	Confined spaces	The Principal Contractors' procedures for managing access, egress and work in confined spaces must be specified in the Safety Plan. Includes permit procedures, air monitoring, PPE, etc.
37	Safety Representatives and Safety Committees	When a project has more than 20 employees a designated employee must be chosen by the labourers to represent them. A safety committee must be established if 2 or more safety representatives are appointed. Please note Safety Specification requirements regarding this section (section 2.12).
38	Have the significant hazards from the safety specification been addressed?	See section 1.9 of the Specifications and ensure practical measures have been detailed in the safety plan.
39	Safety File - Safety Policies in File and Signed by 16(1) CEO.	Safety Policies must be signed and explained to employees.
40	Safety File - A copy of the valid Letter of Good standing from FEM / Workman's Compensation must be on file.	A copy of the valid Letter of Good standing from FEM / Workman's Compensation must be on file.
41	Safety File - Signed copy of the 37.2 Mandatary Agreement	A 37.2 Mandatary Agreement needs to be signed between the Client and the Principal Contractor.
42	Safety File - Appointment letter from Client (as well as 5.1.K)	The Client must appoint the Principal Contractor in writing.
43	Safety File – Notification / Permit	A copy of the Annexure 2 Notification (and proof of submission) to Department of Labour must be available. This can be in the form of a Department stamp, email, or copy of Construction Work Permit.



CONTROL MEASURES THAT MUST BE INCLUDED FOR SAFETY PLAN SUBMISSION PURPOSES:

Issues that must be included by the contractor in their COVID-19 safety plan response should include arrangements for the following (please note that reference to contractors' employees / staff / workers / personnel on site must include control of their (sub)contractors, visitors and suppliers):

Workplace Plan - A plan must be developed by the contractor for the phased in return of employees to site. Please refer to the latest regulations and amendments, all persons who are able to work from home should do so.

Coordination on Site Relating to COVID-19 matters - The Employer must appoint a manager as a COVID-19 Compliance Officer (required of all industries, businesses, entities, both private and in the public sector). This compliance officer is responsible for overseeing the following:

- implementation of the workplace plan; and adherence to the standards of hygiene and health protocols relating to COVID-19 at the workplace;
- developing a plan for the phased in return of their employees to the workplace, prior to reopening the workplace for business, which plan must correspond with Annexure E of the Disaster Management Act 2002 (as amended April 2020) and be retained for inspection and contain the following information:
 - which employees are permitted to work;
 - what the plans for the phased-in return of their employees to the workplace are;
 - what health protocols are in place to protect employees from COVID-19; and
 - the details of the COVID-19 compliance officer;
 - phase in the return of their employees to work to manage the return of employees from other provinces, metropolitan and district areas; and
 - develop measures to ensure that the workplace meets the standards of health protocols, adequate space for employees and social distancing measures for the public and service providers, as required.

Transportation to Site - Procedures for Transportation of Workers to Site – employees should be advised that if using transport, passengers must wear a cloth mask to be allowed entry into the vehicle. Hand sanitisers must be made available, and all passengers must sanitise their hands before entering. Public transport vehicles must be sanitised on a daily basis. Please note that the government mandated limit on passengers per vehicle must be strictly adhered to.

Site access - Entry to site may only be through pre-arranged security controlled access points. Contractor must detail how will members of public be prevented from accessing site (risk of cross contamination between persons working on site and members of public).

Provision of Visitors Book for signing in and out of site. Records of all personnel entering site and their contact details must be kept.

Screening on Site - Contractor to advise how will personnel on site be screened on a daily basis for symptoms of COVID-19, including a symptom check as well as temperature assessment (digital thermometer). The contractor must describe their procedure for employees on site, suspected of having COVID-19 symptoms, refusing to undergo **medical** examination, prophylaxis, treatment, isolation, and quarantine. Sites with more than 500 employees must have testing facilities.

Risk assessment and safety procedure - Contractor must provide a written policy concerning the protection of it staff from COVID-19. Contractor must compile a COVID-19 risk assessment and safety procedures for the site. The Policy must include how will it be communicated to all on site and records kept thereof. The Risk Assessments must include the identification of exposure levels, identification of "high contact" activities, the identification of vulnerable workers and special measures for their protection, including protection against unfair discrimination or victimization. The COVID-19 risk



assessment and COVID-19 OHS policy must be submitted to DoEL if employer have more than 50 employees.

Safety Signage and Hotline Number - Contractor to implement placement of COVID-19 safety signage and hotline number at site entrance and on site, warning of hazards and advising control measures (see samples in Annexure to this document). Please note that signage must representative of the local languages.

Communication Procedures - Contractor to describe comprehensive induction and toolbox talk procedures to include COVID-19. Toolbox talks should be conducted weekly on COVID-19 control measures and risks on site, include personal hygiene - manner of controlling coughing and sneezing on site - in elbow.

Emergency Procedure - Contractor must describe communication of COVID-19 symptoms and protocol that must be followed if person demonstrates symptoms, or is thought to have COVID-19 - symptoms of COVID-19 include cough, sore throat, shortness of breath or fever/chills (or $\geq 38^{\circ}\text{C}$ measured temperature), redness of eyes, also additional symptoms – body aches, loss of smell or loss of taste, nausea, vomiting, diarrhoea, fatigue, weakness or tiredness. Contractor must advise personnel on site of the symptom reporting procedure to site management of COVID-19 symptoms, and referral protocol for screening or testing if showing symptoms.

Emergency COVID-19 protocol that must be put in place by Principal Contractor must include:

- Sick workers may not enter workplace.
- If sick worker already on site then worker must be isolated in designated area for isolation on site, provided with FFP1 surgical mask and transported for self-isolation or for medical examination or testing at identified testing site.
- Worker placed on sick leave.
- On receiving their results, the employee and/or health professional supporting the employee should notify their workplace so that the employee is managed accordingly. The workplace should proactively take steps to obtain this information to avoid any delays in reporting.
- Assess the risk of transmission, disinfect area and workers workstation, refer exposed workers for screening, etc.
- Lodge claim with Workman's Compensation if infection occupationally acquired.
- Worker may only return to work after undergoing a medical evaluation confirming worker has tested negative for COVID-19.
- Worker must be closely monitored for symptoms on return to work.
- If worker has been diagnosed with COVID-19 the employer must notify Dept of Health and Dept of Employment and Labour

NOTE THAT: personnel on site, or presenting themselves to site who appear sick, or have symptoms associated with COVID-19 may not be allowed on site.

Welfare and Washing Facilities, Sanitising and Disinfection - Contractor must describe provision of soap and clean running water and sanitisers at site entrance and at other locations on site. Correct manner of washing / disinfecting hands, 20 second rule. Use of paper towels only. Disinfection of work surfaces and equipment control procedures required - carried out before work begins, regularly during day and after work ends. Toilets, common areas, door handles, shared electronic equipment and any other shared equipment must be regularly cleaned and disinfected, biometric systems disabled or made COVID-19 safe.

Hand sanitiser must contain 70% alcohol.

Employees working away from home should be provided with hand sanitiser by the employer.

COVID-19 PPE on Site - Contractor must describe controls for wearing of PPE on site, including wearing of cloth masks on site - people working and visiting site must be instructed on the correct way of



wearing cloth masks, procedure for maintenance and replacement of cloth masks. Surgical masks and N95 masks should only be worn by frontline health workers, not site staff. Note that some surgical masks should be kept on site to give to persons exhibiting COVID-19 symptoms prior to being taken away for testing.

Employer is required to provide each employee with at least 2 cloth masks.

Supervision and Monitoring on Site - Monitoring systems must be in place by Contractor to ensure compliance with safety protocols and identify infections among employees - supervision monitoring and enforcement - how will it be done by the contractor?

Ventilation on Site - How will ventilation and air quality be made safe on site.

Waste Management - Sufficient refuse bins must be on site for disposal of tissues, used PPE. Procedure for safe removal of contents of bins; used PPE, other detritus should be made in contractors safety plan.

Social Distancing Measures - Contractor must describe, so far as practicable how can numbers of workers be minimised on site at any one time (e.g.: through staff rotation, staggered working hours, shift systems, remote working arrangements or similar to achieve social distancing? (1.5m). Note that contractor must minimise contact between workers themselves and workers and public.

Depending on what is reasonably practicable, site must be arranged so that there is distance of at least 1.5m between workers and members of public or put physical barriers in place or provide workers with face shields or visors.

COVID-19 Investigation procedure - Contractor must describe how will they investigate the cause of COVID-19 infection (including control failure and risk assessment review, checking of PPE requirements, admin support to contact tracing implemented by Dept of Health).

Important notes:

If more than 50 employees in contractors employ the employer must submit this risk assessment and written policy re health and safety of employees from COVID-19 to Safety Committee and Department of Employment and Labour.

Monitoring by the Safety Agent will be strict - noncompliance with COVID-19 control measures will be reported immediately to the principal contractor for action purposes. If necessary, transgressors will be removed from site for re-induction, or a recommendation for permanent barring from site will be made.

As this is an ongoing medical crisis it is likely that control measures to prevent the spread of the virus will be updated by the government on a regular basis. Hence the measures in this section of the safety specification will be reviewed on an ongoing basis, as we receive updated information from the government.



ANNEXURE B – LEGAL APPOINTMENTS	
The contractor shall make the following appointments, as required:	
Chief Executive Officer (OSH Act 16(1))	
Contract Director/Manager (OSH Act 16(2))	
Construction Manager (CR 8(1))	
Construction Supervisor (CR 8(7))	
Assistant Construction Supervisor (CR 8(8))	
Construction Safety Officer (CR 8(5))	
Traffic Safety Officer	
Safety Representative (where > 20 employees on site)	
Temporary work Designer (CR 12(1))	
Temporary work Supervisor (CR12(2))	
Construction risk assessor (CR 9(1))	
Excavation Supervisor (CR13(1)(a))	
Demolition Supervisor (CR14(1))	
Scaffold Supervisor (CR16(1))	
Suspended Platform Supervisor (CR17(1))	
Material Hoist Inspector (CR19(8)(a))	
Material Hoist Operator (CR19(6))	
Bulk Mixing Plant Supervisor (CR20(1))	
Bulk Mixing Plant Operator (CR20(2))	
Controller of Explosive Actuated Fastening Devices Nails, Cartridges or Studs Issue and Collection (CR21(2)(g)(1))	
Construction Vehicle and Mobile Plant Operator (CR23(1)(d)(i))	
Controller of Temporary Electrical Installations (CR24(c))	
Stacking Supervisor (CR28(a))	
Fire Extinguishing Equipment Inspector (CR29(h))	
Fall Protection Plan Developer (CR 10(1)(a))	
Incident Investigator (OSH Act 9(2))	
Competent Person – Confined Spaces (GAR 5(1))	
COVID 19 – Compliance Officer and COVID 19 – Manager (to address employees concerns and keep them informed re COVID-19)	

ANNEXURE C - BASELINE RISK ASSESSMENT FOR PROJECT

Irrespective of the risk presented on site, it will be ensured that sufficient supervision is in place on site, that personnel are trained in accordance with legislation, including the requirement for site specific inductions on site to inform personnel on site of the risks and hazards applicable to the site. Site supervision is responsible for ensuring that the control measures required below are implemented on site.

	HAZARD	RISK	MINIMUM CONTROL MEASURES
1.	Asbestos Cement Pipes	Release of asbestos fibres	<ul style="list-style-type: none"> • Ensure safe access and egress is provided • Erect physical barriers to prevent entry by unauthorised persons, as applicable • damp down exposed area to contain fibre release • Personnel involved to wear asbestos respiratory protection • Exclusion zone may be required • Only Department of Labour registered asbestos contractors may work with asbestos, and strictly in accordance with the requirements of the Asbestos Abatement Regulations.
2.	Bricklaying	Caustic contamination with mortar Contact with sharp bladed tools	<ul style="list-style-type: none"> • Use only trained personnel • Safe means of access to be provided • Safe/Suitable working platform required where working at height • PPE for mortar to include gloves where practicable and goggles/ masks where there is a risk of contamination
3.	Compacting and Filling	Contact with tipping materials Contact with moving plant Vehicles/personnel falling into excavations Contact with underground services	<ul style="list-style-type: none"> • Trained banksman to control vehicles movement • Only trained personnel use plant • Personal Protective Equipment to be worn • Personnel to stand clear as materials are being tipped • Use stop blocks and signs to warn vehicles of excavations, where applicable • Stand clear of plant whilst materials are being compacted • Establish position of underground services and protect services from damage
4.	Compactor Operations	Crushing of feet	<ul style="list-style-type: none"> • Only trained and competent personnel to use the machine • Ensure operative wears steel toe cap shoes or boots at all times
5.	Confined Spaces	Suffocation Fumes	<ul style="list-style-type: none"> • Ensure that confined space is sufficiently ventilated • Wear personal protective equipment such as proper masks if air supply insufficient or not of sufficient quality • Test oxygen levels in confined space to ensure that is safe for entry • Ensure that emergency procedures in place
6.	Cutting Off Disc	Noise Cuts from machine Fire (particularly at refuelling) Flying debris Blade shattering Contamination by fume created or exhaust fume	<ul style="list-style-type: none"> • Use competent personnel. • Hot works control- fire extinguisher, fire watchman. (Permit may be required) • PPE to include gloves, eye protection, hearing protection • Solid working position. • Clear working area • Correct grade of blade must be used. • Good ventilation to be provided (forced if necessary). • Changing of wheels to be by competent persons only • Cut off discs must not be used for grinding (grinding disc thicker) • Bystanders to wear hearing protection, as applicable



	HAZARD	RISK	MINIMUM CONTROL MEASURES
7.	Electric Tools and Electrical Installations	Electric shock Fire	<ul style="list-style-type: none"> Electric tools and installations to be in good condition Inspect electric tools before use Do not use electric tools in wet/damp conditions Use personal protective equipment such as insulated gloves Electrical installations register to be maintained, inspected by competent person
8.	Excavations (Working in and around)	Toxic fumes Collapse of trench walls/trapping Falling into excavation Collapse of adjacent structures	<ul style="list-style-type: none"> Deep excavations / monitor air for toxic fumes Prevent collapse by battering back sides to a safe angle or install temporary support Protect vehicles from falling into excavations – provide barriers, signage, etc. as necessary Beware of undermining of other structures (e.g. buildings, scaffolds) Record excavation inspections by competent person on daily basis Provide suitable means of access/egress in case of emergency. Excavations formed by explosives must be accompanied by method statement approved by Client
9.	Fire	Injuries to workers, pedestrians, residents, road users, damage to property through fire	<ul style="list-style-type: none"> No littering on site which could become fire hazard, maintain site in clean condition. No fires to be lit on site. Have a working fire extinguisher at hand at all times. No smoking or naked flame near flammable substances or in unauthorised areas Ensure proper storage/use of Petrol/diesel/flammable substances – post warning notices
10.	Flammable Liquids and Gases (Use of)	Fire Explosion	<ul style="list-style-type: none"> No littering on site which could become fire hazard, maintain site in clean condition. Have a working fire extinguisher at hand at all times. No smoking or naked flame near flammable substances or in unauthorised areas Ensure proper storage/use of Petrol/diesel/flammable substances – post warning notices Equipment must be in good condition, maintained Personnel using substances must be trained in safe use and risks
11.	Hand tools	Injuries caused by use of hand tool Impact with the tool Falls due to access problems Contamination with substance being worked	<ul style="list-style-type: none"> Ensure: Tool is correct for job Tool is in good order and suitably sharp Personnel must be competent/instructed in tool usage and tool safely Lighting is sufficient Access is safe, working platform is secure, leading edge is guarded Operative is wearing all necessary PPE
12.	Hazardous Substances	Injuries to workers through use of hazardous substances, e.g. injuries to eyes, skin, etc.	<ul style="list-style-type: none"> Use substances in accordance with data sheet, particularly reference protective clothing required (example: gloves, goggles, etc.) Know what First Aid measures are Have welfare facilities available for washing of hands, etc.
13.	Hot Works	Burns to eyes or other parts of the body	<ul style="list-style-type: none"> Personal Protective Equipment to include eye, skin, and hearing protection Respirator maybe be required where cutting galvanized steel or anywhere else toxic fumes and gases arise. Dust can also be a problem and forced ventilation may be required.



	HAZARD	RISK	MINIMUM CONTROL MEASURES
14.	Manual Handling of General Items	Muscular skeletal injuries if the load is too heavy or awkward Operative falling/ tripping Contamination from the substance being carried Fall of material being carried	<ul style="list-style-type: none"> Personnel should be aware of safe manual handling techniques Personnel to wear Personal Protective Equipment when carrying items, e.g. safety footwear and gloves. Ensure good housekeeping against tripping/fall hazards. Operative to get assistance if load too heavy- team lift if necessary. Utilise mechanical lifting and carrying aids where possible. Personnel to ensure access equipment, ladders will take weight of operative and load being carried. Personnel to ensure item being carried is properly bonded or is not be liable to break apart whilst being manually handled.
15.	Members of Public – Protection of	Injury to member of public and road users from site works	<ul style="list-style-type: none"> Barriers and signage to be in place Workers must warn away any members of public from the works Footpaths and bridges which are open to public must be closed off if in area of works or otherwise made safe so that no injury occurs to members of public Traffic turning into site – traffic management and signage as required. Signage to be on road at site entrance warning motorists that construction traffic turning into/out of site access. Keep roads free of mud where possible Refer to plant risk assessment for details on plant safety precautions NOTE: SIGNAGE TO BE POSTED ON SITE TO WARN OF CONSTRUCTION TRAFFIC MOVEMENTS. SAFE MEANS OF ACCESS FOR BOTH CONSTRUCTION TRAFFIC TO SITE AND PRIVATE HOMEOWNERS MUST BE AGREED.
16.	Noise and Dust	Breathing in dust can cause long term health problems, noise can damage hearing	<ul style="list-style-type: none"> Wear respiratory and hearing protection Dampen down and minimise dust where possible.
17.	Plant or Vehicles and Equipment Operation	Workers injured by passing traffic Road users and pedestrians at risk from plant operation Noise	<ul style="list-style-type: none"> Implement traffic protection measures Trained and competent operators must be used Check plant and vehicles on daily basis before use and record inspections. Maintain vehicles in safe condition. Medical certificates of fitness required for construction plant. Crossing of road by construction vehicles or machines must be limited to the practical minimum Plant and vehicles must be fitted with amber rotating beacons and reverse alarms. Wear appropriate protective clothing/equipment, e.g. goggles, gloves, ear defenders, etc. as appropriate.



	HAZARD	RISK	MINIMUM CONTROL MEASURES
18.	Road Working – working in or next to road	Injury to workers caused by passing traffic Injury to road users and pedestrians by works	<ul style="list-style-type: none"> • Flagmen to be used where interface with construction plant with passers-by or where hazard posed by delivery vehicles turning into/out of site. • Traffic management plan to be approved by Municipality and, if necessary, traffic department • No construction activities to commence until adequate provision made to accommodate traffic in accordance with the South African Traffic Signs Manual. • Use safety signage to warn traffic and pedestrians of construction works • Where existing walk ways/pavements affected by works, must direct pedestrian traffic away to safe walking area. • Wear reflective waistcoats when working on or near the road or road shoulder as well as any other required personal protective clothing. • Crossing of road by personnel must be limited to the practical minimum • Use of fencing or other barriers as appropriate
19.	Steel Fixing	Back injuries caused by manual handling Eye injuries from tie wire Trips / falls Falling from height	<ul style="list-style-type: none"> • PPE must include safety boots and goggles • Manual handling training may be required • Care to be taken when working near overhead lines • Use only trained personnel • Provide safe means of access • Maintain and regularly inspect all lifting appliances and equipment • Cap starter bars to prevent injuries where feasible • Construct scaffold walk ways to cross reinforcing mesh, as required
20.	Temporary Works	Collapse of temporary works	<ul style="list-style-type: none"> • Wear personal protective equipment such as gloves and goggles • Formwork must be built by trained person and also be inspected by competent person and results entered into register on site
21.	Live Services	Striking of live services	<ul style="list-style-type: none"> • Make all necessary enquiries to establish what services are in the area. Consult drawings and advice from service provider (e.g. Municipality or ESKOM) when planning work. • Assume all service to be live (Unless confirmation is received to confirm that services are isolated or otherwise made safe). Do not work near live services without authorisation from site management. • Comply with the requirements of the safe system of work for underground services. • Where available, locate services with a locator • Hand dig around services

ANNEXURE D - BASELINE RISK ASSESSMENT FOR PROJECT – COVID-19

It must be ensured that sufficient supervision is in place on site, that personnel are trained in accordance with legislation, including the requirement for site specific inductions on site to inform personnel on site of the COVID 19 risks and hazards applicable to the site. Site supervision is responsible for ensuring that the control measures required below are implemented on site.

