LEPELLE NORTHERN WATER

LEPELLE NORTHERN WATER
Water is our passion

TENDER NO: LNW 17/25/26 (RE-ADVERT OF LNW 06/24/25)

PROJECT NAME: CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES.

A CIDB GRADING: 7 CE OR HIGHER

CLOSING DATE: 11th JUNE 2026 @ 11:00 AM

ISSUED BY:

LEPELLE NORTHERN WATER

Physical address: 01 Landros Mare Street
Polokwane
0700

Postal address: Private Bag X9522
Polokwane
0700

Tel: 015 295 1800
Fax: 015 295 1931

NAME OF TENDERER: _____

TOTAL AMOUNT: _____ **(incl. VAT)**

CHECKLIST

Please indicate in the column (Completed) Yes or No in writing and sign when completed at the bottom of this page. Failure to complete this checklist may render this Tender as non-responsive.

Position in Document	Description	Complete (Yes / No)	Initial
Schedule A	Compulsory Attendance certificate - Completed and Signed		
Schedule B	Certificate for authority of companies Completed and Signed		
Schedule C	Record of Addenda to tender documents - Completed and Signed		
Schedule D	Plant and Equipment - Completed and Signed		
Schedule E	Completed Relevant work experience carried out		
Schedule F	Completed Tenderer Key		
Schedule G	Full details of directors / trustees / members / shareholders - Completed and Signed		
Schedule H	Company details regarding tenderer / company / partnership		
Schedule I	Contractors OHS Management system checklist - Completed and Signed		
Schedule J	Contractors Estimated monthly expenditure - Completed and Signed		
SBD 1	Invitation to Tender - Completed and Signed		
SBD 2	Tax Clearance Certificate - Completed and Signed		
SBD 4	Declaration of interest - Completed and Signed		
SBD 6.1	Preference Points - Completed and Signed		
C1.1	Form of Offer - Completed and Signed		
C1.2	Contract Data - Completed and Signed		
C1.3	Blasting Indemnity - Completed and Signed		
C1.4	Health and Safety Contract - Completed and Signed		
C2.1	Pricing Data - All items in the Schedule of Quantities priced		
	Company registration certificated/ Copy of a sole trader (Copies must be certified)		

Position in Document	Description	Complete (Yes / No)	Initial
	SARS Tax Compliance Status (TCS) PIN (Valid)		
	Certified Copies of Identity Documents of Partners and/or Directors and Key Personnel (NOT COPIES OF CERTIFIED ID COPIES)		
	Letter of Good Standing (COIDA) -Relevant to Construction Works		
	Signed Joint Venture Agreement		
	CIDB Proof of Registration		
	Municipal current rates account not more than three months old and not in arrears		
	Printed the Tender Document in accordance with the page color coding		
	Professional Presentation of Tender Proposal (Neatly bounded and file dividers for all the annexures)		

Signed: ..... Date: .....

NUMBER	HEADING	COLOUR
The Tender		
Part T1:	**Tendering Procedures**	
T1.1	Tender Notice and Invitation to Tender	White
T1.2	Tender Data	Pink
T1.3	Standard Conditions of Tender	Pink
T1.4	Preferential Procurement Regulations	Pink
Part T2:	**Returnable Documents**	
T2.1	List of Returnable Documents	Yellow
T2.2	Returnable Schedules	Yellow
Part C1:	**Agreement and Contract Data**	
C1.1	Form of Offer and Acceptance	White
C1.2	Contract Data	White
C1.3	Blasting Indemnity	White
C1.4	OHS Contract	White
C1.5	Inclement Weather	White
Part C2:	**Pricing data**	
C2.1	Pricing Instructions	Yellow
C2.2	Bill of Quantities	Yellow
C2.3	Summary of Schedules	Yellow
Part C3:	**Scope of Work**	
C3.1	Description of Works	Blue
C3.2	Standard Specifications : Civil & Structural	Blue
C3.3	Amended Standard Specifications: Civil & Structural	Blue
C3.4	Technical Specifications: Civil & Structural	Blue
C3.5	Standard Specifications: Mechanical, Electrical & Electronic	Blue
C3.6	Engineering, Procurement, Construction & Management	Blue
C3.7	HIV/AIDS Requirements	Blue
C3.8	Occupational Health and Safety	Blue
Part C4:	**Site Information**	Green
Part C5:	**Drawings**	Green
Part C6:	**Annexures**	Green

PART T1

TENDERING PROCEDURES

T1 TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Lepelle Northern Water invites tenders for **Construction, supply, installation, testing and commissioning of sludge lagoons and disinfection facilities complete with the associated equipment and ancillaries** project from qualified contractors with experience in the construction or refurbishment of sludge lagoons or similar systems (e.g. dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures).
It is estimated that tenderers must have a **CIDB grading of 7 CE or higher, 6 CE PE will not be considered.**

Bid documents will be available on National Treasury E-tender portal from **Friday**, **15th May 2026** on E-tender Portal website, from www.etenders.gov.za

Compulsory Briefing Session: **Wednesday, 27th May 2026 at 11H00 AM at Phalaborwa Water Treatment Plant, Ba-Phalaborwa Municipality within Mopani District in Limpopo Province, which is situated at coordinates 24°03'57.6"S & 31°08'28.2"E (-24.066007; 31.141166**).
PPE and Identification documents required for entry. No safety shoes and identity document, no entry.
Site Inspection: Wednesday, 27th May 2026 immediately after the compulsory briefing session at Phalaborwa Water Treatment Plant, Ba-Phalaborwa Municipality within Mopani District in Limpopo Province. Further inspections may be done upon written request to LNW. Request must be sent to LNW atleast Seven (7) working days prior to intended date of site visit, The last day for queries is Thursday the 05th June 2026.

Bids are to be completed in accordance with the conditions and rules contained in the bid documents. All documents must be sealed and labeled with the Bid number and description, and placed in the tender box, at the offices of **Lepelle Northern Water in Polokwane situated in No. 1 Landros Mare Street**, not later than **11h00 on Thursday, 11th June 2026.**

All bids shall remain valid for a period of **90 days** as from the closing date.

Bid documents which are not received and/or deposited in the tender box before **11h00am** on the closing date will be marked as late bids and shall in terms of the **Procurement Policy of Lepelle Northern Water**, not be considered.

Procurement related enquiries may be directed to **Mmamokgadi Ramanna on email: mmamokgadir@lepelle.co.za at 015 295 1800 and Technical related** enquiries may be directed

to Mr. S Ratshibvumo email: shudur@lepelle.co.za at 015 295 1800 from 08h00 to 16h00.

Bidders are requested to ask if not clear about anything related to the bid.

The lowest or any bid will not necessarily be accepted and Lepelle Northern Water reserves the right not to consider any bid suitably endorsed or comprehensively completed, as well as the right to accept a bid in whole or part. Any bidder not contacted within 90-120 days after the closing date must consider their proposal unsuccessful.

T1.1.1. MANDATORY REQUIREMENTS (PRE - QUALIFICATION)

i. Proof of valid **CIDB** registration with a Grading of **7 CE or higher**, In case of a Joint Venture (JV) bid, the combined grading should be a minimum of **7 CE or higher** and **6CE PE** will not be considered, the Lead partner JV to be at least one grade below the advertised. This will be verified online.

ii. Submission of **Two (2)** successfully completed relevant projects to the value of not less than **R9 000 000.00** on the **Construction or refurbishment of sludge lagoons or similar systems** (eg. Dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures) with appointment letter and completion certificate or reference letter on client's official letter head as well as completing table under Schedule E. For JV submission a minimum of one partner should submit the proof of two (2) successfully completed projects. Failure to adhere to the above will lead to disqualification.

iii. Fully completed LNW project reference form for the two (2) successfully completed projects, For JV submission a minimum of one partner should submit the proof of successfully completed projects.

iv. The JV agreement for JV partners to be submitted indicating percentage split up to 100% for partners, as well as indicating the lead partner of the JV to render agreement valid.

v. Attendance of compulsory site briefing session, at least one partner to attend in case of a JV.

vi. All bid documents must be submitted in hard copy and completed in black ink. No tampering of bid documents with either correction fluid, sticky papers or any other form of bid tampering shall be accepted. All cancellations must be fully signed.

vii. Full Completion and Signing of SBD 4.

viii. Proof of registration on the Central Suppliers Database (CSD). In case of a JV, all partners must submit, CSD report must be attached. This will be verified online.

ix. Letter of Good standing, COIDA relevant to Construction Works.

x. Company registration documents, where company name changes have occurred, CIPC documents are to be provided in support.

xi. Certified valid ID copies of the company shareholders less than 3 months.

NB: Failure to comply with any of the above requirements will lead to disqualification from the bid.

T1.1.2. ADMINISTRATIVE COMPLIANCE (Only to be requested from the preferred bidder)

i. The BOQ must be completed in FULL to render the bid complaint. Non-numerical (N/A, Nil or dash (-) or included or incomplete space) completion of BOQ items will be considered non-complaint. The BOQ will be clarified, balanced, and confirmed by the bidder within the required time.

ii. Any arithmetic errors, omissions and discrepancies such as BOQ rates and amount figures not tallying to the bottom total or BOQ is left incomplete or omitted in printing and/or submission will be dealt with inline with clause C.3.9 of the CIDB Standard Conditions of Tender contained in annex C of the CIDB Standard for Uniformity.

iii. Completion of other SBD forms.

NOTES:

a) ***All the above administrative compliance documents will be requested from the preferred bidder if not submitted with the tender document.***

b) ***The JV agreement for JV partners to be submitted indicating percentage split up to 100% for partners to render agreement valid (Point will be allocated as per pro rata(proportional) JV percentage split). This is only applicable on company experience under functionality.***

c) ***Preferred JV bidder will be required to submit a JV bank account and VAT number***

d) ***The bidders must comply with all terms and condition including requirements as stipulated in the Tender Documents to be evaluated further.***

e) ***LNW is not compelled to accept the lowest or any bid. Alternative bids will be disqualified. Further analysis may be undertaken if it is established that the pricing relates to an alternative scope of works.***

f) ***LNW reserves the right to reduce the scope of works due to budget constraint or reduction of scope by client.***

g) ***Bidders will be subjected to risk assessment, verification, and arithmetic check.***

h) ***LNW reserves the right to verify any information provided by the bidder, falsified and fraudulent reference or experience will lead to disqualification and***

blacklisting in terms of SCM process in conjunction with legal/law enforcement process.

i) ***Bids from bidders who have previously submitted fraudulent documentation to LNW will be disqualified.***

T1.1.3. CONTRACT CONDITIONS

a) The contract shall abide by the CIDB B.U.I.L.D standards for Indirect targeting enterprise development and Skills development through infrastructure as per the Government Gazettes of RSA No.48491 of 28 April 2023 and No.36190 of 25 February 2013 respectively where applicable.

b) Should the CIDB B.U.I.L.D standard for Indirect targeting enterprise development be applicable, the contractor will be required to appoint a dedicated enterprise development co-ordinator to form part of the project team.

c) The approved bidder shall under no circumstances interrupt the operations of the plant as a result of his/her activities in, or around the Scheme.

d) Full adherence to the Occupational and Health and Safety Act, Act 85 of 1993 and other applicable Acts will be applicable during the contract; and

e) Labour desk to be created for employing local labour. All unskilled labour will be from local communities, skills transfer to be considered and where skilled locals are available, they are to be given first preference.

f) Form of contract shall be GCC 2015.

g) Each of the person listed on functionality must be confirmed as available for the duration of the project and A Signed declaration/employment contract (refer Tender Document for the standard employment contract) by proposed qualifying Contracts Manager, Site Manager, General Foreman and Safety Officer must be included on their CV's. Should the proposed candidate be not available during construction, a similar replacement or better must be made available immediately and the employer must be notified in advance.

h) LNW reserves the right to verify any information provided by the bidder, falsified and fraudulent reference or experience will lead to disqualification and blacklisting in terms of SCM process in conjunction with legal/law enforcement process.

i) Submission of Municipal current rates account not older than three months.

Lepelle Northern Water's Tip-off HotLine

Speak out against fraud and corruption
Ethics & fraud hotline Details
Free Call: 0800 113 555
Free Post: BNT165, Advance Call Pty (Ltd),
Brooklyn Square, 0075
Email: LNW@behonest.co.za
Website: www.behonest.co.za

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the **CIDB** Standard for Uniformity (SFU) as published in Government Gazette No 42622 of 8 August 2019 and as amended and supplemented by the Tender Data in this Part T1.2. The complete extract entitled "Annex C" of the CIDB Standard for Uniformity as published in Government Gazette No 42622 of 8 August 2019 is bound into Part T1.3 of this document.

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

These Conditions of Tender are furthermore subject to the requirements of the Preferential Procurement Framework Act, 2000: Preferential Procurement Regulations, 2022 published in Government Gazette No. 47452 dated 04 November 2022.

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

Clause	Addition or Variation to Standard Conditions of Tender
C.1.1.1	The employer is **Lepelle Northern Water (LNW)**
C.1.1.3	*Replace the contents of the clause with the following:* "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, in accordance with the provisions of C.1.5."
C.1.2	The tender documents issued by the employer comprise is a single document which comprises the following: **Part T1: Tendering Procedures** Part T1.1 Tender Notice and Invitation to Tender Part T1.2 Tender Data Part T1.3 Standard Conditions of Tender Part T1.4 Preferential Procurement Regulations **Part T2: Returnable Documents and Schedules** Part T2.1 List of Returnable Documents Part T2.2 Returnable schedules **Part C1: Agreements and Contract Data** Part C1.1 Form of Offer and Acceptance

Clause	Addition or Variation to Standard Conditions of Tender
	Part C1.2 Contract Data Part C1.3 Blasting Indemnity Part C1.4 OHS Contract Part C1.5 Inclement Weather **Part C2: Pricing Data** Part C2.1 Pricing Instructions Part C2.2 Bill of Quantities Part C2.3 Summary of Bill of Quantities Part C2.4 Banking Details **Part C3: Scope of Work** Part C3.1 Description of the Works Part C3.2 Standard Specifications Part C3.3 Technical Specifications Part C3.4 Engineering, Procurement, Construction & Management Part C3.5 HIV/AIDS Requirements Part C3.6 Occupational Health and Safety **Part C4: Site Information** **Part C5: Drawings** **Part C6: Annexures** These shall be read together with any Addenda issued in accordance with Clause C3.2 of these Instructions to Tenderers. Upon receipt of the Tender Documents and prior to the submission of any Tender, the Tenderer shall check the documents issued and the number of pages contained in each document and if any are found to be missing or duplicated or any figure or wording is indistinct the Tenderer shall apply to the Employer at once to have the same rectified. No liability will be entertained by the Employer or the Employer's Agent in respect of errors in any Tender arising out of any matter referred to in this paragraph.
C.1.3.4	*Add the following new clause:* "The Tender documents have been drafted in English. The contract arising from the invitation of tender shall be interpreted and construed in English"
C.1.4	The Employer's Agent is: Name: TBA
C.1.6.3	The two stage-system shall not be applied.

Clause	Addition or Variation to Standard Conditions of Tender
C.2.2	*Add the following to the clause:* Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the employer or the employer's agent (if required).
C.2.5	*Add the following to the clause:* Reference documents include, but are not limited to, the following: • "South African Bureau of Standards: Standardized Specifications for Civil Engineering Construction", (SANS 1200) • "General Conditions of Contract for Construction Works, Third Edition, 2015, displaying (Print 3 or later)" on the frontispiece • "Preferential Procurement Regulations, 2022" published in Government Gazette No 47452 dated 04 November 2022 • "Construction Regulations, 2014" • "Occupational Health and Safety Act", 1993 (Act No. 85 of 1993)
C.2.6	*Add the following to the clause:* Extension of time will only be allowed at the discretion of the Employer in terms of the governing prescripts
C.2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. Tender documents will not be made available at the site visit or clarification meeting. Detail relating to the collection of tender documents is indicated in the Tender Notice and Invitation to Tender (Section T1.1 of the document). Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list.
C.2.8	*Replace the contents of the clause with the following:* Request clarification of the tender documents, if necessary, by notifying the employer at least ten (10) working days before the closing time stated in Clause C 2.15.
C.2.10.5	*Add the following new clause:* A digital copy of the Bill of Quantities in MS-Excel format may be obtained from the Employer's Agent at the office of the Employer's Agent upon sufficient notice.
C.2.11	*Add the following to the clause*: To correct errors made, draw a line through the incorrect entry and write the correct entry above in black ink and place the full signatures of the authorised signatories next to the correct entry.

Clause	Addition or Variation to Standard Conditions of Tender
	Corrections in terms of price may not be made by means of a correction fluid such as Tippex or a similar product.
C.2.12.1	*Alternative offers shall not be applicable*
C.2.13.1	*Add the following to the clause:* No claim will be entertained for faults in the tender price resulting from any discrepancies, omissions or indistinct figures.
C.2.13.2	*Replace the contents of the clause with the following:* Return all parts of the tender document to the Employer after completion of the relevant sections of the document in their entirety, by writing legibly in black ink. All documents are to be left intact in its original format and no pages shall be removed or re-arranged.
C.2.13.3	Parts of each tender offer communicated on paper shall be submitted as an original, plus one copy in a USB drive.
C.2.13.4	*Add the following to the clause:* Only authorised signatories may sign the original and all copies of the tender offer where required in terms of the tender data In the case of a **ONE-PERSON CONCERN** submitting a tender, this shall be clearly stated. In case of a **COMPANY** submitting a tender, include a certified copy of the Certificate of Incorporation of such company shall, together with a **resolution by its board of directors** authorising a director or other official of the company to sign the documents on behalf of the company. In the case of a **CLOSED CORPORATION** submitting a tender, include a certified copy of the Founding Statement of such corporation, together with a **resolution by its members** authorising a member or other official of the corporation to sign the documents on each member's behalf. In the case of a **PARTNERSHIP** submitting a tender, **all the partners** shall sign the documents, unless one partner or a group of partners has been authorised to sign on behalf of each partner, in which case **proof of such authorisation** shall be included in the Tender. In the case of a **JOINT VENTURE** submitting a tender, include **a resolution** of each company of the Joint Venture together with a resolution by its members authorising a member of the Joint Venture to sign the documents on behalf of the Joint Venture.
C.2.13.5	The Employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package with the name and address of the tender entered on the back of the envelope are: **Location of Tender Box:** Lepelle Northern Water Tender Box

Clause	Addition or Variation to Standard Conditions of Tender
	Physical address: 01 Landros Mare Street, Polokwane, 0700 **Identification details:** **LNW 17/25/26** **BID TITLE: CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES**
C.2.13.6	A two-envelope procedure will not be followed.
C2.13.10	*Add the following new clause:* Accept that all conditions, which are printed or written upon any stationary used by the tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which are in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.
C.2.15.1	The closing time and location for the submission of tender offers are: **Closing date and time:** 11th June 2026 at 11h00 **Identification details:** **LNW 17/25/26** **Location:** Lepelle Northern Water Tender Box, 01 Landros Mare Street, Polokwane, 0700
C.2.16.1	The tender offer validity period is 90 days from closing date. *Add the following to the clause:* This will be subject to extension at the request by Lepelle Northern Water's Accounting Officer, to be considered by the service provider.
C.2.19	Access shall be provided for the following inspections, tests and analysis: Inspection during the Tender site meeting, request to inspect to be made to the employer within the period stipulated on T1.1.

Clause	Addition or Variation to Standard Conditions of Tender
C.3.4	The time and location for opening of the tender offers are: **DATE AND TIME :** 11th June 2026 at 11h00 **IDENTIFICATION DETAILS: LNW 17/25/26** **LOCATION:** Lepelle Northern Water Tender Box 01 Landros Mare Street, Polokwane, 0700 **BID TITLE : CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES**
C.3.5	A two-envelope procedure will not be followed.

T1.3. STANDARD CONDITIONS OF TENDER

The Standard Conditions of Tender that shall govern, shall be the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity as published in Government Gazette No 42622 of 8 August 2019 as amended and supplemented by the Tender Data in Part T1.2.

The complete extract entitled “Annex C” is bound hereafter into this volume and may not have been edited where found in electronic format by any tender document compiler or tenderer. However, where differences between the original published edition and the edition bound in this document are evident, the original published edition shall govern.

Annex C
(normative)

Standard Conditions of Tender

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:

i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;

ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or

iii) incompatibility or contradictory interests exist between an employee and the tenderer which 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; or

(b) funds are no longer available to cover the total envisaged expenditure; or

(c) no acceptable tenders are received; or

(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 comply 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 seven (7) 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, policies, etc.

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

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 BBBEE 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 specific goals. 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 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 nonconforming deviation or reservation.

C.3.9 Arithmetical errors 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.3.9.3 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.

T1.4 PREFERENTIAL PROCUREMENT REGULATIONS

T1.4.1. Supply Chain Management Procedures

Lepelle Northern Water is committed to fair, equitable and transparent supply chain management procedures free of corruption of any nature. Should anybody suspect any irregularity of any sort they are requested to state their concerns in writing to the Chief Executive Officer of Lepelle Northern Water without delay. Should a satisfactory explanation or action not be forthcoming from the Chief Executive Officer the matter should be reported to the office of the Public Protector.

This Request for Proposals has been compiled and approved by the Bid Specification Committee of Lepelle Northern Water established in terms of the Public Finance Management Act and its Regulations.

The bids received will be evaluated by the Bid Evaluation Committee in terms of the bids evaluation criteria described in this document. The Committee will then submit a report on the bids received to the Bid Adjudication Committee.

The Bid Adjudication Committee will make a recommendation to the Accounting Officer or his delegate nominated in writing. The Accounting Officer will either accept the recommendation of the Bid Adjudication Committee or refer it back to the Bid Adjudication Committee for further investigation or award the contract to a different bidder. In the event that the contract is awarded to a different bidder from the one recommended by the Bid Adjudication Committee, the Auditor-General shall be informed of the reasons for the decision.

The above process will, depending upon the complexity of the project and the number of bids received, take between 4 and 6 weeks. Bidders are requested to refrain from making queries on progress and/or from submitting unsolicited information regarding their bids and especially from commenting on other bidders' proposals during this time. Lepelle Northern Water will endeavor to keep bidders informed of the progress of the process

T1.4.2. Evaluation criteria

Preferential Points System will be used to evaluate this bid in line with the Preferential Procurement Policy Framework Act, 2022. Bidders will be evaluated on mandatory requirements first, then functionality, only those qualifying by achieving the minimum cut off point of **70.6% (24 points)** will be evaluated for administrative requirements. Following administrative compliance evaluation shall be of price and specific goals as the final stage.

This bid will be evaluated and adjudicated according to the following criteria:

Method 4

1. Relevant specifications
2. Value for money
3. Capability to execute the contract
4. LNW SCM Policy
5. PPPFA & associated regulations

The Bid Evaluation Committee will evaluate the received bid in line with the below sequence

T.1.4.2.1. Mandatory Requirements (Pre-Qualification)

Pre-qualification – Only bidders who have adhered or submitted the following documents will be considered for further evaluation, namely:

i. Proof of valid **CIDB** registration with a Grading of **7 CE or higher**, In case of a Joint Venture (JV) bid, the combined grading should be a minimum of **7 CE or higher** and **6CE PE** will not be considered, the Lead partner JV to be at least one grade below the advertised. This will be verified online.

ii. Submission of **Two (2)** successfully completed relevant projects to the value of not less than **R9 000 000.00** on the **Construction or refurbishment of sludge lagoons or similar systems** (eg. Dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures) with appointment letter and completion certificate or reference letter on client's official letter head as well as completing table under Schedule E. For JV submission a minimum of one partner should submit the proof of two (2) successfully completed projects. Failure to adhere to the above will lead to disqualification.

iii. Fully completed LNW project reference form for the two (2) successfully completed projects, For JV submission a minimum of one partner should submit the proof of successfully completed projects.

iv. The JV agreement for JV partners to be submitted indicating percentage split up to 100% for partners, as well as indicating the lead partner of the JV to render agreement valid.

v. Attendance of compulsory site briefing session, at least one partner to attend in case of a JV.

vi. All bid documents must be submitted in hard copy and completed in black ink. No tampering of bid documents with either correction fluid, sticky papers or any other form of bid tampering shall be accepted. All cancellations must be fully signed.

vii. Full Completion and Signing of SBD 4.

viii. Proof of registration on the Central Suppliers Database (CSD). In case of a JV, all partners must submit, CSD report must be attached. This will be verified online.

ix. Letter of Good standing, COIDA relevant to Construction Works.

x. Company registration documents, where company name changes have occurred, CIPC documents are to be provided in support.

xi. Certified valid ID copies of the company shareholders less than 3 months.

NB: Failure to comply with any of the above requirements will lead to disqualification from the bid.

This bid will be evaluated and adjudicated according to the following criteria:

Method 4

1. Relevant specifications
2. Value for money
3. Capability to execute the contract
4. PPPFA & associated regulations

5. LNW SCM Policy

T.1.4.2.2. Bid Evaluation Method

Bids will further be evaluated in terms of Method 4:

a) Stage 1: Evaluation on Functionality, Minimum of 70.6% (24 points) to be scored to be considered responsive.
b) Stage 2: Evaluation on 80/20 or 90/10 preferential points system (Price and specific goals)

a) Stage 1: Evaluation on Functionality

Under functionality, Bidders must achieve a minimum of **70.6% (24 points)** of functionality to be considered for further evaluation.

EVALUATION PROCESS. All bids duly lodged will be evaluated on functionality as Pre-qualifying criteria. The evaluation criteria and weighting for measuring functionality are indicated. **Criteria**	**Weighting**
1. Relevant Company Experience	**20**
Attach proof of successfully completed traceable projects in construction or refurbishment of sludge lagoons or similar systems (e.g. dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures). • Two (2) projects to the value of R9 000 000.00 or above – Ten (10) points • Three (3) projects and above to the value of R9 000 000.00 or above – Twenty (20) points **Attach signed appointment letter with completion certificate signed by the client or signed appointment letter with signed reference letter on client's official letter head indicating successfully completed projects for scoring the above points.** **The client /employer contact details should be recent, accurate, contactable, LNW might have further questions for the purposes of scoring the bidder if**	

required, the responsibility remains on the bidder to ensure that the client /employer responds when required to do so. It is advisable to contact previous clients before submitting this bid. **Only relevant projects listed under schedule E will be considered for points scoring, it is encouraged that bidders list the projects in this section in order of most compliant.**	
2. Capacity (Proposed key personnel)	**14**
2.1. Detailed CV of Contracts Manager with minimum B-Tech/B Eng/BSc Eng Degree or higher in engineering qualification professionally registered as a Pr Tech Eng or Pr Eng with ECSA or with SACPCMP as a PrCPM with experience indicating a role as a Contracts manager or Project Manager on infrastructure projects. **Points will be allocated as follows:** • ***Construction Project Manager:*** o *Four (4) and above projects = Eight (8) points.* o *Three (3) projects = Six (6) points.* o *Two (2) projects = Four (4) points.* o *Less than two (2) Projects = Zero (0) Points.* **2.2.** Detailed CV of **Site Manager** with minimum National Diploma or higher in Civil engineering qualification and experience in construction site management indicating the role of **site agent** or **site manager** on construction or refurbishment of sludge lagoons or similar systems (e.g. dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures) **Points will be allocated as follows:** • ***Site Manager:*** o *Two (2) and above projects = Two (2) points.* o *One (1) project = One (1) point* o *Zero (0) Projects = Zero (0) Points.*	

2.3. Detailed CV of a **General Foreman** with a minimum N2 or higher in civil engineering with experience indicating a role as a General Foreman in construction or refurbishment of sludge lagoons or similar systems (e.g. dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures) **Points will be allocated as follows:** • ***General Foreman:*** o *Two (2) and above projects = Two (2) points.* o *One (1) project = One (1) point* o *Zero (0) Projects = Zero (0) Points.* **2.4.** Detailed CV of a **Safety Officer** with minimum N3 or higher Certificate in Occupational Health and Safety or a recognised OHS qualification e.g. NOSA or SAMTRAC or others with experience in construction projects of any nature **Points will be allocated as follows:** • ***Safety Officer:*** o *Two (2) and above projects = Two (2) points.* o *One (1) project = One (1) point* o *Zero (0) Projects = Zero (0) Points.* Attach academic qualifications with a CV clearly indicating the role occupied by the individual on the key personnel criteria above, which includes; • Completing Proposed Project Organogram on Table under Schedule F • Certified ID Copies of the key personnel • Certified copies of qualifications of key personnel. • All international qualifications must be accompanied by South African Qualifications Authority (SAQA) Accreditation, failure to provide SAQA accreditation for international qualifications will result in zero points being scored • *LNW summarized CV template (refer to annexure A of the Tender Document for the standard LNW CV Summary template) to be completed.* • No points will be allocated if any of the above is not adhered to.	
Total Points	**34**

Table 1 : Evaluation Criteria

- Minimum points to be scored is 24 points out of 34 points (70.6%). Point's allocation under functionality will be split as per JV agreement (percentage split on company experience).
- Note that, the LNW reserves the right to verify any information provided by the bidder, falsified and fraudulent reference or experience will lead to disqualification and blacklisting in terms of SCM process in conjunction with legal/law enforcement process.

b) Stage 2: Scoring based on price and Preferential points system

NB:NO BIDDER WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (see definition on SBD 6.1 attached).