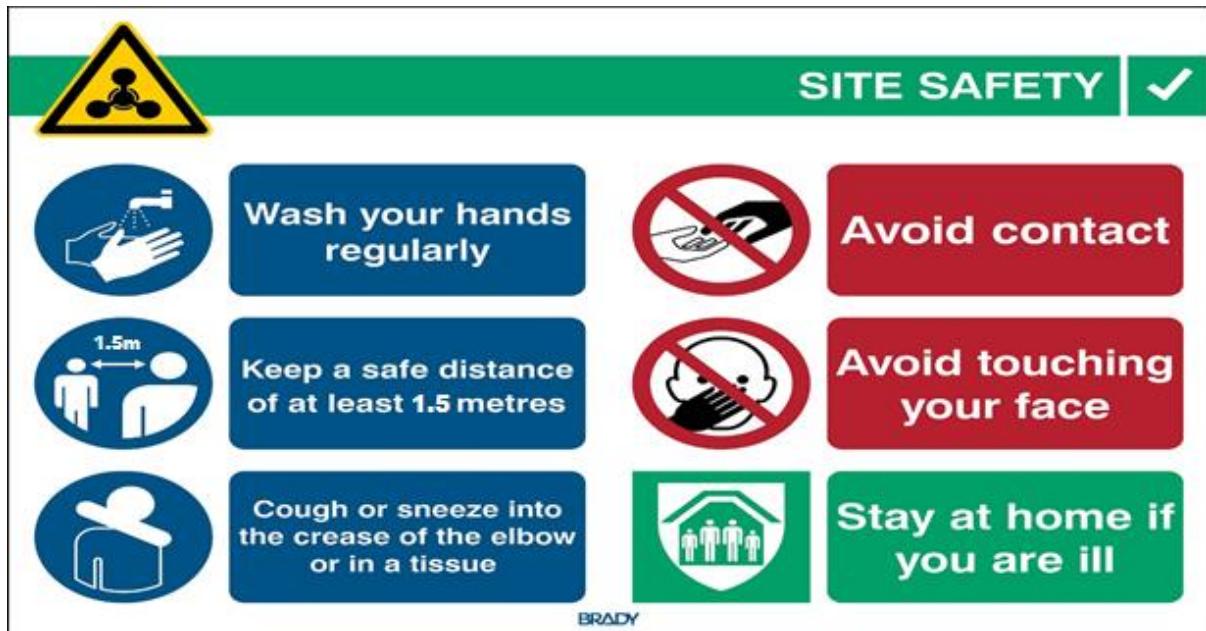
No.	HAZARD	MINIMUM CONTROL MEASURES
1.	COVID-19 - Contracting COVID-19, person to person transmission	<ul style="list-style-type: none"> Do not share tools / equipment, crockery/cutlery/towels/bedding or anything that can facilitate the spread of the virus. Masks have not been proven to definitively protect against every contagion. However, masks prevent a person from unconsciously touching their eyes, nose and mouth, so they may offer a measure of protection. Masks are for single use only, not to be worn two days in a row. Avoid touching your eyes, nose, and mouth and shaking hands with others. Cough or sneeze into a tissue and dispose thereof safely into a bin provided. Wash your hands frequently with soap and running water for no less than 20 seconds. If you have none available use a hand sanitiser with at least 70% alcohol. Apply social distancing principles, stay at least 1.5m away from people/employees where possible. Avoid crowds and gatherings. Clean frequently touched objects/surfaces. The following cleaning products can be used: Hypochlorite (e.g. Household Bleach) Alcohol (70%) Hydrogen Peroxide Phenolic Compounds Quaternary Ammonium Compounds

No.	ACTIVITY	HAZARD	MINIMUM CONTROL MEASURE
2.	Site Preparation	Site might be infected with COVID-19 contagion during lock down	<ul style="list-style-type: none"> Inspect the site to assess conditions. Revise any policies, method statements for risks and hazards identified for review. Decontaminate the site, in affected areas, ensure the availability of hand washing facilities and sanitizers, throughout the site, and at entrances. Ensure sanitising and hand washing facilities are available at ablution areas, common eating areas, offices, canteens, security
3.	Occupational Health	Older workers of 60+, workers with underlying auto-immune or chronic diseases are at increased risk of infection (note that workers may be symptom free but infected with COVID-19)	<ul style="list-style-type: none"> All workers are to be screened and have a valid certificate of fitness on return to work. A full questionnaire to be completed daily before entry on site, and those identified as high risk, or exhibiting flu like symptoms, must be separated and refused entry to site until declared symptom free by a medical practitioner.
4.	Labour	Underlying auto-immune or chronic diseases, socio-economic status, having to use public transport to get to work	<ul style="list-style-type: none"> A full questionnaire to be completed daily before entry on site, and those identified as high risk, or exhibiting flu like symptoms, must be separated and refused entry to site until declared symptom free by a medical practitioner. Daily temperature readings to be taken on entry to site; Induction, toolbox talks to be done daily on topics relating to COVID-19, personal hygiene and PPE. Strict enforcement on use of PPE Public traffic must comply with government guidelines re wearing of masks and sanitising requirements.



No.	ACTIVITY	HAZARD	MINIMUM CONTROL MEASURE
5.	Transportation (Public and on Site)	Maximum allowed capacity exceeded; No facilities for sanitising vehicles and passengers; No additional protective measures available, e.g. face masks; Unlicensed drivers and operators	<ul style="list-style-type: none"> Selection and provision of transport services compliant with gazetted requirements; Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, ongoing toolbox talks and supply of cloth masks to be worn when travelling or moving on and off site. Vehicles sanitised between trips; hand sanitiser provided for passengers. Public transport services can carry 100% of their loading capacity except for long-distance services which are allowed to only carry up to 70% of their loading capacity.
6.	Social Distancing	Many construction tasks require more than 1 worker that will be required to work within the limit of 1,5m Access/Egress to and off site; Welfare facilities, Meeting areas	<ul style="list-style-type: none"> Demarcation and spacing of queueing areas; segregation of queueing areas and public outside site perimeters; Meeting/eating areas large enough to maintain 1.5m distance at maximum occupancy. Only essential workers to spend time on site, Staggered meeting/eating times, use of Zoom, Skype, Microsoft Teams for meetings where necessary. Individual, segregated facilities for safe keeping.
7.	Waste Management	Spreading of virus and contact with virus causing infection from handwashing, drying hands, cleaning equipment, disposal of contaminated waste and other related aspects	<ul style="list-style-type: none"> Establish and follow protocols for disposal of potentially infected waste (receptacles). Awareness through notices (posters) regarding correct procedures of waste disposal. Competent supervision and adequate awareness training required. Provide adequate supplies of material and consumables, provision of sealable disposal containers/bags through appropriate waste removal company. Provide adequate supply of paper towels. If contractors used ensure appropriate management.
8.	Signage	Unauthorised entry to site and work areas compromising workers health (contamination). Acts and behaviour that compromises worker	<ul style="list-style-type: none"> Installation of posters and signage with the site rules and protocols that need to be maintained at strategic points. Competent supervision and adequate awareness training required. Disciplinary steps to be taken against transgressors.
9.	Welfare Facilities	Spreading of virus and contact with virus causing infection	<ul style="list-style-type: none"> Limiting of personnel on site to minimum number required to maintain control and management. Implement and maintain cleaning and disinfecting programme. Site rules for social distancing to 1.5m. Use technology to avoid proximity between individuals where possible
10.	Use of Personal Protective Equipment	Risk of spread of droplet infection through coughing, sneezing when in close contact with other people	<ul style="list-style-type: none"> No employee/ visitor will be allowed on site without a cloth mask. Adequate training must be provided in the correct use and disposal of these masks. Cloth masks must be washed and ironed. Where possible face shields should be used to protect mouth, nose and eyes. Regular cleaning of face shields required. No sharing of PPE will be permitted. Adequate supervision required. COVID PPE does not replace conventional PPE.

ANNEXURE E - COVID-19 SITE SAFETY SIGNAGE





ANNEXURE F – GUIDELINES TO HEALTH AND SAFETY BILL OF QUANTITIES

Not thought to be applicable to this project.



**ANNEXURE G – SAFETY SPECIFICATION AND BASELINE RISK ASSESSMENT
ISSUE REGISTER**

Date of Original Safety Specification Compilation	Compiled By	Issue Date
October 2021.	Mark Winter	22 nd October 2021.

Revision Summary	Revised By	Revision Date

Acknowledgement:

I, _____ representing
_____(Contractor), have satisfied
myself with the content of this Health and Safety Specification and shall ensure that our employees
and contractors on site comply with the requirements of this document, our safety documentation and
health and safety legislation.

Signature of Contractor

Date

Comments:

ANNEXURE D

1. ENVIRONMENTAL MANAGEMENT PROGRAMME

2. ENVIRONMENTAL AUTHORISATION

3. WATER USE LICENCE

UPGRADING OF BULK WATER – GRABOUW, PHASE 5

CONSTRUCTION AND OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME (COEMPr)

PREPARED FOR:



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DATE: November 2021

LCE REF: 1652-01

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- DECLARATION OF UNDERSTANDING BY THE ENGINEER.
- DECLARATION OF UNDERSTANDING BY THE CONTRACTOR.
- METHOD STATEMENT (Example).
- ECO / ENGINEER DECLARATION FOR METHOD STATEMENTS.
- ENVIRONMENTAL INCIDENTS.

ABBREVIATIONS

COEMP	Construction and Operational Environmental Management Plan
DEA&DP	Department of Environmental Affairs & Development Planning
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ELO	Environmental Liaison
EO	Environmental Officer
ESO	Environmental Site Officer
I&AP	Interested and Affected Party

DEFINITIONS

Alternative - A possible course of action, in place of another, that would meet the same purpose and need defined by the development proposal. Alternatives considered in the EIA process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

Aspect – Element of an organisation's activities, products or services that can interact with the environment.

Auditing - A systematic, documented, periodic and objective evaluation of how well the environmental management plan is being implemented and is performing with the aim of helping to safeguard the environment by: facilitating management control which would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

Built environment - Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

Contamination - Polluting or making something impure.

Corrective (or remedial) action - Response required to address an environmental problem that is in conflict with the requirements of the EMP. The need for corrective action may be determined through monitoring, audits or management review.

Degradation - The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Environment - Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings.

Environmental Impact Assessment (EIA) - An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives; recommendations for appropriate management actions for minimising or avoiding negative impacts and for enhancing positive impacts; as well as proposed monitoring measures.

Environmental Management System (EMS) - Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The ISO14001 EMS standard has been developed by the International Standards Organisation.

Environmental policy - Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.

Habitat - The physical environment that is home to plants and animals in an area, and where they live, feed and reproduce.

Hazardous waste – Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

Impact - A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

Infrastructure - The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.

Integrated - Mixing or combining all useful information and factors into a joint or unified whole. See Integrated Environmental Management.

Integrated Environmental Management (IEM) - A way of managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments. Also called "IEM".

Land use - The use of land for human activities, e.g. residential, commercial, industrial use.

Mitigation - Measures designed to avoid, reduce or remedy adverse impacts

Over-utilisation - Over-using resources - this affects their future use and the environment.

Policy - A set of aims, guidelines and procedures to help you make decisions and manage an organisation or structure. Policies are based on people's values and goals. See Integrated Metropolitan Environmental Policy.

Process - Development usually happens through a process - a number of planned steps or stages.

Proponent – Developer. Entity which applies for environmental approval and is ultimately accountable for compliance to conditions stipulated in the of the EMPr.

Recycling - Collecting, cleaning and re-using materials.

Resources - Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.

Stakeholders - A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its

consequences. The term includes the proponent, authorities and all interested and affected parties.

Storm water management – Strategies implemented to control the surface flow of storm water such that erosion, sedimentation and pollution of surface and ground water resources in the immediate and surrounding environments are mitigated. This is specifically important during the construction and decommissioning phases of a project.

Waste Management – Classifying, recycling, treatment and disposal of waste generated during construction and decommissioning activities.

REFERENCES

DEAT (1992) Integrated Environmental Management Guideline Series, Volumes 1-6, Department of Environmental Affairs, Pretoria.

DEAT (2004a) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

Lochner, P. 2005. Guideline for Environmental Management Plans. CSIR Report No ENV-S-C 2005-053 H. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Republic of South Africa. 1998. National Environmental Management Act 107 of 1998 (NEMA).

SECTION 1: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

A regulations applicability checklist was prepared and submitted by Lukhozi to the Department of Environmental Affairs and Development Planning (DEA&DP) in June 2021 to confirm the applicability of the NEMA Regulations, 2014 (as amended) with respect to the proposed development of a Bulk water rising main from Grabouw water purification plant (WPP) to the Steenbras Reservoir.

Based on the information contained in the Regulations applicability checklist, DEA&DP has confirmed that the proposed development does **not trigger** a listed activity in terms of the EIA Regulations, 2014 (as amended), Environmental Authorisation (EA) is therefore not required from the competent authority prior to the undertaking of the above-mentioned development.

The proposed development will entail the development of a pipeline from the Grabouw WPP to the Steenbras reservoir along Ou Kaapse Weg, Grabouw; The pipeline will be approximately 2000m long with a diameter of approximately 500mm. The proposed pipeline will be located inside an urban area within the existing road reserve. Refer to **Figure 1** for a proposed route for the pipeline.

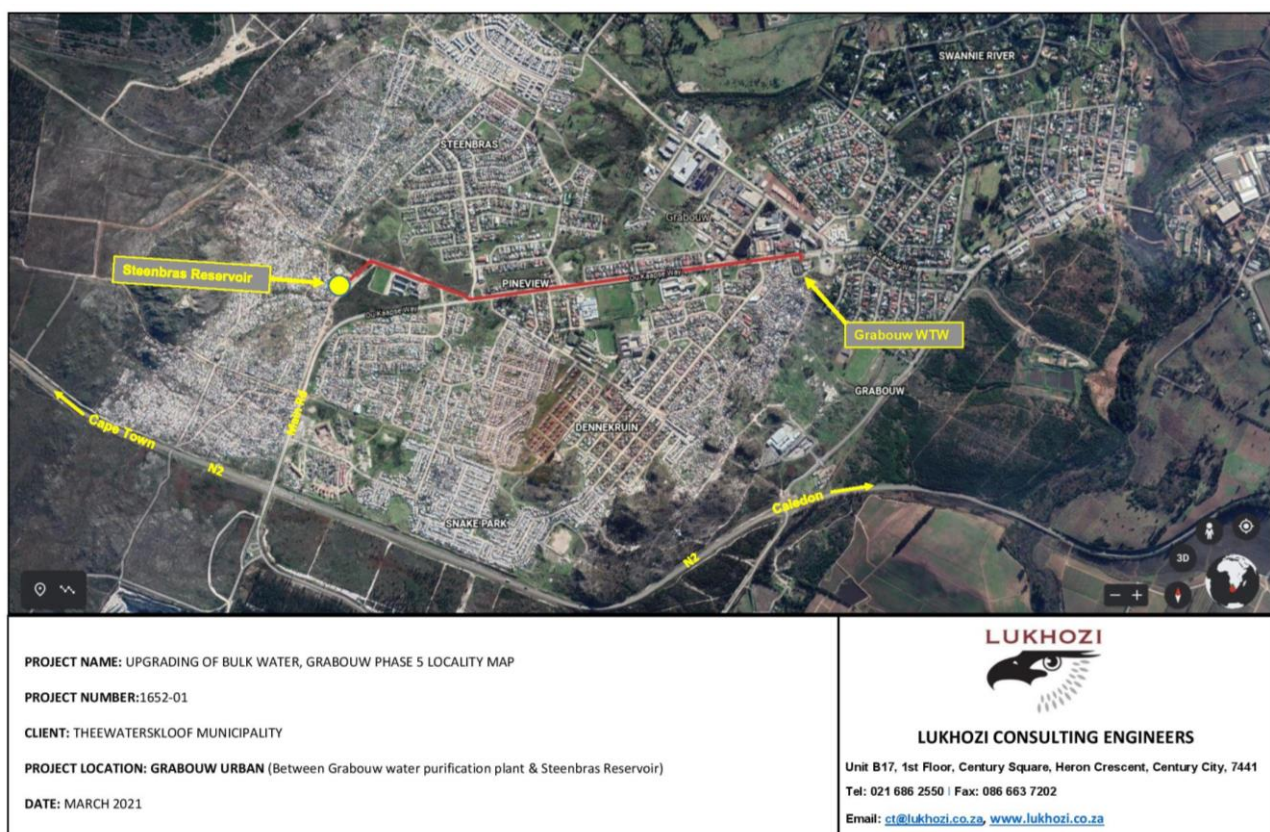


Figure 1: Locality map showing the pipeline route (in red).

This document is compiled in accordance with the Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development (DEAT, 1992). IEM is a key instrument of the National Environmental Management Act [NEMA] (Act No. 107 of 1998). NEMA promotes the integrated environmental management of activities that may have a significant effect on the environment, while IEM prescribes a methodology for ensuring that environmental management principles are fully integrated into all stages of the development process. It advocates the use of several environmental management tools that are appropriate for the various levels of decision-making. One such tool is a COEMPr.

The IEM guidelines encourage a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The basic principles underpinning IEM are that there be:

- informed decision-making;
- accountability for information on which decisions are taken;
- accountability for decisions taken;
- a broad meaning given to the term environment (i.e. one that includes physical, biological, social, economic, cultural, historical and political components);
- an open, participatory approach in the planning of proposals;
- consultation with interested and affected parties;
- due consideration of alternative options;
- an attempt to mitigate negative impacts and enhance positive aspects of proposals;
- an attempt to ensure that the 'social costs' of development proposals (those borne by society, rather than the developers) be outweighed by the 'social benefits' (benefits to society as a results of the actions of the developers);
- democratic regard for individual rights and obligations;
- compliance with these principles during all stages of the planning, implementation and decommissioning of the proposals (i.e. from 'cradle to grave'); and
- the opportunity for public and specialist input in the decision-making process.

These principles are in line with NEMA, which has repealed a number of the provisions of the Environment Conservation Act, 1989 [ECA] (Act No. 73 of 1989), and is focussed primarily on co-operative governance, public participation and sustainable development. The Environmental Impact Assessment Regulations that are applicable, namely EIA Regulations, 2014 (as amended) regulate the procedures and criteria for the submission, processing, consideration and decision on applications for environmental authorisation of listed activities.

Compiler of the COEMPr

Natalie Ritsch has been an Environmental Assessment Practitioner (EAP) for 15 years, and has been involved in the environmental science field for 19 years. She has been involved in the government, parastatal and private sectors in her career thus far, which involved the supervision of junior staff, reviewing of documentation and compilation of various reports from small-scale BA's to large-scale EIA's, including a number of Environmental Management Programmes (EMPr). Natalie is currently an Environmental Manager at Lukhozi, where she provides environmental support to technical staff, project leadership and quality assurance on all projects. Natalie is currently registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions (Reg. No. 400130/05), and is a committee member of the International Association for Impact Assessment – South African affiliate (IAIAsa).

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1.2 SCOPE

The general principles contained within this document apply to all **PRE-CONSTRUCTION AND CONSTRUCTION** activities.

1.2.1 Principles of this COEMPr

This COEMPr is compiled using the following concepts and implementation requirements so that the higher principles of sustainable development are realised:

- Continuous improvement. The project proponent (or implementing organisation) must commit to review and to continually improve environmental management, with the objective of improving overall environmental performance.
- Broad level of commitment. A broad level of commitment is required from all levels of management as well as the workforce in order for the development and implementation of this COEMPr to be successful and effective.
- Flexible and responsive. The implementation of the COEMPr must respond to new and changing circumstances, i.e. rapid short-term responses to problems or incidents. The COEMPr is a dynamic “living” document and thus regular planned review and revision of the COEMPr must be carried out.
- Integration across operations. This COEMPr must integrate across existing line functions and operational units such as health, safety and environmental departments in a company/project. This is done to change the redundant mindset of seeing environmental management as a single domain unit.
- Legislation. It is understood that any development project during its construction phase is a dynamic activity within a dynamic environment. The Developer, Engineer, Contractor and Sub-contractor must therefore be aware that certain activities conducted during construction may require further licensing or environmental approval, e.g. river or stream diversions, bulk fuel storage, waste disposal, etc. The Contractor must consult the ER, EO and ECO on a regular basis in this regard.

1.2.2 Site specific information

1.2.2.1 Proposed activity and local context

The proposed route of the pipeline is within jurisdiction of Theewaterskloof Municipality within the established urban area of Grabouw. The proposed water pipeline will be installed predominantly within the Ou Kaapse Weg Road reserve, and will start from the Grabouw Water Treatment Plant along Ou Kaapse Weg and will follow in the north-westerly direction at the Ou Kaapse Weg/Steenbras Street intersection along an unnamed road to the Steenbras reservoir. Most of the route follows surfaced roads.

There are existing services located within the existing road reserves, including a 315mm-diameter uPVC and 250mm diameter AC pipelines, within the Grabouw urban area. The new rising main route will ideally follow the same route as the existing lines as indicated on the Engineering services map as

1.2.3 Interpretations

The implementation of the COEMPr is not an additional or “add on” requirement. The COEMPr is legally binding through NEMA. The proponent is to ensure that through the project tender process the COEMPr forms part of the Project Construction Contract Document to be incorporated in line with:

- a) General project specifications; and
- b) SANS 1200 A or SANS 1200 AA, as applicable.

1.2.4 Project phase

This COEMPr is specifically compiled for the period of time prior to commencement of, and activities associated with construction of the above-mentioned activity.

1.2.5 Role players and responsibility matrix

In order for the COEMPr to be successfully implemented, all the role players involved in the project need to co-operate. For this to happen, role players must clearly understand their roles and responsibilities in the project, must be professional, form respectful and transparent relationships, and maintain open lines of communication.

These role players or the project team include the Authorities (A), Developer/Proponent (D), Consulting Engineers (CE), Engineers Representative (ER), Environmental Officers (EO), Environmental Site Officer (ESO), Environmental Control Officer (ECO), Project Manager (PM), Contractors (C), Environmental Assessment Practitioner (EAP). Further; landowners, interested and affected parties and the relevant environmental and project specialists are also important role players.

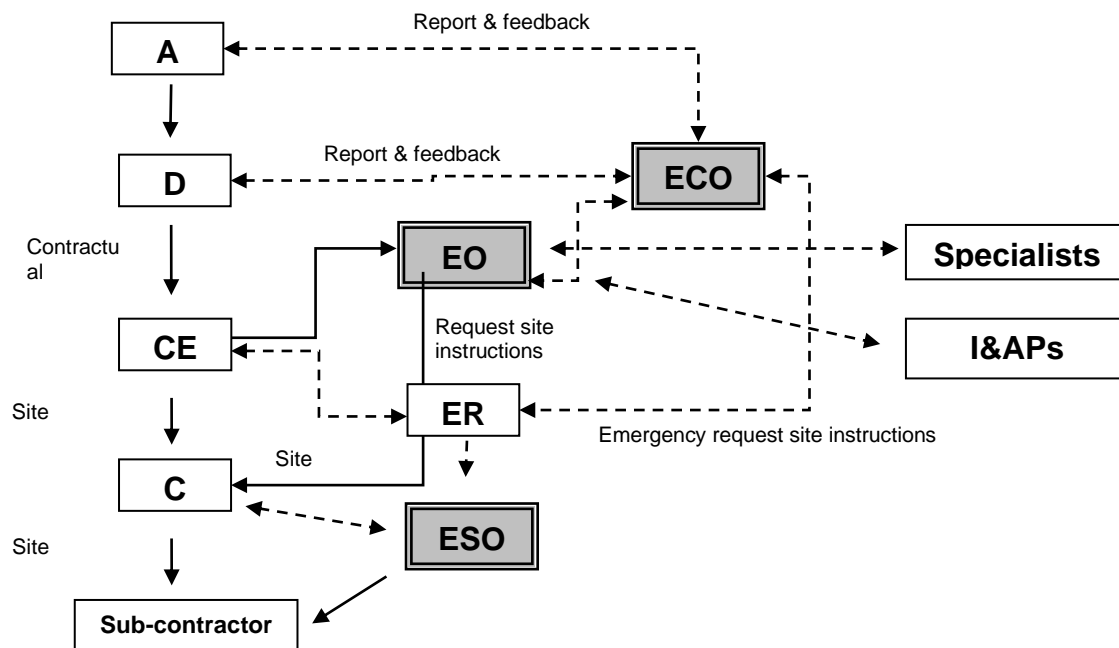
Table 1: Functions and Responsibilities of the Project Team

KEY	FUNCTION	RESPONSIBILITY
D	Developer	Proponent ultimately accountable for ensuring compliance to the COEMPr. The ECO must be contracted by the developer (full time or part time depending on the size of the project) as an independent appointment to objectively monitor implementation the COEMPr for the project. The developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities. The developer must ensure that the ECO is integrated as part of the project team.
CE	Consulting Engineer	Contracted by the developer to design and specify the project engineering aspects. Generally, the engineer runs the works contract. The CE may also fulfil the role of Project Manager on the proponent's behalf (See PM).
PM	Project Manger	The Project Manager has over-all responsibility for managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. The CE may also act as the PM. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any construction activity in contravention of the EMPr in accordance with an agreed warning procedure.
ER	Engineers Representative	The consulting engineer's representative on site. Has the power/mandate to issue site instructions and in some instances, variation orders to the contractor, following request by the EO or ECO. The ER oversees site works, liaison with Contractor and ECO.
EO/EM	Environmental Officer /Environmental manager	<p>Appointed by the Consulting Engineers as their environmental representative on site. The EO is not independent but must rather act on behalf of the consulting engineers with the mandate to enforce compliance under the project contract, which must include the COEMPr. The EO has the directive to issue non-conformance and hazard certificates. Further, in terms of accepted industry practice the EO could issue the equivalent of a "cease works" instruction only in exceptional circumstances where serious environmental harm has been or is about to be caused i.e. in cases of extreme urgency and then only when the ER is absent.</p> <p>The EO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. On certain types of projects, such as linear developments (fences, pipelines, etc), the EO must also be the liaison between the contractor and landowners.</p> <p>The EO must attend relevant project meetings, conduct daily inspections to monitor compliance with the COEMPr, and be responsible for providing reports and feedback on potential environmental problems associated with the development to the project team and ECO.</p> <p>The EO must convey the contents of this COEMPr to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.</p> <p>The EO must be suitably experienced with the relevant qualifications and preferably competent in construction related methods and practices.</p>

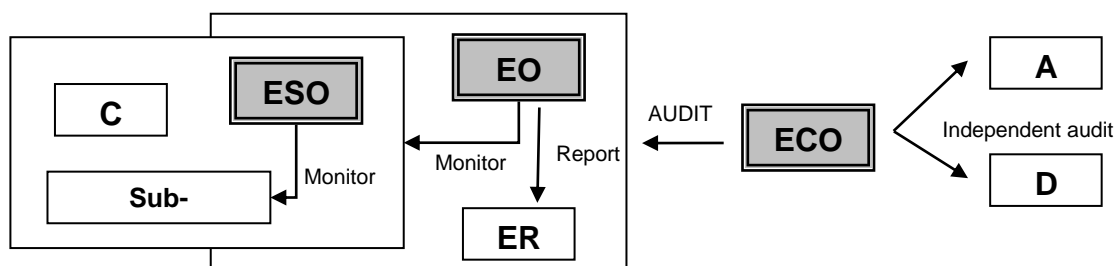
KEY	FUNCTION	RESPONSIBILITY
ECO	Environmental Control Officer	<p>An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of the COEMPr for the project. The ECO must be on site prior to any site establishment and must endeavour to form an integral part of the project team.</p> <p>The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the COEMPr for the project. The size and sensitivity of the development, based on the EIA, will determine the frequency at which the ECO will be required to conduct audits. (A minimum of a monthly site inspection must be undertaken).</p> <p>The ECO must be the liaison between the relevant authorities and the project team. The ECO must communicate and inform the developer and consulting engineers of any changes to environmental conditions as required by relevant authoritative bodies. The ECO must ensure that the registration and updating of all relevant COEMPr documentation is carried out.</p> <p>The ECO must be suitably experienced with the relevant environmental management qualifications and preferably competent in construction related methods and practices.</p> <p>The ECO must handle information received from whistle blowers as confidential and must address and report these incidences to the relevant Authority as soon as possible.</p> <p>On small projects, where no EO is appointed, the ECO must convey the contents of this COEMPr to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.</p>
C	Contractor	<p>The principle contractor, hereafter known as the 'Contractor', is responsible for implementation and compliance with the requirements of the COEMPr, contract and relevant environmental legislation. The Contractor must ensure that all sub-contractors have a copy of and are fully aware of the content and requirements of this COEMPr.</p> <p>The contractor is required, where specified, to provide Method Statements setting out in detail how the management actions contained in the COEMPr will be implemented.</p>
ESO	Environmental Site Officer	<p>The ESO is employed by the Contractor as his/her environmental representative to monitor, review and verify compliance with the COEMPr by the contractor. This is not an independent appointment; rather the ESO must be a respected member of the contractor's management team.</p> <p>Dependent on the size of the development the ESO must be on site one week prior to the commencement of construction. The ESO must ensure that he/she is involved at all phases of the construction (from site clearance to rehabilitation).</p>
A	Lead Authority	<p>The authorities are the relevant environmental department that has issued the Environmental Authorisation. The authorities are responsible for ensuring that the monitoring of the COEMPr and other authorisation documentation is carried out, this will be achieved by reviewing audit reports submitted by the ECO and conducting regular site visits.</p>
OA	Other Authority	<p>Other authorities are those that may be involved in the approval process of a COEMPr. Their involvement may include reviewing COEMPr's to ensure the accuracy of the information relevant to their specific mandate.</p> <p>Other authorities may be involved in the development, review or implementation of an COEMPr. For example if a specific development requires a water use licence for the relevant national authority then that authority should review and comment on the content of the particular section pertaining to that mandate.</p>
EAP	Environmental Assessment Practitioner	<p>The definition of an environmental assessment practitioner in Section 1 of NEMA is "<i>the individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management plans or any other appropriate environmental instruments introduced through regulations</i>".</p>

Figure 2 Recommended lines of communication, reporting and monitoring

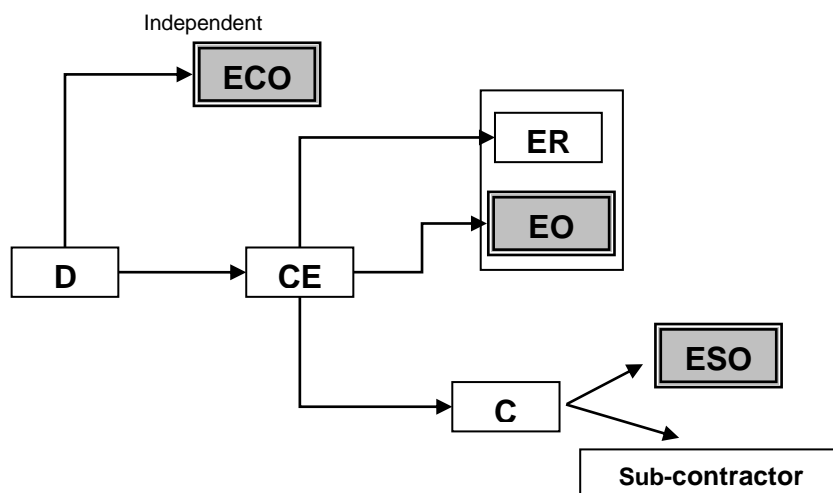
FORMAL ENVIRONMENTAL COMMUNICATION CHANNELS



MONITORING, AUDITING AND REPORTING



ENVIRONMENTAL APPOINTMENTS



1.2.6 Enforcement, monitoring and auditing

The ECO must conduct monthly independent environmental audits, or as required by the Environmental Authorisation (EA). The audits are to verify the projects compliance with the COEMPr.

Before any construction activities commences, the ECO must compile, an audit checklist based on the contents of this COEMPr.

Evidence of the following as **key performance indicators**, must be included in the audit reports where required:

1. Complaints received from landowners and actions taken.
2. Environmental incidents, such as oil spills, concrete spills, etc. and actions taken (litigation excluded).
3. Incidents leading to litigation and legal contraventions.
4. Environmental damage that needs rehabilitation measures to be taken.

A copy of all ESO and EO monitoring reports, contractor method statements and pro forma documentation (see 1.2.11 & 1.2.12) must be held by the ESO and/or the EO on site and be made available to relevant Authorities and or the ECO upon request.

1.2.7 Non-Compliance

Fines

The contractor must comply with the requirements of the Environmental Management Programme (EMPr) on an on-going basis and any failure on his part to do so will entitle the Principal Agent (in consultation with the ECO) to impose a fine subject to the details set out below:

- a) 1The Engineer/Principal Agent shall issue a Notice of Non-compliance to the contractor for repeat NCs (as identified by the ECO in monthly audit reports) and issue a formal instruction to the contractor to resolve the repeat NCs within a period of 14 days of the date of the instruction. The formal instruction should also detail possible consequences of continued non-compliance (i.e. the issuance of fines).
- b) The contractor shall act to correct the transgressions within the period specified in the instruction and provide the Engineer/Principal Agent and ECO with a written statement describing the actions taken to resolve the non-compliance.
- c) In the event the contractor fail to remedy the NCs within the prescribed/required timeframe and there is evidence of non-compliance identified by the ECO during a subsequent audit, the ECO will formally recommend the issuing of a fine by the Engineer/Principal Agent for transgressions outlined/identified by the ECO.
- d) The Engineer/Principal Agent will issue a fine to the contractor for the transgressions outlined/identified by the ECO.

- e) Should the contractor fail to resolve the repeat NC(s) (subsequent to the issuance of fines by the Engineer/Principal Agent) as identified by the ECO during a subsequent audit, the ECO will formally recommend the issuing of a fine by the Engineer/Principal Agent of which double the value of the first fine that was originally issued.
- f) Should the contractor fail to resolve the repeat NC(s) (subsequent to the issuance of fines by the Engineer/Principal Agent) as identified by the ECO during a subsequent audit, a 'Stop Works' order may be issued by the Engineer/Principal Agent until the NCs are resolved. Any costs incurred as a result of the 'Stop Works' order will be for the account of the Contractor. In addition to the 'Stop Works' order, the Engineer/Principal Agent may also mobilise the required resources to resolve the NC(s) and to remedy any environmental impact and harm at the expense of the contractor.

Refer to **Annexure 6** for a summary of the typical incidents and resultant penalties.

1.2.8 General guidelines

The following measures provide guideline solutions to frequently anticipated issues on most development activities.

- The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the construction phase, illegal activities, delays caused by archaeological finds, etc. is ultimately the responsibility of the applicant/developer. Section 28, National Environmental Management Act [NEMA] (Act No. 107 of 1998).
- The study area must be clearly defined, surveyed and fenced according to the project authorisation. All workforce members and other construction personnel are not to go beyond the fenced footprint. Landowners are not comfortable when strangers come on to their properties. They will look for reasons to interfere with the construction process and may therefore cause delays in the process that can be very costly to the Contractor.
- The Contractors must adhere to agreed and approved access points and haul roads.
- No camping is allowed on any private property.
- Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the owner.
- Relevant landowners and businesses within the area must be informed of the starting date of construction, as well as the phases in which the construction shall take place.
- The Contractor must adhere to all conditions of contract including this COEMPr.
- Proper planning of the construction process must be undertaken to allow for disruptions due to rain and very wet conditions.
- Where existing private roads to be utilised as access are in a bad state of repair, such roads' condition must be well documented, including photographs, before they are used for construction purposes. If necessary, some repairs must be done to prevent damage to equipment and plant.

- All private and public manmade structures near the project site must be protected against damage at all times and any damage must be rectified immediately.
- Proper site management and regular monitoring of site works.
- Proper documentation and record keeping of all complaints and actions taken.
- Regular site inspections and good control over the construction process throughout the construction period.
- A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions (see 1.2.10 below).
- An ESO, on behalf of the Contractor, is to be appointed to implement this EMP. The EO and not the Contractor or his/her ESO is to deal with any landowner related matters (see figure 2).
- Environmental Audits to be carried out during and upon completion of construction.

1.2.9 Awareness training

The EO or ESO, or ECO, are responsible for ensuring everyone on site is given an environmental awareness induction session which not only clearly defines what the environment is and gives specifics detailing the local environment but outlines the requirements of the COEMPr as a management tool to protect the environment. Refresher courses must be conducted as and when required. The EO or ESO must ensure daily toolbox talks include alerting the workforce to particular environmental concerns associated with the tasks for that day or the area in which they are working. Awareness posters and a hand out may be produced to create awareness throughout the site.

1.2.10 Contractor environmental Method Statements

Method Statements are written submissions to the Engineer by the Contractor in collaboration with his/her ESO, in response to a request by the EO and or Engineer. The Method Statements set out the plant, materials, labour and method that the contractor proposes using to carry out an activity, identified by the EO and/or Engineer. The Method Statements contain the appropriate detail such that the EO and Engineer are able to assess whether the Contractor's proposal is in accordance with the requirements of the COEMPr. The contractor must sign each Method Statement along with the EO and Engineer to formalise the approved Method Statement.

All Method Statements including those which may be required as *ad hoc* or emergency construction method statements must be submitted to the Engineer for approval prior to the commencement of the activity.

Any changes to the method of works must be reflected by amendments to the original approved Method Statement. Any changes in this regard must be approved by the EO and Engineer on the understanding that such changes are environmentally acceptable and in line with the requirements of this COEMPr.

The *pro forma* Method Statements attached must be used and method statements for the following activities must be submitted to the EO, ECO and Engineer for approval before construction commences. These include *inter alia*:

- Solid waste management;
- Crew camps and construction lay down areas;
- Workshop and maintenance/cleaning of plant;
- Cement and concrete batching;
- Dust control;
- Hydrocarbon and emergency spills procedures;
- Diesel tanks and refuelling procedures;
- Fire; and
- Rehabilitation of crew camp and other disturbed areas.

1.2.11 Site documentation

The following is list of documentation that must be held on site and must be made available to the ECO and/or Approving Authority on request.

- Access negotiations and physical access plan;
- Site daily diary /instruction book/ Incident reports;
- Records of all remediation / rehabilitation activities;
- Copies of EO reports (management and monitoring);
- Construction and Operational Environmental Management Programme (COEMPr);
- Complaints register; and
- Method statements.

1.2.12 Pro forma documentation

1.2.12.1 Prior to the commencement of construction activities

The following attached *pro forma* documentation is to be filled out and is binding to the COEMPr and project contract and includes *inter alia*:

- Declaration of understanding by the Developer;
- Declaration of understanding by the Engineer;
- Declaration of understanding by the Contractor;
- Method statements;
- ECO / Engineer approval for method statements; and
- Access negotiations and physical access plan.

1.2.12.2 During construction activities

The following attached *pro forma* documentation is to be filled out and maintained. These are binding to the COEMPr and project contract. They include *inter alia*:

- Amended Method Statements;
- ECO / Engineer approval for amended method statements;
- Environmental incidents; and
- Records of all remediation / rehabilitation activities.

SECTION 2: GENERIC CONSTRUCTION PHASE COEMPR- IMPLEMENTATION

2.1 PREAMBLE

The point of departure for this COEMPr is to ensure a pro-active rather than re-active approach to environmental performance by addressing potential problems before they occur. This will limit corrective measures needed during the construction phase of the project. Therefore, the purpose of a COEMPr is to provide management measures that must be implemented by Developers, Engineers and Contractors alike to ensure that the potential impacts of a proposed development are minimised. It must also be ensured that the COEMPr is maintained and upheld as a dynamic document in order for the project team to add or improve on issues that might be considered left out or not relevant to the project. In such instances, the approving authority may authorise the ECO to make such changes.

The following tables form the core mitigation measures appropriate to the pre-construction and construction phase. The tables present the objectives to be achieved and the management actions that need to be implemented in order to mitigate the negative impacts and enhance the benefits of the project. Associated responsibilities, criteria/targets and timeframes are clearly specified.

The **‘pre-construction’** section of this COEMPr, refers to the period of time leading up to and prior to commencement of construction activities, and is included to ensure pro-active environmental management measures with the goal of identifying avoidable environmental damage at the outset and sustain optimal environmental performance throughout the construction phase. Most impacts will occur during the construction phase and must be mitigated through the contingency plans identified in the pre-construction phase.

The bulk of environmental impacts will have immediate effect during the **‘construction’** phase (e.g. noise, dust, and water pollution). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the measures outlined in this section, together with a commitment to sound environmental management from the project team.

The **“construction”** section refers to all construction-related activities that will occur within the approved area and access roads, until the project is completed. This “construction” section is divided into three functional areas, namely “materials”; “plant”; and “construction”. Each of these functional areas within the COEMPr contains specific mitigation requirements and requested contractor method statements stipulated where required.

2.2 STRUCTURE AND CONTENTS OF TABLES

The table consists of seven parts as follows:

“Phase of development” - This row will identify either pre-construction (planning) or actual construction phase.

“Impact / issue” - This row will identify the issue being addressed, e.g. Materials, site demarcation, heritage, etc.

Mitigation Measure - This column will include all the necessary mitigation measures for each impact/issue’.

Management objectives - This column will indicate what the management objectives to be achieved for each mitigation measure are.

Measurable targets - This column will indicate what evidence is to be used as an indication to whether or not the ‘Management objectives’ have been implemented and hence achieved.

Frequency of action - These columns provide time guidelines for the ‘Responsible party’ by which he/she is to action or manage the required mitigation.

Phase of development	PRE-CONSTRUCTION
Impact / issue	GENERAL PLANNING (A)

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
A1 Project contract and programme <ul style="list-style-type: none"> i. The COEMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. ii. A copy of this COEMPr must be available on site. The Contractor must ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the COEMPr. 	<ul style="list-style-type: none"> • Contingencies for minimising negative impacts anticipated to occur during the construction phase. • Ensure environmental awareness and formalise environmental responsibilities and implementation. 	<ul style="list-style-type: none"> • Contract records • Signed declaration pro forma's 	-	
A2 Appointments and duties of project team <ul style="list-style-type: none"> i. The contact details for the ECO, ER, EO, Contractor and ESO must be visible at the contractor's site office. ii. Before construction activities commence, role players must have a clear indication of to their role in the implementation of this COEMPr. iii. Subcontractor(s) contracts with the principle contractor must ensure that the subcontractors are bound and will comply with the specific provisions of the COEMPr, as it pertains to the project. 	<ul style="list-style-type: none"> • Contingencies for minimising negative impacts anticipated to occur during the construction phase 	<ul style="list-style-type: none"> • Contract records • Proof of awareness training / Acknowledgement form 	-	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
A3 Method statements <ul style="list-style-type: none"> i. Method statements must be provided by the contractor. All activities which require method statements may only commence once the method statements have been approved by the engineer and or ECO as applicable. ii. Where applicable, the contractor will provide job-specific training on an ad hoc basis when workers are engaged in activities, which require method statements. 	<ul style="list-style-type: none"> • Contingencies for minimising negative impacts anticipated to occur during the construction phase 	<ul style="list-style-type: none"> • Approved method statements and relevant pro forma documents • Training records 	As and when required	
A4 Site demarcation and development <ul style="list-style-type: none"> i. The surveys for the overall project area and construction footprint must be complete and clearly demarcated before the contractors set up their crew camps or begin construction. 	<ul style="list-style-type: none"> • Contingencies for minimising negative impacts anticipated to occur during the construction phase 	<ul style="list-style-type: none"> • Demarcated area's • Filled in section of this document 	As and when required	
A5 Emergencies, non-compliance and communication <ul style="list-style-type: none"> i. The contractor must provide method statements on the protocols to be followed, and contingencies to be put in place for the potential incidents before construction may begin. ii. The contractor understands that where non-compliance is identified in terms of the COEMPr, fines will be instituted according to the agreed approach. iii. An evacuation plan for personal, describing the signals to be used for evacuation, evacuation routes, as well as alternative evacuation routes in the case where the primary route could be blocked. 	<ul style="list-style-type: none"> • Contingencies for minimising negative impacts anticipated to occur during the construction phase 	<ul style="list-style-type: none"> • Method statements 	As and when required	

Phase of development	CONSTRUCTION
Impact / issue	Materials (C)