Specific Goals	Means of verification	80/20 Points	90/10 Points
Disability (Minimum of 1 shareholder ownership in the company	CSD Report	5	2,5
Black women (100% Black women ownership in the company)	CSD Report	5	2,5
Black ownership (100% black ownership in the company)	CSD Report	5	2,5
Black Youth (Minimum of 1 shareholder Black youth ownership in the company)	CSD Report	5	2,5
Total points		**20**	**10**

Table 2 : Preference Points

The points scored by the tenderer in respect of the level of B-BBEE contribution must be added to the points scored for price.

The 80/20 or 90/10 Preferential Point System will be used to evaluate the bid.

Financial offer and Preferential Point System:

a) Score tender evaluation points for financial offer.

b) Confirm that tenderers are eligible for the Preference points claimed, and if so, score tender evaluation points.

c) Calculate total tender evaluation points.

d) Rank tender offers from the highest number of tender evaluation points to the lowest.

e) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

GENERAL CONDITIONS

The following preference point systems are applicable to invitations to tender:

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

To be completed by the organ of state

(*delete whichever is not applicable for this tender*).

a) The applicable preference point system for this tender is the 90/10 preference point system.

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

c) Either the 90/10 or 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

The maximum points for this tender are allocated as follows:

	POINTS

PRICE	
SPECIFIC GOALS	
Total points for Price and SPECIFIC GOALS	**100**

Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(d) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

POINTS AWARDED FOR PRICE

THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

80/20 or 90/10

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \qquad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

Note to tenderers: The tenderer must indicate how they claim points for each preference point system on SBD 6.1

PART T2

RETURNABLE DOCUMENTS

T2 RETURBANLE DOCUMENTS & SCHEDULES

T2.1 LIST OF RETURNABLE DOCUMENTS

The tender document must be completed in full. The information the tenderer shall supply in his/her tender or attached to his/her tender shall include, but not be limited to the documents and schedules as set out below.

1. Company registration certificated/ Copy of a sole trader (Copies must be certified)
2. SARS Tax Compliance Status (TCS) Pin
3. Certified Copies of Identity Documents of Partners and/or Directors (NOT COPIES OF CERTIFIED ID COPIES)
4. Letter of Good Standing (COIDA) Relevant to Construction Works
5. Company Profile
6. Proof of CIDB Registration
7. Municipal current rates account not older than three months and not in arrears for more than 3 months
8. Central Suppliers Database (CSD) Report
9. Audited or independently reviewed financial statements to verify the financial capability of service providers to carry projects
10. The JV agreement for JV partners to be submitted indicating percentage split up to 100% for partners, as well as indicating the lead partner of the JV to render agreement valid.

T2.2. RETURNABLE SCHEDULES

Schedule A	Compulsory Attendance certificate	*1
Schedule B	Certificate for authority of companies	*1
Schedule C	Record of Addenda to tender documents	*1
Schedule D	Plant and Equipment	*1
Schedule E	Previous relevant work carried out by tenderer	*1
Schedule F	Tenderer Key Personnel and Project Specific Organogram.	*1
Schedule G	Full details of directors / trustees / members / shareholders	*1
Schedule H	Company details regarding tenderer / company / partnership	*1
Schedule I	Contractors OHS Management system checklist	*1
Schedule J	Contractors Estimated monthly expenditure	*2
SBD 1	Invitation to Tender	*2
SBD 2	Tax Clearance Certificate	*2
SBD 4	Declaration of interest	*1
SBD 6.1	Preference Points	*1

NOTES:
*1 - SCHEDULES/DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES
*2 - SCHEDULES/DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

SCHEDULE A: CERTIFICATE OF ATTENDANCE OF SITE INSPECTION

COMPULSORY BRIEFING ATTENDANCE REGISTER TO BE USED

SCHEDULE B: CERTIFICATE OF AUTHORITY FOR COMPANIES

This Returnable Schedule is to be completed by companies and close corporations. Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A **Company**	**C** **Joint Venture**	**E** **Close Corporation**

B.1 Certificate for company

I, ……, managing director of the board of directors of ……..... hereby confirm that by resolution of the board taken on ……20….., Mr./Ms ……. , has been duly authorized to sign all documents in connection with this tender and any contract resulting from it on behalf of the company. As witnesses: -

4. ……
…..……..……
Managing director

1. ……
……
Date

B.2. Certificate for Joint Venture

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

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

B.3 Certificate for close Corporation

We, the undersigned, being the key members in the business trading as ……..... .....hereby authorise Mr/Ms ……. . , to sign all documents in connection with the tender and any contract resulting from it on our behalf of:

NAME	ADDRESS	SIGNATURE	DATE

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

SCHEDULE C: RECORD OF ADDENDA TO TENDER DOCUMENTS

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	**Title or Details**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

NOTE: Attach additional pages if more space is required.

Signed: ..... Date: .....

Name: ..... Position: .....

Tenderer: .....

SCHEDULE D: PLANT AND EQUIPMENT

The following are lists of major items of relevant equipment that I/we presently own or lease (Attach proof of ownership or rental) and will have available for this contract or will acquire or hire for this contract if my/our tender is accepted.

(a) Details of major equipment that is owned by and immediately available for this contract.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired, or acquired for this contract if my/our tender is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed: _____ Date: _____

Name: _____ Position: _____

Tenderer: _____

SCHEDULE E: PREVIOUS RELEVANT WORK CARRIED OUT BY TENDERER

Provide successfully completed traceable projects in the "**Construction or refurbishment of sludge lagoons or similar systems (e.g. dry beds for wastewater systems, water recycling systems, supernatant return works, concrete water retaining structures)**", Relevant appointment letter complete with completion certificate or reference letter on client official letter head as well as a completed LNW project reference form attached to this document as an annexure must be attached for each project as proof of Company Experience to score points.

Project Description	Contract Value (VAT excl)	Project Duration		Reference		
		Start	Finish	Name:	Organization:	Tel No/Email:

Tenderer : _____

Signature:_____ **DATE:** _____

SCHEDULE F: TENDERER'S KEY PERSONNEL

Bidders are to complete this proposed project organogram table for all proposed key personnel, as well as completing fully the CV template attached as Annexure A of this document for each key personnel.

NAME	ROLE	NQF QUALIFICATIONS

TENDERER: ……

SIGNATURE: ……DATE: ……

SCHEDULE G

FULL DETAILS OF DIRECTORS / TRUSTEES / MEMBERS / SHAREHOLDERS.

Full Name	Identity Number	Personal Tax Reference Number	State Employee Number / Perusal Number

SCHEDULE H

COMPANY DETAIL REGARDING TENDERER / COMPANY / PARTNERSHIP

1. Complete Name : . . . . . .
(Business)

Registered Address : . . . . . .

Registration No. : . . . . . .

Type of Business : . . . . . .

Indicate with an "X"

One-man Business	Partnership	Private Company	Closed Corporation	Joint Venture	Consortium	Others

Date registered : . . . . . .

Tel. No. : (W) Code: . . . . . No.: . . . . . .

Cell No. : . . . . . .

Fax No. : Code: . . . . . No.: . . . . . .

E-mail : . . . . . .

2. AUTHORIZED / CONTACT PERSON

Name : . . . . . .

Title : . . . . . .

3. FINANCIAL DETAIL

(1) Bank detail

Bank : . . . . . .

Branch : . . . . . .

Account Name: . . . . . .

Account No. : . . . . . .

Contact person: . . . . . .

Tel No. : . . . . . .

Fax No. : . . . . . .

SCHEDULE I: CONTRACTORS' OHS MANAGEMENT SYSTEM CHECKLIST

1. OHS Policy and Management

1.1	Is there a written company health and safety policy?	☐	☐
1.2	Does the company have an OHS Management System?	☐	☐
1.3	Is there a company OHS Management System manual or plan?	☐	☐
1.4	Are health and safety responsibilities clearly identified for all levels of staff?	☐	☐

2. Safe Work Practices and Procedures

2.1	Has the company prepared safe operating procedures or specific safety instructions relevant to its operations?	☐	☐
2.2	Does the company have any permit to work systems?	☐	☐
2.3	Is there a documented incident investigation procedure?	☐	☐
2.4	Are there procedures for maintaining, inspecting and assessing the hazards of plant operated/ owned by the company?	☐	☐
2.5	Are there procedures for storing and handling hazardous substances?	☐	☐
2.6	Are there procedures for identifying, assessing and controlling risks associated with manual handling?	☐	☐

1. OHS Training

3.1	Is health and safety training conducted in the company	☐	☐
3.2	Is a record maintained of all training and induction programs undertaken for employees in the company?	☐	☐

2. Health and Safety Workplace Inspection

4.1	Are regular health and safety inspections at worksites undertaken?	☐	☐
4.2	Are standard workplace inspection checklists used to conduct health and safety inspections?	☐	☐
4.3	Is there a procedure by which employees can report hazards at workplaces?	☐	☐

5. Health and Safety Consultation

5.1	Is there a workplace health and safety committee?	☐	☐

5.2 Are employees involved in decision making over OHS matters? ☐ ☐

5.3 Are there employee elected health and safety representatives? ☐ ☐

4. OHS Performance Monitoring

6.1 Is there a system for recording and analysing health and safety performance statistics? ☐ ☐

6.2 Are employees regularly provided with information on company health and safety performance? ☐ ☐

6.3 Has the company ever been convicted of an occupational health and safety offence? ☐ ☐

7. Health and Safety Plan for this specific contract

7.1 Does your company's health and safety plan contain the following elements? ☐ ☐

a) Description of contract
b) OHS structure for work undertaken under this contract
c) Induction and safety training
d) Safe work practices and procedures for specific work undertaken
e) Risk assessment for specific work undertaken
f) Workplace inspection schedule for duration of contract
g) OHS consultative processes to be followed
h) Emergency procedures for specific contract
i) Incident recording and investigation procedures
j) Health and safety performance monitoring arrangements to be implemented during contract

Signed: ……..

Name: ……

Position:……..

SCHEDULE J
CONTRACTORS' ESTIMATED MONTHLY EXPENDITURE

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

MONTH NO.		VALUE
1:	R	.....
2:	R	.....
3:	R	.....
4:	R	.....
5:	R	.....
6:	R	.....
7:	R	.....
8:	R	.....
9:	R	.....
10:	R	.....
11:	R	.....
12:	R	.....
		.....
TOTAL	R	

SIGNED ON BEHALF OF TENDERER:

SBD1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*NAME OF DEPARTMENT/ PUBLIC ENTITY*)					
BID NUMBER:	**LNW 17/25/26**	CLOSING DATE:11th June 2026		CLOSING TIME:	**11h00**
DESCRIPTION	**CONSTRUCTION, SUPPLY,INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES**				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*					
LEPELLE NORTHERN WATER TENDER BOX					
01 LANDROS MARE STREET					
POLOKWANE					
0700					

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO		**TECHNICAL ENQUIRIES MAY BE DIRECTED TO:**	
CONTACT PERSON	**Mr Mmamokgadi Ramanna**	CONTACT PERSON	**Mr Shudu Ratshibvumo**
TELEPHONE NUMBER	**015 295 1800**	TELEPHONE NUMBER	**015 295 1800**
FACSIMILE NUMBER	**N/A**	FACSIMILE NUMBER	**N/A**
E-MAIL ADDRESS	**Mmamokgadir@lepelle.co.za**	E-MAIL ADDRESS	**Shudur@lepelle.co.za**

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					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		**OR**	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	[TICK APPLICABLE BOX] ☐ Yes ☐ 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?	☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]

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 BELOW.

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 IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.

2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.

2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

……

CAPACITY UNDER WHICH THIS BID IS SIGNED:

……

(Proof of authority must be submitted e.g. company resolution)

DATE:

……...

SBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS

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

2. In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

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. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.

5. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

6. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

7. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

TAX CLEARANCE **TCC 001**

Application for a Tax Clearance Certificate

Purpose

Select the applicable option ..... Tenders ☐ Good standing ☐

If "Good standing", please state the purpose of this application

Particulars of applicant

Name/Legal name (Initials & Surname or registered name)	
Trading name (if applicable)	
ID/Passport no	Company/Close Corp. registered no
Income Tax ref no	PAYE ref no 7
VAT registration no 4	SDL ref no L
Customs code	UIF ref no U
Telephone no CODE - NUMBER	Fax no CODE - NUMBER
E-mail address	
Physical address	
Postal address	

Particulars of representative (Public Officer/Trustee/Partner)

Surname	
First names	
ID/Passport no	Income Tax ref no
Telephone no CODE - NUMBER	Fax no CODE - NUMBER
E-mail address	
Physical address	

Particulars of tender (If applicable)

Tender number

Estimated Tender amount R , ,

Expected duration of the tender year(s)

Particulars of the 3 largest contracts previously awarded

Date started	Date finalised	Principal	Contact person	Telephone number	Amount

Audit

Are you currently aware of any Audit investigation against you/the company? YES NO

If "YES" provide details

Appointment of representative/agent (Power of Attorney)

I the undersigned confirm that I require a Tax Clearance Certificate in respect of Tenders or Goodstanding.

I hereby authorise and instruct to apply to and receive from SARS the applicable Tax Clearance Certificate on my/our behalf.

Signature of representative/agent

C C Y Y — M M — D D

Date

Name of representative/ agent

Declaration

I declare that the information furnished in this application as well as any supporting documents is true and correct in ev ery respect.

Signature of applicant/Public Officer

C C Y Y — M M — D D

Date

Name of applicant/ Public Officer

Notes:

1. It is a serious offence to make a false declaration.
2. Section 75 of the Income Tax Act, 1962, states: Any person who
   (a) fails or neglects to furnish, file or submit any return or document as and when required by or under this Act; or
   (b) without just cause shown by him, refuses or neglects to-
      (i) furnish, produce or make available any information, documents or things;
      (ii) reply to or answer truly and fully, any questions put to him ...
      As and when required in terms of this Act ... shall be guilty of an off ence ...
3. **SARS will, under no circumstances, issue a Tax Clearance Certificate unless this form is completed in full.**
4. Your Tax Clearance Certificate will only be issued on presentation of your South African I dentity Document or Passport (Foreigners only) as applicable.

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

In cases of contracts of 12 months period or more, non-firm prices will be adjusted (loaded) with the assessed contract price adjustments implicit in non firm prices when calculating the comparative prices.

In this contract, price escalations will only be considered in terms of the following formula:

$$P_a = (1 - x)(L\frac{L_t}{L_O} + P\frac{P_t}{P_O} + M\frac{M_t}{M_O} + F\frac{F_t}{F_O} - 1)$$

Where:

Pa = The new escalated price to be calculated.

L = Is the "Labour Index" and shall be the Consumer Price Index for the urban area nearest to the Site, and as published in the Statistical News Release, P0141, Additional Tables: Table 14 "CPI – all items according to area" of Statistics South Africa.

P = Is the "Plant Index" and shall be the Producer Price Index applicable to the appropriate Construction Equipment as published in the Statistical Release P0151, Table 4 of Statistics South Africa.

M **=** Is the "Materials Index" and shall be the Producer Price Index applicable to the appropriate materials as published in the Statistical Release P0151, Table 3 or Table 4 of Statistics South Africa.

F **=** Is the "Fuel Index" and shall be the Producer Price Index for Diesel at wholesale level for the area as published in the Statistical News Release P0151, Table 4 of Statistics South Africa.'

The values of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of “x” is 0.15

The values of the coefficients are:

L = 0.15

P = 0.20

M = 0.55

F = 0.10

The base month shall be taken as 30 days **after** the closing date for tenders.

B PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		

Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

SBD 4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration in respect of employees of the State

2.1 Is the bidder, or any of the directors / trustees / shareholders / members / partners of the bidder employed by the state? **YES/NO**

If so, furnish particulars of the names, individual identity numbers, in table below.

Full Name	**Identity Number**	**Name of State institution**

3. Bidders' disclosure in respect of independent bidding

I, the undersigned, …… in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.5 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.

3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.7 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 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 state for a period not exceeding 10 years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED ABOVE IS CORRECT AND ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS INFORMATION PROVE TO BE FALSE.

…… …….
Signature Date

…… ……
Position/ Designation Name of bidder

SBD 6.1

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

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

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

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

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

1.2 To be completed by the organ of state

(*delete whichever is not applicable for this tender*).

d) The applicable preference point system for this tender is the 90/10 preference point system.

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

f) Either the 90/10 or 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(c) Price; and

(d) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	
SPECIFIC GOALS	
Total points for Price and SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

(f) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(g) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(h) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

(i) **"tender for income-generating contracts"** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

(j) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \text{ or } \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

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

80/20 **or** **90/10**

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \text{ or } \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

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

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

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

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
SMME (Small Medium Micro Enterprises)	2.5	5		
Black women (100% Black women ownership in the company)	2.5	5		
Black ownership (100% black ownership in the company)	2.5	5		
Black Youth (Minimum of 1 shareholder Black youth ownership in the company)	2.5	5		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I 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 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering 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 tenderer or contractor, its shareholders and directors, or only the shareholders and directors who

acted on a fraudulent basis, be restricted 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, if deemed necessary.

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

PART C1

AGREEMENT AND CONTRACT DATA

C1 AGREEMENT AND CONTRACT DATA

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:

Project Name: TENDER NO: LNW 17/25/26 : CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES

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

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

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

……

……..
Rands (in words);

R…… (in figures)

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

Signature ……

Date ……

Name ……

Capacity ……

FOR THE TENDERER

(Name and address of organization) ……

Name and signature of witness ……

……

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

Part C5: Annexures

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

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

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

Signature …….. Date ……

Name ……..

Capacity ……..

FOR THE EMPLOYER

Name and signature of witness …….....

……

Date ……

Schedule of Deviations (To be filled in if there are any Deviations or Alternatives accepted)

1. Subject :_____

   Details :_____

   _____

   _____

2. Subject :_____

   Details :_____

   _____

   _____

3. Subject :_____

   Details :_____

   _____

   _____

4. Subject :_____

   Details :_____

   _____

   _____

5. Subject :_____

   Details :_____

   _____

   _____

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

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

(To be signed only if there are any Deviations listed above)

Signature ……. Date ……

Name ……

Capacity ……

FOR THE TENDERER

(Name and address of organization) ……

Name and signature of witness ……

……

Date ……

Signature ……....

Date ……..……..

Name ..……..

Capacity ..……..

FOR THE EMPLOYER

Name and signature of witness …….

…….

Date …….

C1.2 CONTRACT DATA

The General Conditions of Contract for **Construction Works Third Edition (2015)** published by the South African Institution of Civil Engineering, is applicable to this contract. Copies of these General Conditions of Contract may be obtained from the South African Institution of Civil Engineering:

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

Block 19, Thornhill Office Park
Bekker Street, Vorna Valley,
Midrand.

Private Bag X200,
Halfway House. 1685

Tel: 011-805 5947
Fax: 011-805 5971

C1.2.1 CONTRACT SPECIFIC DATA.

The following contracts data are applicable to this contract:

REFERENCE TO:	***CLAUSE.***	***DATA***
Contractor.	*1.1.1.9*	*Bidder*
Defect liability Period	*1.1.1.13*	*The defect liability period shall be 12 months.*
Due Completion Date	*1.1.1.14*	*The Works shall be completed within 12 calendar months as envisaged by the employer.*
Employer.	*1.1.1.15*	*Lepelle Northern Water*
Employer's Agent	*3.2.1*	*To be advised*
Sub-Contracting	*4.4*	*No Works of value more than 25% of contract amount may be sublet to non-HDI Sub-contractor if contract has been obtained with HDI points. Except where the works are specialised upon approval by LNW.*
Selection of subcontractors	*4.4.1*	*Where applicable, the subcontracting will be done in line with the CIDB standard for Indirect Targeting Enterprise, The applicable works to be sub-contracted to the service providers of targeted areas/locals withing within the Ba-Phalaborwa Local Municipality where feasible. Targeted and Selected Sub-contractors are to comply with applicable regulations and must be approved by*

REFERENCE TO:	***CLAUSE.***	***DATA***
		LNW. All subcontracting will be done by the Contractor in consultation with the Employer.
Contract Cessions	*5.1*	*Contract Cessions will be approved by the Employer on this Project as per the National Treasury regulations. Approval on any cession must be granted by LNW before any works is ceded.*
Documentation Required Before Commencement with Works	*5.3.1*	*The Works are to be commenced within twenty-one (21) days of the Commencement Date. The documentation required before commencement with Works execution are:* 3. *A signed Agreement between the Employer and the Contractor for the Works to be completed by the Contractor in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act No.85 of 1993) and the Construction Regulations promulgated there under (Refer to Clause 4.3).* 4. *Health and Safety Plan and approved OHS file by the Department of Labor in terms of Construction Regulations 2014 (Clause 4.3)* 5. *Proof of payment to the Employer, that the Contractor has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993 (Refer to Clause 4.3).* 6. *Sub-contracting strategy where applicable including information pertaining to the targeted sub-contractors to be used (names, proven capabilities, project experience and scope of work to be sub-contracted) (clause 4.4.1)* 7. *Initial Program* *Clause 5.6* 8. *Security* *Clause 6.2* 9. *Insurance* *Clause 8.6* 10. *CVs and qualifications of key staff, and Contractor's project team organogram.* *Clause 8.6*
Submission of documents required in clause 5.3.1	*5.3.2*	*The time to submit the documentation required before commencement with the Works execution is 21 days except OHS related documents which must be submitted within 7 days.*

REFERENCE TO:	***CLAUSE.***	***DATA***
Time for Completion	*5.6.2.1*	*12 months from date of site handover, including Special Non-working.*
Special Non-working days	*5.8.1*	*The special non-working days are public holidays*
Penalty for delay	*5.13.1*	*0.03% of the contract value per calendar day and part thereof.*
Liability for Any Latent Defects	*5.16.3*	*The latent defect period is 10 years.*
Guarantee Sum	*6.2.1/6.2.2*	*The form of security for this contract will be 10% of the contract value, this may be in a form of ;* ***a)*** *Performance Guarantee to the value of 10% of the Contract Value, this must either be issued by an insurance company duly registered in terms of the Insurance Act, 2017*
Contract Guarantee	*6.2.3*	*The performance guarantee shall not have an expiry date. No cancellation shall be implemented without prior written consent by the LNW Chief Executive Officer.*
Percentage Allowances	*6.5.1.2.3*	*The percentage allowances shall be 10%.*
Contract Price Adjustment	*6.8.2*	*Contact Price Adjustment is applicable.*
Special Materials	*6.8.3*	*There are no special materials in this contract.*
Materials on Site	*6.10.1.5*	*The percentage limit on materials and plant not yet built into the Permanent Works is 70% of the value of the plant and materials. No upfront payment shall be permitted. Proof of payment and formal cession of the plant and material to LNW will be required.*
Retention Money	*6.10.3*	*The percentage retention is 10% in addition to the performance guarantee (Guarantee sum) on each payment certificate and in accordance with LNW requirements. No retention bonds from banks or insurance companies will be acceptable.*
Limit of Retention	*6.10.3*	*The limit of retention money is 10% of the tender value*
Retention Money Guarantee	*6.10.5*	*A Retention Money Guarantee may be required in lieu of retention money.*
Variations exceeding 15 per cent	*6.11*	*Delete "15 percent" in this and associated clauses and enter "20 per cent".*

REFERENCE TO:	***CLAUSE.***	***DATA***
Defects Liability Period	*7.8.1*	*12 Months*
Excepted Risks	*8.3*	*The contractor must include in his/her insurance's risks due to use or occupation by the Employer or Employees of the Employer or agents or other contractors of any part of the Works.*
Limit of indemnity	*8.4.2*	*claims unlimited*
Insurances	*8.6.1*	*The amount to be included in the sum insured to cover the value of: 100% of the contract value plus (+) 20%.*
	8.6.1.1.2	*Materials and equipment supplied by the Employer for incorporation into the works is R 4 million excluding VAT, this material value shall be included when determining the contract sum insured plus 20%.*
	8.6.1.3	*The limit of the liability insurance required shall not be less than the contract amount. The number of claims during the construction and Defects Liability Period shall be unlimited.*
	8.6.1.5	*The following additional and varied insurances are required:* • *CAR & SASRIA should not be less than the contract amount including any variation orders.* • *The insurance shall be in the joint names of LNW and the bidder. No cancellation or expiry shall be permitted without written instruction by LNW CEO to the insurance company.*
Dispute Resolution	*10.5.1, 10.5.3*	*The number of Adjudication Board Members to be appointed: one.* *Adjudication, Arbitration, and the Court will be acceptable dispute resolution mechanisms*

…….. ……..……

Signature Date

…….. …….

Position Name of bidder

C1.2.2 DATA PROVIDED BY THE CONTRACTOR

The Contractor is advised to read the General Conditions of Contract, as specified above, in order to understand the implications of this Data which is required to be completed.

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

REFERENCE TO:	**CLAUSE.**	**DATA**
Contractor.	1.1.1.9	The name of the Contractor is :……
Contractor's Address	1.2.1.2	The address of the Contractor is: Physical address: …… …… …… Postal address: …… …… …… e-mail address: …… Contact numbers: Corporate: ..... Direct: ..... Mobile: ..... E-mail: .....

…….. ……

Signature	Date
……..	…….
Position	Name of bidder

Note:

i. Failure to complete and sign this section will not necessarily lead to disqualification of the bid, but submission of the bid document shall put into effect the contract data information.

C1.2.3 MINISTERIAL DETERMINATION SPECIAL PUBLIC WORKS PROGRAMMES

No. 35310

GOVERNMENT GAZETTE, 4 May 2012

DEPARTMENT OF LABOUR

No. R 347 **4 May 2012**

BASIC CONDITIONS OF EMPLOYMENT ACT, 1997,

MINISTERIAL DETERMINATION: EXPANDED PUBLIC WORKS PROGRAMMES

I, Nelisiwe Mildred Oliphant, Minister of Labour, hereby in terms of section 50 of the Basic Conditions of Employment Act, 1997, make a Ministerial Determination establishing conditions of employment for employees in Special Public Works Programmes, South Africa, in the Schedule hereto and determine the second Monday after the date of publication of this notice as the date from which the provisions of the said ministerial Determination shall become binding.

NM Oliphant
Minister of Labour

SCHEDULE

MINISTERIAL DETERMINATION No 3: EXPANDED PUBLIC WORKS PROGRAMMES

Index

1. Definitions

1.1 In this determination –

"expanded public works programme" means a programme to provide public or community assets tor services through a labour intensive programme initiated by government and funded from public resources.

1.2 Without limiting subsection (1), the following programmes constitute expanded public works programmes:

(a) Environment and Culture Sector Programmes including: Working for water, Working for Fire, Working for Wetlands, People and Parks, Working for Energy, Working for Woodlands, Working for Coast, Land care, Working for Waste, Working for Tourism, Investing in Culture Programmes.

(b) Infrastructure Sector Programmes and Projects declared as part of EPWP which may include the construction, rehabilitation and maintenance of: rural and low-volume roads, storm-water drains, water reticulation, basic sanitation, footpaths, sidewalks, bicycle paths, schools and clinics.