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
Handling				
C1 Stockpiles and Soil <ul style="list-style-type: none"> i. All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised. ii. The stockpiles may only be placed within the demarcated areas the location of which must be approved by the ER, EO or ECO. iii. Storm water run-off from the stockpile sites and other related areas must be directed into the storm water system with the necessary pollution prevention measures such as silt traps and may not run freely into the immediate and surrounding environments. iv. The contractors must provide and maintain a method statement for “management of topsoil” in the instances during construction where paved areas are ripped and underlying areas exposed. v. All topsoil must be removed and stockpiled on the site. vi. Single handling is recommended. Stock piles must not be higher than 2m to avoid compaction. vii. Dust suppression is necessary for stockpiles older than a month – with either water or a biodegradable chemical binding agent. viii. Backfilling must be undertaken in such a way that the final contours blend with the surrounding environment. ix. Remediated slopes must be graded to preferably 1:2. Slopes can then be capped with topsoil. This requires a minimum layer of 100 mm in most areas. x. Disturbed surfaces to be rehabilitated must be ripped and the area must be backfilled with excavated material from the site. 	<ul style="list-style-type: none"> • Minimise construction footprint. • Minimise contamination of storm water run-off. 	<ul style="list-style-type: none"> • No visible erosion scars once construction is completed. • The footprint has not exceeded the agreed site. • No signs of sedimentation and erosion. 	Daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
C2 Oil and chemicals <ol style="list-style-type: none"> The contractor must provide method statements for the “handling & storage of oils and chemicals”, “fire”, and “emergency spills procedures”. These substances must be confined to specific and secured areas within the contractor’s camp, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks. Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles suspected of leaking must not be left unattended, drip trays must be utilised. The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle while standing. Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. Spill kits must be made up of material/product that is in line with environmental best practice (SUNSORB is a recommended product that is environmentally friendly). Remediation of oil spills / spilled hazardous substances must be undertaken as soon as possible, and proof of safe disposal must be provided. A record must be kept of all spills and the corrective action taken. 	<ul style="list-style-type: none"> Prevention of pollution of the environment. Minimise chances of transgression of the acts controlling pollution. 	<ul style="list-style-type: none"> No pollution of the environment No litigation due to transgression of pollution control acts No complaints from I&APs Method statements Proof of safe disposal 	Daily	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
C3 Cement <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “cement and concrete batching”. The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant. ii. The mixing of concrete must only be done on mortar boards or similar structures. iii. Cleaning of cement mixing and handling equipment must be done using proper cleaning trays. iv. All empty containers must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed facility. v. Any spillage that may occur must be investigated and immediate remedial action must be taken. vi. Cement batching areas must be located in consultation with the ER, EO or ECO. 	<ul style="list-style-type: none"> • Minimise the possibility of cement residue entering into the surrounding environment • Minimise pollution of surface and ground water resources 	<ul style="list-style-type: none"> • No evidence of contaminated soil on the construction site • No evidence of contaminated water resources • Method statement 	Monitored daily	
C4 DANGEROUS AND TOXIC MATERIALS (Provision of storage facilities) <ul style="list-style-type: none"> i. Materials such as fuel, oil, paint, must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas. These areas must also be clearly marked (“no smoking”, No Naked lights” and “Danger”) ii. Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction. iii. Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS’s must be updated as required. 	<ul style="list-style-type: none"> • Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments. • Minimise chances of transgression of the acts controlling pollution. 	<ul style="list-style-type: none"> • No visible signs of pollution. • No litigation due to transgression of pollution control acts. 	Monitor daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
C5 Bulk storage of fuels and oils <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “Diesel tanks and refuelling procedures”. ii. Bulk fuel storage tanks on the site must be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. The filler tap must be inside the bunded area where possible and the bund wall must not have a tap or valve. iii. Bulk fuel storage tanks must be located in a portion of the construction camp where they do not pose a high risk in terms of water pollution. iv. Bulk fuel storage tanks must be out of the way of traffic, so that the risk of the tanks being ruptured or damaged by vehicles is minimised. 	<ul style="list-style-type: none"> • Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments • Minimise chances of transgression of the acts controlling pollution 	<ul style="list-style-type: none"> • No visible signs of pollution • No litigation due to transgression of pollution control acts • Method statement 	Once off, as required	

Phase of development	CONSTRUCTION
Impact / issue	PLANT (D)

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
D1 Eating areas <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “Crew camps and construction lay down areas”. ii. The Contractor must, in conjunction with the EO, designate or agree on eating areas for eating during normal working hours. Adequate closed refuse bins must be provided and cleaned on a regular (weekly) basis. iii. No fires are to be lit outside of a facility designed to contain fires. iv. Daily litter patrols should be done (at the end of the day). 	<ul style="list-style-type: none"> • Control potential influx of vermin and flies • Neat work place and hygienic environment • Minimise negative social impacts to surrounding businesses 	<ul style="list-style-type: none"> • No visual sign of vermin and flies • No complaints from I&APs 	Once off, monitor daily	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
<p>D2 Toilets and ablution facilities</p> <p>i. The contractor is responsible for providing all sanitary arrangements for his and the sub-contractors team. A minimum of one chemical toilet must be provided per 15 persons.</p> <p>ii. Sanitary arrangements must be to the satisfaction of the ECO and the local authority. Toilets must be of the chemical type. The contractor must keep the toilets in a clean, neat and hygienic condition. The contractor must supply toilet paper at all toilets at all times.</p> <p>iii. Toilets provided by the contractor must be easily accessible and a maximum of 50m from the works area to ensure they are utilised. The contractor must ensure that the toilets are regularly serviced. The contractor (using reputable toilet-servicing company) must ensure that all toilets are cleaned and emptied before the builders' or other public holidays.</p> <p>iv. Toilets out on site must be secured to the ground and have a sufficient locking mechanism operational at all times.</p>	<ul style="list-style-type: none"> • Ensure proper sanitation is achieved which will encourage the workforce to utilise toilets provided and not the surrounding habitat. • Minimise potential of diseases on site. • Minimise potential to pollute water resources. 	<ul style="list-style-type: none"> • Workforce use toilets provided. • No complaints received from I&APs as well as members of the workforce. • No visible or measurable signs pollution of the environment (ground and surface water). 	As and when required.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
<p>D3 Waste management</p> <p>i. The contractors must provide and maintain a method statement for “solid waste management”. The method statement must provide information on proposed licensed facility to be utilised and details of proposed record keeping for auditing purposes.</p> <p>ii. Waste separation is required on-site, and should be separated into general and hazardous waste. General waste such as building rubble should be kept separate. Non-recyclables (food and wet waste, empty cement bags, contaminated recyclables). Recyclable materials should be grouped, and disposed of at a suitable facility such as drop-offs / recycling facility. Hazardous waste such as old oil, paint, etc must be kept in separate areas.</p> <p>iii. Any illegal dumping of waste must not be tolerated and proof of legal dumping must be able to be produced on request.</p> <p>iv. Bins must be clearly marked for ease of management (general waste, recyclable, hazardous).</p> <p>v. Sufficient closed containers/ waste cages / skips (where relevant) must be located around the construction site to handle the amount of litter, wastes, rubbish, debris, and builder’s wastes generated on the site.</p> <p>vi. All solid and chemical wastes that are generated must be removed and disposed of at a licensed waste disposal site. The contractor is to provide proof of such to the EO and ECO.</p>	<ul style="list-style-type: none"> • Sustainable management of waste by recycling. • To keep the site neat and tidy. • Minimise litigation and complaints by I&APs. • Reduce visual impact. • Control potential influx of vermin and flies thereby minimising the potential of diseases on site and the surrounding environment. • Minimise potential to pollute soils, water resources and natural habitats. 	<ul style="list-style-type: none"> • Disposal of rubble and refuse in an appropriate manner with no rubble and refuse lying on site. • Site is neat and tidy. • No complaints from surrounding residents and businesses. • Sufficient containers available on site. • No visible or measurable signs of pollution of the environment (soils, ground and surface water). • Method statement. 	Daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
D4 Dust <ul style="list-style-type: none"> i. Adequate measures must be taken to control dust into the atmosphere in terms of the Theewatersloof Municipality Bylaws (applicable at the time) and the National Dust Control Regulations. ii. The contractors must provide and maintain a method statement for “dust control” for the construction site. The method statement must provide information on the proposed source of water to be utilised and the details of the licenses acquired for such usage. iii. Potable water must not be used as a means of dust suppression, and alternative measures must be sourced. The contractor will be responsible to source this water and obtain the required approvals to utilise this water for the purpose of dust suppression. iv. Dust production must be controlled by regular watering of roads and works area, should the need arise. NB: Concrete dust is toxic and damages soil properties. Therefore, watering to prevent dust spread must not be done where concrete dust has fallen or it will infiltrate into the soil. Concrete bags must not be allowed to blow around the site and spread cement dust. v. Excessive dust conditions must be reported to the ECO. 	<ul style="list-style-type: none"> • Reduce dust fall out. • Reduce visual impact. 	<ul style="list-style-type: none"> • No visible signs of dust. • No complaints from interested and Affected parties. • No incidences reported to ECO. • No visible evidence of dust contamination on the surrounding environment. • Method statement. • Baseline targets not exceeded during regular monitoring of dust counts. 	Monitored daily.	
D5 Workshop equipment, maintenance and storage <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “workshop maintenance and cleaning of plant” (<i>if applicable</i>). ii. All maintenance and washing of vehicles and equipment must take place in the workshop area that is equipped with a bund wall. During servicing of vehicles or equipment, a suitable drip tray must be used to prevent spills onto the soil, especially where emergency repairs are done outside the workshop area. Leaking equipment must be repaired immediately or be removed from site to facilitate repair. All potentially hazardous and non-degradable waste must be collected and removed to a registered waste site. 	<ul style="list-style-type: none"> • Prevent pollution of the environment • Minimise chance of transgression of the acts controlling pollution • Disposal of hazardous substances in an appropriate manner 	<ul style="list-style-type: none"> • No pollution of the environment • No litigation due to transgression of pollution control acts • Method statement 	Monitor daily	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
<p>D6 Noise</p> <ul style="list-style-type: none"> i. There must be compliance with the Noise Control Regulations by not creating a disturbing noise and or noise nuisance to the surrounding property owners. ii. In terms of noise impact for various increases over the ambient, the National Noise Regulations define an increase of 7dB as “disturbing”. Noise levels during construction must therefore be kept within 7dB of the baseline data. iii. All construction vehicles must be in a good working order to reduce possible noise pollution. iv. Work hours during the construction phase must be strictly enforced unless permission is given. Permission must not be granted without consultation with the local residents and businesses by the EO. v. Noise reduction is essential and Contractors must endeavour to limit unnecessary noise, especially loud talking, shouting or whistling, radios, sirens or hooters, motor revving, etc. vi. Noisy activities must take place only during working hours. These activities could include, but are not limited to, blasting, piling, use of pneumatic jack-hammers and compressors, bulk demolitions, etc. 	<ul style="list-style-type: none"> • Maintain noise levels below “disturbing” as defined in the National Noise Regulations • Minimise the nuisance factor of the development 	<ul style="list-style-type: none"> • No complaints from surrounding landowners or I&APs 	As and when required	

Phase of development	CONSTRUCTION
Impact / issue	Construction (E)

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
E1 Crew camps <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “Crew camps and construction lay down areas”. ii. Accommodation for members of the workforce is not permitted on site. iii. Dedicated wash areas must occur upon bunded, impervious services equipped with an oil sump. iv. The contractor’s camp must be monitored for dust fallout and dust suppression applied as required. This may include the laying of gravel. The use of grey water can be considered as an option if the required permits have been acquired. v. Location of the contractor’s camp, offices and storage facilities must be decided liaison with Theewaterskloof municipality. No person must be allowed to stay on neighbouring sites unless it is cleared with the owner. In such an event all requirements contained herein for the contractor’s camps will apply. vi. The contractor is responsible for cleaning the contractor’s camp and construction site of all structures, equipment, residual litter and building materials at the end of the construction period and, the topsoil restored in areas where landscaping is to take place. 	<ul style="list-style-type: none"> • Minimise water pollution. • Minimise dust fallout. • Minimise unwarranted environmental damage outside the footprint. • Maintain a clean and healthy working environment. • Minimise impact to surrounding environment. 	<ul style="list-style-type: none"> • No signs of water or soil pollution. • No complaints from surrounding landowners or I&APs. • No visible signs of litter. • Method statements. 	Monitor daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
E2 Fires <ul style="list-style-type: none"> i. The contractors must provide and maintain a method statement for “fires”, clearly indicating where and for what fires will be utilised plus details on the fuel to be utilised. ii. Absolutely no burning of waste is permitted on site. iii. Fires will only be allowed in facilities especially constructed for this purpose within fenced Contractor's camps. Wood, charcoal or anthracite are the only fuels permitted to be used for fires. The contractor must provide sufficient wood (fuel) for this purpose. iv. Fires within the designated areas must be small in scale so as to prevent excessive smoke being released into the air. 	<ul style="list-style-type: none"> • Maintain safety on site. 	<ul style="list-style-type: none"> • Method statement. 	Monitor daily.	
E3 Heritage <ul style="list-style-type: none"> i. In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), construction personnel must be alert and must inform the local heritage agency should they come across any findings of heritage resources within 24 hours. ii. If any heritage resources including archaeological material, paleontological material, graves or human remains are encountered during earth moving activities, all work must cease and they must be reported to Heritage Western Cape (HWC) immediately. HWC contact details is 021 483 9685. iii. The existing gum trees along Ou Kaapse Weg have local heritage resource significance and must be avoided. In cases where it is absolutely necessary to remove a tree, such tree(s) must be clearly marked prior to construction, reported to the ECO and permission to remove them must be obtained from Theewaterskloof municipality. iv. Should any archaeological artefacts be exposed during construction activities, work on the area where the artefacts were found must cease immediately and the ECO must be notified within 24 hours. v. Upon receipt of such notification, the ECO will arrange for the excavation to be examined by an Archaeologist. vi. Under no circumstances must archaeological artefacts be 	<ul style="list-style-type: none"> • Limit the destruction of the country's heritage resources. • The preservation and appropriate management of new archaeological finds should these be discovered during construction. 	<ul style="list-style-type: none"> • No destruction of or damage to known archaeological sites. 	Monitor Daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
removed, destroyed or interfered.				
E4 Access route / haul roads <ul style="list-style-type: none"> i. No unauthorised access is permitted. Any authorised clearing for access roads must be done under the supervision of the ECO. ii. Any damaged or degradation will be investigated and fines issued, the affected areas must be immediately rehabilitated. iii. Access roads for earthmoving-equipment must be clearly designated and be positioned as close as possible to the proposed development site. No driving off from the marked roads is permitted and designated parking areas must be identified and demarcated with applicable signage. 	<ul style="list-style-type: none"> • No unauthorised access is permitted. 	<ul style="list-style-type: none"> • No unauthorised access is permitted. 	As required, monitor daily.	
E5 Crime, safety and security <ul style="list-style-type: none"> i. No site staff, other than security personnel and skeleton staff will be housed on the site camp. The access to the site camp must be controlled so as to restrict unauthorised personnel from entering the site. The workers on site must retain some means of identification. The ESO and the contractor are responsible for ensuring that only authorised personnel are on site at all times. ii. The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. The contact details of this emergency centre, as well as the police and ambulance services must be available within the site camp and the construction crew camps. The contractor must ensure that lists of all emergency telephone numbers / contact persons are kept up to date. 	<ul style="list-style-type: none"> • Reduce the risk of potential incidences. 	<ul style="list-style-type: none"> • No incidences reported. 	Monitor daily.	
E6 Visual impact <ul style="list-style-type: none"> i. Shade cloth or a suitable material / barrier must be utilised to conceal and minimise the visual impact of contractor camps, lay down and storage area 	<ul style="list-style-type: none"> • Minimise visual impact. 	<ul style="list-style-type: none"> • No complaints from I&APs. 	Monitor daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
E7 Geotechnical <ul style="list-style-type: none"> i. All trenches and excavation works must be properly backfilled and compacted according to specifications given in sub-clause 5.2.4. Of SABS 1200DA. ii. Mechanical methods of rock breaking will have noise and dust impacts that must be managed. Method Statements for mechanical breaking must be provided by the ER. iii. There must be roadbed drainage in areas where surface water and very shallow groundwater conditions pertain to allow for damp-proofing. 	<ul style="list-style-type: none"> • Minimise potential structural faults. • Minimise trench collapse. 	<ul style="list-style-type: none"> • No visible signs of backfill deterioration or trench collapse. 	As and when required.	
E8 Air Quality <ul style="list-style-type: none"> i. There must be a contingency plan with respect to odour, flies and litter, etc. 	<ul style="list-style-type: none"> • Minimise health and respiratory risks to construction workers. 	<ul style="list-style-type: none"> • No incidents of health-related complaints 	Daily	
E9 Hydrology <ul style="list-style-type: none"> i. The contractor must ensure that excessive quantities of sand, silt and silt-laden water do not enter the storm water system. Appropriate measures, e.g. erection of silt traps, or drainage retention areas to prevent silt and sand entering drainage or watercourses must be taken. These measures must be reviewed and audited by the ECO. 	<ul style="list-style-type: none"> • Minimise pollution of surface and ground water resources in the immediate and surrounding environments. • Minimise impeding the natural flow of water. • Minimise the impact on storm water flow dynamics. 	<ul style="list-style-type: none"> • No visible signs of pollution. 	As and when required, monitor daily.	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
<p>E10 Soil erosion</p> <ul style="list-style-type: none"> i. Contractor must ensure that excavation backfill material is compacted to the required level to prevent post developments. ii. Trent excavation width must strictly be limited to the minimum required width for the specified pipe size. iii. Vegetation and soil must be retained in position for as long as possible and removed immediately ahead of construction. Natural trees, shrubbery and grass species must be retained wherever possible. 	<p>To minimise erosion</p> <p>Ensure stormwater system is functioning optimally</p> <ul style="list-style-type: none"> • Address all areas of soil erosion promptly to reduce silting of the stormwater system 	<ul style="list-style-type: none"> • No signs of erosion 	<p>Once-off and monitor weekly</p>	

Phase of development	OPERATION
Impact / issue	Operation (G)

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION	NOTES
G1 Site Rehabilitation <ul style="list-style-type: none"> i. The Contractor shall be responsible for rehabilitating all areas cleared or disturbed for construction purposes to return these areas to their former condition. This will include removal of all cement sludge, waste concrete, builders, refuse etc., ripping of compacted surfaces to a depth of 150 mm to loosen soil. 	Minimise the impacts of construction activity	No post development deterioration of the environment.	Daily	
G6 Record Keeping <ul style="list-style-type: none"> i. Where applicable, the applicant must ensure that evidence of all disposed and contaminated products, waste or residues, which have been generated at the construction site, is documented. ii. The applicant must ensure that complaints received by the during construction are documented. 	To ensure proper overall management and maintenance of the facility	No complaints from adjacent landowners, residents and other parties	Daily	

ANNEXURE 1 (SAMPLE)

DECLARATION OF UNDERSTANDING BY THE DEVELOPER

I, _____

Representing _____

Declare that I have read and understood the contents of the Construction Environmental Management Programme for:

Contract: **Upgrading of bulk water – Grabouw, Phase 5**

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 2 (SAMPLE)

DECLARATION OF UNDERSTANDING BY THE ENGINEER

I, _____

Representing _____

Declare that I have read and understood the contents of the Construction Environmental Management Programme for:

Contract **Upgrading of bulk water – Grabouw, Phase 5**

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 3 (SAMPLE)

DECLARATION OF UNDERSTANDING BY THE CONTRACTOR

I, _____

Representing _____

Declare that I have read and understood the contents of the Construction Environmental Management Programme for:

Contract **Upgrading of bulk water – Grabouw, Phase 5**

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

METHOD STATEMENT: **Solid Waste Management**

CONTRACT:..... **DATE:**.....

WHAT WORK IS TO BE UNDERTAKEN? [give a brief description of the works to be undertaken on site that will generate waste (hazardous and non-hazardous wastes)]: * Note: please attach extra pages if more space is required.

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

METHOD STATEMENT: **Solid Waste Management (contd.)**

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.....

End Date:.....

HOW IS WASTE TO BE MANAGED ON SITE? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated:_____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

ANNEXURE 5 (SAMPLE)

INCIDENT AND ENVIRONMENTAL LOG

ENVIRONMENTAL INCIDENT LOG				
Date	Env. Condition	Comments <i>(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)</i>	Corrective Action Taken <i>(Give details and attach documentation as far as possible)</i>	Signature

ANNEXURE 6

TYPICAL INCIDENTS AND RECURRING PENALTIES

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Failure to secure construction site from public access	R5,000
Failure to demarcate working areas and servitudes and/or maintain fences and/or demarcation tape.	R1,000
Failure to stockpile topsoil correctly (per incident)	R2,000
Failure to stockpile materials in designated areas (per incident)	R500
Discharging effluent and/or polluted storm water onto the ground or into surface water (per incident)	R2,000
Failure to provide adequate sanitation, waste disposal facilities or services (per incident)	R1,000
Failure to demarcate construction area boundaries before commencing construction clearance and other activities (per incident)	R5,000
Venturing into or undertaking construction related activities within no-go areas, without formal written approval from the ECO (per incident)	R5,000
No induction regarding environmental matters and site housekeeping practices (per employee)	R2,000
Stockpile of soils and materials outside demarcated areas (per incident)	R1,000
Inappropriate mixing of cement/concrete and poor management of concrete slurry (per incident)	R2,000
Burning of waste on site (including cement bags) (per incident)	R 2,000
Untidiness and litter at camp (per incident)	R200
Unauthorised removal of indigenous trees, medicinal or other plants (per incident)	R2,000
Damaging/killing animals/birds (per incident)	R 1,500
Failure to erect temporary fences as required (per incident)	R2,000
Failure to reinstate disturbed areas within the specified timeframe (per incident)	R2,000
Fire – costs of runaway fires will be borne by the Contractor, should he/she be proven responsible for such fires (per incident)	R25,000
Failure to provide adequate equipment for emergency situations (per incident)	R5,000
Defacing, painting or damaging natural or heritage features (per incident) – mandatory removal of employee from site	R5,000
Damaging cultural, historical and/or archaeological sites of importance (per incident) – mandatory removal of employee from site	R5,000
Failure to maintain basic safety measures on site	R1,000
Failure to carry out required community liaison, damage to property etc., without prior negotiation and/or compensation and other social infringements (per incident)	R1,000

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refuelling (per incident)	R2,000
Failure to provide drip trays and/or empty them frequently (per incident)	R500
Inappropriate use of bins and poor waste management on site (per incident)	R500
Inappropriate off-site disposal of waste from site (per incident)	R10,000
Deliberate lighting of illegal fires on site (per incident)	R1,000
The eating of meals on site outside the defined eating area. Individual not making use of the site ablution facilities (per incident)	R200
Inappropriate use of adjacent watercourses and water bodies – such as for unapproved water abstraction, washing of vehicles, wastewater disposal and use by employees for washing (per incident)	R1000
Any person, vehicle, item of plant, or anything related to the Contractor's operations causing a public nuisance (per incident)	R500
Construction vehicles not adhering to speed limits (per incident)	R200
Failure to maintain and register incidents in the incident register (per incident)	R1,000
Failure to remove all temporary features and leftovers from the construction site and works areas upon completion of the works (per incident)	R50,000
Any contravention with a Method Statement (per incident)	R5,000
Repeated contravention of the specifications or failure to comply with instructions (per incident)	R5,000

NOTE: THE SUBJECTION AND PAYMENT OF A PENALTY DOES NOT ABSOLVE THE CONTRACTOR FROM FULLY REMEDYING ANY TRANSGRESSION OR ENVIRONMENTAL DAMAGE. SHOULD THE CONTRACTOR FAIL TO ADDRESS HIS NON-CONFORMANCE, DOHS HAS THE RIGHT TO REMEDY THE INCIDENT AND RECOVER THE COSTS FROM THE CONTRACTOR.

ANNEXURE E

1. GEOTECHNICAL REPORT- AVAILABLE ON REQUEST

ANNEXURE F

COMMUNITY LIAISON OFFICER CONTRACT

Contract of Temporary Employment as Community Liaison Officer

Construction Contract No.:

PROJECT

AGREEMENT made between the CONTRACTOR
and the Community Liaison Officer....., hereafter
referred to as the CLO, for the appointment and employment of a CLO for the duration of the work in respect of the
above named construction contract.

1. THE PARTIES HAVE AGREED THAT

The CLO will be employed by the CONTRACTOR on a temporary basis for the duration of the work from the date of signing this agreement to the date of practical completion as defined in the Contract, subject to all the conditions set out below.

2. THE DUTIES OF THE COMMUNITY LIAISON OFFICER SHALL BE:

1. to keep the community informed on the progress of the project;
2. to keep the Contractor informed on relevant Community affairs and possible grievances;
3. to manage the recruitment of workers from the Sub-Council Job-Seekers Database;
4. to assist the Contractor's supervisory staff in the management of the workers.

3. THE FOLLOWING CONDITIONS OF EMPLOYMENT SHALL APPLY:

The Conditions of Temporary Employment as applicable on this Contract for the workers recruited from the Community shall apply equally to the CLO, except that the rate of remuneration shall be R420 per working day. These conditions that apply are listed below as they appear in the Contract of Temporary Employment:

- 3.1 If required to work on a statutory public holiday or Sunday the payment will be double the amount stated in the previous paragraph.
- 3.2 Maximum hours of work:
 - (i) 9¼ hours per day
 - (ii) 45 hours per week;
 - (iii) 5 days per week;
 - (iv) 5 hours without an interval, whereupon there shall be an interval of at least 30 minutes;
 - (v) A spread-over period of 12 hours.
- 3.3 The CLO shall be entitled to payment where he is prevented from working by reasons which are within the control of the Contractor.
- 3.4 On days when it is raining the Contractor may, before 9 a.m., decide not to open the site and there will be no pay.

If the Contractor closes the site between 9 a.m. and 1 p.m., the CLO will be paid half the daily wage.

If the site works later than 1 p.m., the CLO will be paid the full daily wage.

3.5 Workers and the CLO will not be permitted to work under conditions of:

- (i) undisciplined or unruly behaviour;
- (ii) insubordination to Team Leader, Supervisors or Management;
- (iii) abuse of intoxicating substances;
- (iv) criminal actions by the employee;
- (v) strike action or political stayaways.

3.6 Workers, including the CLO, may be dismissed after two official written warnings for the following behaviour:

- (i) undisciplined or unruly behaviour;
- (ii) insubordination to Team Leader, Supervisors or Management;
- (iii) abuse of intoxicating substances;
- (iv) wilful or negligent damage to or loss of machines or equipment.

The Contractor shall ensure that he has statements from at least two witnesses concerning any of the above situations.

The Contractor shall inform the CLO within 24 hours of any warning issued to workers employed from the Job-Seekers Database.

3.7 The CLO will be paid on a Friday afternoon every two weeks, one week in arrears.

3.8 The CLO shall be given a statement with each payment on which is recorded:

- (i) the name of the Contractor;
- (ii) the CLO's name;
- (iii) the number of days worked by the CLO;
- (iv) the rate per day;
- (v) the details of any deductions made;
- (vi) the actual amount paid to the CLO.

3.9 No deduction shall be made from the remuneration except where the CLO consents in writing or unless the Contractor is permitted or required to do so by law or the order of any competent court.

3.10 The CLO shall be supplied free of charge with all health and safety equipment required by the Occupation Health and Safety Act. The equipment shall remain the property of the Contractor.

3.11 The Contractor must give the CLO at least one week's notice of the termination of the Contract of Temporary Employment. If this is not done, the CLO must be paid earnings for five days. This condition does not apply if the CLO is dismissed.

3.12 At the end of the period of temporary employment, the Contractor shall provide a Certificate of Service recording the Contractor's name, the CLO's name and address, the period of service, the type of work on which the CLO was engaged and the rate of remuneration on termination.

4. **TERMINATION OF AGREEMENT**

4.1 If the CLO can no longer perform and execute his/her duties as detailed in this agreement, this agreement will be terminated without prejudice to any rights under this agreement.

5. **THE CONDITIONS OF THIS AGREEMENT**

5.1 The parties expressly declare that this agreement contains all the conditions negotiated between them, and no condition or stipulation not contained herein shall be binding upon the parties.

6. **THUS AGREED AND SIGNED BY THE PARTIES:**

Contractor:

Community Liaison officer:

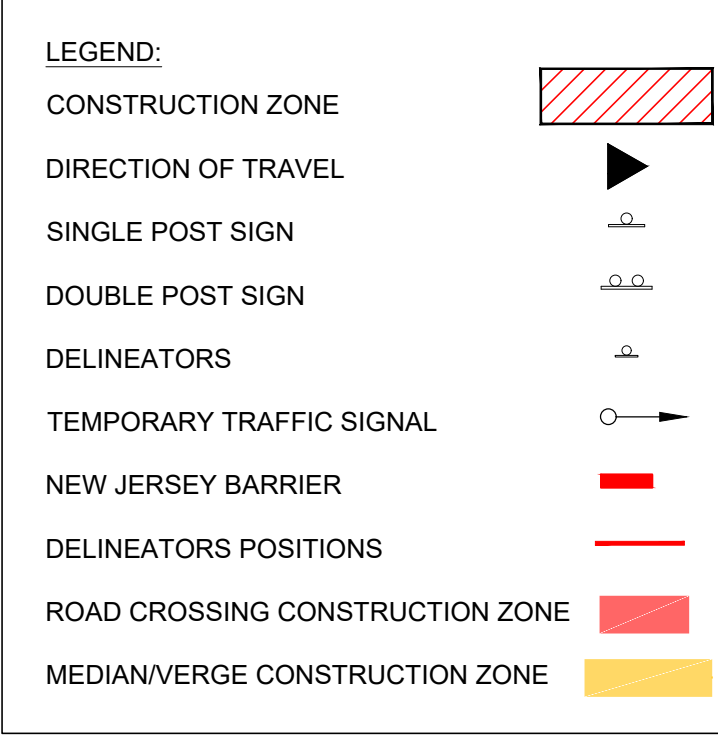
Date:

ANNEXURE G

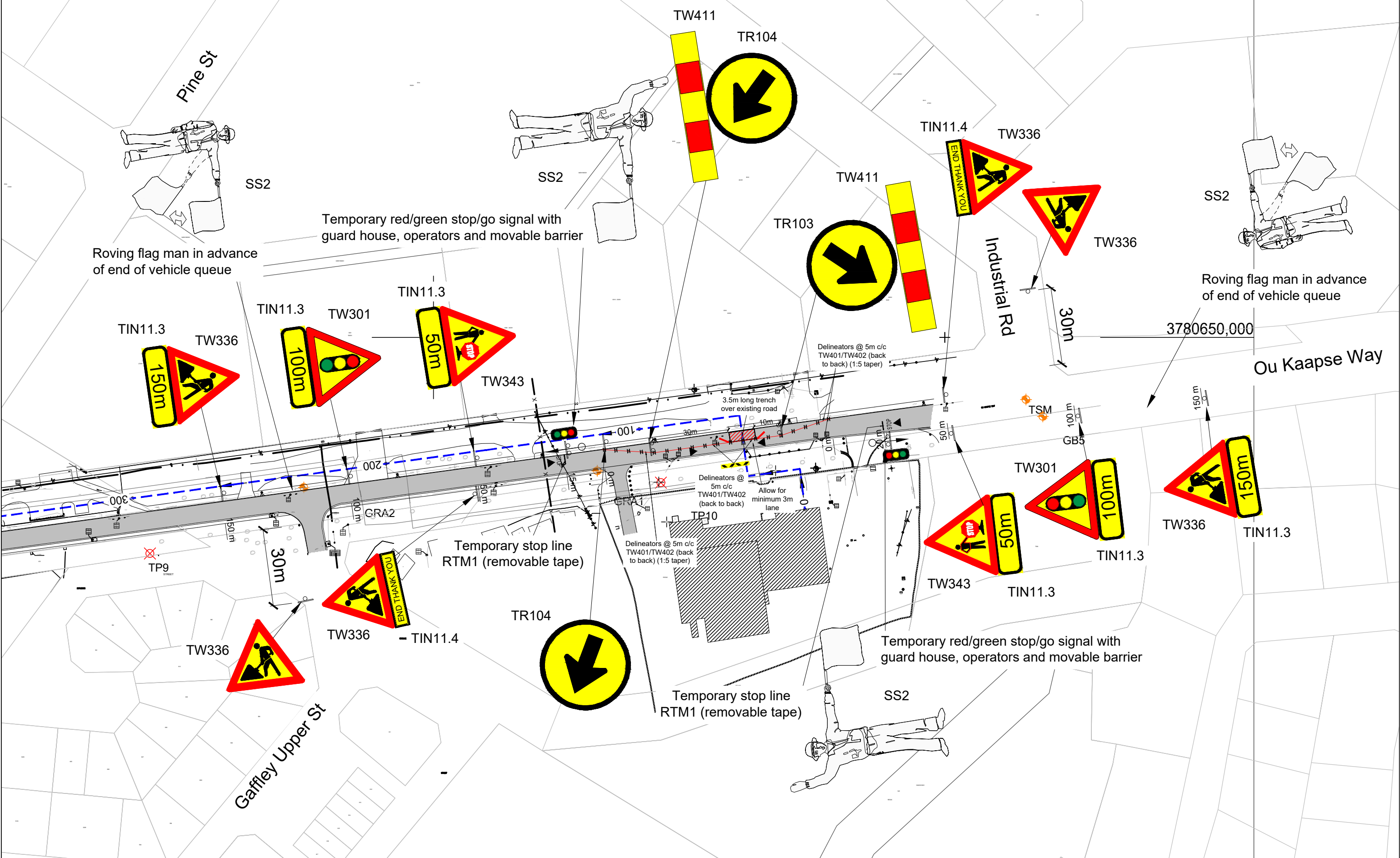
TRAFFIC ACCOMMODATION PLAN



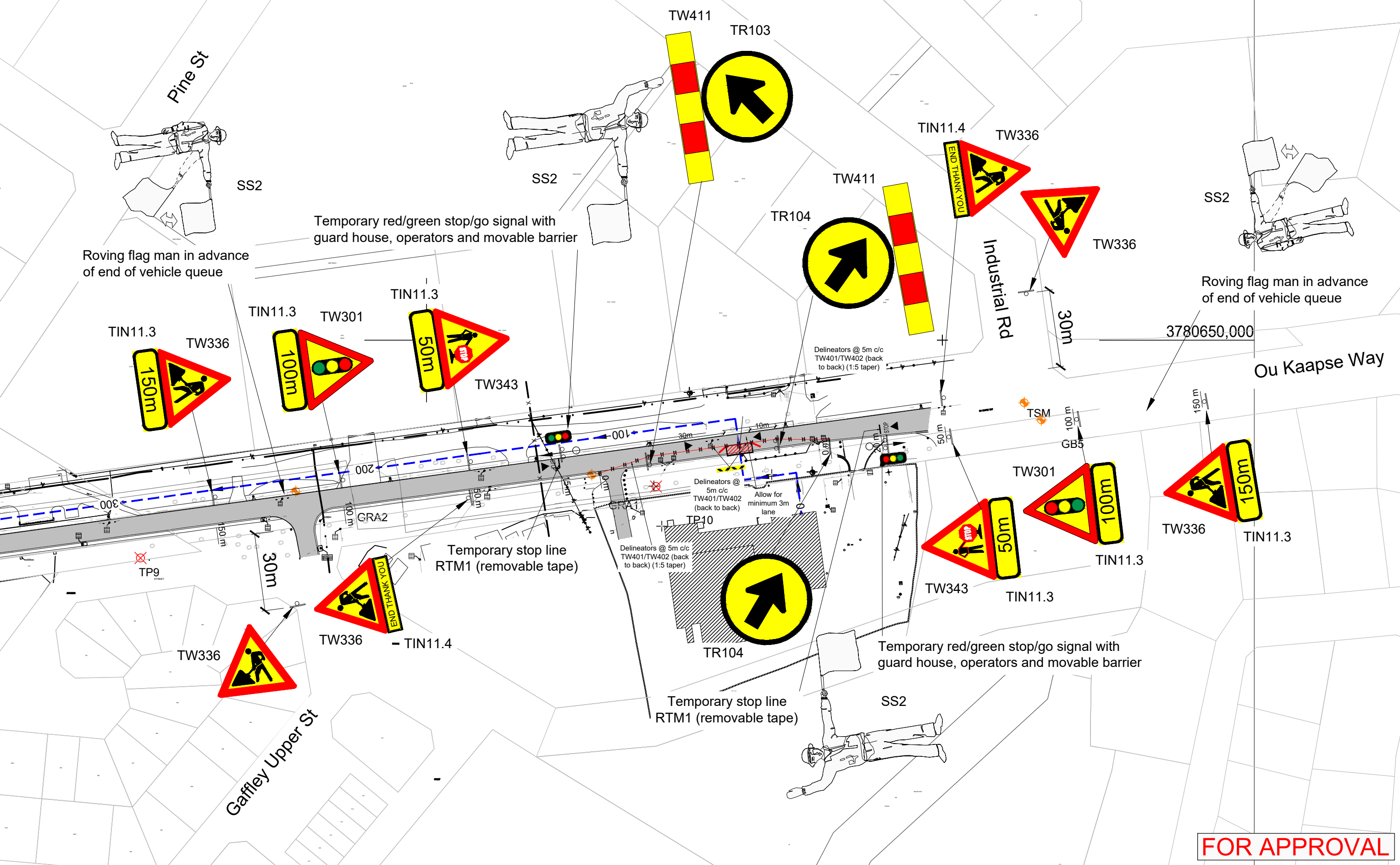
- Notes:
1. All temporary road signs shall comply with the SADC-RTSM latest edition.
 2. This drawing is generic and shall not be scaled.
 3. Final positioning of signs to be approved by the Engineer before implementation.
 4. All road work delineator signs (TW401 & TW402) shall be manufactured from a flexible material and should comply with SABS 1555 and be of a 200mm x 800mm nominal size with Class 1 retroreflective material on the blade facing the oncoming traffic
 5. All road work delineator signs (TW401 & TW402) should be so positioned that encroachment on the adjacent running lane is avoided as far as possible.
 6. Road signs to be removed after temporary closures.
 7. Flagmen to wear appropriate roadwork attire as specified in SADC-RTSM vol 2, chap 13, page 13.7.3
 8. Half width closures: Lane widths of minimum 3m shall remain open to traffic.
 9. Median construction: All road signs and delineators to be moved to median during after hours.
 10. Traffic accommodation plan only accommodates work performed in a sequential manner and only one access point / road can be closed at a given time.
 11. Flagmen shall be issued with two-way radios for stop/go operations.
 12. Temporary traffic signal: Traffic control stations shall be provided as each traffic control point as indicated as shall have the following:
 - 12.1. A trained traffic operator/controller
 - 12.2. a communication system that allows the operators at each end to communicate
 - 12.3. A red/green stop/go electric traffic signal system
 - 12.4. A floodlight system to illuminate the traffic control point during hours of darkness
 - 12.5. Electrical power supply
 - 12.6. A moveable barrier fitted with a stop sign facing oncoming traffic
 13. Delineator Spacing:
Straights : 5m - 10m
Tapers : 5m