(c) Social Sector Programmes including Early Childhood Development, Home, Community Based Care, Community Safety and other community based projects.

(d) All projects and programmes accessing the EPWP wage incentive including those implemented by Non-governmental organisations (NGO) and Community Based Organisations (CBO) and Community Works Programme.

(e) Any other programme deemed to be part of the EPWP as determined by the Department of Public Works.

2. Application

This Determination applies to all employers and employees engaged in expanded public works programmes.

3. The following provisions of the Basic Conditions of Employment Act do not apply to public works programmes:

3.1	Section 10(2)	(Overtime rate)
3.2	Section 14(3) than	(Remuneration required for meal intervals of longer
		75 minutes)3.12 Section 29(h) to (p)
		(Written particulars of employment)
3.13	Section 30	(Display of employee's rights)
3.17	Section 37	(Notice of termination)
3.21	Section 41	(Severance pay)
3.23	Section 51 – 58	(Sectoral Determinations)

4. Conditions

As set out in the Annexure:

ANNEXURE

CONDITIONS OF EMPLOYMENT FOR SPECIAL PUBLIC WORKS PROGRAMMES

1. Introduction

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of an EPWP.

In this document –

(a) "department" means any department of the State, implementing agent of contractor;
(b) "employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a EPWP;
(c) "worker" means any person working in an elementary occupation on a EPWP;
(d) "elementary occupation" means any occupation involving unskilled or semi-skilled work;
(e) "management" means any person employed by a department or implementing agency to administer or execute an EPWP;
(f) "task" means a fixed quantity of work;
(g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;
(h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;
(i) "time-rated worker" means a worker paid on the basis of the length of time worked.

2. Terms of Work

2.1 Workers on a EPWP are employed on a temporary basis.

3. Normal hours of Work

3.1 An employer may not set tasks or hours of work that require a worker to work –
(a) more than forty hours in any week;
(b) on more than five days in any week; and for more than eight hour on any day

3.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.

3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

4. Meal Breaks

4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

4.2 An employer and worker may agree on longer meal breaks.

4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5. Special Conditions for Security Guards

5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

6. Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

7. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

8. Sick Leave

8.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

8.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

8.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

8.4 Accumulated sick-leave may not be transferred from one contract to another contract.

8.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

8.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

8.7 An employer must pay a worker sick pay on the worker's usual payday.

8.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is:

(a) absent from work for more than two consecutive days; or

(b) absent from work on more than two occasions in any eight-week period

8.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

8.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Disease Act.

9. Maternity Leave

9.1 A worker may take up to four consecutive months' unpaid maternity leave.

9.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

9.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

9.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of their child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

9.5 A worker may begin maternity leave –

(a) four weeks before the expected date of birth;

(b) on an earlier date –

(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of their unborn child; or

(ii) if agreed to between employer and worker; or

(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

9.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

10. Family responsibility leave

10.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances:

(a) when the employee's child is born;

(b) when the employee's child is sick;

(c) in the event of a death of –

(i) the employee's spouse or life partner;

(ii) the employee's partner, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

11. Statement of Conditions

11.1 An employer must give a worker a statement containing the following details at the start of employment -

(a) the employer's name and address and the name of the EPWP.

(b) the tasks or job that the worker is to perform; and

(c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;

(d) the worker's rate of pay and how this is to be calculated;

(e) the training that the worker will receive during the EPWP.

An employer must ensure that these are explained in a suitable language to any employee who is unable to read the statement. An employer must supply each worker with a copy of these conditions of employment.

12. Keeping Records

12.1 Every employer must keep a written record of at least the following:

(a) the worker's name and position,

(b) Copy of an acceptable worker identification

(c) in the case of a task-rated worker, the number of tasks completed by the worker,

(d) in the case of a time-rated worker, the time worked by the worker,

(e) payments made to each worker.

The employer must keep this record for a period of at least three years after the completion of the EPWP.

13. Payment

13.1 An employer must pay all wages at least monthly in cash or by cheque or into a back account.

13.2 A task-rated worker will only be paid for tasks that have been completed.

13.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer

13.4 A time-rated worker will be paid at the end of each month.

13.5 Payment must be made in cash, by cheque of by direct deposit into a back account designated by the worker.

13.6 Payment in cash or by cheque must take place –

(a) at the workplace or at a place agreed to by the worker;

(b) during the worker's working hours or within fifteen minutes of the start or finish of work.

(c) In a sealed envelope which becomes the property of the worker.

13.7 An employer must give a worker the following information in writing –

(a) the period for which payment is made;

(b) the numbers of tasks completed or hours worked;

(c) the worker's earnings;

(d) any money deducted from the payment;

(e) the actual amount paid to the worker.

13.8 If the worker is paid in cash of by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

13.9 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

14. Deductions

14.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

14.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

14.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned

14.4 An employer may not require or allow a worker to –

(a) repay any payment except an overpayment previously made by the employer by mistake;

(b) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(c) pay the employer or any other person for having been employed.

15. Health and Safety

15.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

15.2 A worker must –

(a) Work in a way that does not endanger his/her health and safety or that of any other person

(b) Obey and health and safety instruction obey all health and safety rules of the EPWP

(c) Use any personal protective equipment or clothing issued by the employer.

(d) Report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

16. Compensation for Injuries and Diseases

16.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on s EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

A worker must report any work-related injury or occupational disease to their employer or manager. The employer must report the accident or disease to the Compensation Commissioner.

An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

17. Termination

17.1 The employer may terminate the employment of a worker for good cause after the following a fair procedure.

17.2 A worker will not receive severance pay on termination.

17.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

17.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

17.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

18. Certificate of Service

18.1 On termination of employment, a worker is entitled to a certificate stating –

(a) the worker's full name;
(b) the name and address of the employer;
(c) the EPWP on which the worker worked;
(d) the work performed by the worker;
(e) any training received by the worker as part of the EPWP;
(f) the period for which the worker worked on the EPWP; and
(g) any other information agreed on by the employer and worker.

C1.3 BLASTING INDEMNITY

Contract No.

Given by

_____

*Company Registration No. _____

Address

_____

a *Company incorporated with limited liability according to the company laws of the Republic of South Africa, *Partnership, *Close Corporation, *Public Company (hereinafter called the Contractor), represented herein by _____ in his capacity as the Contractor's _____ duly authorised hereto by a resolution of the Contractor dated _____ a certified copy of which resolution is attached to this Indemnity.

WHEREAS the Contractor has entered into a Contract with the **LEPELLE NORTHERN WATER** (hereinafter called the Company) for,

_____

____

and the Company requires this Indemnity from the Contractor

NOW THEREFORE THIS DEED WITNESSETH that the Contractor does hereby indemnify and hold harmless the Company in respect of all loss or damage that may be incurred or sustained by the Company by reason of or in any way arising out of or caused by blasting 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 Company in consequence of such blasting operations, by reason of or in any way arising out of any accidents or damage to persons, life or properly or any other cause whatsoever, and also in respect of all legal or other expenses that may be incurred by the Company in examining, resisting or settling any such claims; for the due performance of which the Contractor binds itself according to law.

THUS DONE AND SIGNED for and on behalf of the Contractor at _____ on the

_____ day of _____ 20____ in the presence of the subscribing

witnesses.

AS WITNESSES

1. _____ _____
SIGNATURE

2. _____ _____
DESIGNATION OF SIGNATORY

*Delete which does not apply

C1.4 HEALTH AND SAFETY CONTRACT: GENERAL INFORMATION

1. The Occupational Health and Safety Act comprises Sections 1 to 50 and all un-repealed regulations promulgated in terms of the former Machinery and Occupational Safety Act No 6 of 1983 as amended, as well as other regulations which may be promulgated in terms of the OHS Act.

2. 'Mandatory' is defined as including an agent, a contractor or a subcontractor for work, but without derogating from his status in his own right as an employer or user of plant and machinery.

3. Section 37 of the Occupational Health and Safety Act potentially punishes employers (principals) for the unlawful acts or omissions of mandataries (contractors) save where a written agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Aid by the mandatory.

4. All documents attached or referred to in the above agreement from an integral part of the agreement.

5. To perform in terms of this agreement mandataries must be familiar with the relevant provisions of the Act.

6. Mandataries who utilise the services of their own mandataries (subcontractors) are advised to conclude a similar written agreement.

7. Be advised that this agreement places the onus on the mandatory to contact the employer in the event of inability to perform as per this agreement. The employer, however, reserves the right to unilaterally take any steps as may be necessary to enforce this agreement.

8. The contractor shall be responsible for the full and proper implementation of the terms and provisions of the Act and its regulations in the area in which the work is to be undertaken by the contractor.

9. The contractor shall be responsible for the well-being, in relation to health and safety, of all persons coming upon or into such area in accordance with that legislation, including the implementation of any directives issued by management of Lepelle Northern Water in this respect.

v) The work to be done is
_____

11. The area in which the work is to be conducted is
_____

- The contractor shall familiarise himself with such area and all risks existing thereon and undertakes to report to the representative of Lepelle Northern Water any hazard or risk to health and safety which arises during the contract work in the area concerned and over which the contractor may have no control. All necessary and appropriate safety / health equipment shall be issued by the contractor to all persons working on or coming into the area.

C1.4.1 HEALTH AND SAFETY CONTRACT BETWEEN EMPLOYER AND CONTRACTOR IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993.

Written agreement between Lepelle Northern Water (hereinafter referred to as "the Employer) and _____ (hereinafter referred to as "the mandatory") as envisaged by Section 37(2) of the Occupational Health and Safety Act, No. 85, of 1993 as amended.

I _____ representing _____ (mandatory) do hereby acknowledge that _____ (mandatory) is an employer in its own right and shall be regarded as the employer for purposes of the contract work specified in the body of the principal agreement with duties as prescribed in the Occupational Health and Safety Act, No. 85 of 1993 as amended so as to ensure that all work will be performed or machinery and plant used in accordance with the provisions of the said Act. I furthermore agree to comply with the requirements of the Employer as contained in the Occupational Health and Safety Specification included with the principal agreement and to liaise with the employer should I, for whatever reason, be unable to perform in terms of this agreement.

Signed this _____ day of _____ at _____

Signature on behalf of mandatory _____

Signature on behalf of Employer _____

Compensation Fund Registration No. of mandatory _____

Good Standing Certificate : ☐ yes ☐ no (tick one box)

C1.4.2 OCCUPATIONAL HEALTH AND SAFETY INDEMNITY UNDERTAKING

I, the undersigned:

_____

in my capacity as:

_____

of the firm:

_____

1.0 hereby undertake to ensure that I/my firm and/or employees and/or subcontractors and/or his employees -

1.1 comply strictly with the provisions of the Occupational Health and Safety Act of 1993 (as amended) and/or the regulations promulgated in terms thereof, with specific reference to section 37(2) of the said act, as well as any relevant legislation, in the course of the performance/execution of any service and/or work in, to or on any Lepelle Northern Water buildings, construction sites and/or premises;

1.2 ensure that consultants and/or visitors comply with any instructions and measures relating to occupational health and safety, as prescribed by Lepelle Northern Water; and

1.3 comply strictly with the statutorily prescribed work systems, operational equipment, machinery and occupational health and safety conditions;

2.0 and as an independent employer and contractor, hereby indemnify, in terms of the above undertakings, Lepelle Northern Water -

2.1 in respect of any costs that I/my firm and/or employees and/or subcontractors and their employees may incur of necessity in compliance with the above undertakings; and

2.2 against any claims that may be instituted against Lepelle Northern Water and/or any liability that Lepelle Northern Water may incur, whether instituted and/or caused by me/my firm's employees, agents, consultants, subcontractors and/or their employees and visitors or Lepelle Northern Water clients or neighbours in respect of any incidents related to my/my firm's activities and as a result of which the occupational health and safety of the persons involved have been detrimentally affected; and

2.3 against similar claims that I, managers or directors of my firm may have against Lepelle Northern Water and any damages for which I, managers or directors of my firm hold Lepelle Northern Water liable.

3.0 My firm's compensation commissioner number is and I confirm that my firm and its subcontractors' fees have been paid up and obligations in respect of the compensation

commissioner have been complied with and further that I shall furnish proof thereof in writing on request.

4.0 I hereby confirm that I have the authority to sign this indemnity undertaking and that Lepelle Northern Water is not obliged to confirm such confirmation.

Signed at_____ this_____day

Of _____ _____

_____ _____

Signature Capacity

As witnesses:

1 _____ _____

Name Signature

2 _____ _____

Name Signature

C1.5 INCLEMENT WEATHER

No extension of time for completion will be granted on account of normal inclement weather but extension of time shall be determined for abnormal rainfall or wet conditions. The extension request must be in accordance with the formula given below, separately for each calendar month or part thereof. It shall be calculated for the period from the Commencement Date to the Due Completion Date or the date of issue of the Certificate of Practical Completion, whichever is earlier, and excluding the Contractor's year-end recess.

$$V = (N_w - N_n) + (R_w - R_n) / X$$

The symbols shall have the following meanings:

V = Extension of time in calendar days in respect of the calendar month under consideration.

Nw = Actual number of days during the relevant calendar month on which Y mm or more of rainfall has been recorded.

Nn = Average number of days in the relevant calendar month on which Y mm or more of rainfall has been recorded, as derived from the rainfall records provided in the Project Specification.

Rw = Actual rainfall in mm for the calendar month under consideration.

Rn = Average rainfall in mm for the relevant calendar month, as derived from the rainfall records provided in the Project Specifications.

If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.

For this Contract, X and Y shall have the following values:

X = 20 mm/d Y = 10 mm

Extensions of time for part of a month shall be calculated using pro rata values of Nn and Rn.

The total extension of time shall be the algebraic sum of the monthly totals for the period under consideration, but if the grand total is negative the time for completion shall not be reduced due to abnormal rainfall.

The factor (Nw - Nn) shall be considered to represent a fair allowance for variations from the average number of days during which rainfall exceeds Y mm.

The factor (Rw - Rn)/X shall be considered to represent a fair allowance for variations from the average in the number of days during which rainfall does not exceed Y mm but wet conditions prevented or disrupted work.

The formula does not take account of flood damage, which could cause further or concurrent delays, which shall be treated separately as far as extension of time is concerned.

The figures for Nn and Rn given below are the most suitable figures available and shall be used unless other are agreed at the commencement of the Contract.

The rainfall records from the nearest weather station from the South African Weather Services for the period 1991 to the most recent year available will be obtained, and the monthly averages (N_n and R_n) for this period will be taken as the normal rainfall for the purposes of this Contract.

PART C2

PRICING DATA

C2 PRICING DATA

C2.1 PRICING INSTRUCTIONS

1. Measurement and payment shall be in accordance with the relevant provisions of the SANS Standard Specification, The General Conditions of Contract, the Contract Data, the Scope of Work (including the Specifications), the Site Information and the Drawings are to be read in conjunction with the Bill of Quantities

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

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t.	=	ton (1 000 kg)
m²	=	square metre	No.	=	number
m².pass	=	square metre pass	sum.	=	lump sum
ha	=	hectare	MN.	=	meganewton
m³	=	cubic metre	MN.m.	=	meganewton-metre
m³-km	=	cubic metre-kilometre	PC sum	=	Prime Cost Sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%.	=	per cent
MPa	=	megapascal	kW	=	kilowatt

3. For the purpose of the Bill of Quantities, the following words shall have the meanings hereby assigned to them:

   Unit: The unit of measurement for each item of work as defined in the SANS Standard Specification, The General Conditions of Contract, the Contract Data, the Scope of Work (including the Specifications).

   Quantity: The number of units of work for each item.

   Rate: The payment per unit of work at which the Tenderer tenders to do the work..

   Amount: The product of the quantity and the rate tendered for an item.

   Lump sum: An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere but of which the quantity of work is not measured in units.

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

5. The quantities certified for payment, and not the quantities given in the Bill of Quantities, shall be used for determining payments to the Contractor. 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.
6. The prices and rates to be inserted in the Bill of Quantities are to be 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.

7. 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.
8. 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.
9. The Tenderer shall fill in a rate against all items where the words “rate only” appears in the amount column. The intention is that, although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item be actually required.

10. 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

11. The Tenderer shall not group together a number of items and tender one rate for such group of items

12. The Tenderer shall not group together a number of items and tender one rate for such group of items.
13. All rates and sums of money quoted in the Bill of Quantities shall be in rands and whole cents. Fractions of a cent shall be discarded.

14. All prices and rates entered in the Bill of Quantities must be **excluding Value Added Tax (VAT)**. VAT will be added last on the summary page of the Bill of Quantities.
15. Should excessively high unit prices be tendered, such prices may be of sufficient importance to warrant rejection of a tender by the Employer.
16. Where the Contractor is required to furnish detailed drawings and designs or other information in terms of the Contract Documents, all costs thereof shall be deemed to have been provided for and included in the unit rates and sum amounts tendered for the items scheduled in the Bill of Quantities, and separate additional payments will not be made.
17. If 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 unit rate shall be corrected. Where there is an obvious gross misplacement of the decimal point in the unit rate, the unit rate as quoted shall govern, and the line item total shall be corrected.
18. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bill of Quantities.
19. The method of measurement published by:
    - "South African Bureau of Standards: Standardized Specifications for Civil Engineering Construction", (SANS 1200); and/or
    - "South African Bureau of Standards: South African National Standard Set: Construction Works", (SANS 2001); and/or
    - any other project specific specification bound into this document, subject to the variations and amendments contained in section C3.5 shall be applicable to this contract.
20. Payments for items which are designated to be constructed labour-intensively (LI items) either in this schedule or in the Scope of Works, will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

In the event that the LI items are not adding to the targeted Contractors Participation Goal (CPG) the onus is with the Contractor construct other activities labour intensively to reach the targeted CPG goal.

21. For all the provisional sums on the BOQ, the Employer's Agent shall have a right to instruct the contractor to obtain at least three (3) quotations from service providers that are independent from the Contractor.
22. Any compensation for Idle plant & equipment on site due to occurrence of an excusable and compensable circumstances shall be done so at fair and reasonable market value, LNW reserves the right to obtain various quotations to determine the fair and reasonable market value.

C2.2 BILL OF QUANTITIES

(Please see attached BOQ on the next page)

C2.3 SUMMARY OF BILL OF QUANTITIES

ITEM	TASK- DESCRIPTION	Tender Amount
SECTION 1	PRELIMINARY AND GENERAL	
SECTION 2	EARTHWORKS	
SECTION 3	CONCRETE WORKS	
SECTION 4	PIPELINE WORKS	
SECTION 5	PROVISIONAL SUMS	
SUB TOTAL 1	**[SECTION 1 + 2 + 3 + 4 + 5]**	
5% CPA		
5% CONTIGENCIES		
SUB TOTAL 2	**[(a) + (b) + (c)]**	
15% VAT		
TENDER SUM (inch VAT)		**R**

PART C3

SCOPE OF WORK

C3. SCOPE OF WORK

C3.1 DESCRIPTION OF WORKS

The scope of works includes construction, supply, installation, testing and commissioning of sludge lagoons and disinfection facilities complete with the associated equipment and ancillaries. It is essential to note that the works comprises of several disciplines in the built environment namely; civil, structural, electrical, electronic and mechanical engineering, as well as building services.

C3.1.1 LOCATION OF WORKS

Location of Site:

The Phalaborwa Scheme is in the Ba-Phalaborwa Local Municipality in the Limpopo Province. The treatment works is located just outside Phalaborwa town, and it is situated at coordinates 24°03'57.6"S 31°08'28.2"E (-24.066007; 31.141166) in Phalaborwa behind the mines and by the banks of the Olifants River.

C3.1.2 NATURE OF THE WORKS

1. Background

The Phalaborwa Water Treatment Works (WTW) is located in the Ba-Phalaborwa Local Municipality within Mopani District Municipality (MDM) in Limpopo Province. The Phalaborwa WTW has, for purposes of water recovery calculations, a daily output of 148 Ml/d, it is estimated that 5% to 7% of this depending on turbidity is wasted away as filter backwash water and clarifier desludging water, as no recovery is done.

The backwash water is discharged direct to the Olifants River via a local watercourse. As would be expected, over time sludge builds up in the watercourse causing blockage flow of the backwash and desludging water to the river. LNW would then remove the sludge and dispose it locally by surface spreading on land along the watercourse. This is not a satisfactory method of disposing the sludge.

Lepelle Northern Water (LNW) has realised the need to find a better acceptable method of disposing of the sludge and that it would be worthwhile to recycle the backwash and desludging water, which is quite a high quantity being wasted (about 5Ml/d).

The description of the project contained in this section is merely an outline of the contract works and shall not limit the work to be carried out by the Contractor under this contract.

Approximate quantities of each type of work to be carried out in accordance with the contract documents are listed in the Bill of Quantities.

2. PROJECT DESCRIPTION

The civil, structural, and building scope of works on the project comprises the works mainly on the sludge lagoons, some works in the proposed pumpstation as well as completion works relating to the chlorine house:

2.1. CIVIL, STRUCTURAL & BUILDING WORKS

a) Sludge Lagoons

- Clearing, grubbing, and shaping existing open drains and embarkments
- Excavations and Compactions to correct levels.
- Supply and installation of penstock isolating complete with fittings.
- Construction of overflow channel.
- Supply and construction of compacted gravel layers.
- Supply and construction of concrete chutes.
- Ultrasonic flow meter concrete channel at the inlet of sludge lagoons
- Construction of a control room (pre-cast concrete structure).
- Concrete lining for base and sides of the sludge lagoons.
- Connection to the head of works.
- Pumpstation shed drawing water from the clear water lagoon

b) Disinfection Facilities

- Stormwater drainage
- Scrubber bund wall
- Ducting and ventilation within the chlorine facilities.
- Replace the existing foldable purpose made doors.
- Waterproofing of the disinfection building roof slab.
- Floor channels and grating

c) Inlet works.

- Construction of meter chamber at the head of works.
- Testing existing 315mm . UPVC pipe line and replacing damaged pipes where necessary.

2.2. MECHANICAL WORKS

The mechanical scope of works on the project comprises the works to the sludge lagoons, supernatant pumpstation, inlet works and disinfection system which includes major service and commissioning to an already installed scrubber and refurbishment of the chlorination system in the chlorine building.

a) Sludge Lagoons pumpstation (Supernatant)
   - Installations of two (2) off self-priming sludge type pumps already procured
   - and to be handed over by LNW.
   - Associated pipework and valves
   - Supply and Installation of new electromagnetic flow meter and ultrasonic channel
   - flow meter and new chamber as per the civil engineering BOQ.

b) Inlet Works
   - New steel pipework inside flow meter chamber.

c) Inlet Works
   - Major Service and Commissioning to already installed scrubber.
   - Commissioning of ventilation system.
   - Refurbishment of chlorination system

2.3. ELECTRICAL & ELECTRONIC WORKS

The electrical scope of works on the project comprises the supply, installation, and commissioning of Electrical, C&I equipment, and related ancillaries at Phalaborwa sludge lagoons & disinfection facilities.

The scope of facilities and activities includes but is not limited to the following items:

- Installation of new 35mmÇ x 4 core SWA PVC low voltage cable from the main MCC to the main distribution board at sludge lagoons control room, and other low voltage cables for high mast lights and pumps;
- Supply and installation of new motor control centre at sludge lagoons control room;
- Excavation, trenching, and backfilling for new low voltage cables;
- Supply and installation of cable trays;
- Integration of new PLC information at sludge control room into existing SCADA;

- Installation of Fibre optic cable from sludge control room to existing SCADA system at the main control room;
- Installation of four 15m high mast lights, each with four of LED flood lights;
- PLC and SCADA programming;
- Testing and commissioning of the entire installation;
- Training of the staff;
- Issuing certificate of compliance according SANS 10142

C3.1.3 SPECIALIST SUBCONTRACTORS

In line with GCC 2015 Clause 4.4.3, the main contractor would be required to source three (3) quotations from competent mechanical and electrical subcontractors for undertaking of the mechanical and electrical works. Each quotation would be based on a schedule of quantities to be supplied by the Employer. The appointment of the selected subcontractor would be subject to the approval of the Employer.

C3.1.4 CONSTRUCTION PERIOD

The construction period for this project is 12 months.

C3.1.5 GENERAL INFORMATION

C3.1.5.1 Drawings

The reduced drawings contained in C5 of this tender document shall be used for tender purposes only. Further drawings are to be provided on an on-going basis by the employer.

Drawings are not to be scaled. Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Engineer. If a dimension is not shown, it will be the responsibility of the contractor to find the correct dimension from the Employer's Agent.

Certain dimensions are marked thus "*" and are to be confirmed on site by the contractor.
The same symbol is used for pipe closing length. And again, the closing length is to be determined on site to fit.

For steelwork the actual as built concrete dimensions/ levels must be measured before ordering or proceeding with fabrication.

The contractor will be provided with three free sets of paper prints of the drawings and two free copies of the contract document.

In addition, a further set of paper prints of the drawings will be issued to the contractor which shall be kept on site and upon which the contractor shall record all data necessary for the compilation of "as-built" drawings. At the completion of the Works, these drawings shall be returned to the Employer's Agent.

C3.1.5.2 Power, Water Supply and Other Services

The contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

C3.1.5.3 Contractor's Camp Site and Security

The contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of potable water.

Provision is made in these specifications for the erection of a security fence around the site offices. The contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

C3.1.5.4 Additional Requirements for Construction Activities

C3.1.5.4.1 The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.5.4.2 The contractor shall submit proposals in connection with directional signs to the engineer for approval.

C3.1.5.5 Programme Requirements for Construction Activities

C3.1.5.5.1 The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

C3.1.5.6 Construction in Confined Areas

C3.1.5.6.1 It may be necessary for the contractor to work in confined areas. The method of construction in these confined areas depends on the contractor's construction plant. However, the contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and amounts tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

C3.1.6 BARRICADING OF EXCAVATIONS

All excavations in close proximity to pedestrian and vehicular traffic are to be barricaded to the satisfaction of the Engineer. Barricading shall consist of a minimum of two strands of parallel and horizontal wire of at least 2mm gauge, the topmost strand being fixed at least 1m above ground level. These wires shall be fixed to the approved fence posts, which shall be securely fixed in a vertical position.
The visibility of these barricades shall be enhanced by the attachment of high visibility construction tape to the posts and wire strands and by the placing of reflective signing to the Engineer's satisfaction. All costs arising from these requirements are to be included in the tendered rates for excavation.

C3.1.7 CONTINUITY OF WATER SUPPLY

It is an important aspect of this project to keep the plant in operation. Thus, continuous water supply to the final consumer must take preference to any construction action affecting the supply of water, i.e.

- The water supply may only be stopped intermittently (4 hours per day) at a time, but with one week's written notice to the Engineer and his subsequent approval after consulting with the Client prior to a shutdown. The main criteria for consideration will be the percentage of full water capacity of the main service reservoirs.
- The Contractor will have to continually co-ordinate his operation concerning the water availability and usage with the Resident Engineer on site.

C3.1.8 ACCOMMODATION OF TRAFFIC

The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual. The contractor shall submit proposals in connection with directional signs to the engineer for approval.

C3.1.9 PROGRAMME REQUIREMENTS FOR CONSTRUCTION ACTIVITIES

The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

C3.1.10 ENGINEERING

a) DESIGN

- ✓ The service provider/contractor is responsible for the design of works on the pipeline based on the Employer's tender drawings and the set-up to be within specification. The pricing shall include costs for such designs as well as the works to be done based on the designs.
- ✓ The service provider/contractor responsible for the design of the permanent Works as reflected in these Contract Documents unless otherwise stated.
- ✓ The **Contractor** is responsible for the design of the temporary Works and their compatibility with the permanent Works.
- ✓ The **Contractor** shall supply all details necessary to assist the engineer in the compilation of the as-built drawings.

b) CONTRACTOR'S DESIGN

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

c) DESIGN PROCEDURE

The Contractor shall submit his drawings prior to the start of manufacture, as required by the Engineer. All such material shall become the property of the Employer.

All fabrication and installation shall only be to the approved drawings.
All correspondence and submittals shall be prominently identified as relating to the works and shall be submitted under the cover of appropriate letters or transmittal notes in accordance with the correspondence procedures which will be advised by the Engineer after the signing of the Contract. All documentation supplied by the Contractor to the Engineer in hard copy shall also be supplied in electronic format.

The Engineer shall have the right at all reasonable times to inspect at the works of the Contractor or Sub-contractors, or elsewhere, and all drawings of any portion of the works.

Drawings shall bear accepted Contract references using a project title block which will be supplied by the Engineer. Also detailed revision blocks and drawing numbers shall be suffixed accordingly.

d) DRAWINGS

The drawings issued to Tenderers as part of the tender documents must be regarded as provisional and preliminary for the Tenderer's benefit to generally assess the scope of work

The work shall be carried out in accordance with the latest available revision of the drawings to be produced by the contractor and approved by LNW for construction.

At commencement of the contract, the Contractor shall produce copies of the construction drawings and any instructions required for the commencement of the works will be issued by the employer. From time to time thereafter during the progress of the works, the Engineer may request updates to drawings or revisions for construction purposes as may be necessary for adequate construction, completion and defects correction of the Works.

The Contractor is required to compile "As Built" record drawings, which will be submitted to the Employer after completion of the construction. Any information in the possession of the contractor, which the Engineer requires, shall be supplied to the Engineer before a certificate of completion will be issued. No additional payment will be made and the cost related thereto shall be deemed included in the tendered rates for the related items.

C3.1.11 EQUIVALENCY OF STANDARDS AND CODES

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be accepted subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 7 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

C3.1.12 TEMPORARY ACCOMMODATION

The contractor shall make his own arrangements for accommodation of his workmen and staff. He shall liaise with the relevant authorities and comply with

any regulations required. No accommodation will be allowed inside the security area of the purification works.
The contractor's site camp and site accommodation of personnel will be subject to the requirements of the Construction Safety Act of 2003, the requirements of the Employment Act and the Environmental Impact Report.

C3.1.13 HEALTH AND SANITATION

Provide health and sanitation in accordance to the latest safety act regulations. In a similar manner change rooms, shower facilities, site personnel eating facilities with gender separation where required are to be supplied. The contractor shall be responsible for the safe and environmentally acceptable disposal of all rubbish and rubble from the site, accumulated during the construction period. All facilities must comply with the OHS act.
The hygiene measures with regards to the works durations as well the number of personnel to be deployed on site must be seen very seriously by the contractor. Chemical toilets will only be allowed on a temporary basis for use at the furthermost areas of the works, at the work face.
These shall be provided on the following basis:
One per 20 labourers of the Contractor's staff with separate facilities for male and female staff.
The Contractor shall make arrangements for the proper maintenance of these facilities.
Reference is made to the Health and safety act and specific requirements for sanitation The Health and safety requirements are to be the prevailing standards requirements.
The main camp of the contractor will be expected to have container type ablution facilities with combined shower and hand wash facilities. Each chemical facility must be equipped with a hand cleaning facility with soap and paper towel dispenser. All effluent to be collected in containers for disposal of and evacuated timeously off site. Upon appointment and within two weeks a detailed plan must be put in place and submitted for the Engineer approval.

C3.1.14 NOTICE OF COVERING OF WORKS

The Contractor shall give due notice to the Engineer, whenever any work is intended to be covered over with earth or otherwise, in order that the Engineer may examine the work to determine that it is in accordance with the Specification and that its correct dimensions may be ascertained before the work is covered, and in default of such notice being received the work shall be uncovered at the Contractor's expense whenever instructions are given by the Engineer to do so.

C3.1.15 INSPECTION AND REJECTION OF FAULTY WORK

The Engineer or his representative (Resident Engineer) appointed by the Engineer shall have the full power to inspect the work during every stage of its construction, and for that purpose shall have free access to the works at all times. Should any work appear to the Engineer or his representative not be executed in accordance with the Specifications, the same may be immediately rejected, and the Contractor shall forthwith carry out the making good, breaking down and rebuilding where applicable of rejected work at his own expense.
The Engineer or his representative (Resident Engineer) appointed by the Engineer shall not be used as the CONTRACTORS SITE AGENT. The contractor is deemed

to have carried out all PROCESS CONTROL before asking for the work to be inspected.
The inspection of all concrete work will be on all stages of the construction and no works will be released for the new stage unless is done so in writing by the Engineer the foundation level, the placing and fixing of steel and the final end product. Settings out and quality of shutters are the responsibility of the contractor and can only be accessed once the end product is built. All inspection call outs (successful or not) will be recorded and must be reported at the site meetings. Both parties must agree all defect lists with a completion date entered into the list for each defect. All site communications are to be confirmed in writing.

C3.1.16 SETTING OUT OF THE WORKS

The Contractor shall set out the works using the various Setting Out Drawings. He will establish a system of setting out and reference pegs encased in concrete, which will be checked by the Surveyor of the Engineer and then maintained and protected for the duration of the contract by the contractor. Should any benchmark be disturbed it will be re-established and verified by the Engineer at the cost of the contractor.
The contractor shall set out the Works relative to the afore-mentioned system of reference pegs in accordance with the positioning and dimensions on the drawings.

C3.1.17 DISINFECTIONS OF THE WORKS

The Contractor shall be responsible for all disinfection of the structures he has worked on.

C3.1.18 FINISHING & TIDYING

Progressive and systematic finishing and tidying will form an essential part of this contract. Under no circumstances would spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate unnecessarily. In the event of this occurring the Engineer will have the right to withhold payment for as long as necessary in respect of the relevant works in the area(s) concerned.

C3.1.19 DOCUMENTATION

At the conclusion of the commissioning independently from stage and before the takeover by the client, The Contractor shall provide, three sets of documents comprising the following.

- Temporary Operation manuals
- Maintenance manuals

At the conclusion of the works. The Contractor shall provide, three sets of documents comprising the following.

- As-Built drawings of the Contractor designs.
- Simple line diagrams of the security fence to be used for the operations and maintenance (OM) manuals. (Reference no will be the same as per the Engineer drawings). That reference no is to be used at the OM.
- List of specialist tools required.
- List of recommended lubricants.
- Name of the firm, address, contact details i.e. tell, fax, e-mail cell no, web site local and international and contact person.
- South African agent for imported material.
- Technical data. Specifications. Technical brochures. Check lists and manuals for local operators.
- Any manufacturer's data which covers more than one type of installations must be clearly marked to show which data is applicable to the model installed.
- Maintenance instructions. With time related information. i.e. Daily, weekly etc service needed.
- Applicable settings.
- List of available spare parts.
- List of action in case part is not functioning properly.
- Original of certificate of approval, testing, commissioned works.
- Each set of documents must be bound in clearly labelled ring binders.
- Drawings will be folded, placed in plastic wallets and positioned into the binder.
- All contractors drawing must be submitted in Auto CAD format. No hand drawn drawing will be accepted.
- One copy must be submitted to the Engineer for approval prior to the issue of the final sets.

C3.1.20 CONTRACTOR'S CODE OF CONDUCT

Workmen Instant Dismissal

Workmen may be instantly dismissed for the following:
Theft.
Violence with co-workers or supervising staff
Committing a criminal offence and is sentenced to prison without the option of a fine.

Misconduct

Any employee who, within a period of 6 months, receives two written warnings and for the third time is guilty of misconduct as listed below may be dismissed without further notice.

- Insubordination and constant refusal to follow instructions
- Absenteeism for 3 or more days without a valid medical certificate
- Repeatedly coming to work late
- Disruptive behaviour conducive to delays in the work program
- Intimidation of other workers
- Dangerous behaviour
- Use of alcohol or drugs during working hours
- Non-performance
- Abuse or waste of company property
- Continuous absenteeism

C3.1.21 FEATURES REQUIRING SPECIAL ATTENTION

a) EXISTING SERVICES

The Contractor shall be deemed to have made allowance in his tender for the need to protect the existing services from damage and to hand over the completed works with the existing services intact and undamaged.

Notwithstanding the information given herein, the Contractor shall retain full responsibility for establishing the exact positions of the various existing services, which may not be shown on the construction drawings, in advance of the main construction work.
The use of specialised equipment for location of power cables and other services is allowed into the relevant Bill of quantities
All the works areas with known services are to be preceded with thorough investigation with hand excavations and exposure of the services.

b) SURVEY BEACONS

The Contractor's attention is drawn to SABS 1200 A, Clause 5.1.2 - Preservation and Replacement of Beacons and Pegs subject to the Land Survey Act - and to the liabilities of the Employer and the Contractor in this regard.
The Contractor shall locate and mark all existing pegs.
The Contractor shall be held responsible for the maintenance of all the cadastral and benchmark pegs on the site that are recorded as existing at the commencement of construction, and for the placement of any pegs that are found to be missing or disturbed upon the completion of the contract. A Completion Certificate shall only be issued after the Contractor has handed back all the pegs and has submitted a certificate from a registered Land Surveyor to the Engineer stating that all relevant pegs are in their correct positions.
Notwithstanding Clause 8.8.5 of SABS 1200 A, the Contractor shall tender sums for searching for and protecting all pegs. Where pegs have been moved, disturbed or covered on the specific instruction of the Engineer, such pegs shall be reinstated by a registered Land Surveyor and shall be paid for by number reinstated on instruction of the Engineer.

C3.1.22 DAMAGE TO SERVICES AND EXISTING WORKS

a) RESPONSIBILITY OF CONTRACTOR

The Contractor shall be responsible for any damage to existing services and existing works in the execution of this contract and shall reimburse the Owner concerned for any repairs required or compensation for damages awarded. The Contractor's attention is drawn to Clause 3.1.30 and SABS 1200 A, Clause 5.4.

b) NOTIFICATION

The Contractor will be responsible for immediately notifying the Authorities concerned the Employer and the Engineer regarding any damage caused to public services and existing works.

The Engineer's Representative must be notified without delay.

C3.1.23 WORK ON PUBLIC AND PRIVATE PROPERTY

The Contractor shall exercise the greatest care to avoid unnecessary damage to trees, gardens, fences, walls and structures on public and private property, and also strictly supervise the behavior of his workmen.
On completion of the work over or in the vicinity of Local or Tribal Authority or private property, the Contractor shall ensure that anything that may have been disturbed or damaged has been compensated for or reinstated to a condition equal to that which it was before construction commenced and also to the satisfaction of the owner concerned. The materials resulting from any demolition of existing structures shall be the property of the owner.

C3.1.24 REGULATIONS

The Contractor shall in all respects conform to the requirements contained in regulations by higher authorities. Such regulations shall include *inter alia*:

1.) *__National Building Regulations. SABS 400__
2.) Code of Practice for the Wiring of Premises, SABS 0142-1981 as amended.
3.) The Mines and Works Regulations, Government Notice Number R1609 of 1962-09-28, as amended.
4.) *__The Occupational, Health and Safety Act 85/93, as amended__.
5.) The local Municipal Byelaws and Regulations as well as the regulations of the local Supply Authority.
6.) The local Fire Regulations.
7.) The regulations of Telkom.
8.) The regulations of the local Gas Board where applicable.
9.) The standard regulations of any Government Department or public service company where applicable.
10.) The Regulations of Lepelle Northern Water.
11.) The Regulations of Eskom
12.) *__SABS 1200 and the application SABS 0120__.
13.) The construction Regulations of the Construction Industry Development Board (CIDB)

The regulations marked "*" are to be kept on site.
The Contractor shall pay and indemnify the Employer against any fees or charges by law and shall keep the Employer and the Engineer indemnified against all penalties and liabilities of any kind for breach by the Contractor or any of the conditions due by law, except insofar as amended or specifically allowed by the Engineer.

C3.1.25 LABOUR BASED CONSTRUCTION

Employment of local labour
The contractor shall limit the utilisation of permanently employed personnel for the execution of the Works to key personnel, such as contracts manager, site agent, foreman, supervisors, plant operators, material technicians, surveyors, trainers, buyers, storemen and the like should such expertise not be available within the community. Not less than 70% of the labour employed on site shall be drawn from the community closest to the contract Works.
The contractor, in conjunction and in co-ordination with the local community/Local Authority, will establish a Community Liaison Officer (CLO) within the local community and the Contractor shall apply to the CLO for details of local labourers who are available and shall give preference to the employment of these labourers identified through the CLO.

The employment of labour from outside the local area will only be allowed in the event of:

- The unavailability within the local community of sufficient numbers of local labourers to execute the work,
- The unavailability of required skills within the local community necessary for the execution of specific tasks
- Where the completion period does not permit the creation of the necessary skills through training.

In these cases, the contractor shall prove to the satisfaction of the Employer that he has exercised his best endeavours and taken all reasonable actions to recruit local labour.
The Contractor shall maintain accurate and comprehensive daily records of all labour engaged on the contract and shall submit to the Employer at two weekly intervals detailed labour returns substantiating the actual numbers of labours employed, the amounts actually paid in respect thereof, and details of the various activities undertaken by the labourers.
The Contractor shall employ a Community Liaison Officer (CLO), through the Labour Committee (LC) representing the local community. The CLO and LC shall be the facilitators for all negotiations between the Contractor and the Labourers. An Agreement signed by the LC on behalf of the Labourers shall be given to and accepted by the Contractor and applied without revisions. The Contractor may price to recover his Payment for the CLO in the P & G and where he enters no price; it shall be assumed that the cost of the CLO is included in the other rates.

C3.1.26 ENVIRONMENT AND SAFETY

The Environmental Management Plan (EMP) for the site of the Works has been commissioned by the Client and will be issued to the Successful Contractor.
The Contractor shall comply with all the requirements laid down in the EMP. The Contractor shall take time to acquaint his employees with the provisions, regulations, duties, obligations and prohibitions, and shall accept sole liability for due compliance with the duties, obligations and prohibitions and absolve the Employer from being obliged to comply with the aforesaid duties, obligations and prohibitions.
In case of failure on the part of the Contractor to comply with the requirements of the EMP, the Employer shall be entitled to employ and pay other persons to carry out any remedial work to rectify any consequence resulting from the non-compliance by the Contactor and all cost consequent or incidental thereto shall be borne by the Contractor and shall be recoverable form him by the Employer. If it is not practical to rectify any consequence resulting from the non-compliance of the Contractor with the EMP the Employer will be entitled to impose a penalty on the Contractor which penalty shall be in relation to the expense which the Contractor would have incurred to comply.
The Contractor shall indemnify the Employer and the Engineer against responsibility for damage to the environment on the site of the Works.

C3.1.27 BLASTING INDEMNITY

The Contractor may require blasting the rock from time to time during the implementation of his construction works. The use of a certified Blasting Contractor as sub-contractor is paramount to the safety of the surrounding public, person and property. When blasting in the close proximity of fixed structures, the

Contractor shall take full responsibility for any costs related to damage thereof. It is in this context that it is recommended for the Contractor to fully photograph and record structural damage, prior to blasting. The Contractor shall complete the "Blasting Indemnity Form C1.3" included in Part C1of the Contract, before the commencement of the Works.
The Contractor is responsible for compliance with all requirements of the authorities concerned with respect to the safety of the Works labourers and the public. Any negligence or noncompliance on the side of the Contractor shall be sufficient cause for the Employer's Agent to suspend the Works and the Contractor shall have no claim for additional compensation against the Employer in such an event.

C3.1.28 RECORDING OF WEATHER

The Engineer shall adjudge the extent of the delays that are attributable to "abnormal climatic conditions", however, in order to assist him in this regard, the Contractor must erect a rain gauge at the site office to record rainfall figures. The reading of the rain gauge shall be made at 08h00 and 16h00 of each working day of the contract. The records shall be submitted weekly to the Employer's Agent (the Engineer); together with a statement recording the Contractor's opinion of the effect on his programme of any weather condition that he may consider to be abnormal.

C3.1.29 EQUIVALENCY OF STANDARDS AND CODES

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be accepted subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 7 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

C3.1.30 TESTING OF EQUIPMENT

The Contractor shall execute and submit to the Engineer all test results in accordance with clause 29 of the General Conditions of Contract in order to prove that the equipment supplied under the Contract conforms in all respects to the Specifications. In particular, successful execution of the following testing is required in respect of completion of the Works:

C3.1.31 FACTORY ACCEPTANCE TESTING

Any imported material and equipment needs to be inspected, checked and tested before shipment. The contractor shall submit a list of all factory acceptance tests to be performed for all critical equipment supplied under the contract.

The Contractor shall prior to shipment, submit to the Engineer all test results on Plant and Material that are to be manufactured or shipped from foreign destination. No material shall on any account be shipped before receiving the Engineer's approval in writing.

C3.1.32 DRY COMMISSIONING

Once the construction of the Works or a Sub-section has reached the stage of completion where it can be tested, the Contractor shall give to the Employer notice of the date after which the Contractor will be ready to carry out Dry Commissioning of the Works or any Sub-section thereof. Dry Commissioning shall commence as soon as the Works or a Sub-section is mechanically and electrically ready to test, it shall undergo commissioning tests and inspections to check the following general aspects:

a) Components of the Works or Sub-section are complete and comply with drawings, specifications and data as indicated in the manufacture's documentation.

b) The assembly has been carried out in compliance with the above documents and professional practice

c) Visual checking installation and appearance

In addition dry commissioning shall include the following specific aspects:

a) Through check of all ergonomic (Lighting and noise), maintainability and safety related aspects.

b) Through check of flow lines of products, materials, fluids and compressed air

c) Through check of electrical, hydraulic, pneumatic and electromechanical circuits.

d) Through check of all functional and control loop tests (Equipment level).

e) Dry-run of every machine and checking of its operation and, if necessary, running in.

f) Calibration checks and supporting documentation on all metering and monitoring equipment.

g) Dry-run or no-load run of every section.

h) Fixing of equipment, cable racks, pipes, brackets, anchors, etc.

i) Written proof of all direction testing and alignment tests on pumps, motors and rotating equipment.

j) Statutory testing requirements (Lifting, hoisting, pressure vessels etc)

k) Checking and testing of all actuators, valve and control valve settings.

l) Water testing of chemical dosing equipment, pipes, and joints.

m) Water tightness and pressure tests on all water retaining structures, pressure vessels, pipelines and pipe fittings.

n) Completion and assuring of all tests reports and test certificates

o) Completion of cathodic and lighting protection (Where applicable).

p) Compiling of an asset register suitable for interrogation with the financial and Computerised Maintenance Management system of the client.

q) Completion and issuing of all equipment and O&M manuals including functional specifications and control philosophy.

r) Supply of all critical spares and special tools on site

Following the successful completion of Dry Commissioning the Employer and Contractor will designate each completed Sub-section to complete as Ready for Wet Commission (RWC). A request to proceed with wet commissioning will be issued by the Contractor after completion of the dry commission phase.

C3.1.33 WET COMMISSIONING

After being designate as Ready for Wet Commissioning, each process will commence with wet commissioning test runs which shall include the same operations as for dry commissioning tests but with the equipment loaded.

a) Performance testing of all equipment at specific duties and efficiencies for at least 24 hours continuously.

a) Check of levels, flows, pressure and temperatures at minimum and maximum operating conditions for all operation scenarios.

After successful of the Wet Commissioning of all equipment and process and the Works as a whole, the trial operation period of the entire system will commence. The Engineer shall confirm in writing the date on which successful wet commissioning was achieved.

C3.1.34 TRIAL OPERATION PERIOD

On successful completion of the wet commissioning stage the system will be put into service by the contractor. The contractor shall ensure that the system is put into service in compliance with the O&M Manual and the OHC Act and its Regulations.

A detailed procedure for conducting the trial period will be developed and agreed between the contractor and the Employer.

The purpose of the trial operation is to, demonstrate the reliability of the works, system integrity with regards to system losses and evaluate the training effectiveness of the training of the operators.

Once the trial period has commenced, the works will be operated successfully and continuously for a period of six weeks, with interruptions only to alter plant settings, effect final settings and optimization, test auto-functionality and train the operator in the detail functioning of the plant. The Engineer shall confirm in writing the date on which the trial operation period commenced.

During the **6 weeks** trial operation period, the Contractor shall record all operational data and at its completion submit to the engineer a report confirming final settings, calibration, auto control functions, approved tests and successful training of the operator to the satisfaction of the Employer before a Completion Certificate will be issued for the works in terms of clause 32 of the General Conditions of Contract.

The availability of the equipment during the trial operation period shall not be less than 95%.

All failures occurring during the trial period will be subject to a root cause analysis and repaired accordingly by the contractor. A failure investigation analysis and close-out report shall be submitted for each failure of the works and included in the section dealing with total plans and reports.

If declared unsuccessful, the Engineer may request a repeat of the Trial Operation period. Under such circumstances the Contractor shall repeat the Trail Operation Period and Performance Test as indicated herein within three months after the Engineer's request. The costs in performing this, or any further Performance Tests, will be for the Contractor's account.

C3.1.35 FINAL PERFORMANCE TEST AFTER COMPLETION OF TRIAL PERIOD

Once the trial period has been completed successfully the Engineer shall set the date of the Final Performance Test.

The Performance Test Shall establish:

a) The capacity and characteristics of the Works are as specified, and that they meet the performance guarantees.

b) The works can meet the performance guarantee for all the operating scenarios.

The equipment provided by the Contractor on site to test the performance of the equipment shall include all the instrumentation not included in the permanent installation, (e.g. Energy meter), and all tools and suitable trained staff necessary.

If the outcome of the Performance Test, the Contractor Shall inform Personnel Provided by the Employer all appropriate technical information derived from the result.

On successful completion of the performance Test a Commissioning report shall be drawn up by the Contractor and shall be signed by the Engineer.

C3.1.36 GUARANTEES OF PERFORMANCE

The Contractor shall guarantee the output and efficiency of all machines, which guarantees shall be binding under the Contract.

The fulfilment of these guarantees shall be demonstrated at the Contractor's factory premises or a suitable off-site test facility approved by the Engineer.

All measuring instruments used in the tests shall have previously been certified by an independent testing authority, not more than one month prior to the test and to the Engineer's satisfaction.

C3.1.37 TEST PLAN AND REPORTS

Test reports shall be submitted after the successful completion of each testing phase. The following documents shall be submitted in writing to the Employer:

a) Testing plan

b) Progressive testing reports as detailed in the testing plan

c) Tests on completion: Dry commissioning report and wet report

d) Trial operation: Trial operation report and performance test report

e) Failure investigation reports (where necessary) during defects notification period

C3.2 STANDARD SPECIFICATIONS

C3.2.1 STANDARD SPECIFICATIONS: CIVIL ENGINEERING

The following SANS specifications shall apply for the construction of the Works:

SANS 1 200 A	:	General
SANS 1 200 AB	:	Engineers Office
SANS 1 200 C	:	Site Clearance
SANS 1 200 D	:	Earthworks
SANS 1 200 DB	:	Earthworks (Pipe Trenches)
SANS 1 200 DK	:	Gabions and Pitching
SANS 1 200 DM	:	Earthworks (Roads, Subgrade)
SANS 1 200 G	:	Concrete
SANS 1 200 GE	:	Precast concrete
SANS 1 200 HA	:	Structural Steelwork (small works)
SANS 1 200 H	:	Structural Steelwork
SANS 1200 HB	:	Cladding and Sheeting
SANS 1 200 L	:	Medium pressure pipelines
SANS 1 200 LB	:	Bedding (Pipes)
SANS 1 200 LC	:	Cable ducts
SANS 1 200 MF	:	Base
SANS 1 200 MJ	:	Precast paving
SANS 1 200 MK	:	Kerbing and channelling
SANS 1 200 MM	:	Ancillary Road works
SANS 1 200 LE	:	Stormwater drainage
SANS 1 200 LF	:	Erf connections

Wherever any reference is made to the South African Bureau of Standards (SABS) in either the Bill of Quantities or the document, this reference shall be deemed to read “SANS standard”

The following SANS specifications are also applicable to this contract:

SANS 1921 (2004): Contracts	Construction and Management Requirements for Works
Part 1:	General Engineering and Construction Works
Part 2: the Contractor	Accommodation of Traffic on Public Roads Occupied by
Part 3:	Structural Steelwork
Part 6:	HIV/AIDS Awareness
SANS 1921-1 (2004): Contracts	Construction and Management Requirements for Works

Part 1: General Engineering and Construction Works and where accommodation of traffic is involved

The Tenderer is expected to be in possession of a copy of the Standard Specifications. The successful Tenderer will be required to provide a full set of the applicable standard specifications at the commencement of the Contract which is to be kept available on site at all times.

Copies of the “Standardised Specification for Civil Engineering Construction” SANS 1200 are available from the:

South African Bureau of Standards
Private Bag X191
Pretoria, 0001

C3.3 AMENDMENTS TO THE STANDARD SPECIFICATIONS: CIVIL ENGINEERING

The following variations to standardized specifications and additional clauses are applicable to this Contract:

PSA	**General**
PSAB	**Engineer's Office**
PSC	**Site Clearance**
PSD	**Earthworks**
PSDB	**Earthworks (Pipe Trenches)**
PSG	**Concrete (Structural)**
PSHA	**Structural steel (Sundry Items)**
PSL	**Medium Pressure Pipelines**
PSLB	**Bedding**
PSLE	**Stormwater Drainage**

STATUS

Should any requirement of the project specification conflict with any requirements of the standardized specification listed, the requirements of the project specification shall prevail.

PSA GENERAL

PSA 1 SCOPE

REPLACE THE CONTENTS OF SUB-CLAUSE 1.1, INCLUDING THE NOTES, WITH THE FOLLOWING:

"1.1 This specification covers requirements, principles and responsibilities of a general nature which are generally applicable to civil engineering construction and building works contracts, as well as the requirements for the Contractor's establishment on the Site."

PSA 2 INTERPRETATIONS

PSA 2.3 DEFINITIONS

IN THE OPENING PHRASE BETWEEN THE WORDS "specification" *AND* "the following", *INSERT THE WORDS* "the definitions given in the Conditions of Contract and".

(a) General

ADD THE FOLLOWING DEFINITIONS:

" 'General Conditions' and 'Conditions of Contract': The General Conditions of Contract specified for use with this Contract, together with the Special Conditions of Contract as applicable.

'Specified': As specified in the Standardized Specifications, the Drawings or the Project Specifications. 'Specifications' shall have the corresponding meaning."

(b) Measurement and payment

REPLACE THE DEFINITIONS FOR "Fixed charge", "Time-related charge" *AND* "Value-related charge" *WITH THE FOLLOWING:*

" 'Fixed charge': A charge that is not subject to adjustment on account of variations in the value of the Contract Price or the time allowed in the Contract for the completion of the work.

'Time-related charge': A charge, the amount of which varies in accordance with the Time for Completion of the Works, adjusted in accordance with the provisions of the Contract.

'Value-related charge': A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract.' "

PSA 2.4 ABBREVIATIONS

(a) Abbreviations relating to standard documents

ADD THE FOLLOWING ABBREVIATION:

"CKS: SANS Co-ordinating Specification."

PSA 3 MATERIALS

PSA 3.1 QUALITY

ADD THE FOLLOWING AT THE END OF SUB-CLAUSE 3.1:

PSA 3.1 QUALITY

ADD TO THE FOLLOWING:

"No used or recycled material may be used in the Works unless expressly authorised by the Engineer.

All materials to be provided under this Contract shall bear the mark of the South African Bureau of Standards wherever such materials are the subject of an SABS standard.

Materials bearing the SABS or BS mark will not be subjected to tests to determine whether they comply with the relevant specifications. The Engineer may in his discretion require any material not bearing such mark to be tested in accordance with the relevant specifications; should he do so the Contractor shall arrange for such tests to be carried out at the Contractor's cost by the South African Bureau of Standards or other approved body. Should the tests prove that any material complies with the Specifications the Contractor will be reimbursed the value of the testing body's account for carrying out the tests required by the Engineer."

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSE 3:

"PSA 3.3 ORDERING OF MATERIALS

The quantities set out in the schedule of quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be approximate quantities only. Before ordering materials of any kind the contractor shall check with the Engineer whether or not the scope of the work for which the materials are required is likely to change substantially. No liability or responsibility whatsoever shall be attached to the employer for materials ordered by the contractor except when ordered in accordance with written confirmation issued by the Engineer.