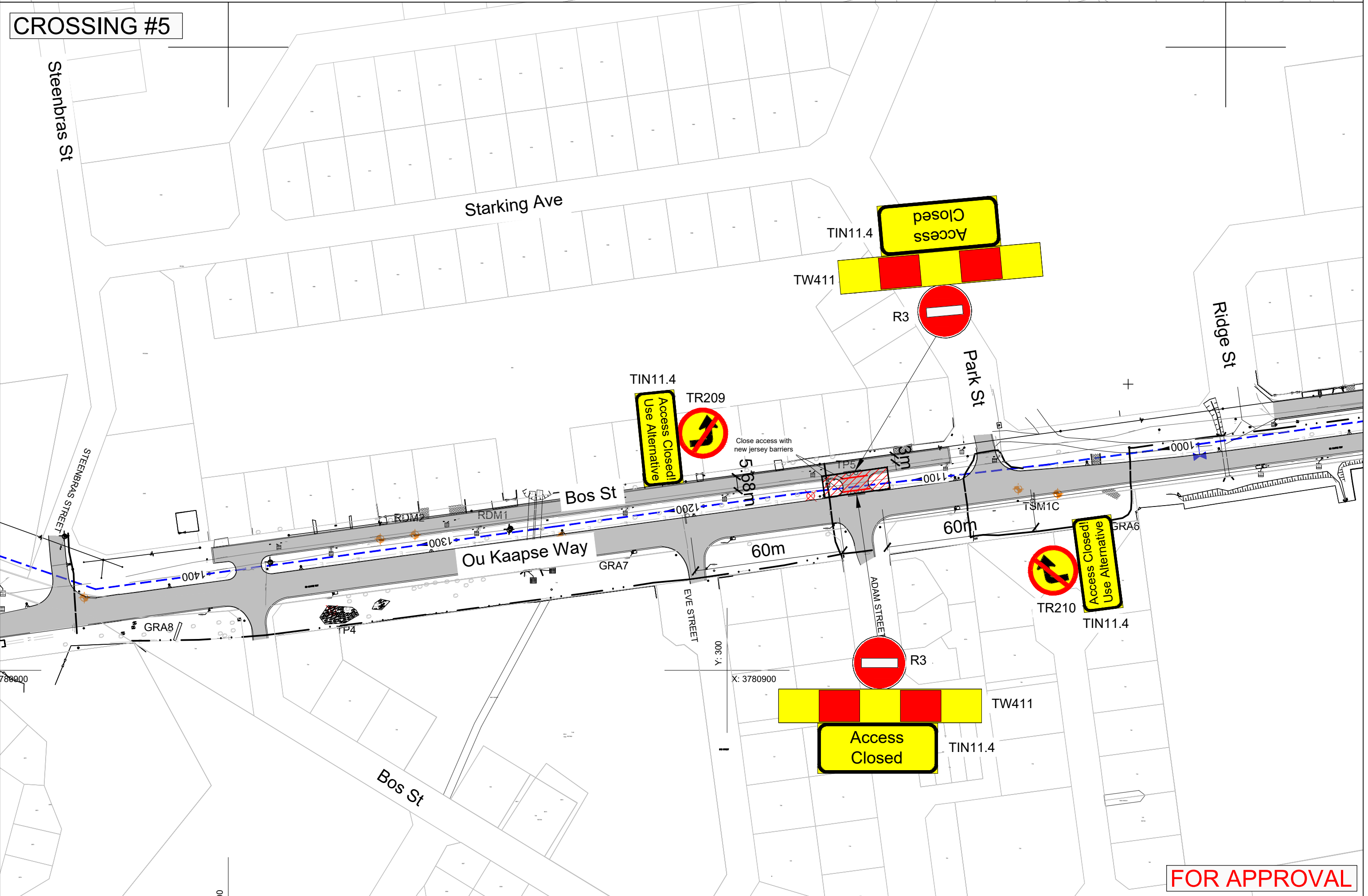
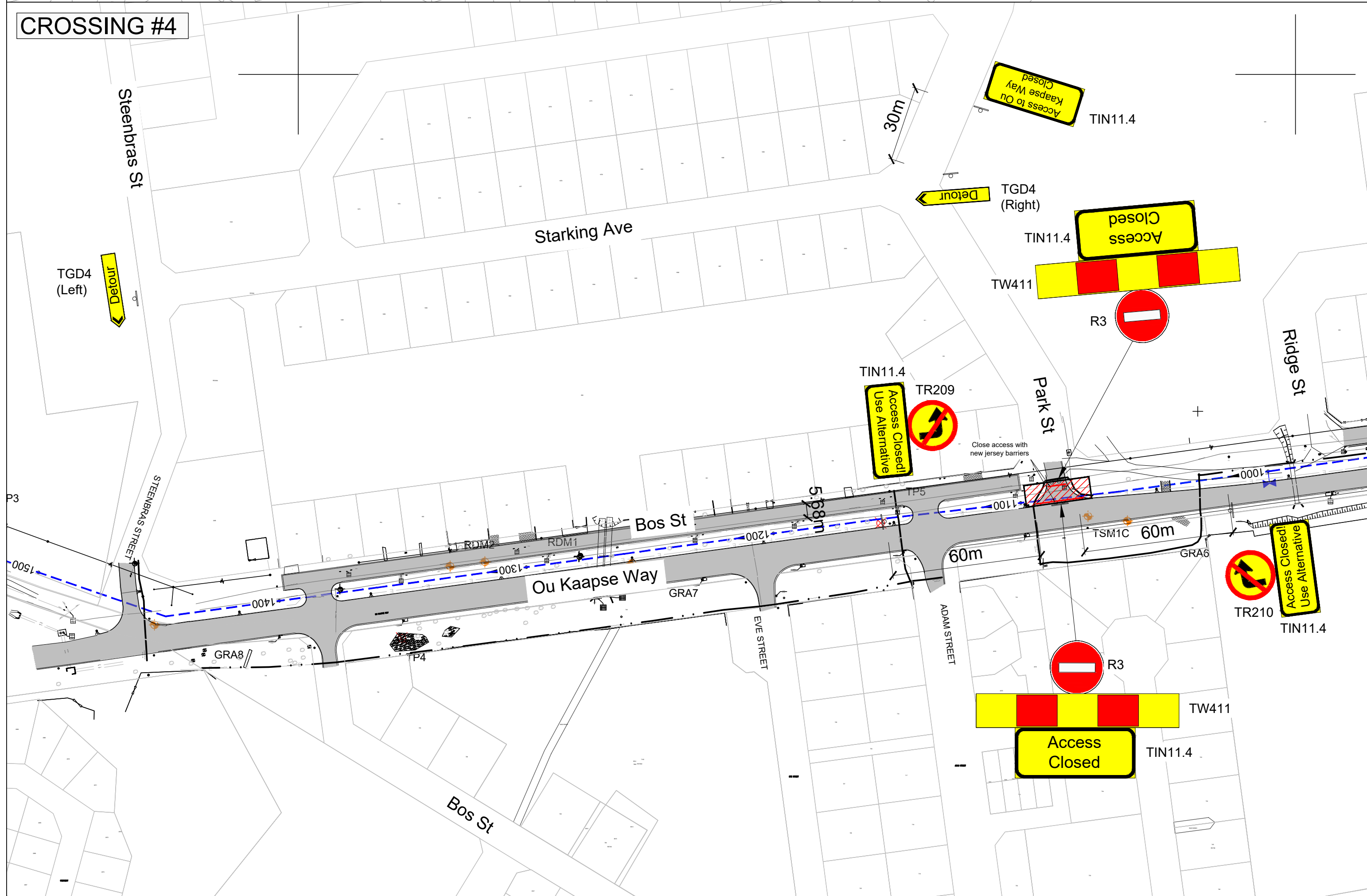
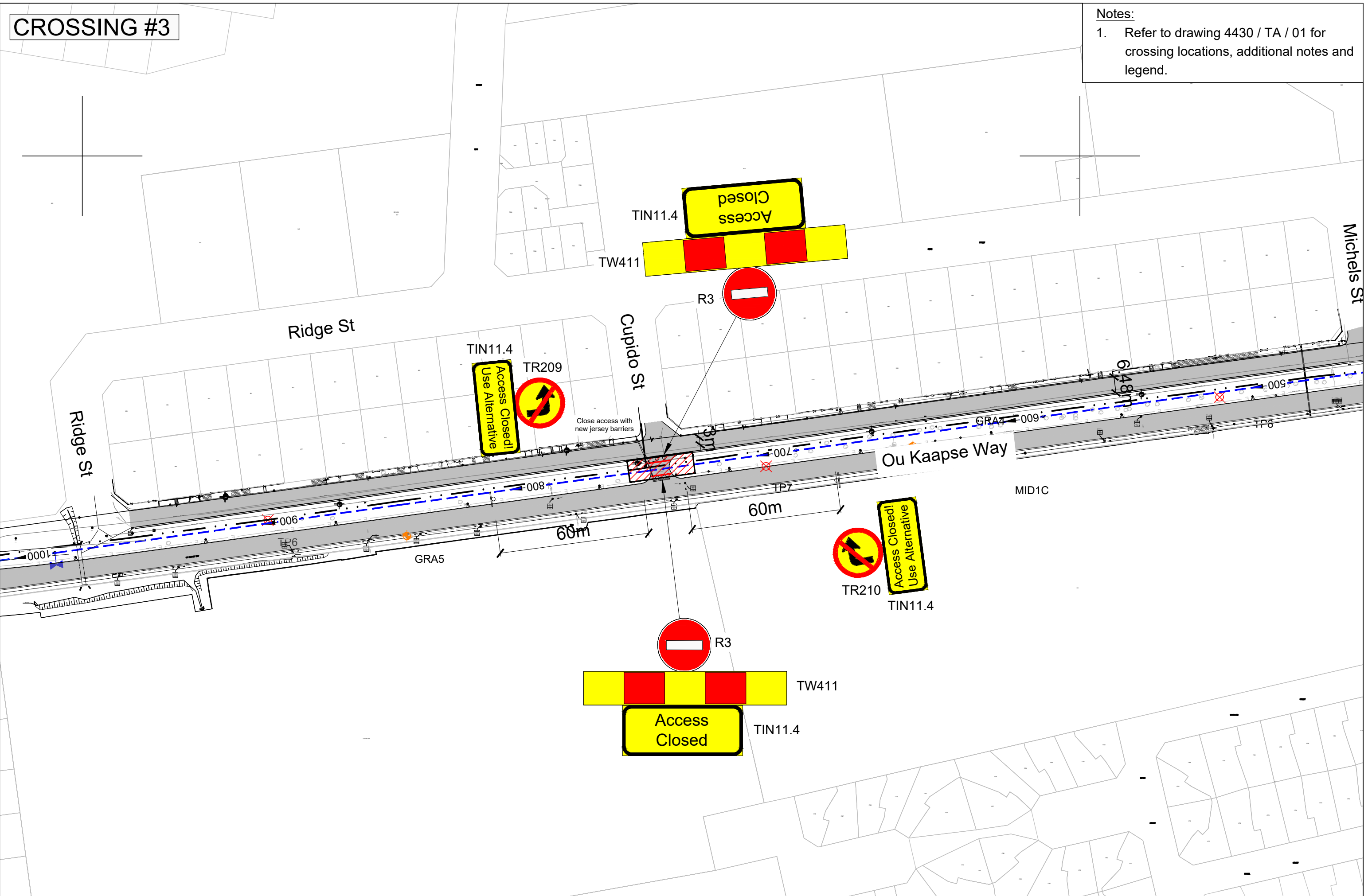
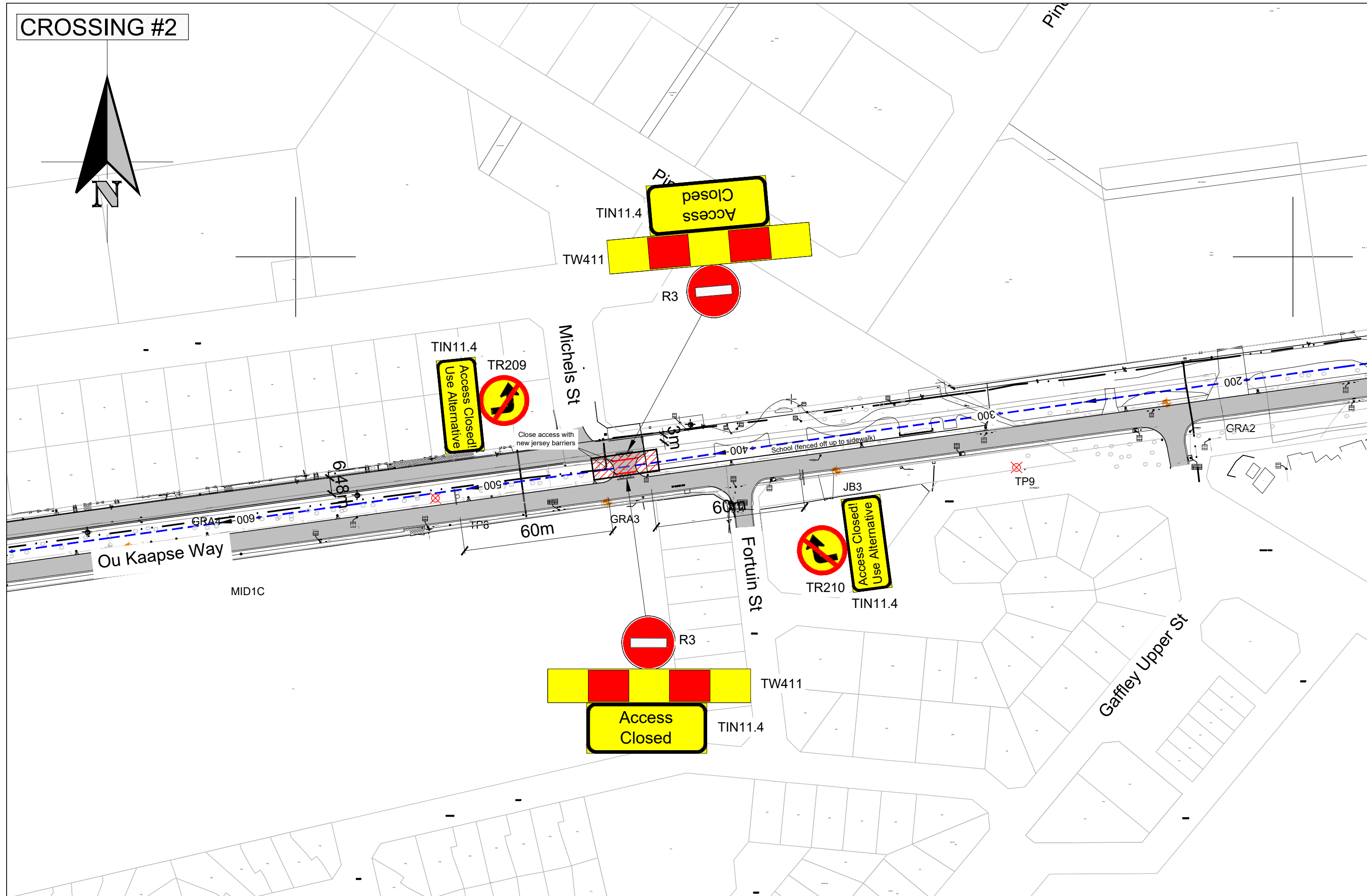
CROSSING #1 - EASTBOUND LANE CLOSED

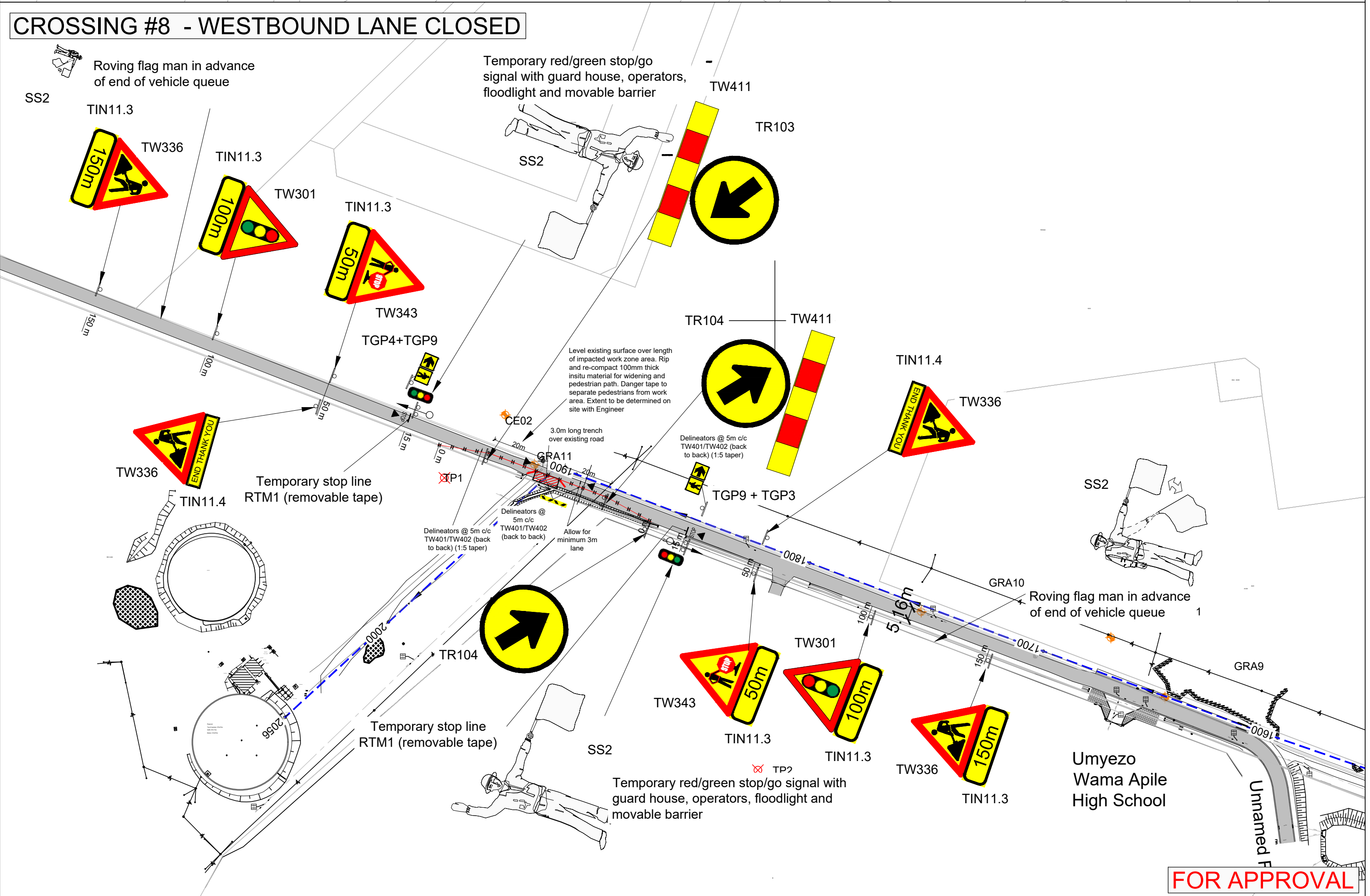
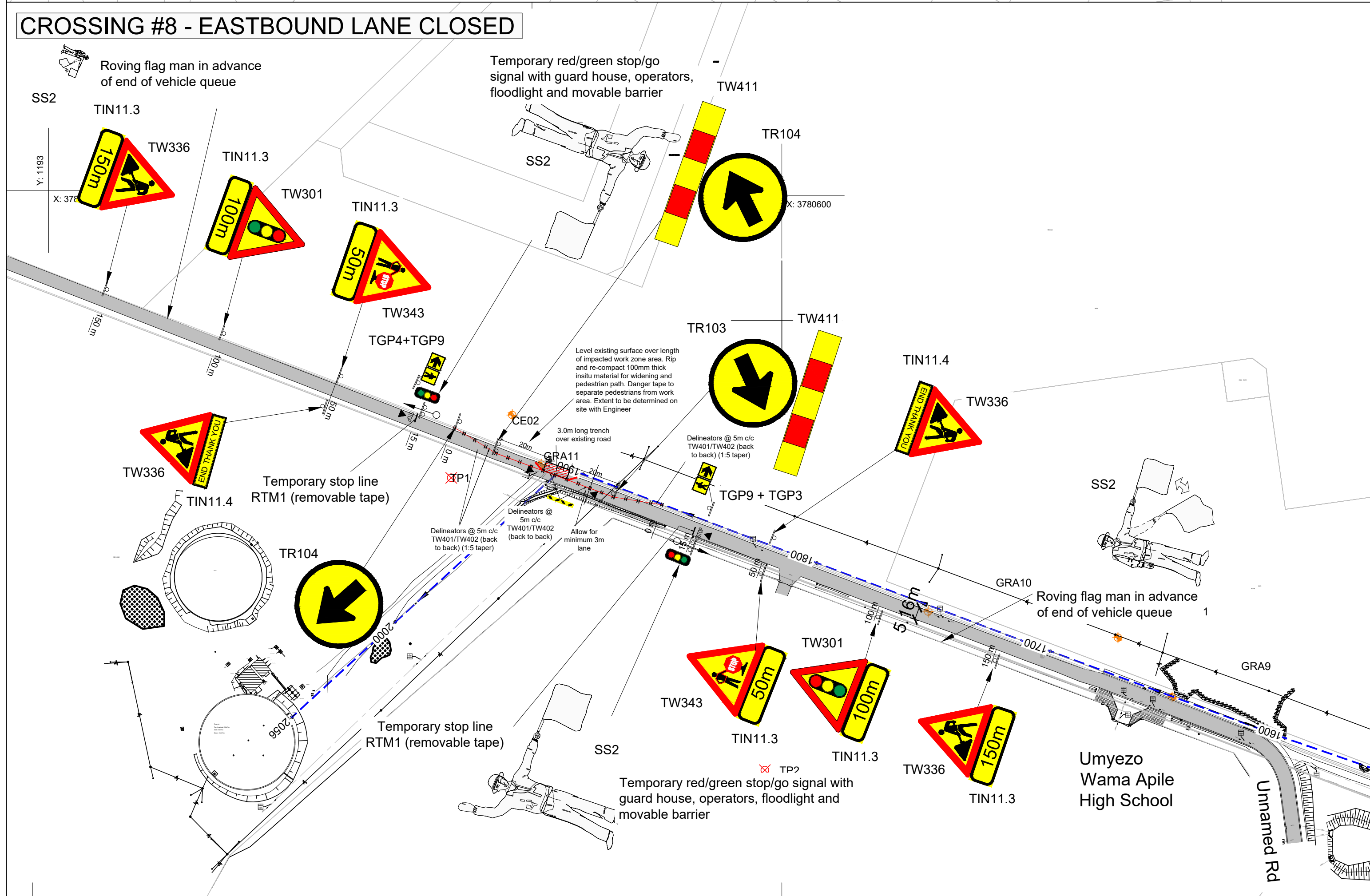
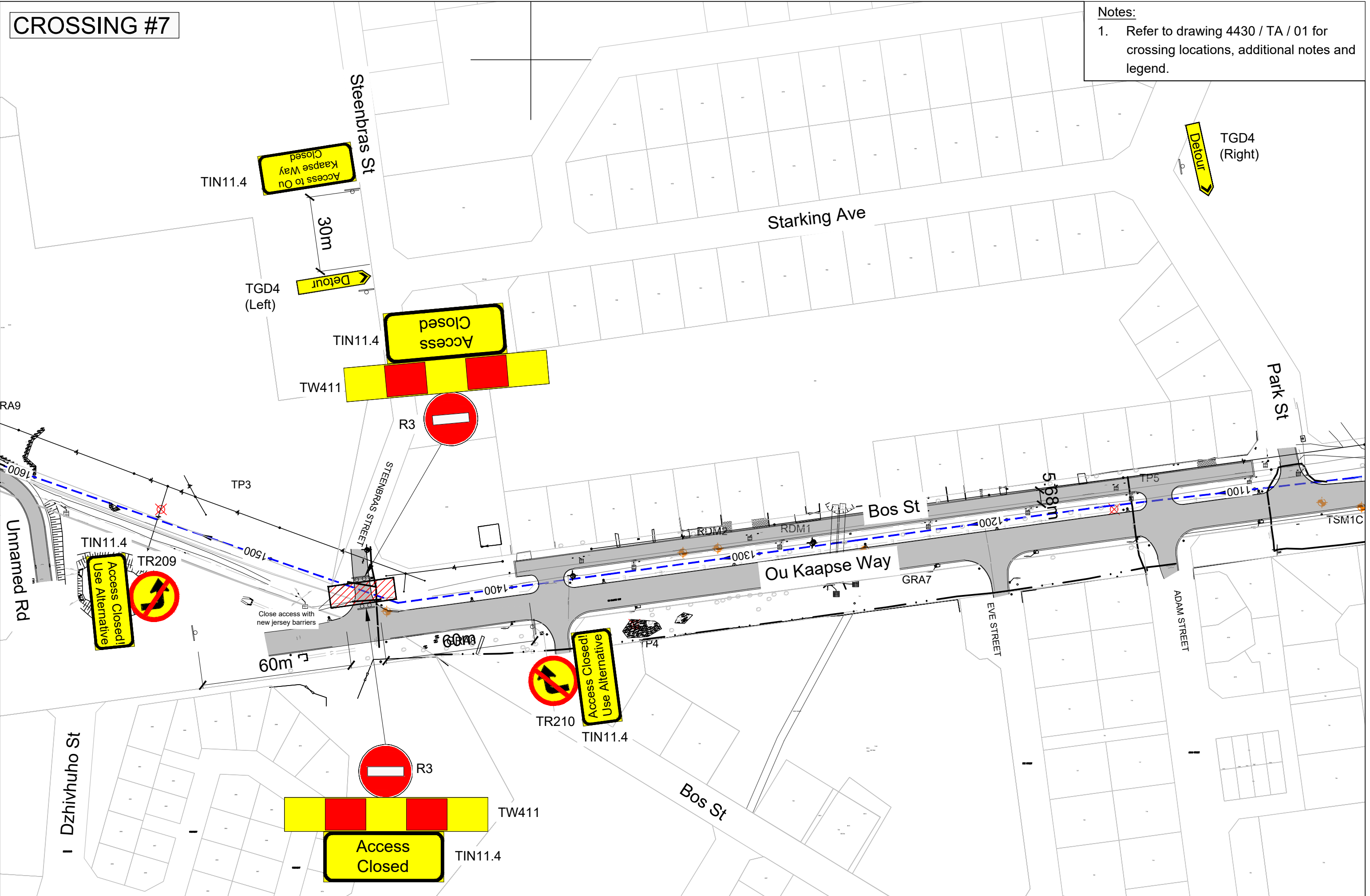
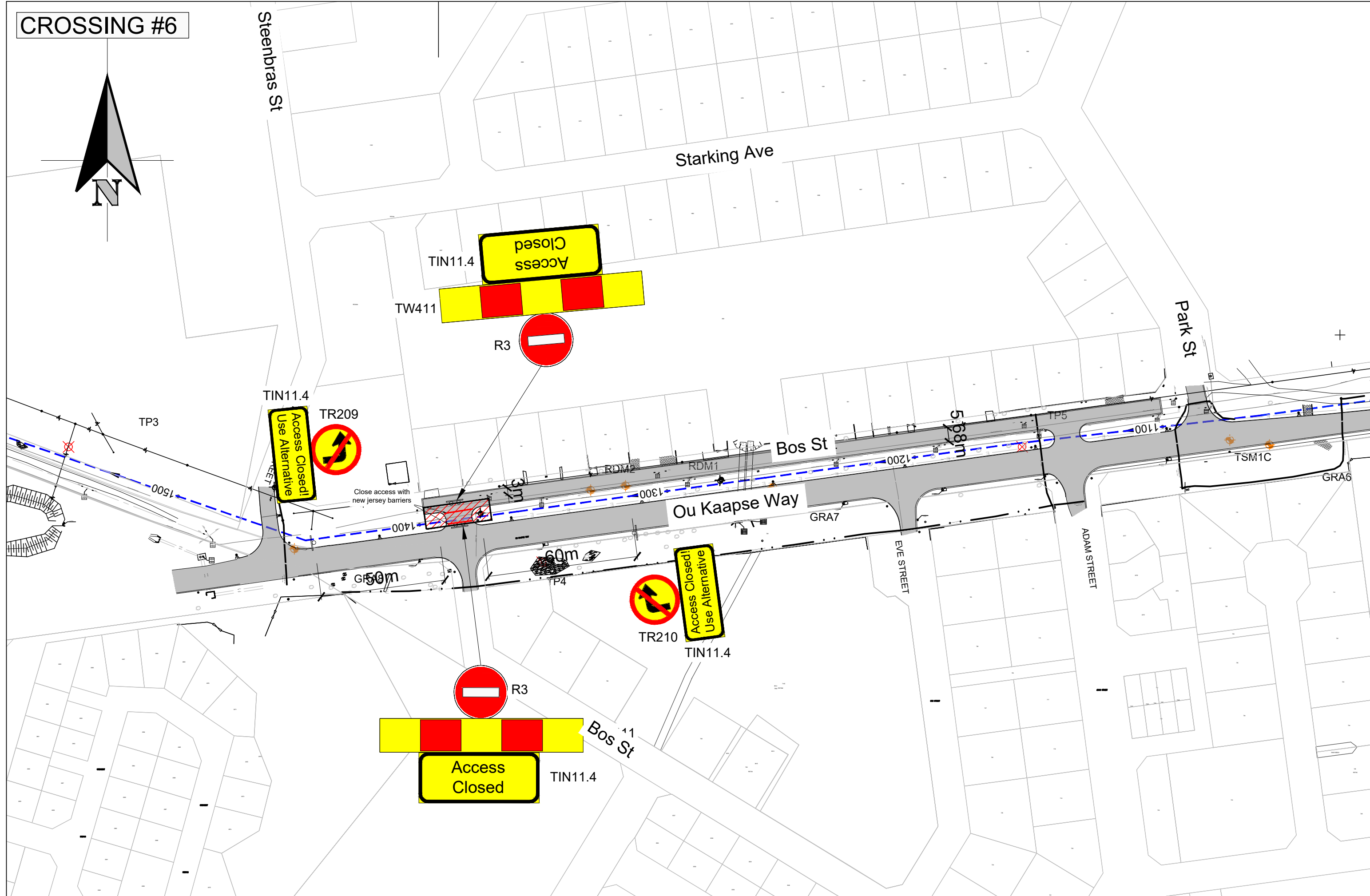