PSA 3.4 DELAY DUE TO SUPPLY OF MATERIALS

The Contractor shall ensure that the work is not delayed, due to the lack of materials on the site of the works, by placing orders with suppliers for the materials required under this contract timeously.

The Contractor shall, by producing copies of written orders or written enquiries for supplies, prove to the satisfaction of the Engineer that any delay occasioned by non-availability of materials has been caused by the inability of suppliers to supply and not by his own lack of timely ordering or lack of exhaustive enquiry for supplies, before any extensions of the contract time will be allowed due to such delays."

PSA 4 PLANT

PSA 4.1 SILENCING OF PLANT

REPLACE THE CONTENTS OF SUB-CLAUSE 4.1 WITH THE FOLLOWING:

"The Contractor's attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations."

PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

ADD THE FOLLOWING PARAGRAPH BEFORE THE EXISTING FIRST PARAGRAPH IN SUB-CLAUSE 4.2:

"Neither housing nor shelters are available for the Contractor's employees on site. The Contractor shall make his own arrangement to house his employees and transport them to the site.

The Contractor's buildings, sheds and other facilities erected or utilised on the Site for the purposes of the Contract shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. as may be required by the Contractor. The facilities shall always be kept in a neat and orderly condition.

No personnel may reside on the Site. Only night-watchmen may be on the Site after hours."

DELETE "and first-aid services" *IN THE SECOND PARAGRAPH OF SUB-CLAUSE 4.2 AND ADD THE FOLLOWING:*

"The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 10 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained.

The Contractor shall, where applicable, make all necessary arrangements and pay for the removal of night soil."

ADD THE FOLLOWING NEW SUB-CLAUSE 4.3:

"PSA 4.3 SUITABILITY OF CONSTRUCTION PLANT

If the Engineer considers that any constructional plant in use is in any way inefficient or is inadequate in capacity to complete the Works properly or on time, he shall have the right to call upon the Contractor to provide such additional plant or equipment as may be required to meet the needs of the Works."

PSA 5 CONSTRUCTION

PSA 5.1 SURVEY

PSA 5.1.2 Preservation and Replacement of Beacons and Pegs subject to the Land Survey Act

DELETE THE WORDS "in the vicinity of boundaries" *IN THE SECOND SENTENCE OF SUB-CLAUSE 5.1.2 AND REPLACE THE WORDS* "under the direction of" *IN THE SAME SENTENCE WITH* "in consultation and liaison with".

ADD THE FOLLOWING AFTER THE SECOND SENTENCE OF SUB-CLAUSE 5.1.2:

"The Contractor and the Engineer shall record on the said list, their concurrence or disagreement (as the case may be) regarding the completeness and accuracy of the details recorded therein."

REPLACE THE THIRD SENTENCE OF SUB-CLAUSE 5.1.2 WITH THE FOLLOWING:

"At the completion of the Contract, the Contractor shall expose all pegs that were listed at the commencement of the construction as being in order and the Contractor shall arrange with a registered Land Surveyor for the checking of the positions of all such pegs and the replacement of those that the Land Surveyor's check reveals have become disturbed or damaged. The Contractor shall, as a precedent to the issue of the Certificate of Completion, provide to the Engineer, a certificate from the registered land surveyor, certifying that all the pegs listed at the commencement of construction in accordance with the provisions of this clause, have been checked and that those found to have been disturbed, damaged or destroyed have been replaced in their correct positions, all in accordance with the provisions of the said Act.

The costs of all checking, replacement and certification as aforesaid shall be entirely for the Contractor's account. This, with the provision always that the Contractor shall not be held liable for the cost of replacement of pegs which:

(a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the permanent works, and

(b) the Contractor can prove beyond reasonable doubt to the satisfaction of the Engineer, were disturbed, damaged or destroyed by others beyond his control."

PSA 5.3 PROTECTION OF EXISTING STRUCTURES

REPLACE "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" *WITH* "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," *AND INSERT THE FOLLOWING AFTER* "(Act No. 27 of 1956)": "as amended".

PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

REPLACE THE HEADING AND THE CONTENTS OF SUB-CLAUSE 5.4 WITH THE FOLLOWING:

"PSA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

PSA 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent contractor to be present on, under, over or within the Site.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Engineer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer nor the Engineer offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of sub-clauses 4.4 and 5.1.2.2 of SANS 1200 D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans, but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'known services' and their positions shall be indicated by the Contractor on a separate set of drawings, a copy of which shall be furnished to the Engineer without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Engineer immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

(a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and

(b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause,

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of his costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer the Drawings as aforesaid.

These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

PSA 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising therefrom to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Engineer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In pipes, the requirements of sub-clause 4.1 of SANS 1200 DB should be observed.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

PSA 5.7 SAFETY

REPLACE THE CONTENTS OF SUB-CLAUSE 5.7 WITH THE FOLLOWING:

"Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor's obligations thereunder, the Contractor shall at his own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items), provide the following:

(a) Provide to its Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;

(b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;

(c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times;

(d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works;

(e) Full compliance with all other requirements pertaining to safety as may be specified in the Contract.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirements of the Act. For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer's and/or Engineer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Engineer's attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of Clause 39 of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of Clause 43(1) of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of Sub-clause 55(1)(5) of the Conditions of Contract and for the Employer to cancel the Contract in accordance with the further provisions of the said Clause 55 (GCC 2015)."

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSE 5:

"PSA 5.9 <u>SITE MEETINGS</u>

The Contractor or his authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case, whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the Contractor's offices on the site. At such monthly meetings, matters such as general progress on the works, quality of work, problems, claims, payments, and safety shall be discussed, but not matters concerning the day-to-day running of the Contract.

The Contractor shall provide a suitable venue for holding these meetings. The venue shall be furnished with a conference table and chairs that can seat at least 12 people.

The room shall be well ventilated and provided with adequate air conditioning. At least two 220 -240V power points shall be provided."

"PSA 5.10 <u>TRAFFIC ACCOMMODATION</u>

(a) Scope

It is a condition of this contract that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, chapter 13 of the June 1999 edition. Copies of this publication are available from Government Printers – Arma Steyn – Tel: (012) 334 4500, e-mail: asteyn@print.pwv.gov.za.

(b) Safety

The Contractor shall be responsible for maintaining the existing road surface both within the works area and the advance warning and termination areas in a safe and trafficable condition for the duration of the contract.

The Contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of the drawings, specifications and the South African Road Traffic Signs Manual.

The Contractor shall supply, erect, operate and maintain all the road signs and other equipment shown on the drawings or in the specifications or as directed by the Engineer, necessary to safely carry out his traffic control responsibilities. He shall also carry out these responsibilities. He shall also carry out these responsibilities in consultation with the various Provincial Traffic Control Centres along the route and to the satisfaction of the Engineer.

(c) Use of the road by the public

The Contractor shall plan and conduct his activities so as to bring about the least possible disruption to the traffic on the roads on which he works. No detours for construction traffic and for the public are envisaged. Where there is no working space off the road, construction vehicles may be parked on the shoulder in which case flagmen and traffic cones shall be employed. All temporary lane closures and halting of traffic will require the prior approval of the Engineer and shall be pre-arranged with the appropriate traffic.

(d) Temporary traffic-control facilities

The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, canalization devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control devices) in accordance with these special provisions and as shown on the drawings and in the SARTSM and remove them when no longer required. It shall be incumbent upon the Contractor to see to it that the abovementioned traffic-control devices are present where required at all times and are functioning properly.

"The type of construction, spacing and placing of traffic-control devices shall be in accordance with the SARTSM. The recommended arrangements of the traffic control

devices illustrated and/or drawings issued by the Engineer shall not be departed from without prior approval of the Engineer. The arrangements expected to be most commonly used in the contract are given on the tender drawings.

The details shown for spacing and placement of traffic-control facilities may, however, be revised at the discretion of the Engineer where deemed necessary to accommodate local site geometry and traffic conditions."

All traffic control facilities supplies on the contract shall be new. Used traffic control facilities, bases, stands and poles which are in an "as new" conditions and approved by the Engineer may be used on site.

(e) Road signs and barricades

The Contractor shall be responsible for the protection and maintenance of all signs and shall at his own cost replace any that have been lost or stolen.

All temporary road signs required to remain in position for some time shall be pole mounted as shown on the drawings. All temporary road signs required to be moved more often shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included in the tendered rates for the various types of temporary road signs.

The covering of permanent road signs, if applicable, shall be by utilising a hessian bag that shall be pulled over the sign in the form of a hood and fastened to the signposts.

Plastic bags or other materials and fastened by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be included in the tendered rates of items PSA 8.3.19.06

The thickness and density of the hessian shall prevent the visibility of the road signs during day as well as night-time."

(f) Canalization devices and barricades

The use of drums as canalization devices shall not be permitted. Drums may however be used to set up barriers.

Delineators shall comply with the requirements of SANS 1555;

(i) comply with the manufacturing and reflective requirements of the SARTSM for TW 401 and TW 402 signs and the blades shall be reversible with dimensions as indicated on the drawings.;

(ii) have smooth and round edges and be mounted on a post and base. All components shall be of durable plastic material;

(iii) have the lower edge of the reflective part of the delineator mounted not lower than 250mm above the road surface;

(iv) be capable of withstanding the movement of passing vehicles and gusting winds up to 60km/h in typical working conditions without falling over. To achieve this, the base shall be at least 0,18m^2 and ballasted by sandbags with sand;

(v) together with its mounting be designed such that it will collapse in a safe manner under traffic impact;

(vi) minimum size 1 000mm x 250mm.

Traffic cones manufactured in a fluorescent red-orange or red plastic material may be used only at short term lane deviations during daylight. Cones shall not be used on their own but shall be interspersed with delineators at a ration not exceeding 3:1. Cones used on all deviations shall be 750mm high. Lane closures which continue into the night-time shall be demarcated by delineators only.

(g) Warning devices

All construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant before being allowed onto the site shall obtain a clearance permit from the Engineer.

(h) Vehicle mounted flashing lights

Rotating lights shall have an amber lens of minimum height of 200mm and shall be mounted in such a way as to be highly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted section of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, and as the vehicles accelerate to the general continuously while the plant is working alongside sections of road open to public traffic.

All LDV's and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be highly visible and operated continuously while the vehicles are manoeuvring in or out of traffic or are travelling or parked alongside roads open to public traffic.

The Contractor shall mount and maintain lights together with temporary mounting brackets, to the approval of the Engineer. Vehicles and plant that do not comply with these requirements shall be removed from the site".

(h) Other traffic control measures ordered by the Engineer

The Engineer may instruct the Contractor to provide any other road sign, reflective tape, etc. Not measured in standard pay items. Such road signs shall conform to the requirements of the SARTSM, or specification provided by the Engineer. Similarly, in order to ensure that the travelling public is kept fully informed and warned on matters relating to the accommodation to traffic, construction sign posting and the effect of the construction on the free flow of traffic through the site, the Engineer may arrange for advertising in the press and/or for other forms of publicity."

PSA 6 **TOLERANCES**

ADD THE FOLLOWING SUB-CLAUSE TO CLAUSE 6:

"PSA 6.4 **USE OF TOLERANCES**

No guarantee is given that the full specified tolerances will be available independently of each other, and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified, or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorised' dimensions.

If the work is constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the calculation of quantities will be based on the 'authorised' dimensions, regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

PSA 7 TESTING

PSA 7.1 PRINCIPLES

PSA 7.1.1 Checking

REPLACE THE LAST SENTENCE WITH THE FOLLOWING:

"The Contractor shall obtain the services of an independent testing laboratory at his own expense (refer to Clause 8 in Portion 1 of the Project Specifications) to carry out the checks prescribed in the various standardized specifications."

PSA 7.1.2 Standard of finished work not to specification

REPLACE THE WORDS "Where the Engineer's checks reveal …" *WITH* "Where the checks by the approved laboratory reveal …"

PSA 7.2 APPROVED LABORATORIES

REPLACE THE CONTENTS OF SUB-CLAUSE 7.2 WITH THE FOLLOWING:

"Unless otherwise specified in the relevant specification or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out:

(a) Any 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;

(b) Any testing laboratory owned, managed or operated by the Employer or the Engineer;

(c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Engineer.

(d) Any other laboratory that the Engineer approves in his absolute discretion.

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 MEASUREMENT

PSA 8.1.1 Method of measurement, all sections of the Schedule

DELETE THE WORDS "and South West Africa".

PSA 8.1.2 Preliminary and General item or section

PSA 8.1.2.1 Contents

REPLACE THE LAST SENTENCE OF SUB-CLAUSE 8.1.2.1(b) WITH THE FOLLOWING:

"Separate items will be scheduled to cover the fixed, value-related and time-related components of the Contractor's preliminary and general costs."

PSA 8.1.2.2 Tendered sums

REPLACE THE CONTENTS OF THIS SUB-CLAUSE WITH THE FOLLOWING:

"Except only where specific provision is made in the Specifications and/or the Schedule of Quantities for separate compensation for any of these items, the Contractor's tendered sums under items PSA 8.3 and PSA 8.4 shall collectively cover all charges for:

- risks, costs and obligations in terms of the Conditions of Contract and of this standardized specification;
- head-office and site overheads and supervision;
- profit and financing costs;
- expenses of a general nature not specifically related to any item or items of the permanent or temporary work;
- providing such facilities on site as may be required by the Contractor for the proper performance of the Contract and for its personnel, including, but without limitation, providing offices, storage facilities, workshops, ablutions, services such as water, electricity, sewage and rubbish disposal, access roads and all other facilities required, as well as for the maintenance and removal on completion of the works of these facilities and cleaning-up of the site of the Contractor's establishment and reinstatement to not less than its original condition, and
- providing the facilities for the Engineer and his staff as specified in the Contract and their removal from the site on completion of the Contract."

PSA 8.2 PAYMENT

PSA 8.2.1 Fixed-charge and Value-related items

REPLACE THE CONTENTS OF SUB-CLAUSE 8.2.1 WITH THE FOLLOWING:

PSA 8.2.1.1 Fixed-charge items

"Payment of fixed charges in respect of Item 8.3.1 will be made as follows:

(a) EIGHTY PER CENT (80%) of the sum tendered will be paid when the facilities have been provided and approved;

(b) The remaining TWENTY PER CENT (20%) will be paid when the Works have been completed, the facilities have been removed and the site of the Contractor's establishment has been cleared and cleaned to the satisfaction of the Engineer.

No adjustment will be made to the sum tendered in respect of item 8.3.1 should the value of the works finally executed or the time for completion vary in any way from that specified in the tender.

PSA 8.2.1.2 Value-related items

Payment for the sum tendered under item 8.3.2 will be made in three separate instalments as follows:

(a) The first instalment, which is 40% of the sum, will be paid when the Contractor has fulfilled all his obligations to date under this specification, the General Conditions of Contract and the Special Conditions of Contract, and when the value of work certified for payment, excluding materials on site and payments for preliminary and general items, is equal to not less than 5% of the total value of the work listed in the Schedule of Quantities.

(b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention moneys but excluding this second instalment, exceeds 50% of the tender sum.

(c) The final payment, which is 20% of the sum, will be made when the works have been certified as completed and the Contractor has fulfilled all his obligations to date under this Specification, the General Conditions of Contract and the Special Conditions of Contract.

Should the value of the measured work finally completed be more or less than the tender sum, the sum tendered under item 8.3.2 will be adjusted up or down in accordance with the provisions of Clause 50 of the Conditions of Contract, and this adjustment will be applied to the third instalment."

PSA 8.2.2 Time-related items

REPLACE THE CONTENTS OF SUB-CLAUSE 8.2.2 WITH THE FOLLOWING:

"Subject to the provisions of sub-clauses 8.2.3 and 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum tendered for the item by the tendered Contract period in months, provided always that the total of the monthly amounts so paid for the item is not out of proportion to the value of the progress of the Works as a whole."

PSA 8.4 TIME-RELATED ITEMS

ADD THE FOLLOWING ITEM TO SUB-CLAUSE 8.4:

PSA 8.4.6 Liaison with Authorities, opportunities to and co-operation with others on Site

a) Mechanical Contractor …….…….. Unit: sum

b) Electrical Contractor …….…….. Unit: sum

The tendered sum shall include full compensation to the Contractor for all time-related costs relating to liaison with relevant Authorities (as may be required from time to time) as well as for giving opportunities to other contractors or specialist sub-contractors undertaking related electrical and mechanical works and for interfacing his work with that of the specified engineering disciplines. The successful tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

PSA 8.5 SUMS STATED PROVISIONALLY BY THE ENGINEER

REPLACE THE CONTENTS OF SUB-CLAUSE 8.5 WITH THE FOLLOWING:

PSA 8.5.1 Works executed by the Contractor ..... Unit: Prov Sum

The Contractor will be reimbursed in accordance with the Provisional Sums (if any) allowed in the Schedule of Quantities, in the amounts determined in accordance with the provisions of Clause 6.6 of the General Conditions of Contract for Construction Works."

PSA 8.6 PRIME COST ITEMS

REPLACE SUB-CLAUSE 8.6 WITH THE FOLLOWING:

PSA 8.6 PRIME COST SUMS

(a) Description of item to which Prime Cost Sum applies ..... Unit: PC Sum

(b) Charge required by Contractor on subitem (a) above ..... Unit: %

Subitems (a) and (b) will be provided in the Schedule of Quantities for each different item to which a Prime Cost Sum applies.

The Contractor shall be reimbursed under subitem(s) (a) in substitution of the respective Prime Cost Sums included in the Contract, the actual price(s) paid or payable by him in respect of the goods, materials or services supplied, but excluding any charges for the Contractor's labour, profit, carriage, establishment or other charges related to such goods, services or materials.

The Contractor shall be paid under subitem (b), the respective percentage, as stated by the Contractor in his tender, of the amount certified by the Engineer for payment under the related subitem (a). The percentages tendered by the Contractor for each respective subitem (b) included in the Schedule of Quantities shall be deemed to be in full and final compensation to the Contractor in respect of any charge by the Contractor for labour, carriage profit, establishment and for any other charges related to the goods, services or materials supplied under the related subitem (a).

If the Contractor shall have omitted within his tender to insert a tendered percentage under subitem (b), or tendered a zero percentage, the Contractor's tendered rate for subitem (b)

shall be deemed to be zero and the Contractor shall not be entitled to any payment under subitem (b).

Note in connection with additional tests required by the Engineer:

When a PC sum is included in the Schedule of Quantities for additional tests required by the Engineer, the Contractor shall be responsible for both the cost of normal testing as described in the Standard Specifications and for the cost of any additional test that indicates that the specifications have not been complied with."

PSA 8.7 DAYWORK

REPLACE THE CONTENTS OF SUB-CLAUSE 8.7 WITH THE FOLLOWING:

"Measurement and payment shall be in accordance with the provisions of Sub-clause 6.5 of the Conditions of Contract for Construction Works.

PSA 8.9 COMPLIANCE WITH OHS ACT AND REGULATIONS

(INCLUDING THE CONSTRUCTION REGULATIONS 2003) Unit: sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations 2003) at all times for the full duration of the Contract, as described in the project specifications and Employers' OHS policy. The successful tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance.

PSA 8.10 COMPLIANCE WITH ENVIRONMENTAL MANAGEMENT PLAN……Unit: sum

The Tenderer shall carefully read the provisions of Clause C3.1.34 "Environment and Safety" and refer to Annexure 1 included at the end of the document for the applicable Environmental Management Plan (EMP) and shall make adequate allowance in the time-related rates for compliance to the said Specification during the period of construction of the Works. The successful tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance.

PSA 8.11 ACCOMMODATION OF TRAFFIC

Accommodating traffic and re-use of temporary traffic control facilities …Unit: month

"The tendered rate shall include full compensation for accommodating traffic and maintaining temporary deviations, including roads used as temporary deviations during construction

The tendered rate shall also include full compensation for the re-use, moving, transporting and re-erection of temporary road signs, barricades, as well as the dismantling and storing irrespective of the number of times such traffic control facilities need to be moved during the construction period. The tendered rate shall include the temporary covering of road signs and shall include all labour cost including flagmen"

PSAB ENGINEER'S OFFICE

PSAB 3 MATERIALS

PSAB 3.1 NAMEBOARDS

REPLACE THE FIRST SENTENCE OF SUB-CLAUSE 3.1 WITH THE FOLLOWING:

"The Contractor shall supply and erect at locations approved by the Engineer, 1 name-board, which, unless otherwise specified in the Contract, shall comply with the recommendations for the standard board of the South African Association of Consulting Engineers, with regards to size, painting, decorating and detail, and the requirements described hereunder."

PSAB 3.2 OFFICE BUILDING(S)

REPLACE SUB-CLAUSE 3.2(j) WITH THE FOLLOWING:

"(j) a heater and fan or air conditioning unit capable of both heating in summer and cooling in winter."

PSAB 3.3 CARPORT

The Contractor shall construct the 2 carports for the sole use of the Engineer and his staff. Each carport shall be constructed so that the vehicle parked under it is always protected against the direct rays of the sun. The carport area shall be at least 20 m^2 and the floor shall be covered with a layer of crushed stone to alleviate dusty and muddy conditions. The carport(s) shall be positioned so as to provide easy and convenient access to the Engineer's office."

PSAB 4 PLANT

REPLACE SUB-CLAUSE 4.1 WITH THE FOLLOWING:

"**PSAB 4.1 CELLPHONE**

The Contractor shall provide 2 cellular telephones and associated service contracts from a reputable cellular service provider, for the exclusive use of the Engineer and his staff. The Contractor shall further insure the cellular phones against loss or damage from whatever cause arising and shall ensure that all cellular phone accounts are promptly paid on the due dates for payment. The Contractor shall further, at its own cost, ensure the prompt repair of all cellular phones provided under this clause, when reasonably required by the Engineer."

ADD THE FOLLOWING NEW SUB-CLAUSES TO CLAUSE 4:

PSAB 4.4 SURVEY EQUIPMENT

The Contractor shall provide onsite and make available for the exclusive use of the Engineer and his staff, the survey equipment and labour listed below:

6. Automatic level (including staff and tripod stand)
7. 5m steel measuring tape
8. 30m plastic measuring tape
9. 2 survey assistants
10. 3 ranging rods
11. 4kg hammer

All survey equipment provided by the Contractor shall be in good condition, properly calibrated and fit for the purpose.

In addition to survey equipment provided by the Contractor for the exclusive use of the Engineer and his staff, the Contractor shall make available for use by the Engineer any further survey equipment when such is reasonably required by the Engineer and his staff for the purposes of the Contract.

PSAB 5 CONSTRUCTION

REPLACE THE CONTENTS OF SUB-CLAUSE 5.4 WITH THE FOLLOWING:

"**PSAB 5.4 Cellular Telephone Costs**

The costs of any necessary repairs and/or the replacement of components to the handsets of the cellular telephones shall be for the Contractor's account.

The Contractor shall ensure that all accounts for cellular phone calls and the respective service contracts are promptly paid. The Contractor shall, on production of an itemised statement, be reimbursed the cost of the Engineer's cellular telephone calls and a 10% handling charge."

PSAB 5.8 SURVEY EQUIPMENT

All survey equipment provided by the Contractor shall be kept fully serviceable at all times by the Contractor. The Contractor shall have any defective equipment repaired or replaced at its own cost within 12 hours after notification by the Engineer's staff.

Where required by the Engineer, the Contractor shall at its own cost, promptly arrange for the re-calibration of survey equipment provided.

PSC SITE CLEARANCE

PSC 3 MATERIALS

PSC 3.1 DISPOSAL OF MATERIAL

ADD THE FOLLOWING NEW PARAGRAPH AT THE END OF SUB-CLAUSE 3.1:

"The Contractor shall obtain his own dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance."

PSC 5 CONSTRUCTION

PSC 5.1 AREAS TO BE CLEARED AND GRUBBED

ADD THE FOLLOWING TO SUB-CLAUSE 5.1 WHICH DEFINES THE EXACT AREAS TO BE CLEARED AND GRUBBED:

"The following areas are to be cleared and grubbed:

i) The Contractor's site.

ii) The necessary areas around the Water Treatment Plant to accommodate the new infrastructure.

iii) The stormwater drainage lines.

iv) The pipeline routes."

PSC 5.2 CUTTING OF TREES

PSC 5.2.3 Preservation of trees

PSC 5.2.3.2 Individual trees

REPLACE THE LAST SENTENCE OF SUB-CLAUSE 5.2.3.2 WITH THE FOLLOWING:

"An amount of not less than R500.00 (Five Hundred Rands) will be deducted from moneys due to the Contractor as a penalty for every tree that is damaged or removed unnecessarily, and as further guided by prevailing legislation."

PSC 5.5 RECLEARING OF VEGETATION

ADD THE FOLLOWING NEW PARAGRAPH AT THE END OF SUB-CLAUSE 5.5:

"When areas have to be re-cleared on the written instructions of the Engineer, such re-clearing shall be carried out at the Contractor's own cost and the Contractor is therefore advised not to clear the areas too soon."

PSC 5.7 LANDSCAPE PRESERVATION AND CONSERVATION OF FLORA

ADD THE FOLLOWING NEW PARAGRAPH AT THE END OF SUB-CLAUSE 5.7:

"A penalty of R1000-00 (One Thousand Rands) per hectare of general habitat and flora damaged by the Contractor outside the designated areas shall be levied".

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.2 PAYMENT

AMEND PAYMENT ITEMS 8.2.1 AND 8.2.4 AS FOLLOWS:

PSC 8.2.1 **Clear and grub** ……. Unit: m^2

REPLACE THE FIRST LINE IN SUB-CLAUSE 8.2.1 WITH THE FOLLOWING:

"The area designated by the Engineer to be cleared and grubbed will be measured in square metre to the nearest square metre or, "

PSC 8.2.4 **Reclear surfaces (only on instructions from the Engineer) .....** Unit: m^2

REPLACE THE FIRST LINE WITH THE FOLLOWING:

"The area designated by the Engineer to be recleared will be measured in square metre to the nearest square metre or, "

REPLACE PAYMENT ITEM 8.2.10 WITH THE FOLLOWING:

PSC 8.2.10 **Remove topsoil to spoil site furnished by Contractor .....** Unit: m^3

“The tendered rate shall include full compensation for removing topsoil to a depth of 150 mm and for loading and transporting the material to spoil sites furnished by the Contractor."

PSD EARTHWORKS

PSD 2 INTERPRETATION

PSD 2.1 SUPPORTING SPECIFICATIONS

REPLACE SUB-CLAUSE 2.1 *WITH THE FOLLOWING:*

"Any of the other SANS 1200 specifications may form part of the Contract documents."

PSD 4 PLANT

PSD 4.4 DETECTORS

REPLACE THE CONTENTS OF SUB-CLAUSE 4.4 WITH THE FOLLOWING:

"The Contractor shall, for the purposes of detecting and locating underground services in accordance with the provisions of sub-clause 5.4 of SANS 1200 A and sub-clause 5.1.2 of SANS 1200 D, at his own cost, provide and use detecting equipment which is suitable for the detection of underground cables and pipes."

PSD 5 CONSTRUCTION

PSD 5.1 PRECAUTIONS

PSD 5.1.1 Safety

PSD 5.1.1.2 Safeguarding of excavations

AMEND SUB-CLAUSE 5.1.1.2 BY ADDING THE FOLLOWING:

"(g) Any cost the Contractor may undergo in ensuring the safety of excavations or any additional excavation and backfilling he may have to undertake due to the unstable sides of excavations and trenches shall be held to his account and the various rates for excavation and trenching included in the Schedule of Quantities shall include full compensation thereof."

PSD 5.1.1.3 Explosives

REPLACE THE CONTENTS OF SUB-CLAUSE 5.1.1.3 WITH THE FOLLOWING:

"The Contractor will generally be permitted to use explosives for breaking up hard material during excavations, for demolishing existing structures, and for other purposes where explosives are normally required, subject to the following conditions:

(a) The Engineer may prohibit the use of explosives in cases where, in his opinion, the risk of injury to persons or damage to property or to adjoining structures is too high. Such action by the Engineer does not entitle the Contractor to additional payment for having to resort to less economical methods of construction.

(b) The Engineer's prior written approval shall be obtained for each and every blasting operation. This approval may be withheld if the Contractor does not use explosives responsibly and carefully.

(c) The Contractor shall comply fully with the applicable legislation and regulations.

(d) Before blasting is undertaken, the Contractor shall satisfy the Engineer that he has

established whether or not the insurers concerned require pre- and post-blasting inspections of buildings and structures within a certain radius of the proposed blasting.

Should such inspections be required, the Contractor shall, together with the Engineer and the insurer, examine and measure the buildings, houses or structures in the vicinity of the proposed blasting site and establish and record, together with the owner, lessee or occupier, the extent of any existing cracking or damage before blasting operations commence.

(e) When there is a possibility of damage to power and telephone lines or any other services or property, the Contractor shall adapt his method of blasting and the size of the charges and shall use adequate protective measures (eg cover-blasting) to reduce the risk of damage.

(f) All accidents, injury to persons and animals and damage to property shall be reported to the Engineer in detail and in writing as soon as is practical.

(g) The Engineer shall be given 24 hours' notice by the Contractor before each blasting operation is carried out.

(h) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good, at his own expense, any additional excavation necessitated by the shattering of rock in excess of any over break allowances specified in the Project Specifications or given on any Drawing.

Notwithstanding the Contractor's compliance with the above provisions, the Contractor shall remain liable for any injury to persons and animals and loss of or damage to property occurring as a result of blasting operations."

ADD A NEW SUB-CLAUSE 5.1.1.4 AS FOLLOWS:

PSD 5.1.1.4 <u>Access and safety for working in deeper excavations</u>

"Tenderers are to carefully note that some of the excavations from the previous contract, such as at the settling tanks / clarifiers, are significantly deep (>5m) and so, the Contractor would be required to provide safe access and emergency escape route from these excavations and to make proper allowance for this in his tender. The successful tenderer shall provide the Engineer with a detailed method statement clearly indicating how he intends to carry out the earthworks and concrete works in such deep excavations.

PSD 5.1.2 <u>Existing Services</u>

PSD 5.1.2.2 <u>Detection, location and exposure</u>

REPLACE THE CONTENTS OF SUB-CLAUSE 5.1.2.2 WITH THE FOLLOWING:

"The exposure by the Contractor of underground services, as required in terms of sub-clause 5.4 of SANS 1200 A (as amended) shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Engineer.

Unless otherwise instructed or agreed by the Engineer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

(a) In roadways: 93% Mod AASHTO density; and

(b) In all other areas: 90% Mod AASHTO density.

Where hand excavations to expose underground services have to be carried out in roadways, the Contractor shall reinstate the road layer works in accordance with the provisions of sub-clause 5.9 of SANS 1200 DB.

Payment in respect of exposing the services by means of hand excavation as described above, will be made in accordance with sub-clause PSD 8.3.8.1.

Payment in respect of reinstating layer works in roadways will be made in accordance with sub-clause 8.3.6.1 of SANS 1200 DB (as amended)."

PSD 5.1.2.3 Protection during construction

REPLACE THE CONTENTS OF SUB-CLAUSE 5.1.2.3 WITH THE FOLLOWING:

"Protection during construction.

Further to the requirements of sub-clause 5.4 of SANS 1200 A (as amended), major excavating equipment and other plant shall not be operated dangerously close to known services. Where necessary, excavation in close proximity to known services, shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a known service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of sub-clause 5.4 of SANS 1200 A (as amended), immediately notify the Engineer thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring."

PSD 5.1.2.5 Negligence

DELETE SUB-CLAUSE 5.1.2.5 IN ITS ENTIRETY

PSD 5.1.3 Stormwater and Groundwater

ADD THE FOLLOWING TO SUB-CLAUSE 5.1.3:

"The Contractor shall, where applicable and at the earliest practicable opportunity, install the permanent drainage specified or shown on the drawings and shall at his own cost provide the temporary drainage required to protect the works."

PSD 5.2 METHODS AND PROCEDURES

PSD 5.2.1 Site Preparation

PSD 5.2.1.2 Conservation of topsoil

ADD THE FOLLOWING TO SUB-CLAUSE 5.2.1.2:

"Topsoil shall be removed from all areas where structures are to be constructed and shall be stockpiled or spread as and where indicated by the Engineer."

PSD 5.2.2 Excavation

PSD 5.2.2.1 Excavation for general earthworks and for structures

ADD THE FOLLOWING TO PARAGRAPH b) OF SUB-CLAUSE 5.2.2.1:

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. The tendered rate for Item 8.3.5 will be deemed to include the cost of a working width of 600mm, but the Contractor may excavate a greater working width at no additional cost to the Employer."

REPLACE THE FIRST SENTENCE OF PARAGRAPH e) OF SUB-CLAUSE 5.2.2.1 WITH THE FOLLOWING:

"Where excavations have been carried out below the authorised levels, the Contractor shall backfill such excavations to the correct level with approved gravel compacted to 93% of modified AASHTO density or to the density of the surrounding material, whichever is the higher density.

Where excavations for structures have been carried out in hard material, the Engineer may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall re-trim the excavations if necessary and, unless other remedial measures are agreed to by the Engineer, shall cast the concrete for the structure, including the additional concrete that may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

PSD 5.2.2.3 <u>Disposal</u>

REPLACE THE SECOND SENTENCE OF SUB-CLAUSE 5.2.2.3 WITH THE FOLLOWING:

"The Contractor shall provide all necessary spoil sites for the spoiling of all surplus and unsuitable materials and shall make the necessary arrangements with the owner of the site where the material is disposed of, and pay all charges and levies as may be applicable for the use of such spoil sites.

Every spoil site provided by the Contractor shall be approved by the local authority in whose area it is located, and the spoiling shall comply with the applicable statutory and municipal regulations as well as the requirements of the owner of the spoil site.

If so instructed by the Engineer, surplus or unsuitable materials arising from the works shall be spoiled and neatly spread and levelled so as not to interfere with future works nor to disrupt the natural overland flow of storm runoff, at spoil areas arranged by the Contractor and approved by the land owner and Engineer. Where a pipeline is laid within a rail or road reserve the route of the pipeline shall be finished neatly to be flush with the natural ground level or finished sidewalk level as may be applicable."

PSD 5.2.3 <u>Placing and Compaction</u>

ADD THE FOLLOWING NEW SUB-CLAUSE UNDER SUB-CALUSE 5.2.3:

PSD 5.2.3.3 <u>Backfilling with soilcrete</u>

Soilcrete backfilling shall be a G5 material as specified in SANS 1200 M, stabilised with 5% cement and compacted to 93% modified AASHTO maximum density."

PSD 7 <u>TESTING</u>

PSD 7.2 TAKING AND TESTING OF SAMPLES

REPLACE THE CONTENTS OF SUB-CALUSE 7.2 WITH THE FOLLOWING:

"The Contractor shall arrange with an approved independent laboratory engaged by the Contractor to carry out sufficient tests on a regular basis as agreed between him and the Engineer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the Specifications and shall submit the results of these tests to the Engineer in a form approved by him.

The compaction requirements for fills shall be deemed complied with when at least 75% of the dry-density tests on any lot show values equal to or above the specified density and when no single value is more than five (5) percentage points below the specified value."

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.3 SCHEDULED ITEMS

ADD THE FOLLOWING NEW PAYMENT ITEM UNDER SUB-CLAUSE 8.3

PSD 8.3.14 Provide access and emergency escape route from excavation ……Unit: sum

The unit of measurement shall be a once-off sum for providing safe access into and emergency escape route from the deep excavation of the settling tanks to the satisfaction of the Engineer.

The sum tendered shall include full compensation for the provision of all labour, plant and materials necessary for providing the specified safety measure. This payment shall be deemed extra over the normal provision for OHS requirements which is measured under the Preliminary and General.

PSD 8.3.15 Backfilling or for fill material against structures in 150 mm .... Unit: m³

The rate supplied for this item is to include haulage from the existing stockpile on site, grading (removal of oversized material, vegetation and other foreign objects), placing in required 150 mm layer thickness, labour, plant and compaction to a minimum of 93% mod AASHTO density. The material has the minimum grading of a G7 or higher.

PSDB EARTHWORKS (PIPE TRENCHES)

THE FOLLOWING VARIATIONS ARE APPLICABLE TO THE STANDARD SPECIFICATION SANS 1200 DB:

PSDB 3 MATERIALS

PSDB 3.8 Suitable Material available form Trench Excavation

The Contractor is required to use selective methods for preserving material, suitable for bedding, from being contaminated.

PSDB 3.9 Suitable Material not available from Trench Excavation

When suitable material is not available from the trench excavations, material shall be obtained from other necessary excavation on site and lastly imported from external sources unless otherwise indicated by the Engineer.

PSDB 5 CONSTRUCTION

PSDB 5.4 Excavation

Should any portion of a pipe trench exceed the specified depth, the Contractor will be held responsible for any additional costs, which may arise as a result of such over-excavation. Concrete filling or imported backfill may be ordered by the Engineer to remedy such over break, all at the Contractor's expense.

PSDB 5.5 Trench Bottom

No compensation shall be made for over break and the backfilling thereof except in hard rock conditions where a maximum of 300mm over break under the designated trench bottom shall be allowed for. No over break shall be allowed for the sides of the trench excavation.

Where the bottom of the trench is in waterlogged conditions, the Engineer may instruct the Contractor to lay a 200mm thick layer of 19mm to 6,7mm graded stone under the pipes.

PSDB 5.6 General Backfilling

No pipe joint or pipefitting shall be covered by either the blanket fill or main fill prior to the successful completion of the visual inspection of the relevant section of the pipeline.

PSDB 5.6.2 Material for backfilling

Hard rock material shall not be used for or incorporated in the backfill of the trench.

PSDB 5.6.9 Soilcrete

When specified or ordered by the Engineer, the backfilling of culverts shall be done using a wet or a stiff mixture of soil cement in lieu of a compacted gravel or lean concrete. A wet mixture of soil cement shall consist of an approved soil or gravel mixed with 5% by weight of Portland cement and only sufficient water to give a consistency that will permit the soil cement to be placed with vibrators, so that all voids between the pipes and the sides of excavations will be properly filled. A stiff mixture of soil cement shall contain 3% cement and just sufficient water for it to be placed and compacted like

ordinary backfill material. The height to which the soil cement backfill shall be taken shall be as prescribed by the Engineer or shown on the drawings, and any remaining backfill shall be carried out as described above with a granular material.

The aggregate used for soil cement shall preferably be a sandy material but may contain larger particles up to 38mm, and it shall not have a plasticity index exceeding 10. Detrimental percentages of silt or clay shall be avoided, and the aggregate shall be obtained from an approved source.

The soil cement shall be mixed on the site with suitable concrete mixers, and the water and cement contents shall be carefully controlled. The material shall be placed and then thoroughly compacted so that all voids are filled as described above. At culvert ends stones shall be packed to prevent the soil cement from flowing beyond the required limits.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1.5 Encasing of Pipes in Concrete

The costs shall include for a flexible joint at each coupling.

PSDB 8.1.6 Stone Bedding

The rate shall cover the Contractor's costs for the supply and laying of the specified thickness of stone bedding and shall include all labour, plant, equipment and material required for this operation.

PSDB 8.1.7 Soilcrete

The unit of measurement shall be the cubic metre. The quantity shall be calculated from the dimensions of the excavation as specified or as may be authorised by the Engineer, less the volume taken up by the pipe/culverts, irrespective of whether the actual excavation to be backfilled exceeds the specified or authorised dimensions.

PSDM EARTHWORKS (ROADS, SUBGRADE)

PSDM 3 MATERIALS

PSDM 3.2 Classification for Placing Purposes

PSDM 3.2.3 Selected Layer

REPLACE THE CONTENTS OF SUB-CLAUSE 3.2.3 WITH THE FOLLOWING:

"The following requirements shall apply in respect of the selected layer:

(a) Maximum particle size: 60% of compacted layer thickness

(b) Unstabilised selected layer

(i) Upper selected layer

Minimum CBR at 93% of modified AASHTO density: 15

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

(ii) Lower selected layer

Minimum CBR at 90% of modified AASHTO density: 7

Maximum PI: 12 (the Engineer has the right to alter this requirement to 3 x the grading modulus + 10)

(c) Stabilized selected layer

Minimum grading modulus of natural material: 0,75

UCS of stabilized material 300 kPa - 500 kPa at 93% of modified AASHTO density

Maximum PI for stabilized material: 10"

PSDM 5 CONSTRUCTION

PSDM 5.2 METHODS AND PROCEDURES

PSDM 5.2.2 Cut and Borrow

PSDM 5.2.2.3 Use of material

ADD THE FOLLOWING PARAGRAPH TO SUB-CLAUSE 5.2.2.3:

"(e) **Commercial sources**

Sources of materials, other than as contemplated in paragraphs a) to d) of this sub-clause or not obtained from designated borrow pits but shall be suitable alternative sources of material located by the Contractor and used at the approval of the Engineer."

PSDM 5.2.2.6 Catchwater mounds and channels and mitre banks and channels

ADD THE FOLLOWING SENTENCE TO SUB-CLAUSE 5.2.2.6:

"Catchwater mounds and mitre banks shall be compacted to a minimum density of 90% of

modified AASHTO density."

PSDM 5.2.3 Treatment of the Roadbed

PSDM 5.2.3.2 Removal of unsuitable ground

REPLACE THE SECOND SENTENCE OF PARAGRAPH a) OF SUB-CLAUSE 5.2.3.2 WITH THE FOLLOWING:

"The excavated spaces shall then be backfilled with approved imported material compacted to the required density."

ADD THE FOLLOWING SENTENCE TO PARAGRAPH b) OF SUB-CLAUSE 5.2.3.2:

"Unsuitable excavated material will be paid for as cut to spoil."

PSDM 5.2.3.3 Treatment of roadbed

ADD THE FOLLOWING PARAGRAPH TO SUB-CALUSE 5.2.3.3:

"(c) Three-pass roller compaction

Any portion of the roadbed that is shown on the Drawings or is specified or is directed by the Engineer to be given three-pass roller compaction because of its inadequate natural density, shall be prepared by shaping where necessary and compacting with a roller, complying with the requirements specified below.

Compaction shall comprise three complete coverages by the wheels of the specified roller over every portion of the area that is being compacted. While it is not the intention that the Contractor should apply water to the roadbed for this type of compaction, and while no rigid moisture control will be exercised during compaction, the Contractor shall nevertheless satisfy the Engineer that everything is being done to take full advantage of favourable soil moisture conditions during the rainy season, and that such compaction is as far as possible carried out when the roadbed is neither excessively dry nor excessively wet.

The Engineer has the authority to decide when conditions are favourable for compaction and where such compaction is to be carried out at any particular time, and he has the right to instruct the Contractor to water the roadbed at the Contractor's expense when, in the opinion of the Engineer, the Contractor failed, neglected or refused to comply with these requirements.

The rollers to be used for roller-pass compaction shall conform to the following requirements:

Grid roller: The grid roller shall have a mass of not less than 13,5 t when ballasted, shall be loaded to this mass if required, and shall be moved at a speed of not less than 12 km/h.

Vibratory roller: The vibratory roller shall be capable of exerting a combined static and dynamic force of not less than 120 kN/m width for every metre of loose-layer thickness at an operating frequency not exceeding 25 Hz and shall move at a speed not exceeding 4 km/h."

PSDM 5.2.5 Selected Layer

REPLACE THE CONTENTS OF SUB-CLAUSE 5.2.5 WITH THE FOLLOWING:

"Except with regard to density, the requirements of sub-clause 5.2.4 shall apply. The degree of compaction shall be:

Upper selected*

Selected* : 93% of modified AASHTO density

PSDM 5.2.6 Gravel surfacing

REPLACE THE THIRD SENTENCE OF SUB-CLAUSE 5.2.6 WITH THE FOLLOWING:

"The relevant requirements in sub-clause 5.2.4.2 shall apply, except that the material shall be compacted to 93% of modified AASHTO density."

PSDM 5.2.8 Transport

REPLACE THE CONTENTS OF SUB-CLAUSE 5.2.8 WITH THE FOLLOWING:

"The provisions of sub-clause PSD 5.2.5 of SANS 1200 D, as amended, shall apply."

PSDM 7 TESTING

PSDM 7.3 ROUTINE INSPECTION AND TESTING

REPLACE TABLE 2 AND THE CONTENTS OF SUB-CLAUSE 7.3.2 WITH THE FOLLOWING:

"PSDM 7.3.2 The dry density requirements for a particular lot of selected layer or wearing course shall be deemed to be satisfied if the average density and the results of individual tests meet the requirements specified in table 2 below. Refer to sub-clause PSD 5.2.2 for the requirements for fill."

TABLE 2 - DENSITIES

1	2	3	4	5
Layer	Specified density (% of modified AASHTO density)	Number of tests per lot	Average density, %	Minimum density for any single test, %
Upper selected* or selected layer* and gravel wearing course*	93	3 and 4 5 6	93,1 93,4 93,6	89,4 89,2 89,0

* See 1.1 (c)

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.2 COMPUTATION OF QUANTITIES

REPLACE SUB-CLAUSES 8.2.1 TO 8.2.3 (INCLUSIVE) WITH THE FOLLOWING:

"PSDM 8.2.1 **The provisions of subclause 8.2.1 of SANS 1200 D shall apply.**

PSDM 8.2.2 **The provisions of subclause 8.2.2 of SANS 1200 D shall apply.**

PSDM 8.2.3 **The provisions of subclause 8.2.2 of SANS 1200 D shall apply.**"

PSDM 8.2.5 Verifying Quantities

REPLACE THE FIRST SENTENCE OF SUB-CLAUSE 8.2.5 WITH THE FOLLOWING:

"Before any earthworks are commenced but after completion of any site preparation, the

Engineer will, upon a written request from the Contractor, provide cross-sections for the purpose of measurement of earthworks quantities."

PSG CONCRETE (STRUCTURAL)

PSG 1 SCOPE

This specification covers the requirements for water retaining structural concrete for civil engineering work.

PSG 2 INTERPRETATIONS

PSG 2.3 DEFINITIONS

For purpose of this variation to the Standard Specification, all reinforced concrete structures at the Phalaborwa Water Treatment Works will be regarded as water retaining structures unless stated otherwise in the Project Specification. The Standard Specification shall be applicable to all other concrete structures not mentioned above.

PSG 2.4 EXPLANATION OF TERMS

PSG 2.4.1 Exposure Conditions

For the purpose of this Specification, Water retaining structures shall be deemed to be classified under clause 2.4.1.3 (severe conditions) as specified in SANS 1200 G unless specified otherwise in the project specification.

PSG 3.2 CEMENT

PSG 3.2.1 Applicable Standards

All cementitious material used in concrete shall comply with the following standards, as relevant:

Common Cements

SANS ENV 197-1:1992 *Cement B composition, specifications and conformity criteria B Part 1: Common Cements*

Cement Extenders

SANS 1491: Part I-1989 *Ground granulated blast furnace slag*

SANS 1491: Part II-1989 *Fly ash*

SANS 1491: Part III-1989 *Condensed silica fume*

PSG 3.2.2 Alternative Types of Cement

Only CEM II B-V shall be used in water retaining structures. The target Fly Ash content shall be 25-30%.

Other types of cementitious material may be used only if specifically approved by the Engineer.

PSG 3.4 AGGREGATES

THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE APPLICABLE TO WATER RETAINING STRUCTURES:

PSG 3.4.4 Fine Aggregate

Samples of the proposed fine aggregate shall be submitted to the Engineer for his approval before use.

The Contractor shall submit a sieve grading analysis to the Engineer for approval and if unacceptable, the Contractor shall offer another sample and grading for approval or may blend aggregate from different sources and submit the blend for approval.

The water demand of the fine aggregate shall not exceed 195 ℓ/m³.

Fine aggregate shall be stored on a concrete surface and washed sand shall be allowed to drain for at least 24 (twenty-four) hours before use. The Engineer may require the Contractor to test the sand daily (or more frequently if necessary) for moisture content, impurities and grading before use.

PSG 3.4.5 Coarse Aggregate

The voids ratio of the coarse aggregate shall not exceed 47% (forty-seven per cent). Single sized aggregates shall be stored on a concrete surface in separate stockpiles, according to size. The proportions of the various single sized aggregates required for the various portions of the work shall be submitted by the Contractor for the Engineer's approval.

PSG 4.5 FORMWORK

PSG 4.5.1 Design

The use of wooden formwork shall not be allowed for the construction of any visible surfaces on any structure. This requirement applies to all walls, columns, walkways and steps.

PSG 4.5.2 Finish

Unless otherwise specified, the surface finish of all structural concrete on water-retaining structures shall be Smooth as defined in clause 5.2.1 (b).

PSG 5 CONSTRUCTION

PSG 5.1 REINFORCEMENT

THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE APPLICABLE TO WATER-RETAINING STRUCTURES:

PSG 5.1.2 Fixing

The use of plastic spacer blocks will not be allowed. Concrete spacer blocks, of same mix design as the strength concrete, shall be used.

"The Engineer will inspect the reinforcing after it has been fixed in place, the formwork has been cleaned, cover blocks have been positioned, and before concreting commences.

Welding of reinforcing steel will not be permitted."

PSG 5.1.3 Cover

In water retaining structures the exposure condition of a reinforcing bar closest to the face in direct contact with water or soil backfilling, shall be classified as severe.

It should be noted that in some water retaining structures only one face of the structural elements will be in contact with water.

The nominal concrete cover is generally 50mm, unless otherwise specified on the Drawings.

The soffit of a slab suspended above the water (e.g. a reservoir roof) will be treated as being in contact with the water for the purpose of determining the cover.

PSG 5.5 CONCRETE

PSG 5.5.1 QUALITY

PSG 5.5.1.7 Strength Concrete

It is a requirement that the Contractor employ the services of an approved specialist to recommend design mixes compatible with the Specification. The preferred specialist shall confirm in writing:

(a) The proposed concrete mix is suitable for water retaining structures with aggressive (waste) water being retained;

(b) The proposed concrete mix is of grade 35/19 (minimum).

No concrete shall be placed until the Contractor's concrete mix design has been approved by the Engineer. The Contractor shall submit to the Engineer a statement of the mix proportion proposed, together with a report from an approved testing laboratory, showing the 28-day concrete strength obtained when using the materials proposed for the work.

The strength determinations shall be based on not less than three concrete test specimens.

When the Contractor can furnish reliable test records of concrete of a quality at least equal to that specified, having been made with materials from the same sources and of the same qualities as he proposes to use, the Engineer may waive all or part of the strength tests required in the above paragraph.

The preparation of the 150 mm test cube specimens and the sampling techniques shall be in accordance with the relevant SANS specification.

Concrete for water retaining structures shall be class (min) 35MPa/19mm concrete and shall have a cement/water ratio not less than 2.2 and a cement content of 420 kg/m³.

Admixtures may be used to increase the workability of the concrete but only with the express approval of the Engineer and when the details of the active ingredients of the admixture and their effects are supplied to the Engineer for approval before use. No additives likely to impair low permeability of the concrete will be approved. Calcium chloride or admixtures containing chlorides may not be used in concrete for water retaining structures. Other admixtures and constituents may only be used with the approval of, or as specified by the Engineer.

PSG 5.5.5 Placing

Panels between construction joints shall be cast alternatively.

PSG 5.5.7 Construction Joints

THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE APPLICABLE TO WATER-RETAINING STRUCTURES:

The Engineer may allow the Contractor to cut an additional straight construction joint if it is

possible without prejudicing the water tightness of the structure. The additional construction joint shall be sealed with the same seal that is specified for planned construction joints at the expense of the Contractor.

Construction joints in reinforced concrete walls, embankments, etc. shall consist only of horizontal joints. If under abnormal conditions a vertical construction joint is unavoidable it may only be constructed with the approval of the Engineer.

Construction joints shall only be placed at intervals shown on the drawings or as directed by the Engineer. The exact position of construction joints shall be marked on the formwork in order to obtain truly horizontal joints.

Preparation of Surface

Prior to placing any further concrete, the joint must be clean, damp and free of laitance. During the period when the concrete is still green, all loose material shall be removed, without disturbing the aggregates, by light brushing. Where this is not possible, or if the concrete has already set, the surface film shall be removed by mechanical means appropriate to the degree of hardness of concrete so as to expose the aggregate over the entire surface and leave a sound, irregular surface.

Before Placing Concrete

Where the concrete of the previous lift is more than 3 days old, it shall be kept continuously wet for a period of 24 hours before the mortar and fresh concrete is placed.

On all construction joints the following steps shall be taken after the surface has been prepared and at the most, 30 minutes before placing the concrete:

(i) Remove all surface water with an air hose and dry sprinkle waterproofing additive (Vandex Premix or similar approved) at 9,8 kg per m².

(ii) Place a layer of approximately 10 mm thickness consisting of cement, sand and water mixed in the same proportions as used in the concrete.

(iii) Place concrete within 30 minutes.

PSG 5.5.8 Curing and Protection

SANS 1200 G CLAUSE 5.5.8 WILL BE DELETED FOR THE PURPOSE OF THIS SPECIFICATION AND REPLACED WITH THE FOLLOWING:

"All concrete other than blinding concrete shall be maintained continuously saturated for at least ten days or as directed on the drawings immediately after placement or after stripping formwork in the case of walls, by methods which shall receive the prior written approval of the Engineer if different from the following:

a) *For floors*

Ponded water with a minimum depth of 30mm.

b) *For Columns and Walls*

Continuously saturated heavy jute sacking, or other approved absorbent material maintained in contact with the concrete surface by fastenings spaced at not more than 2m centres.

c) *For Floors and Columns*

Covering the previously saturated surfaces with approved plastic sheets maintained in contact with the concrete surface and with all edges and joints sealed by methods approved by the Engineer.

Where the ambient temperature is below 4°C the curing period of 10 days or as directed on the drawings, will be extended by 72 hours.

Newly cast concrete sections shall not be used for supporting loaded wheelbarrows, monorails, material or scaffolding, etc., until permission is obtained from the Engineer."

PSG 5.5.9 Adverse Weather Conditions

(a) Concreting in cold weather

During cold weather no material having a temperature below 5 °C shall be used for making concrete.

No concrete shall be placed when the ground or air temperature is below 2°C or if the ground or air temperature is likely to fall below 2° C within 6 (six) hours of placing the concrete.

The temperature of placed concrete shall not be allowed to fall below 5 °C until the concrete has attained a strength of at least 5Mpa, and the Contractor shall be responsible for all the necessary protective measures to ensure this. All concrete that has been damaged by frost or by the formation of ice in the concrete shall be removed and replaced by the Contractor at his own expense.

(b) Concreting in hot weather

During hot weather, the temperature of the concrete, as placed, shall not exceed 30°C. The Contractor shall ensure that the placing of the fresh concrete does not exceed the ambient temperature by more than 5°C. Where necessary this shall be accomplished by shading aggregate stockpiles, shading or insulating water pipes and water storage tanks.

PSG 5.5.10 Concrete Surfaces

(a) Wood-Floated Finish

Where wood floating is specified or scheduled, the surface shall first be given a finish as specified in Sub-Clause 5.5.10.1 of SANS 1200 G after the concrete has hardened sufficiently, it shall be floated to a uniform surface free of trowel marks. The screeded surface shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screed marks.

(b) Steel-Floated Finish

Where steel is specified or scheduled, the surface shall be treated as specified in PSG6.1 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.

(c) Power-Floated Finish

Where power floating is specified or scheduled, the surface shall be treated as specified in PSG6.1 except that the screeded surface shall be power floated to produce a high quality dense, smooth, uniform surface free from trowel marks.

PSG 5.5.11 Watertight Concrete

(a) Construction Joints (See Sub-Clause 5.5.7)

Joints in the concrete at which special measures are taken to achieve subsequent continuity are termed construction joints. Construction joints will be permitted only where shown on the drawings or approved by the Engineer and shall be formed true to line on all formed or exposed surfaces. Horizontal joints shall be formed by casting against a timber or metal former. Recesses shall be formed as detailed on the drawings. Where detailed on the drawings, galvanized metal strips or water bars shall be cast into the joints. No unplanned construction joints will be allowed. If a breakdown occurs, the contractor shall strip the shuttering as soon as possible and break out all concrete up to the previous planned construction joint.