CROSSING #1 - WESTBOUND LANE CLOSED

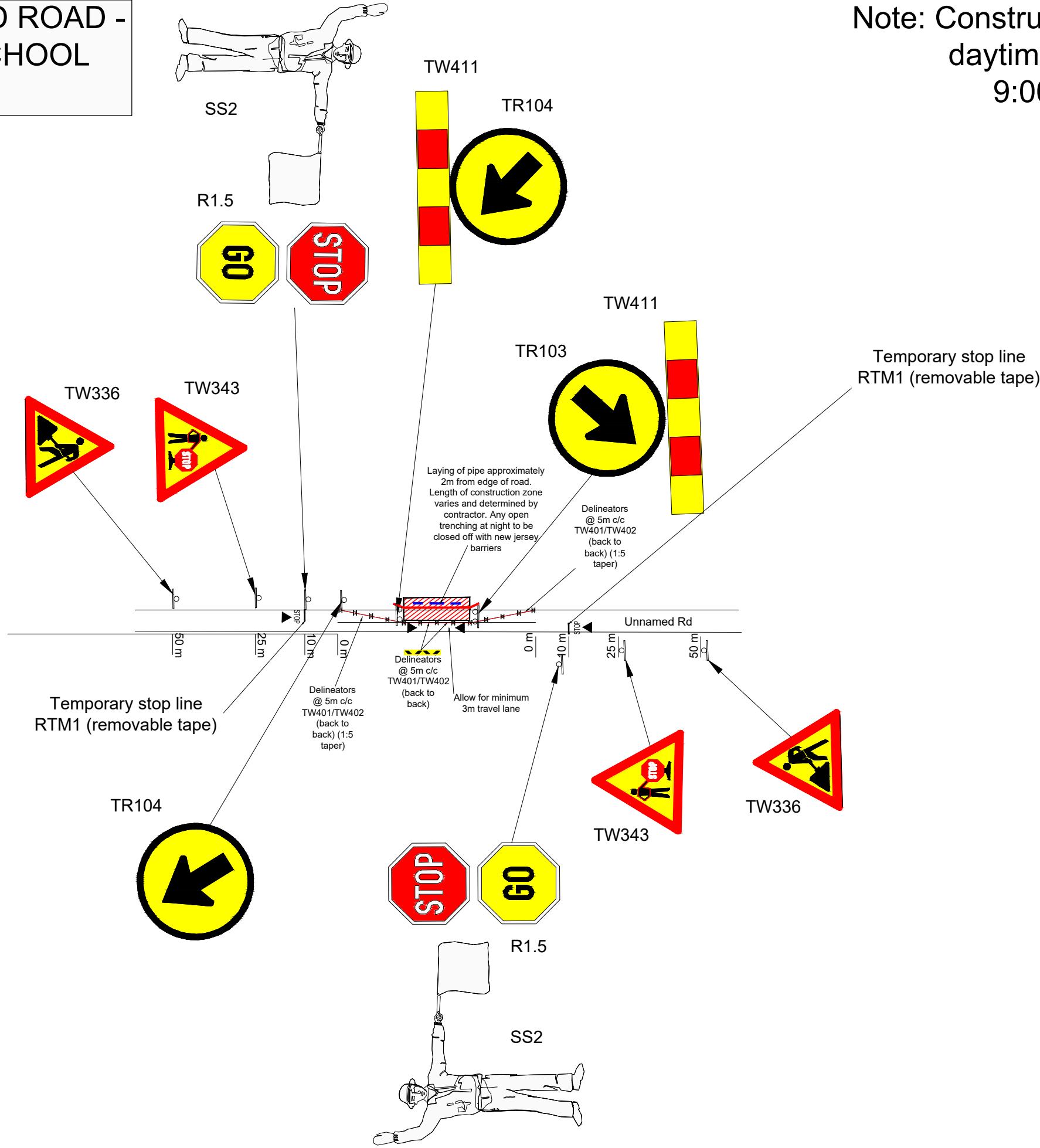
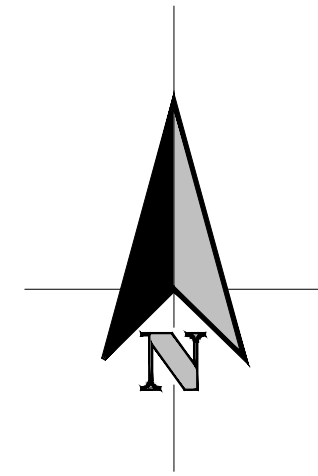


FOR APPROVAL



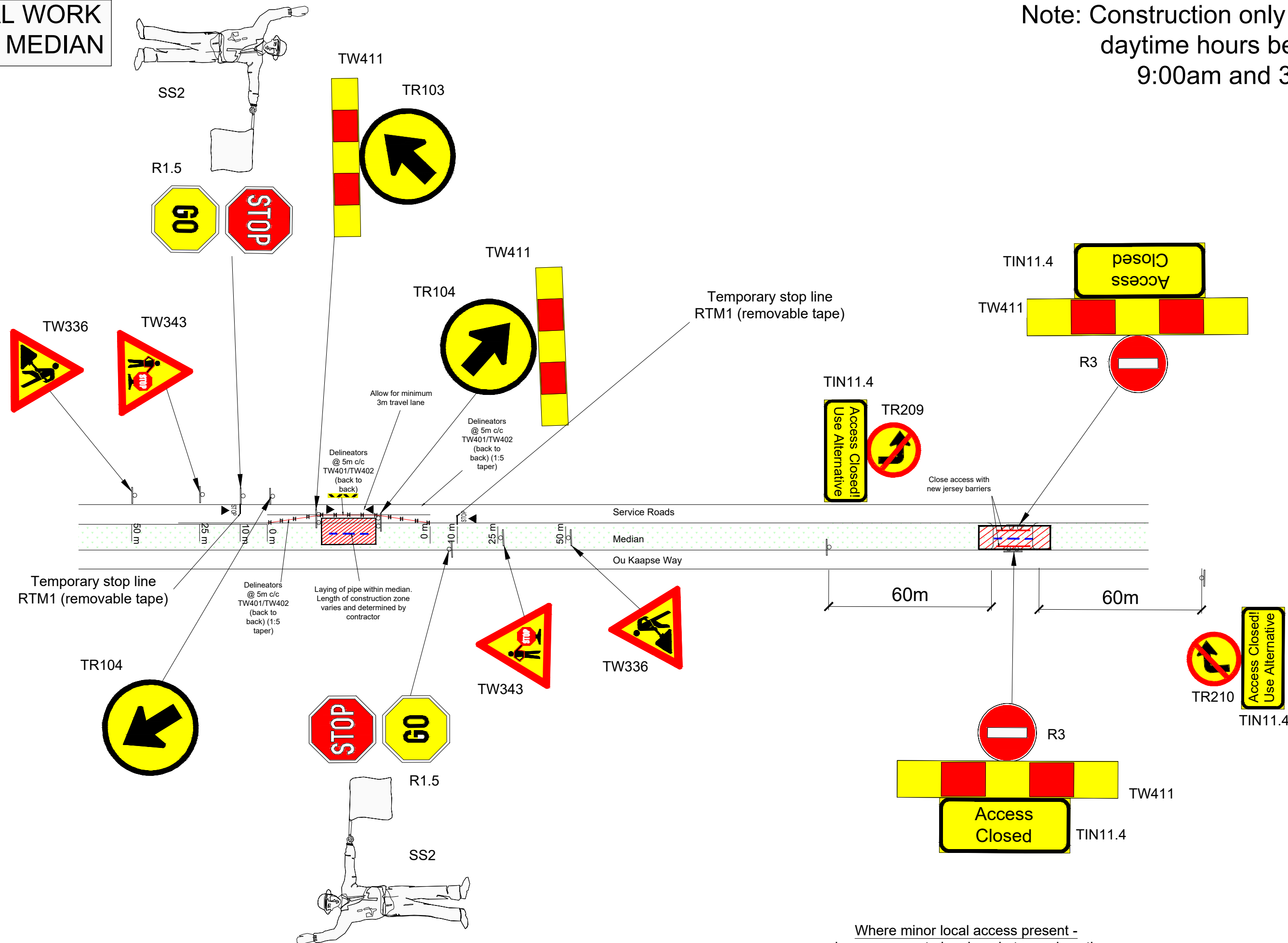


WORK ALONG SIDE OF UNNAMED ROAD -
UMYEZO WAMA APILE HIGH SCHOOL
ROAD



Note: Construction only during
daytime hours between
9:00am and 3:30pm

TYPICAL WORK
WITHIN MEDIAN



Note: Construction only during
daytime hours between
9:00am and 3:30pm

Where minor local access present -
only one access to be closed at any given time

Notes:

1. Refer to drawing 4430 / TA / 01 for additional notes and legend.

NO.	QUANTITY	SKETCH OF SIGN & SIGN CODE (SARTSM)	SIZE	MATERIAL CLASS	NO.	QUANTITY	SKETCH OF SIGN & SIGN CODE (SARTSM)	SIZE	MATERIAL CLASS
1	20X final to be determined on site		TW401	80mm x 200mm Background: Class 1	11	2X		80mm x 300mm Border: Class 1 Letter: Semi-matt Background: Class 1	
2	20X final to be determined on site		TW402	80mm x 200mm Background: Class 1	12	2X		80mm x 300mm Border: Class 1 Letter: Semi-matt Background: Class 1	
3	1X		TR104	80mm Diameter Border: Semi-matt Letter: Semi-matt Background: Class 1	13	2X		80mm x 300mm Border: Class 1 Letter: Semi-matt Background: Class 1	
4	1X		TR104 & TW411	80mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	14	2X		80mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
5	1X		TR103 & TW411	80mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	15	2X		80mm x 300mm Border: Class 1 Letter: Semi-matt Background: Class 1	
6	2X		R3 & TW411.4	80mm x 300mm Border: Class 2 Letter: Semi-matt Background: Class 1	16	1X		100mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
7	1X		TR209 & TIN11.4	80mm Diameter Border: Semi-matt Letter: Semi-matt Background: Class 1	17	1X		100mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
8	1X		TR210 & TIN11.4	80mm Diameter Border: Semi-matt Letter: Semi-matt Background: Class 1	18	1X		100mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
9	2X		TIN11.4	100mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	19	1X		400mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
10	2X		R1.5	80mm Diameter Border: Class 2 Letter: Semi-matt Background: Class 1	20	1X		400mm x 300mm Border: Semi-matt Letter: Semi-matt Background: Class 1	
					21	2X		Temporary red/green stop/go signal with guard house, operators and movable barrier	
					22	4X		2x stop/go operators, 2x moving all end of vehicle queue for road crossings. Flag man - SS2(x & d)	

FOR APPROVAL

APPROVED - AS BUILT

Name : -
Prof. Reg. No. : -
Date : -

APPROVED - CONSTRUCTION

Name : -
Prof. Reg. No. : -
Date : -

NO	DATE	REVISION	SIGNED
0	2022/02/02	ISSUED FOR APPROVAL	

DESIGNED:

NAME: N Platte

REVIEWED:

NAME: G Matthee

DRAWN:

COPYRIGHT RESERVED

SIGNED:

SIGNATURE: [Signature]

PR NO: 20070107

DATE: 2 FEBRUARY 2022

N Platte

PROJECT:

Upgrading of Bulk Water
Grabouw - Phase 5

DRAWING TITLE:

Traffic Accommodation Plan (Sheet 4 of 4)

SCALE:

N.T.S

@ A1

DRAWING NUMBER:

4430 / TA / 04

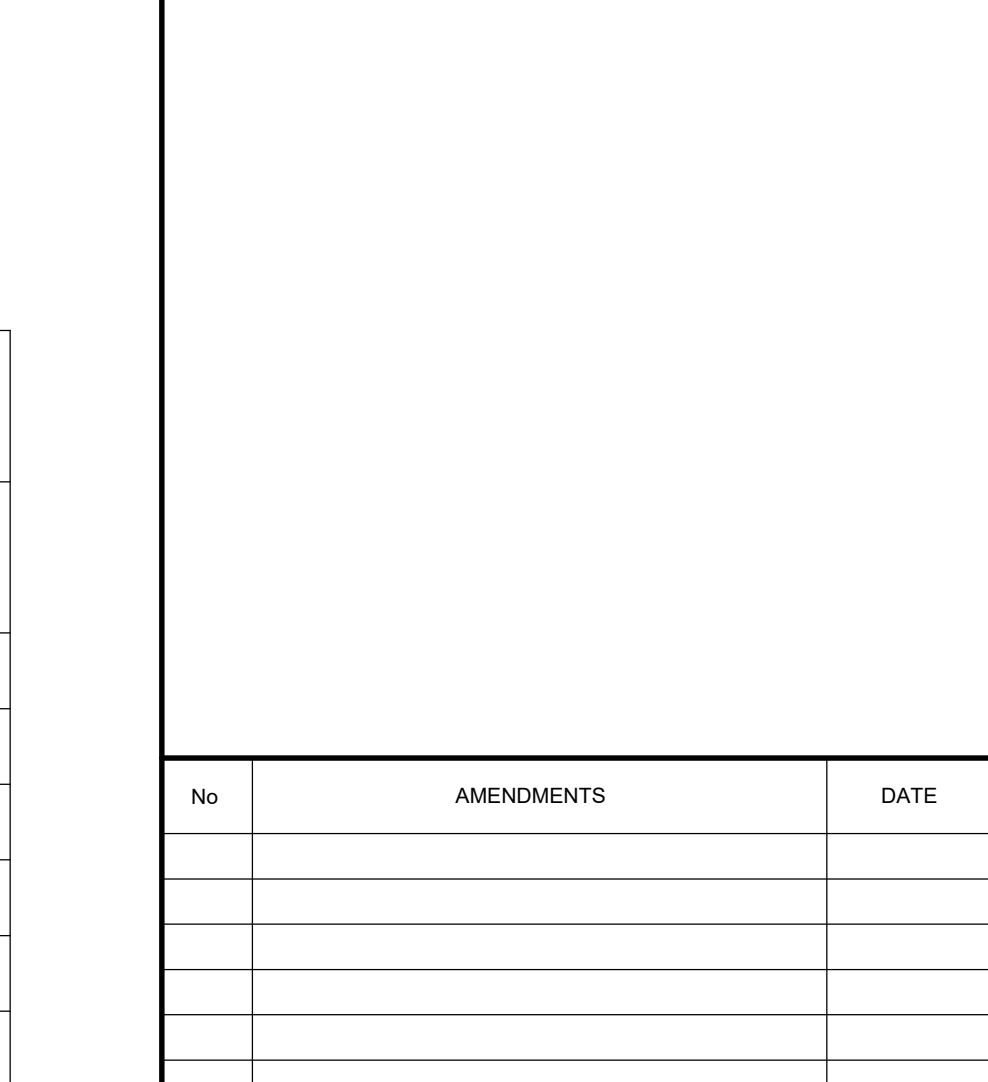
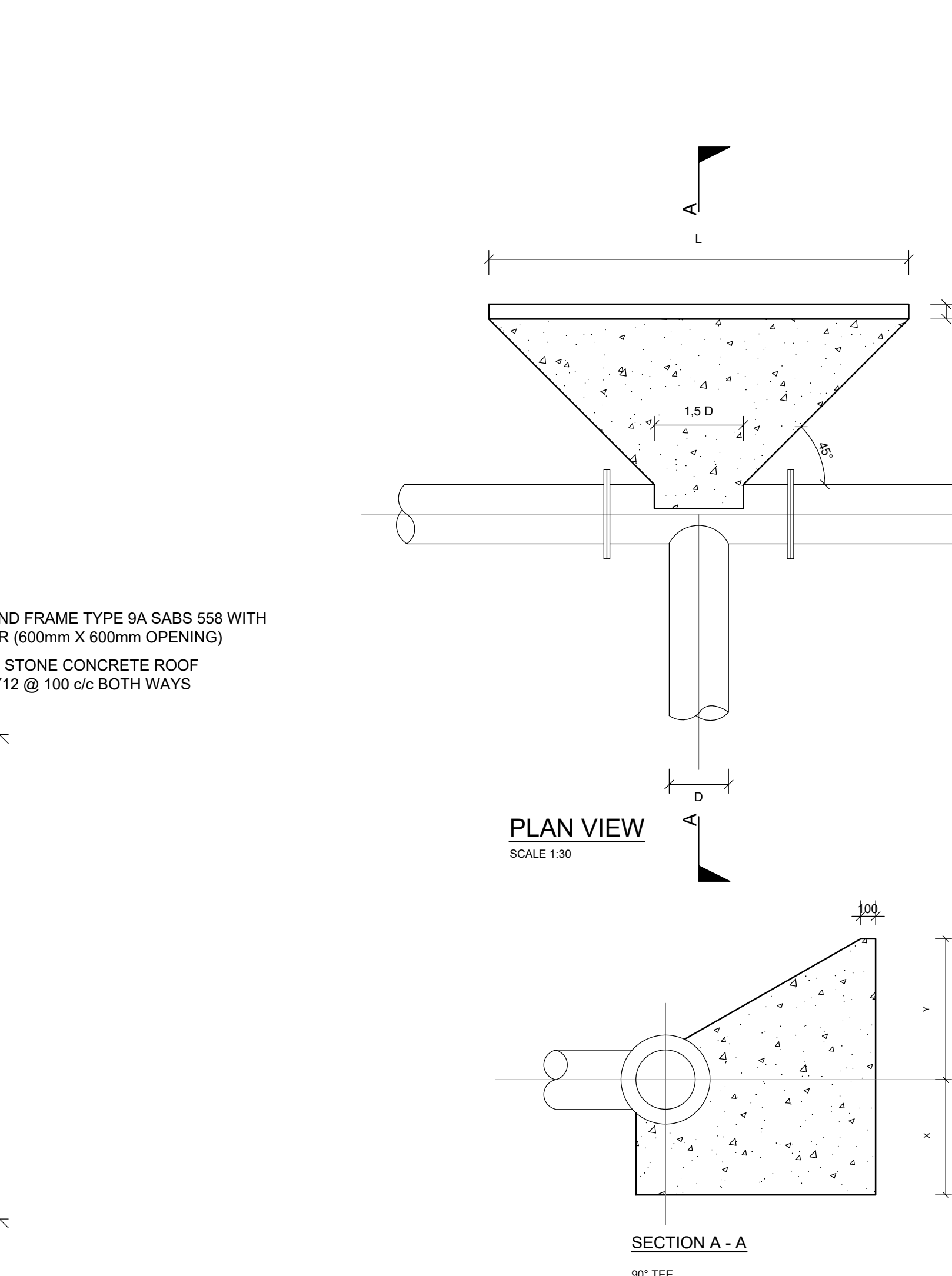
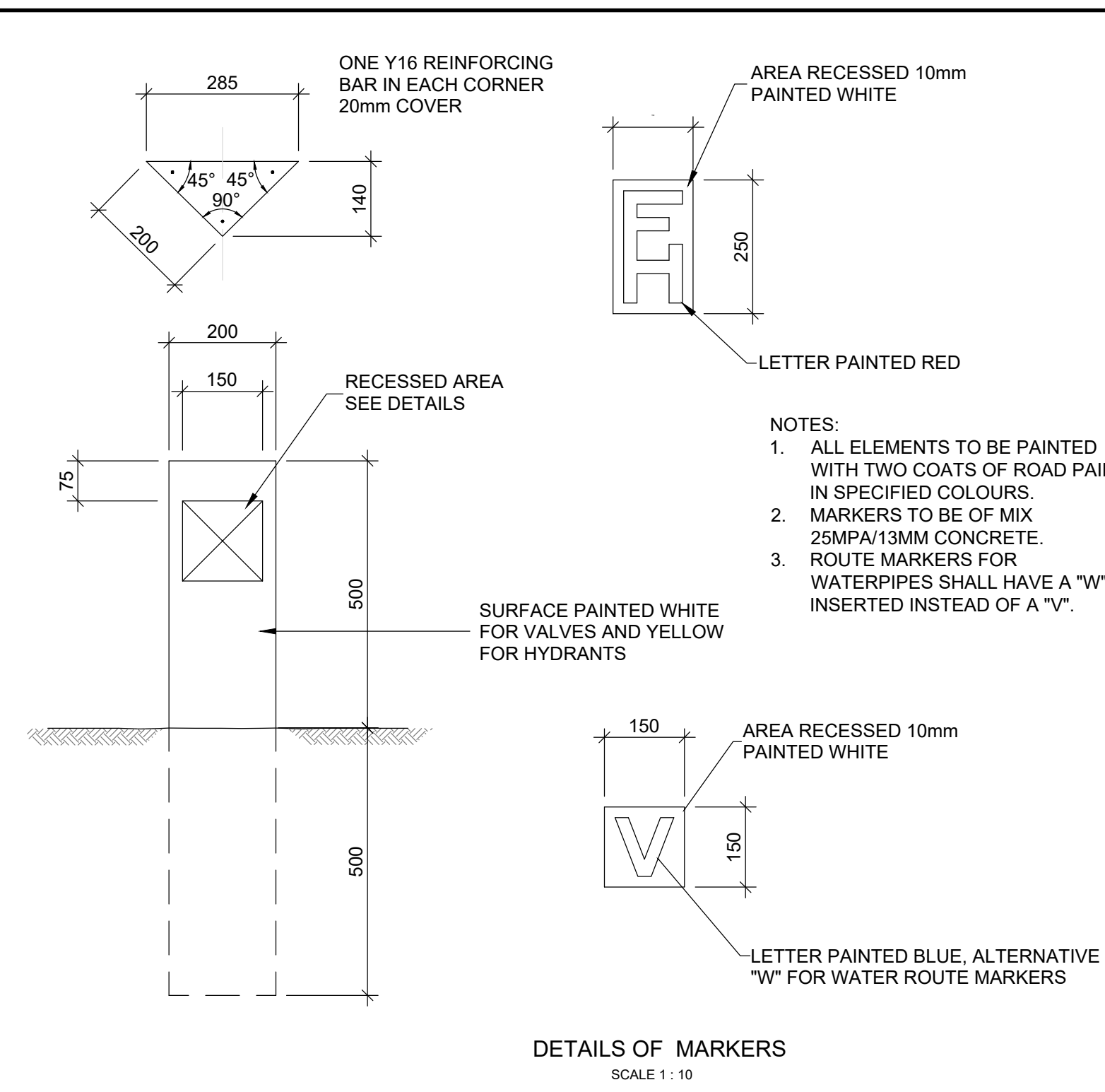
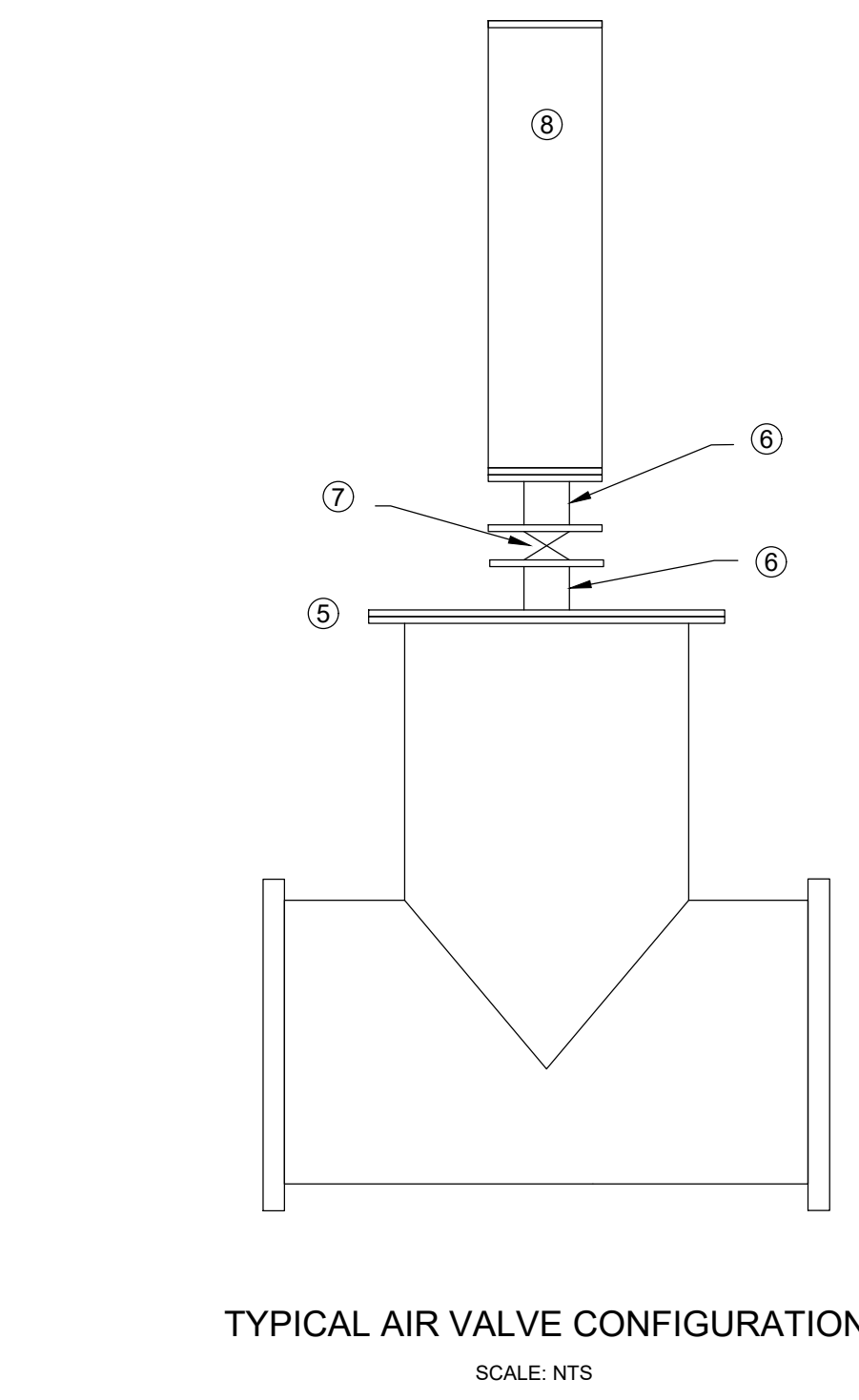
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DATE:


2022/02/02

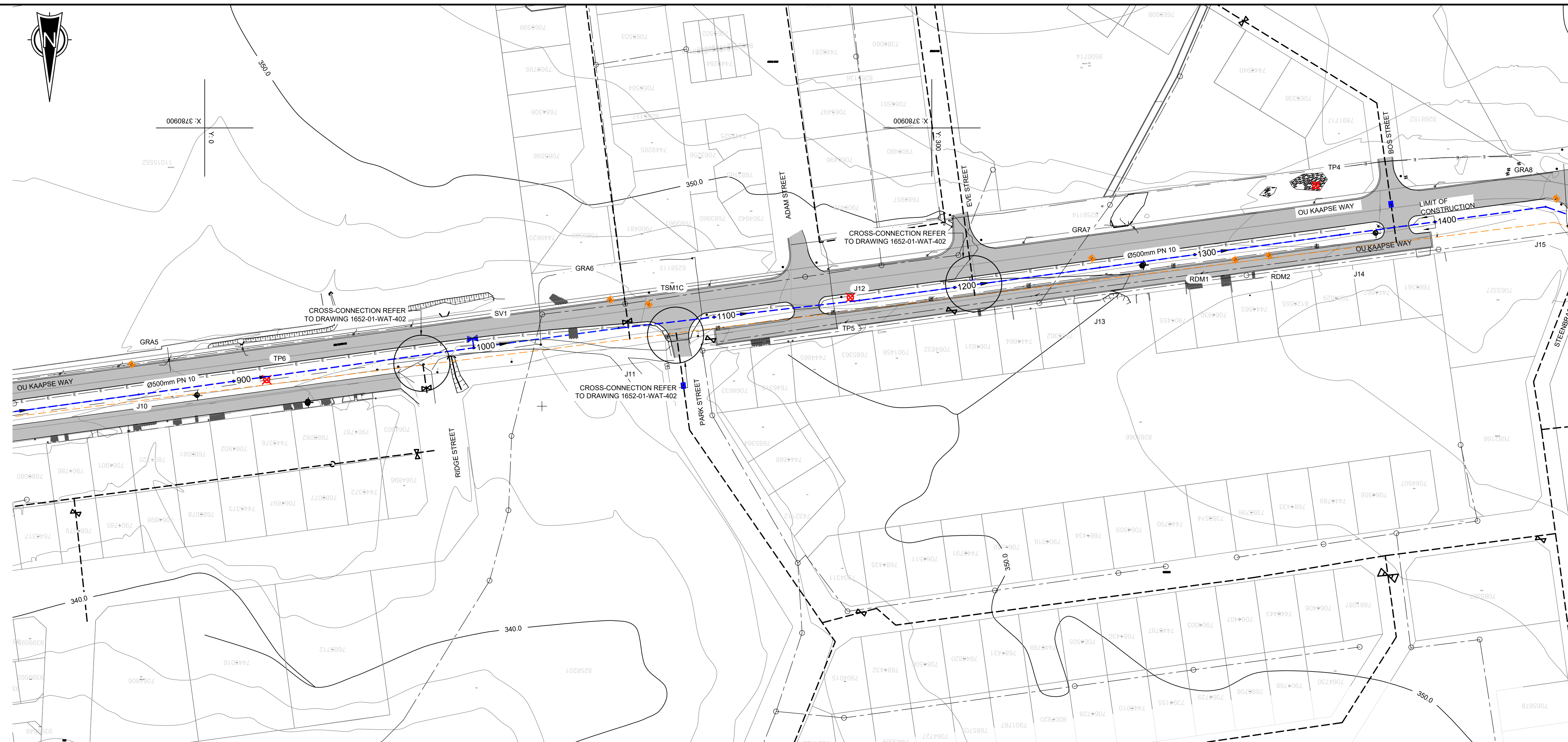
ANNEXURE H
TENDER DRAWINGS



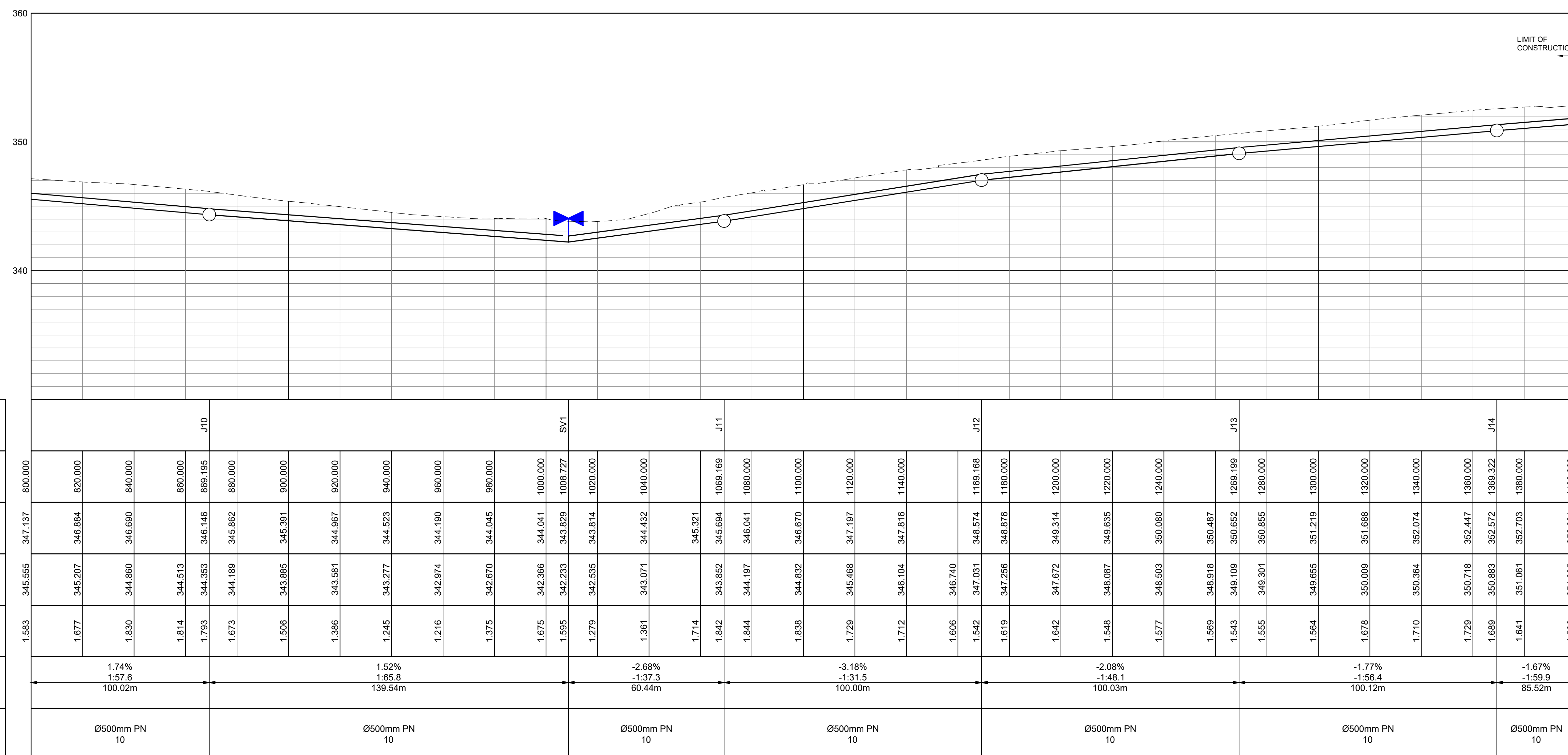
PRESSURE (MPa)		1.2			
DIAMETER (mm)		90°	45°	22.5°	11.25°
450	L (m)	4.278	3.458	2.608	2.133
	X (m)	1.125	0.920	0.757	0.593
	Y (m)	1.375	1.125	0.925	0.725
500	L (m)	4.438	3.753	2.755	2.163
	X (m)	1.227	0.982	0.818	0.654
	Y (m)	1.500	1.200	1.000	0.800

No	AMENDMENTS	DATE
TO	ISSUED FOR TENDER	06/10/2021
SURVEYED		
DRAWN	D SHARP	05/10/2021
DESIGNED	D SHARP	05/10/2021
CHECKED	J JORDAAN	05/10/2021
APPROVED		
	PR REGISTRATION NO.	DATE

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<div style="text-align: center;">  <p>LUKHOZI CONSULTING ENGINEERS (PTY) LTD</p> </div>												
<p>LUKHOZI CONSULTING ENGINEERS (PTY) LTD</p> <table border="0" style="width: 100%;"> <tr> <td>UNIT B17, FIRST FLOOR</td> <td>PO BOX 2032</td> </tr> <tr> <td>CENTURY SQUARE</td> <td>CARESBURG</td> </tr> <tr> <td>HEROIN CHESBENT</td> <td>7735</td> </tr> <tr> <td>CENTURY CITY</td> <td>TEL: -021 699 2500</td> </tr> <tr> <td>7441</td> <td>FAX: -086 963 7032</td> </tr> </table>			UNIT B17, FIRST FLOOR	PO BOX 2032	CENTURY SQUARE	CARESBURG	HEROIN CHESBENT	7735	CENTURY CITY	TEL: -021 699 2500	7441	FAX: -086 963 7032
UNIT B17, FIRST FLOOR	PO BOX 2032											
CENTURY SQUARE	CARESBURG											
HEROIN CHESBENT	7735											
CENTURY CITY	TEL: -021 699 2500											
7441	FAX: -086 963 7032											
<p>E-MAIL: info@lukhozi.co.za</p>												
<p>CUSTOMER</p> <div style="text-align: center;">  <p>Theewaterskloof Municipality</p> </div>												
<p style="text-align: center;">THEEWATERSKLOOF MUNICIPALITY</p>												
<p>PROJECT TITLE</p> <p style="text-align: center;">UPGRADING OF BULK WATER GRABOUW - PHASE 5</p>												
<p>DRAWING TITLE</p> <p style="text-align: center;">WATER RISING MAIN DETAILS</p>												
SCALE	SHEET SET	SHEET SIZE										
AS SHOWN	SHEET 1 OF 1 SHEETS	A0										
DRAWING No.	1652-01-WAT-402	REVISION										
		T0										



RISING MAIN LAYOUT PLAN FROM CH: 800.000m TO 1400.000m



RISING MAIN LONGITUDINAL SECTION FROM CH: 800.000m TO 1400.000m

SETTING OUT POINTS			
POINT NAME	Y	X	Z
SV1	110.975	3760809.264	343.829
J11	170.863	3780817.380	345.694
J10	-27.227	3780790.001	346.146
J12	270.206	3780828.818	348.574
J13	369.318	3780842.348	350.652
J14	468.520	3780855.890	352.572

LEGEND		
EXISTING INFRASTRUCTURE		
	BENCHMARK	
	TRIAL HOLE	
	SEWER MANHOLE	
	ISOLATION VALVE	
	WATER PIPELINE FROM WATER TREATMENT WORKS TO RESERVOIR	
	WATER PIPELINE FROM RESERVOIR TO TOWN	
	SEWER PIPELINE	
	ESKOM CABLE	
	TELEPHONE CABLE	
	STORMWATER PIPELINE	
	STORMWATER HEADWALL	
	VEGETATION TREES	
	FIRE HYDRANT	
	ASPHALT ROAD	
PROPOSED INFRASTRUCTURE		
	RIISING MAIN	
	AIR VALVE	
	SCOUR VALVE	
GENERAL NOTES		
<ol style="list-style-type: none"> 1. ALL CONSTRUCTION WORK TO BE IN ACCORDANCE WITH THE RELEVANT SANS 1200 STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION AS AMENDED BY THE SCOPE OF WORKS. 2. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL LEVELS AND DIMENSIONS ON SITE PRIOR TO COMMENCING ANY BUILDING OPERATIONS. 3. THE EXACT POSITIONS AND LEVELS OF ALL EXISTING SERVICES TO BE DETERMINED BY HAND EXCAVATION OR APPROVED LOCATION DEVICE BEFORE COMMENCING WITH CONSTRUCTION. 4. THE ENGINEER IS TO BE CALLED TO INSPECT ALL TRENCHES PRIOR TO ANY BACKFILL. 5. ALL MATERIAL TESTS FOR ALL CONSTRUCTION WORKS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL. 6. ANY DISCREPANCIES TO BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. 7. THE DESIGN ON THIS DRAWING REMAINS THE PROPERTY OF LUKHOZO CONSULTING ENGINEERS - COPYRIGHT IS RESERVED. 8. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE WORK IS PUT IN HAND. ANY DISCREPANCY MUST IMMEDIATELY BE REPORTED TO THE ENGINEER. 9. THIS DRAWING IS NOT BE SCALED. 		
No	AMENDMENTS	DATE
TO	ISSUED FOR TENDER	06/10/2021
SURVEYED	J.OUBERT & BRINK	12/03/2021
DRAWN	S.KULU	23/06/2021
DESIGNED	D.SHARP	23/06/2021
CHECKED	J.JORDAAN	25/06/2021
APPROVED		
	PR REGISTRATION NO.	DATE
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<div style="display: flex; justify-content: space-between;"> <div> LUKHOZO CONSULTING ENGINEERS (PTY) LTD UNIT B17, FIRST FLOOR 601 SOUTH SQUARE HERON CRESCENT CENTURY CITY 7441 </div> <div style="text-align: right;"> PO BOX 2372 GARDENBURG 7735 TEL : 021 698 2550 FAX : 021 698 6532 </div> </div> <div style="text-align: center; margin-top: 10px;"> E-MAIL : info@lukhozi.co.za </div>		
CLIENT		
THEEWATERSKLOOF MUNICIPALITY		
PROJECT TITLE UPGRADING OF BULK WATER GRABOUW - PHASE 5.2		
DRAWING TITLE		
GRABOUW BULK WATER LAYOUT PLAN AND LONGITUDINAL SECTION CH: 800.000m - 1400.000m		
SCALE	SHEET SET	SHEET SIZE
AS SHOWN	SHEET 1 OF 1 SHEETS	A0
DRAWING No.	1652-01-WAT-411	REVISION
		T0