Except in the case where movement joints are required, the entire joint contact area of the concrete already placed shall be thoroughly roughened by chipping with sharp chipping picks before placing concrete against the surface. This surface will not be accepted unless the coarse aggregate projects 5 mm beyond the surrounding matrix. In this connection approved light pneumatic or electric tools are preferred provided that no structural damage is done to the concrete being chipped: otherwise hand tools are to be used. Chipping shall not be commenced until at least 48 (forty-eight) hours after the concrete was placed.

Alternative methods of preparing the surfaces of construction joints to those given above will be considered. The Contractor shall submit proposed alternative methods of achieving the roughened surface required to the Engineer for approval.

Should the Engineer at any time withhold or withdraw permission for alternative methods to be used then the Contractor shall prepare the surfaces of construction joints in accordance with the above specification.

Immediately before the adjoining concrete is placed, the chipped surface shall be thoroughly cleaned by brushing and washing and then thoroughly wetted.

At the discretion of the Engineer the percentage of coarse aggregate of the mix may be slightly reduced in a layer not exceeding 200 mm in depth immediately above the chipped surface of a horizontal construction joint. Suitable temporary openings shall be left in the shuttering to allow for the removal of sawdust, shavings, nails, debris, etc.

The application of compounds to the surfaces of stop ends at vertical joints to retard the setting of a film of concrete in contact with the stop end will be permitted subject to the Engineer's approval of the compound to be utilized and the Contractor's methods for the application of the same.

(b) Movement Joints

Movement joints shall be formed where shown on the Drawings.

Movement joints shall be formed true to line and shall be thoroughly cleaned of all accretions of concrete or other foreign matter by scraping or other approved means. The surfaces in contact with joint sealing material shall be prepared strictly in accordance with the manufacturer's Specification.

Care shall be taken to ensure that the water bars are in perfect contact with well compacted void-free concrete throughout, particularly on horizontal joints where special procedures

shall be adopted for placing and compacting concrete under the water bars, to the approval of the Engineer.

PSG 5.5.11.1 Waterproofing of Concrete Joints (if specified)

Three different systems of waterproofing (or construction systems) exist and the appropriate system (or combination) will be applied as specified on the drawings: The three systems are:

a) Waterproofing with Hypalon bandage system

b) Waterproofing with water bars

c) Waterproofing with surface sealants

(i) Hypalon system

Hypalon bandage joint sealing system shall be the Sikadur-Combiflex Hypalon bandage system as supplied by Sika (Pty) Ltd.

The joint shall consist of 2 mm thick Combiflex Hypalon sheeting, 200mm and 250mm wide, as shown on the drawings. The Hypalon sheeting shall have a tensile strength of 6N/mm² and an elongation at failure of not less than 400%.

The Hypalon sheeting shall be bonded to the concrete with Sikadur 31 two component, solvent free, moisture intensive, high viscosity, epoxy paste adhesive.

(ii) Water bars

Except where otherwise specified water bars shall be manufactured from virgin polyvinyl chloride complying with BS 2571: latest amendment (Class 3 compounds) and the Tenderer shall provide full details of the composition and properties of the material in the relevant annexure where applicable.

Samples of water bars shall be submitted for approval and all material subsequently supplied shall be identical in size, shape, colour and quality to the approved sample. The water bar shall be of uniform cross-section and size and shall have lugs welded at 1m centres on both edges of the water bar to hold it securely in position during concreting operations.

It shall be possible for all sizes of water bar to be turned through a 75mm radius without damage or permanent set to the water bar.

Joints in water bars shall be kept to a minimum by the use of the longest possible lengths.

Water bars shall be held to the required shape, lines, etc, in suitable formwork: site joints shall be bonded as directed by the manufacturer in such a way as to form a continuous watertight seal free from pin holes at any point of the length or width of the strip.

Formwork shall be designed to accommodate the water bars without subsequent bending and the water bars shall be adequately supported and protected from damage and sunlight until finally encased in concrete.

Water bars shall be tested in accordance with BS 2782 and ISO R527.

(iii) Waterproofing with surface sealants

a) General

A groove of dimensions specified shall be formed, where indicated, and sealed by an approved sealant. The sealant shall be non-toxic and shall be either a hand applied bitumen putty sealant or a polysulphide sealant. The type of sealant to be specified on the drawings and the product to be used shall be approved by the Engineer.

b) Bitumen Putty Sealant

All joints shall be clean, dry and free of latance. The concrete shall be at least four weeks old. The joint surfaces shall then be primed by an ancillary product and the sealant applied as per the suppliers' specification. Special precautionary measures shall be taken to acquire a neat finish by covering the face edges of the joint with masking tape before priming. Any excess material will be cut away and finished flush.

c) Polysulphide Sealant

All joints shall be clean, dry and free of latance. Prime joint face if required – following the suppliers' specification. Apply the sealant and finish off flush with the concrete surface.

PSG 5.6 MISCELLANEOUS

PSG 5.6.1 Porous concrete/No-fines concrete

Porous or no-fines concrete shall be laid under foundations and floor slabs and behind walls, etc, where shown on the drawings and where directed by the Engineer. Porous concrete shall be placed behind shuttering to form a vertical layer against the external face of foundations etc where shown on drawings and where directed by the Engineer. The thickness of the horizontal, sloping and vertical layers shall not be less than that shown on the drawings.

The exposed faces, both horizontal and vertical, of the porous concrete shall be finished with a cement mortar seal where reinforced concrete is to be cast against it. The porous concrete shall be sealed with a 10mm thick layer of mortar composed of one part normal Portland cement to two parts of fine aggregate by mass, trowelled on before the porous concrete has hardened, and finished with a screed to provide a smooth, uniform plane surface without filling any of the internal voids of the porous concrete. The surface of the seal shall have a steel or power float surface.

The schedule rates for porous concrete shall include the cost of mortar seal and steel float finish.

Porous concrete shall comprise water, cement, coarse aggregate and not more than 5% (five percent) by mass of fine sand. The voids ratio of porous concrete shall not be less than 27.5% (twenty-seven and one half) percent. Testing of porous concrete shall be carried out in accordance with test method 3 of BS 1881 Part 3 – 1970.

(a) Classes of no-fines concrete

No-fines concrete shall be classified by the prefix NF and the size of aggregate to be used. Class NF 19 means a no-fines concrete with a 19 mm nominal size aggregate.

The volume of aggregate per 50 kg of cement for each class of concrete shall be as follows:

Class	Aggregate per 50 kg cement
NF 38	0,33 m^3
NF 19	0,30 m^3
NF 13	0,27 m^3

(b) Batching and Mixing

Cement shall be measured by mass or in full pockets of 50 kg each and aggregate shall be measured by volume in approved measuring boxes or barrows.

The aggregate shall be moist or wetted before the cement is added. Where drum mixers are used, about 20% of the water shall be poured into the drum before the aggregate and cement are loaded. The mixing time in the drum shall be about 45 to 50 seconds.

The quantity of water added shall be just sufficient to form a smooth grout which will adhere to and completely coat each and every particle of aggregate, and which is just wet enough to ensure that, at points of contact of aggregate, the grout will run together to form a small fillet to bond the aggregate together. The mix shall contain no more than 20 litres of water for every 50 kg of cement.

Mixing shall be done in an approved batch-type mechanical mixer, but small quantities may be hand-mixed.

(c) Placing

No-fines concrete shall be placed in accordance with the procedure approved by the Engineer. It shall be placed in its final position within 15 minutes of having been mixed.

The concrete shall be worked sufficiently to ensure that it will completely fill the space to be concreted and that adjacent aggregate particles are in contact with one another. Excessive tamping or ramming shall be avoided and under no circumstances shall the concrete be vibrated.

(d) Protection

All no-fines concrete shall be protected from the elements and loss of moisture. Protection against loss of moisture shall be accomplished by one or more of the following methods:

7. Retaining formwork in place
8. Covering exposed surfaces with sacking or other approved material kept continuously wet
9. Covering exposed surfaces with plastic sheeting

No-fines concrete placed during cold weather shall be adequately protected against frost for at least 3 days.

(e) Measurement and Payment

Cast-in-situ no-fines concrete (state class)..... Unit: m^3

The provisions of sub-clause 8.1.3 of SANS 1200 G shall apply *mutatis mutandis*.

PSG 5.6.2 Bond breaker

Where indicated on the drawings, site or porous concrete under floor slabs and wall footings etc. shall be covered with a bond breaker consisting of 250 micron tear resistant damp proof membrane to SANS 952 (1969) C having 150mm laps and pierced at 1m intervals to allow the passage of water.

PSG 5.6.3 Pipe work

All pipe specials shall be cast in by the Contractor. Special care shall be taken to maintain them in the exact position shown on the drawings and also to render the joints watertight.

For pipework to be cast in at a later stage, square box-outs shall be provided. For pipes with puddle flanges to be cast in, the size of the box-out shall be suitable for the outside diameter of the pipe plus a full size (class 10) flange according to SANS 1123 plus 100mm. For pipes without puddle flanges, the size of the box-out shall be suitable for the outside diameter of the pipe plus 100mm.

Pipework cast into concrete structures shall be done so with a suitable standard non-shrink grout (BASF Master flow 525, Sika SikaGrout 212 or similar).

PSG 5.6.4 Holding Down Bolts

All holding down bolts and nuts, other than those used in structures retaining liquid shall be galvanised in accordance with SANS 763.

All holding down bolts and nuts in structures retaining liquid shall be Stainless Steel, Grade 316.

All holding down bolts and anchorages, shall be set in accordance with the drawings by means of accurate constructed steel templates and securely fixed in position to prevent displacement during the concreting.

Exposed threads of holdings down bolts shall be adequately protected with grease and sacking and this protection shall be maintained in all portions of the works until they are taken over.

PSG 5.6.5 Ferrule Cap Holes

Holes formed in reinforced concrete walls during the fixing of formwork shall be repaired on the waterside face with an approved epoxy or non-shrink grout (BASF Master flow 525 or Sika SikaGrout 212 or similar). On the dry face the holes left in the concrete shall be repaired with a 1:3 cement-sand mortar. All grouting material shall be thoroughly panned in.

No system leaving holes passing through the walls will be permitted. Ferrules shall be of the permanent sacrificial type.

PSG 5.6.6 Sterilization of Reservoirs

Before a reservoir is sterilised, the roof shall have been tested for water tightness as set out in Clause 8.7 below, and the pipelines serving the reservoir shall have been sterilised. The reservoir shall then be thoroughly cleaned out and washed down with clean water.

The roof, beams, columns and walls shall thereafter be thoroughly sprayed down, using pressurised equipment, and the floors shall be scrubbed with water containing 0,015 g per litre of chloride of lime.

On completion of the sterilisation, the sterilising solution shall be run to waste before the reservoir is filled for testing its water tightness.

Should additional work be required to be done inside the reservoir after the water tightness test has been completed, the reservoir shall be re-sterilised at the Contractor's expense.

PSG 5.6.7 Testing for Water-tightness

Each water-retaining structure shall be filled with water at a uniform rate not exceeding 2.0m in 24 hours until the top water level has been reached. The water level will then be carefully noted and recorded by the Engineer in relation to a fixed benchmark, and the structure shall be allowed to remain filled for a period of two weeks to permit complete absorption of water by the concrete.

Any loss of water which may have occurred shall then be made up by again filling the structure to the top water level and by allowing the water to remain undisturbed for a period of not less than four days. The structure shall be considered to be watertight if the drop-in level in 96 hours (less the drop caused by evaporation) does not represent more than 0,06% of the volume of the reservoir.

The evaporation shall be measured by the mean drop in level caused by the evaporation of the water in three flat containers floating in the water, being recorded.

The Contractor is free to attend the taking of all measurements by the Engineer.

In the event of an appreciable leakage being evident or visible at any stage of the filling or testing, or in the event of the final degree of water tightness being unsatisfactory, the Contractor shall, when so ordered by the Engineer, discontinue such filling or testing and shall, at his own expense, take approved steps to rectify the leakage, until a test proves that a sufficient degree of water tightness has been obtained.

The water tightness of the reservoir roof shall be tested before that of the reservoir itself by water being continuously sprinkled over the roof in an approved manner so that a film of water is maintained on the surface of the slab. The roof shall be considered watertight if no damp patches are visible on the underside after 48 hours of sprinkling.

Before the expiry of the defects notification period, the Engineer shall have the right to retest the structure for water tightness. Results of such further tests will be made available for the information of the Contractor. In the event of these tests indicating an unsatisfactory degree of water-tightness, the Engineer will, before issuing the final certificate, again require the Contractor to rectify the leakage, at his own expense, in such a manner as will cause the least interruption of the water supply to consumers and as will ensure the soundness of the work, to the satisfaction of the Engineer.

The costs of re-testing a water-retaining structure for water tightness shall be borne by the Contractor.

PSG 6 TOLERANCES

PSG 6.1 BASIS OF MEASUREMENT

PSG 6.1.1 General

Unless otherwise stated on the Drawings, the degree of accuracy applicable to all concrete structures shall be Degree of Accuracy II (refer to table under clause 6.2.3).

PSG 7 TESTS

PSG 7.1 FACILITIES AND FREQUENCY OF TESTING

PSG 7.1.1 Facilities

ADD THE FOLLOWING TO SUB-CLAUSE 7.1.1:

"The Contractor shall provide sufficient storage capacity for the concrete cubes and shall arrange to have them tested by an approved laboratory.

The cost of all testing, including the cost of sampling, storage and transport of samples shall be included in the rates tendered for concrete work."

PSG 7.3 ACCEPTANCE CRITERIA FOR STRENGTH CONCRETE

ADD THE FOLLOWING TO SUB-CLAUSE 7.3:

"Test results obtained from the supplier of ready-mixed concrete will not be accepted for evaluation in terms of sub-clause 7.3, but samples for testing shall be taken of such concrete at the point of placing."

PSG 8 MEASUREMENT AND PAYMENT

PSG 8.1 MEASUREMENT AND RATES

PSG 8.1.1 Formwork

Delete "or splays over 20 mm x 20 mm" *from the first line of paragraph 8.1.1.2.*

ADD THE FOLLOWING TO PARAGRAPH 8.1.1.2:

"Splays up to and including 25 mm x 25 mm will not be measured separately and will be deemed to be included in the formwork costs."

Add the following paragraphs:

"8.1.1.7 For construction joints at kickers, all additional costs for formwork to edges up to 300 mm high will be deemed to be included in the rates tendered for vertical formwork to sides of walls and will not be measured separately in narrow widths.

8.1.1.8 No formwork will be measured to edges of blinding layers under structures, and the cost thereof (if needed) will be deemed to be included in the rates tendered for concrete in blinding layers.

8.1.1.9 Back-shuttering or formwork to top revealed surfaces of sloping or conical formwork will only be measured to surfaces of over 40° and up to 85° to the horizontal.

8.1.1.10 Formwork to horizontal surfaces in pump stations, valve chambers, manholes or sumps can either be removed through the manhole cover opening or the Contractor may use permanent formwork at his own cost as no claims in this regard will be considered."

PSG 8.1.2 Reinforcement

ADD THE FOLLOWING TO PARAGRAPH 8.1.2.1:

Reinforcement will be supplied by the Employer. All reinforcement should be brushed down and cleaned from all rust and debris before any fixing and placing may continue.

PSG 8.4 SCHEDULED CONCRETE ITEMS

PSG 8.4.3 Strength concrete, Grade

ADD THE FOLLOWING AFTER THE LAST SENTENCE OF SUB-CLAUSE 8.4.3:

"In the case of structural floor screeds, the unit of measurement shall be the square meter and the average thickness and proportions will be stated."

PSG 8.4.4 Unformed surface finishes

(b) Steel-floated finishes

ADD THE FOLLOWING SUB-ITEM UNDER PAYMENT ITEM 8.4.4:

"(i) Extra over sub item (b) for special

finishing tolerances to top of outside

ring walls as specified ..... Unit: m²

The quoted rate shall include full compensation for the additional cost of finishing the ring walls to closer tolerances as specified on the Drawings and in clause PSG 6.1.1."

ADD THE FOLLOWING NEW PAYMENT ITEMS:

PSG 8.9 MISCELLANEOUS WORK OTHER THAN METALWORK..... Unit: as scheduled

Separate items will be scheduled for each type of miscellaneous work.

The tendered rates shall include full compensation for providing all labour, materials and equipment required to carry out the work, for all preparatory work, for constructing the work scheduled in a workmanlike manner and for finishing off and cleaning up when the work has been completed.

PSG 8.10 TESTING FOR WATERTIGHTNESS:

(a) (Structure stated) .....Unit: Sum

The unit of measurement shall be the number of each structure successfully passing the specified water tightness tests to the satisfaction of the Engineer.

The sums tendered shall include full compensation for the provision of all labour, plant and materials necessary for carrying out the test for water tightness as specified.

PSG 8.11 SCREEDS

(a) Floor screeds (1:3) with falls including V-joints to form panels and a smooth steel-trowelled fish/power float finish to top:

(i) Description of application and thickness.....Unit: m²
(ii) Etc for other applications and thickness

The unit of measurement shall be the square meter of screed constructed.

The tendered rate shall include full compensation for constructing the screeds as specified including supplying of all materials, preparing the concrete surface to receive the screeds and for all else that may be necessary to complete the work

PSG 8.12 CASTING IN PIPES WITH OR WITHOUT PUDDLE FLANGES

(a) Up to 300 mm nominal bore:
(i) Through (description and thickness of structural elements) ..... Unit: No

(b) Over 300 mm up to 600 mm nominal bore:

(i) Through (description and thickness of structural elements) ..... Unit: No

(c) Etc for other nominal bores in increments of 300 mm

The unit of measurement shall be the number of each size of pipe installed.

The tendered rates shall include full compensation for installing the pipe where new pipes are used (with or without a puddle flange) in the exact position as shown on the Drawings, for splitting or cutting the formwork where required, supply and installation of suitable non-shrink grout and for ensuring water tightness where required and for all additional costs required to install the pipes specified or shown on the Drawings.

Pipe items to be cast in shall be measured elsewhere.

PSG 8.13 CORROSION PROTECTION BY

(a) Vinyl anti-fouling paint and undercoats to form an algae- resistant coating on:

(i) (Description of structural element stated) ..... Unit: m²

(b) Solvent-free abrasion-resistant coating and primer to a minimum thickness of 3 mm on:

(i) (Description of structural element stated) ..... Unit: m²

The unit of measurement shall be the square meter of surface protected against corrosion.

The tendered rates shall include full compensation for surface preparation for supplying and applying the materials as specified, for all labour, equipment and appurtenant materials necessary to carry out the work and for all waste and cleaning up after the work has been completed."

PSG 8.13 EMERGENCY SITE REINFORCEMENT AND EQUIPMENT……..…… Unit: t

The Contractor must bring onto site reinforcement that is to be used for emergency situations at the sole discretion of the Engineer:

In addition to the above, the Contractor must keep on site manual tools for cutting and bending the above reinforcement in emergency situations as per Engineers' instructions.

All the above reinforcement and equipment must be kept dry, clean and available for use at very short notice. Any of the above reinforcement that is used, must be replaced as soon as practically possible.

Payment will be as follows:

8. 80 % of the tendered amount will be paid when the above material and equipment is brought to site and stored in a manner that is acceptable to the Engineer.
9. Reinforcement used will be paid for under the "normal" reinforcement items.
10. The remaining 20 % of the tendered amount will be paid when all material and equipment is removed from site, after being instructed to do so by the Engineer.

PSHA STRUCTURAL STEELWORK (SUNDRY ITEMS)

PSHA5 CONSTRUCTION

PSHA 5.1.2 Shop Details

REPLACE THE FIRST SENTENCE OF SUB-CLAUSE 5.1.2 WITH:

"The Engineer's drawings issued for construction purposes are preliminary with regards to structural steel items and the Contractor shall prepare shop drawings of all structural steel items for the Engineers approval."

ADD THE FOLLOWING SENTENCE TO THE END OF SUB-CLAUSE 5.1.2:

"No payment shall be considered for any structural steel item without shop details being provided and approved by the Engineer in writing."

PSHA 5.2 FABRICATION AND ASSEMBLY

PSHA 5.2.10 Protective Treatment

This clause shall be replaced with the requirements of Particular Specification PTV (Corrosion Protection).

PSHA 8 MEASUREMENT AND PAYMENT

PSHA 8.3 SCHEDULED ITEMS

PSHA 8.3.2 Handrails:

Replace sub-item c (3) with the following:

"(c) (3) Extra over rails for bends, end closures and accessories:

(i) (Description of item stated) …… .....Unit: No

PSHA 8.3.3 Ladders, complete and installed (drawing number or type and length stated)

REPLACE ITEM 8.3.3 WITH THE FOLLOWING:

"**PSHA 8.3.3 Ladders, complete and installed (Drawing number or type and length stated)**

Separate items will be scheduled for grid ladders of different materials, dimensions and height.
…….....Unit: number

The tendered rates shall include full compensation for the cost of supplying the specified or scheduled ladders complete, including welding where applicable."

PSHA 8.3.4 Flooring, Complete and installed with frames (Drawing number stated)

REPLACE ITEM 8.3.4 WITH THE FOLLOWING:

"**PSHA 8.3.4 Flooring. Complete and installed with frames:**

(a) Open grid floors…… ..... Unit: m²

(b) Floor plate floors…….....Unit: m² or t

(c) Frames and kerbs for flooring……. .....Unit: m

Separate items will be scheduled for grid floors, floor-plate floors, frames and kerbs of different materials, dimensions, weight and different methods of fixing.

The tendered rates shall include full compensation for the cost of supplying the specified or scheduled types of flooring, frames or kerbing complete, including welding where applicable."

PSL MEDIUM-PRESSURE PIPELINES

PSL 3 MATERIAL

PSL 3.1 GENERAL

ADD THE FOLLOWING PARAGRAPHS TO SUB-CLAUSE 3.1:

"Each type of pipe delivered to the Site shall have a standard length corresponding with the standard lengths offered by the pipe manufacturer in his catalogue, with a maximum permissible variation in length of ± 2%.

A pipe that is a shorter or longer than the defined standard will be rejected by the Engineer, except when such non-standard lengths are required in terms of the Contract and have been specifically manufactured or cut as such by the pipe manufacturer or supplier."

PSL 3.4 STEEL PIPES, FITTINGS AND SPECIALS

PSL 3.4.2 Pipes of Nominal Bore up to 150 mm

ADD THE FOLLOWING TO SUB-CLAUSE 3.4.2:

"The pipes shall be 'normalised' or seamless steel pipes and shall be used with malleable cast-iron fittings complying with the requirements of SANS 509."

PSL 3.4.3 Pipes of Nominal Bore over 150mm

ADD THE FOLLOWING TO SUB-CLAUSE 3.4.3:

All steel pipes shall be flanged heavy-duty mild steel pipes. Flanges shall be welded on prior to coating. No screwed-on flanges will be allowed, nor will welding to galvanised pipes be allowed.

All bolts and nuts to be used for connecting flanges, joints, fittings, specials, etc. shall be manufactured from stainless steel.

Provide appropriate bolt units, consisting of a standard-length bolt, nut and two washers of a material to conform to the requirements of SANS 1123 where applicable, otherwise to the requirements of the Engineer for each set of flanges and for flange adaptor to flange installations.

NB: The shortest standard bolt or stud that protrudes beyond the nut by a minimum of two threads, when the assemblies are fully tightened, shall be used. A washer shall be fitted under all bolt/screw heads and nuts.

Gaskets for flanged connections shall be of compressed asbestos fibre to BS 2815 Grade A, ring type with a minimum thickness of 3 mm, unless otherwise specified.

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PSL 3.7 OTHER TYPES OF PIPES

PSL 3.7.2 Polyethylene pipes

REPLACE THE CONTENTS OF SUB-CLAUSE 3.7.2 WITH THE FOLLOWING:

"Polyethylene pipes shall be HDPE type IV pipes with compression fittings and shall comply with SANS 533 Part II."

PSL 3.8.2 Flexible Couplings

ADD THE FOLLOWING:

“Where detachable flexible couplings or flange adaptors are used these shall be of the Viking-Johnson type except where otherwise specified or approved by the Engineer.

Detachable flexible couplings for nominal pipe diameters up to 600mm shall be suitable for an angular deflection of 5 degrees without leakage. Flange adaptors shall be suitable for half the angular deflection stated.”

PSL 3.8.3 Flanged and Accessories

ADD THE FOLLOWING:

“Flanges to other standards shall be used only if approved by the Engineer and provided that any differences do not effect mating dimensions.”

PSL 3.9 CORROSION PROTECTION

PSL 3.9.2 Steel pipes

PSL 3.9.2.1 Steel pipes of Nominal Bore up to 150 mm

ADD THE FOLLOWING:

"Steel pipes shall be galvanised where shown on the Drawings."

PSL 3.9.2.2 Steel pipes of Nominal Bore over 150 mm

ADD THE FOLLOWING TO SUB-CLAUSE 3.9.2.2:

“Steel pipes shall receive heavy duty galvanising, unless otherwise stated on the drawings”.

PSL 3.9.5 Joints, Bolts, Nuts and Washers

REPLACE THE CONTENTS OF SUB-CLAUSE 3.9.5 WITH THE FOLLOWING:

"Where no other protection is specified, joints, bolts, nuts, and washers shall be hot-dip galvanising."

PSL 3.9.6 Corrosive Soil

ADD THE FOLLOWING TO SUB-CLAUSE 3.9.6:

"Where shown on the Drawings, steel pipes in contact with corrosive soil shall be wrapped with Densopol Tape 60 or an equivalent approved product, strictly in accordance with the manufacturer's instructions, prior to the commencement of the backfilling.

All flanges and other fittings in contact with natural ground shall be covered with Denso putty prior to the commencement of the backfilling.

All bolts and nuts, which are to be painted, shall be covered with Genstick L prior to the commencement of the painting.

All valves shall be epoxy coated internally as well as externally with Copon KZIR88.

PSL 3.10 VALVES

REPLACE THE CONTENTS OF THIS SUB-CLAUSE WITH THE FOLLOWING:

"Sluice valves shall be of approved pattern and finish. They shall be of the non-rising spindle type, clockwise closing with hand wheel and shall be Class 16 valves complying with SANS 664.

Butterfly valves shall be of approved pattern and finish. They shall be standard 16 bar valves, gearbox operated, conforming to BS-5155: 1984, and fitted between flanges specified elsewhere.

Air valves shall be of approved pattern and finish. They shall be standard 16 bar double orifice air release and vacuum break valves, with anti-shock orifice mechanism, and fitted to flanges specified elsewhere.

All 80mm nominal bore and larger valves to be flanged valves, with all flanges being drilled in accordance with SANS 1123 Table 10.

All smaller sized valves (less than 80mm nominal bore) to be female threaded valves."

PSL 5 CONSTRUCTION

PSL 5.1 LAYING

PSL 5.1.4.1: Depth and cover

ADD THE FOLLOWING TO SUB-CLAUSE 5.1.4.1:

"The minimum cover to pipelines shall be 1000 mm, unless otherwise shown on drawings."

PSL 5.6 VALVE AND HYDRANT CHAMBERS

PSL 5.6.1 General

REPLACE THE WORDS "drawing L-1" *IN THE SECOND LINE WITH* "the Drawings".

PSL 5.6.2 Construction of chambers

REPLACE THE WORDS "drawing L-1, L-2 and L-3" *IN THE FOURTH LINE WITH* "the Drawings".

PSL 5.9 LIFTING AND REPLACING OF EXISTING PIPE

ADD THE FOLLOWING TO SUB-CLAUSE 5.9:

"Where new pipes, valves or specials are to be connected to, or inserted into existing mains, the Contractor shall excavate back along the existing main only as far as is necessary in order to complete the connection satisfactorily - he shall ensure that

suitable material is carefully placed and properly compacted beneath all existing and new work so that the pipes, specials, etc. are properly bedded on sound material.

Where necessary, the Contractor shall cut the existing pipes so that new valves and/or specials can be installed. Care shall be taken that the lengths cut from existing pipes, etc. are accurate so as to ensure a proper joint when the new material is installed. Similarly, where specials and/or valves are removed from existing pipes, closure pieces shall be accurately cut to length and the gaps properly closed.

Whereas nominal pipe/fitting sizes are specified and/or shown on the drawing, it shall be the responsibility of the Contractor to confirm the accurate sizes of the pipes involved and to supply the new materials according to these measured sizes."

ADD THE FOLLOWING NEW SUB-CLAUSES:

"PSL 5.11 MARKER BLOCKS

Type 1 and Type 2 marker blocks shall be manufactured and positioned as shown on the Drawings.

PSL 5.12 PIPELINE ROUTE MARKERS

Route markers for the various water pipelines shall be erected in the positions and shall be manufactured according to the details shown on the Drawings."

PSL 7 TESTING

PSL 7.1 GENERAL

REPLACE THE FIRST SENTENCE OF SUB-CLAUSE 7.1 WITH THE FOLLOWING:

Pipes shall be tested in convenient lengths not exceeding 1000 m. Longer lengths require the Engineer's approval.

AND ADD:

The Contractor must include in his rates for all equipment, thrust block arrangements and overhead costs necessary for testing.

PSL 7.3 STANDARD HYDRAULIC PIPE TEST

PSL 7.3.1 Test pressure and time of test

PSL 7.3.1.2 Testing pressure shall be 1,5 times Working Pressure as scheduled or labelled by the manufacturer.

Hydraulic pipe tests shall be carried out in the presence of both the Engineer and the Contractor, and for each test a form shall be completed and certified by both parties, as a record of the test.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2 SCHEDULED ITEMS

PSL 8.2.1 Supply, Lay and Bed pipes complete with Couplings ..... Unit: m

ADD THE FOLLOWING UNDER ITEM 8.2.1:

The price tendered and paid for pipelines of various diameters and types shall include for the supply and installation of all fittings, joints and specials not specifically scheduled.

Payments of pipes laid shall be affected as follows:

a) 90% of the laid rate on successful completion of laying, cutting, jointing and flushing of the line plus selected fill.

b) 100% on successful completion of the hydraulic testing of the line.

Pipe work is to be bedded on a Class C bed as per drawing SANS 1200 LB.

PSL 8.2.11 Anchor blocks/Thrust blocks and pedestals

INSERT "concrete" *BEFORE* "and" *IN THE LAST LINE OF THE LAST PARAGRAPH*.

ADD THE FOLLOWING:

"The tendered rates shall also include the wrapping of uPVC pipes and fittings with Densopol 80 or a similar approved material where the pipes and fittings come into contact with concrete."

PSLB BEDDING (PIPES)

PSLB 3 MATERIALS

PSLB 3.1 SELECTED GRANULAR MATERIAL

REPLACE THE CONTENTS OF SUB-CLAUSE 3.1 WITH THE FOLLOWING:

"Selected granular material shall have a PI not exceeding 6 and shall be free from sharp-edged particles exceeding 19 mm."

PSLB 3.2 SELECTED FILL MATERIAL

ADD THE FOLLOWING:

"Selected fill material used for bedding shall be stabilised with 5% cement as specified under Sub-clause PSDB 3.5(c)."

PSLB 3.3 BEDDING

ADD THE FOLLOWING:

"uPVC and HDPE pipes are deemed to be flexible pipes for the purposes of this sub-clause."

PSLB 3.4 SELECTION

PSLB 3.4.1 Suitable material available from trench excavation

REPLACE THE WORDS "(but is not required)" *IN THE FIFTH LINE WITH THE WORDS* "(at his own cost)".

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.1 PRINCIPLES

PSLB 8.1.5 **Disposal of displaced material**

REPLACE THE CONTENTS OF SUB-CLAUSE 8.1.5 WITH THE FOLLOWING:

"Material displaced by the pipeline and by imported material from sources other than trench excavation, shall be disposed of at an approved site furnished by the Contractor. No haulage is payable for such material."

PSLB 8.1.6 **Free haul**

DELETE THE WORDS "of 0,5 km" *IN THE FIRST LINE OF THIS SUB-CLAUSE.*

PSLB 8.2 **SCHEDULED ITEMS**

ADD THE FOLLOWING UNDER ITEM 8.2:

"PSLB 8.2.6 **Extra over items 8.2.1 and 8.2.2 for bedding stabilised**

with 5% cement ..... Unit: m^3

PSLE STORMWATER DRAINAGE

THE FOLLOWING VARIATIONS ARE APPLICABLE TO THE STANDARD SPECIFICATION SANS 1200 LE:

PSLE 3 MATERIALS

PSLE 3.1. a Precast Concrete Pipes

Concrete storm water pipes will be precast reinforced concrete pipes with interlocking joints.

The pipes shall comply with the requirements of SANS 677. Pipes delivered to site and showing cracks in excess of the following shall be rejected:

a) If the depth of a crack is more than one third of the wall thickness of the unit over a length of 600mm or more, irrespective of the width of the crack.

b) If the depth of a crack is more than one third of the wall thickness of the unit over a length of 300mm or more, irrespective of the width of the crack and is within 300mm of the end of the pipe.

PSLE 3.1. d Skewed Ends

Skewed ends of concrete pipes are to be cut on site using a good quality angle grinder.

PSLE 5 CONSTRUCTION

PSLE 5.2.2 Bedding and Laying of Concrete Pipes

Pipes with interlocking joints shall be externally wrapped with two layers of bitumen impregnated burlap of 340g/m² at least 150mm wide and placed symmetrically over the joint. The units shall first be treated with a primer of 60% bitumen emulsion over the width of the strip of burlap.

Ogee pipes shall be laid with their spigot ends pointing downstream.

PSLE 5.2.3 Concrete Encasement and Concrete Cradles for Pipelines

Concrete to be Grade 20/19 or as specified on the Drawings.

PSLE 5.5.3 Plaster

All junction boxes to be plastered internally, using a 1:6 mortar mix, with a steel trowel finish. All exterior exposed surfaces to have a bagged cement finish.

PSLE 8 MEASUREMENT AND PAYMENT

PSLE 8.2.1 Concrete Pipe Culverts

The rate shall include for the supply, handling, transport from on-site store, installation, provision of specified bedding and jointing of pipes as necessary.

Cutting of pipes to be paid as part of structure's cost, as specified.

PSLE 8.2.8 **Supply and install storm water chambers and catch pits**

All storm water chambers, junction boxes or discharge structures shall be measured as per completed unit, according to the type as detailed.

The tendered rate includes excavation (including additional excavation for working space including disposal of surplus), backfilling, benching, formwork, reinforcing, concrete and all items to complete the work to specification.

C3.4 TECHNICAL SPECIFICATIONS: CIVIL AND STRUCTURAL

C3.4.1 TECHNICAL SPECIFICATIONS: CIVIL AND STRUCTURAL WORK

C3.4.1.1 GENERAL

The scope of work comprises items listed hereunder:

a) Construction of four sludge lagoons for containing backwash water and disludging water from the filters and settling tanks;

b) Inlet concrete channel for conveying back wash and desludging water from filters & Settling tanks to sludge lagoon;

c) Construction of pump house including supply, delivery and installation of supernatant pump(s);

d) Construction of rising main to convey supernatant water from lagoon back to the head of works;

e) General electrical wiring and lighting for all the buildings

f) Associated works

C3.4.1.2 EXTENT OF WORKS

The project is planned to be implemented as follows:

- Construction of main channel into the new sludge lagoons,
- Construction of 4 sludge lagoons complete with channels and overflow structures,
- Installation of all required subsoil drains for 4 sludge lagoons, including manholes and related works,
- 4 decanting structures,
- Complete installation of decanting 150mmØ pipelines including collection pipeline to the pump station,
- Installation of 300mmØ pipeline from the pump station to the existing works,

iv. Construction of an overflow channel into the existing main channel to the river.

a. **SPECIFICATION DATA**

MEASURING EQUIPMENT

Bids shall allow for a complete erection, measuring equipment, precision levels, and all other special or regular tools and equipment that may be needed to complete the entire construction in accordance with the specification, and to the satisfaction of the Engineer.

The Contractor shall have the following measuring equipment at his shop or site at all times:

a) Ambient temperature gauge

b) Blast profile gauge

c) Dew point instrument

d) Dry film thickness gauge

e) Electric insulation defect detector

f) Surface temperature gauge

g) Relative humidity instrument

h) Wet film comb

The Contractor will be responsible for any damage caused to buildings, equipment, etc. during the course of the erection of these structures.

ITEM	DESCRIPTION
S01	SLUDGE LAGOONS
S02	PREPARATION OF CONCRETE
S03	TESTS ON CONCRETE
S04	WELDING
SO5	COMPLIANCE CERTIFICATE

S01 SLUDGE LAGOONS

LAGOONS

Four sludge lagoons shall be constructed, to ensure continuity of operations, as one will fulfil a duty function, while the other will be on standby.
The duty lagoon shall remain operational until sludge fill up the operational volume.

Each of the four sludge lagoons shall have the following dimensions:

5. nominal size of 44.5m x 40.75m;

Sludge lagoons sizing are based on a nominal WTW capacity of 148Ml/day. Wash water from the plant shall be brought into the four new sludge lagoons via a lined concrete canal as further described below.

INLET CHANNELS

Wash water from the plant is to be delivered into the lagoons via trapezoidal concrete lined channels as shown in the accompanying drawings. There will be a main channel which collects wash water from the exit end of the existing 1000 mm diameter concrete pipe which then splits into the distribution channels to deposit sludge evenly along the length of each lagoon.

MAIN INLET CHANNEL

The main inlet channel will connect to and collect wash water from the existing 1000 mm diameter concrete pipe which currently discharges into the watercourse. This channel is sized to discharge at about 890 l/s over a 1% slope, flowing at about 1.4 m/s. The design flow is about 232 l/s. The channel has been designed with extra capacity for possible increase in inflow from the backwash operations and stormwater channels.

DISTRIBUTION CHANNELS

On entry to the lagoons, the main inlet channel splits and discharges into equally sized distribution channels that deposit sludge into each lagoon, via 3 inlets on either side of each lagoon. This arrangement allows for even distribution of sludge along the length of each lagoon. Simple hand lifted gates will be installed at each of the lagoon inlets to allow for alternate use of the lagoons. Each channel is sized to discharge one-third of the discharge from the main inlet channel and is to be constructed over same 1% slope.

OUTLET STRUCTURE

The outlet structure shall be built out of a concrete column that shall decant at a set height. The decanting structure inside diameter shall be at least 300 mm. The effluent shall be routed by means of pipework to the pump station sump.

OVERFLOW CHANNEL

An overflow channel has been provided at the downstream (eastern) end of the lagoons to collect and discharge any overspill from the lagoons (via weir on each lagoon) into the nearby watercourse. The channel is designed to convey a peak flow of about 532 l/s over a 2% slope, flowing at about 1.8 m/s.

ACCESS WAY FOR MACHINERY

Each sludge lagoon shall be equipped with an access way to allow a front-end loader and tipper truck to drive in and out, for purposes of sludge removal and disposal.

STORM WATER

Storm water shall be permanently routed away from sludge lagoons.

C3.4.2 TECHNICAL SPECIFICATIONS: BUILDING WORKS

C3.4.2.1 APPLICATION

This specification specifies the materials and methods to be used in Building Works including that Architectural work to be done on the new filters and settling tanks. This technical specification forms an integral part of the contract document and therefore shall be read in conjunction with the Bills of Quantities and Drawings.

C3.4.2.2 SPECIFICATIONS

The specifications applicable to building works are the latest **PW 371 SPECIFICATIONS OF MATERIALS AND METHODS TO BE USED** published by the South African National Department of Public Works (NDPW).

The latest **PW 371 SPECIFICATIONS OF MATERIALS AND METHODS TO BE USED** is obtainable from the **Department of Public Works**:

Corner Bosman and Vermeulen Streets

Pretoria Central

Private Bag X65

Pretoria

0001

The National Building Regulations and Building Standards Act (Act no. 103 of 1977) as amended shall apply. The SANS 10400, The Application of National Building Regulations shall also apply.

C3.5 STANDARD SPECIFICATIONS: ELECTRICAL, ELECTRONIC AND MECHANICAL ENGINEERING

STANDARD SPECIFICATIONS – ELECTRICAL, ELECTRONIC AND MECHANICAL ENGINEERING

The following ISO and SANS electromechanical specifications shall apply for the construction of the works:

ID	Standard ID	Title
1	BS 159	Bus bars
2	BS 89	Ammeters
3	BS 3938	Current Transformers
4	BS 639	Welding cables
5	ISO 5210:1991	Industrial valves -- Multi-turn valve actuator attachments
6	ISO 5211:2001	Industrial valves - Part-turn actuator attachments
7	ISO9905:1994	Technical specifications for centrifugal pumps
8	NRS 002 -	Graphical symbols for electrical power, telecommunications and electronic diagrams
9	NRS 029	Current Transformer
10	SANS 10142-1:2012	The Wiring of Premises, Part 1: Low-voltage installations
11	SANS 10292	Earthing of low voltage distribution systems
12	SANS 1091	Paint Colour
13	SANS 119	Bus bars
14	SANS 1213 -	Mechanical cable glands
15	SANS 1433-1	Terminal blocks having screws and screw less terminals
16	SANS 1433-2	Flat push-on connectors
17	SANS 1473-1	Low voltage switchgear and control gear assemblies: Type-tested and partially type-tested assemblies
18	SANS 1473-2	Low voltage switchgear and control gear assemblies: Bus bar trunking systems.
19	SANS 156	Moulded Case Circuit Breakers
20	SANS 1574	Electric cables and flexible cords
21	SANS 1576	Welding cables
22	SANS 1619	Small power distribution units (ready boards) for single-phase 230 V service connections.
23	SANS 1765	Safety of distribution boards

ID	Standard ID	Title
24	SANS 60044	Current Transformers
25	SANS 60439-2	Low voltage switchgear and control gear assemblies: particular requirements for bus bar trunking systems
26	SANS 60439-4	Low voltage switchgear and control gear assemblies: particular requirements for assemblies for construction sites
27	SANS 60947-2	Low voltage switchgear and control gear: Circuit breakers
28	SANS 60947-3	Low voltage switchgear and control gear: switches and disconnects
29	SANS 60947-4-1	Low voltage switchgear and control gear: Contractors and motor starters (Electromechanical)
30	SANS 60947-4-2	Low voltage switchgear and control gear: Contractors and motor starters (semiconductor motor controller)
31	SANS 60947-4-3	Low voltage switchgear and control gear: Contractors and motor starters (for non-motor loads)
32	SANS 60947-5.1	Low voltage switchgear and control gear: Electromechanical control circuit devices
33	SANS 60947-5.2	Low voltage switchgear and control gear: Electrical emergency stop device with mechanical latching function
34	SANS 62-1:2013	Steel pipes Part 1: Pipes suitable for threading and of nominal size not exceeding 150 mm
35	SANS 62-2:2013	Steel pipes Part 2: Screwed pieces and pipe fittings of nominal size not exceeding 150 mm
36	SANS 664-1:2011	Wedge gate and resilient seal valves for waterworks Part 1: General
37	SANS 664-1:2011	Wedge gate and resilient seal valves for waterworks Part 2: Wedge gate valves
38	SANS 719:2011	Electric welded low carbon steel pipes for aqueous fluids (large bore)
39	SANS 767	Earth leakage protection units

C3.5.1. TECHNICAL SPECIFICATIONS – MECHANICAL WORKS

C3.5.1.1. General Operating Philosophy

3.5.1.1.1. SLUDGE LAGOON PUMPSTATION, INLET WORKS AND WATER METER CHAMBERS

The Sludge lagoon pump station will have a floating foot check valve which is supported by buoyant structure which is fixed to the surface by means of a non corrosive cable, this will be connected to a rubber flexible hose which is connected to the suction of 2x Self Priming pump. These will pump water from the clear water lagoon towards the inlet works of the water treatment works.

The pumps shall be equipped with variable speed drives as well as ultrasonic level control instruments what will allow the system to maintain a specific set level if the clear water well.

The pump station shall remain operational 24 hours and day, 7 days a week, and the VSD is to slow the pumps down should the level of the clear water lagoon drop below the set level.

There shall be an ultrasonic water meter installed in a chamber in order to measure the water flowing from the pump station, this shall be coupled with associated piping, valves and fittings.

The reading shall be electronically relayed to the SCADA systems of the water treatment plant.

The rising main shall split into two pipes as it approaches the inlet works, one shall deliver water into the potable water section of the inlet works, and the other to the raw water section which delivers untreated water to the mining areas.

a) Sludge Lagoon Pumps

The High lift pumps shall conform to the below specification

Item	Description	Specification
1	Type	Gorman-Rupp Self Priming T – Series or Similar
2	Design Flow	104.4 m3/h
3	Delivery Head	19m
4	Hydraulic efficiency	60%
5	Mean Speed	1450RPM
6	Impeller	Ductile Iron Impeller
7	Shaft	Forged Carbon Steel (DIN 1.7222)
8	Casing	Spheroidal Graphite Iron (DIN 07040)
9	Seals	Tungsten, Cartridge type, Mechanical Seals
10	Motor size	15kW
11	Voltage	400V
12	Bearing and Temp Insulation	Class H
13	Ingress Protection	IP67
14	Maximum Speed	1750RPM

Item	Description	Specification
15	Minimum Speed	500RPM
16	Minimum Turndown ration	20:1

3.5.1.1.2. VALVE CONSTRUCTION AND OPERATIONAL REQUIREMENTS

Bodies

Hubs for shaft-bearing housings shall form an integral part of the valve body.

Valves bodies shall have adjustable mechanical stops to prevent over travel of the valve disc in the open or closed position. These stops may be incorporated in an actuator.

Discs

Discs shall be a single casting of approved hydrofoil section with a smooth continuous surface. The maximum combined stresses in the disc shall not exceed 20% of the minimum yield stress of the material used when the specified unbalanced pressure is applied on any of the two sides.

Retaining Rings

Stainless steel retaining rings shall be coated to reduce galvanic corrosion (Refer to Standard Specification DWS 9900 Section C3). Any recess for the retaining ring in the disc or body shall be coated and the retaining rings assembled whilst the coating is still wet.

Seats and Seals

Preference shall be given to resilient seal arrangements that are removable, replaceable and adjustable from the downstream side of the valve, without having to remove the valve from the pipeline.

Resilient seals shall have non-weathering, non-sticking, long life properties and shall be compatible with the quality of water to be conveyed.

The seat profile shall be smooth and continuous and shall provide adequate "lead in" for the resilient seal to open and to close on the stainless steel seat only.

Seats and seals shall be of a design that would prevent them from becoming loose and obviate water seepage under the seals or seats during all conditions of operation and test.

Shafts

Shafts can either be continuous or a stub-shaft design configuration. Stub shafts shall extend into the disc hub for a distance of at least 1.5 shaft diameters and shall not protrude from the hubs i.e. exposing the shaft.

Shafts shall be attached to discs by means of keys, dowel pins, taper pins or any combination of the three and the connection shall be designed to transmit shaft torque equivalent to at least 75% of the torsional strength of the shaft. Dowel and taper pins shall be mechanically secured.

Bearings

Self-lubricating sleeve type bearings shall be fitted in the hubs in the valve body.

Each valve shall be fitted with at least one adjustable thrust bearing set to hold the disc securely concentric with the body or seat.

Non-return valves

Non-return valves at pump stations shall be Silent, non-slamming type

ID	Item	Specification
1	Type	Silent, Non-slamming
2	Body	SG Iron or Cast Steel
3	Disc Material	Cast Steel BS 1504-161
4	Disc Seat Material	Stainless Steel, Grade 308
5	Body Seat Material	Stainless Steel, Grade 304L
6	Stroke of Operation	Not more than 40 degrees
7	Dashpot	Not required
8	Valve Position Indicator	Yes
9	Pressure rating	PN10
10	Flanges	To SANS 1123
11	End cover O-ring	Nitrile Rubber 70 NBR
12	Corrosion Protection	Fusion Bonded Epoxy, to 150 microns

Butterfly Isolation Valves

ID	Item	Specification
1	Body	SG Iron
2	Spindle	Stainless Steel, Rising
2	Disc	SG Iron
3	Shaft Bearing Bush	Zinc-free Bronze
4	Gate Nut	Zinc-free Bronze
5	Body Seat	Stainless Steel
6	Seat Ring	Stainless Steel
7	Seal Retaining Ring	Stainless Steel

ID	Item	Specification
8	Operation arrangement	Gearbox
9	Pressure rating	PN10
10	Flanges	To SANS 1123
11	Corrosion Protection	FBE to 150 microns

RSV Isolation Valves

ID	Item	Specification
1	Body	SG Iron or Cast Steel
2	Spindle	Stainless Steel, Rising type
3	Gate Nut	Bronze
4	Body Seat	Stainless Steel, Grade 304L
6	Gate Seat	Stainless Steel, Grade 316
7	Pressure rating	PN10
8	Flanges	To SANS 1123
9	Corrosion Protection	Fusion Bonded Epoxy (FBE), to 150 microns

Pump Control Valves

Pump control valves shall meet specifications that are listed in the schedule below.

ID	Item	Specification
1	Type	Hydraulically operated, diaphragm-actuated, active check valve that opens fully or shuts off in response to electric signals
2	Body	Ductile Iron, Globe Valve, Angle Pattern Design
3	Fail safe mechanism	Yes
4	Double chamber	Yes
4	Operation	Hydraulic, electric and Spring operated, for start-up control, normal

ID	Item	Specification
		shutdown control, as well as power failure shutdown control
5	Control System	3-way solenoid pilot, check valves, limit switch, isolating cock valves
6	Seat	Replaceable, raised stainless steel ring seat
7	Flow Patch	Unobstructed
8	Actuator	Double-chamfered with an inherent separating partition
9	Valve shaft	Stainless Steel
10	Pressure Rating	PN10
11	Flange	To SANS 1123
	Internals	Stainless Steel and Brass
12	Elastomers	NBR (Acrylonitrile butadiene rubber)

FLOW METERS

Each flow meter supplied under this contract shall be equipped with separate mountable signal converter unit complete with sufficient length of signal cable. The signal converter shall be locally programmable and shall be supplied complete with programmer unit. The signal converter shall furthermore have an LCD display for instantaneous flow and totalize flow and shall have a 4-20mA and pulsed output for remote indications.

The magnetic-flow meters shall be supplied and installed, with an operating range of 0 - 400 ℓ/s. Each flow meter shall be able to record reverse flow.

C3.6 ENGINEERING, PROCUREMENT, CONSTRUCTION & MANAGEMENT

C3.6.1. Planning and Programming

The Contractor shall ensure that:

a) They is well informed with regard to the Employer's overall implementation programme for construction and investigative projects and makes available resources as required to efficiently complete required services

b) They compiles designs, documentation, reports and drawings timeously as not to unnecessarily delay the implementation of the construction or investigative projects.

c) The programme shall at minimum contain the following:

d) Time Scale (minimum): Days, where the project period does not exceed three months. Weeks, where the project period exceeds three months.

e) Time Scale (maximum): Months, where the project period does not exceed one year. Years, where the project period exceeds one year.

f) Tasks: All construction tasks and activities shall be shown. Where phases or stages are anticipated, this shall be the highest level of division and all tasks related to the successful accomplishment of that phase of the project shall be grouped. Resources allocation and task dependency shall be indicated.

g) Multiple Project Programming: Where multiple projects are part of the same Contract documentation, the Contractor shall provide a programme per project. However, where interdependency exists the programmes shall be integrated, but divided on the highest level per project followed subsequently by further divisions per phase or stage.

h) Start and Finish Dates: All tasks shall have specific start and finish dates.

i) Critical Path: All tasks forming the programme line that will establish any delays in the overall project period shall be clearly indicated and an indication of their sensitivity characteristics shall be provided.

j) Progress Tracking: The Contractor shall be required to periodically (at minimum of a monthly basis) indicating the project progress per task graphically and on a percentage basis.

k) Non-working Time: All South African public holidays, weekends and the local traditional annual builder's break (as identified in the contract data) shall be incorporated in the programme.

The Contractor's Programme shall include:

a) Dates for submission (by the Contractor) of designs and or design documents.

b) Dates for ordering of special and/or long delivery items.

c) Dates for issue of or approval of drawings for planning purposes.

d) Dates for issue of or approval of drawings for manufacture and construction purposes requiring the approval of the Engineer.

e) Dates for the placement of orders for material, receipt of material, fabrication and manufacture, works (factory) testing, shipment, erection

and commissioning.

f) Dates showing start and completion of site construction of each section and each major component of the permanent works.

g) Dates showing the delivery of all built-in steelwork, anchor bolts, etc.

h) Dates for start and completion of Engineering Design (including allowances for review/approval by the Engineer).

i) Dates for submittal and acceptance of drawings.

j) Dates for submittal of operation and maintenance manuals.

k) Dates for submittal of commissioning check lists and detailed commissioning schedules for acceptance (3 months before the commencement of commissioning).

l) Dates for submittal of commissioning check lists and detailed schedules of approval (3 months before the commencement of commissioning).

m) Dates for submission of complete schedules for all manufactured items.

n) Dates for Test on Completion as defined in the Contract Data.

Activities shall be timed in week units except for commissioning or similar detailed programmes, which shall have activities, specified in days. Activities on which it is intended to operate multiple shift working shall be clearly defined.

Method and resources statements are required for all critical items to prove that the period allocated to them fits the overall programme and that the Contractor's plant and labour are consistent with the time allowed. Critical items shall include (as a minimum) all reinforced, structural steelwork, pipework, tie-ins to existing services and specialist work.

The Contractor shall update and revise the Programme once a week or when required by the Engineer. The submission to and acceptance by the Engineer of such updated and revised Programme, shall not relieve the Contractor of any of his duties or responsibilities under the Contract and existing laws.

C3.6.2 Software Application for Programming

Only the "***Microsoft Project***" software package will be accepted.

The Contractor shall make the programme available in MS Project format and in print version. The Contractor shall also ensure that all necessary hardware and software in this regard are available at all times on site and that at least one member of the permanent site staff is competent on their operation.

C3.6.3 Sequence of the Works

Whenever work being done by other Contractors is contiguous or related to the Works included in this Contract, the sequence of handling the *Works* shall be such that the least delay possible will result to each Contractor and such sequence may be determined by the Engineer. The Engineer will establish the respective rights of the various interests involved in order to secure the completion of the various portions of the Works in general harmony.

The Contractor shall be responsible for the co-ordination and proper execution of the Works, including co-ordination with other Contractors and organizations to the extent specified in the Contract Documents. The Contractor shall, as specified in the Contract Documents, afford all reasonable opportunities for carrying out their work to:

a) any other Contractors employed by the Employer,

b) the staff and workmen of the Employer, and

c) the staff and workmen of any legally constituted public authorities who may be employed in the execution on or near the site of any work not included in the Contract, which the Employer may require.

The Contractor shall obtain, co-ordinate and submit to the Engineer for his information all details (including details of work to be carried out off the Site) from Sub-contractors. The Contractor shall be responsible for the locations of their work or materials, in order to ensure that there is no conflict with the work of other Sub-contractors, the Contractor or other Contractors.

The Contractor shall give the works the constant attention necessary to facilitate the progress thereof and shall cooperate with the Engineer and other Contractors in every way possible.

C3.6.4 Methods and Procedures

C3.6.4.1. Monthly Reports

The Contractor shall prepare and submit to the Engineer within 15 days after the first day of every month a written progress report together with a monthly progress schedule summarising the progress of the various sections of the work both at the place of manufacture and at site. Three (3) copies of the monthly progress report shall be submitted in accordance with the correspondence procedures.

Such progress reports shall indicate accurately the status of different activities covering design, material procurement, manufacture, works (factory) tests, shipping, erection, testing and commissioning and shall be related to key dates identified in the programmes referred to in the *conditions of contract*.

The report shall also include data on labour strength and equipment employed. The programme submitted with the monthly report shall show cumulative progress towards scheduled completion, expressed as a percentage, of all items shown in the contract schedule.

The reports shall indicate the degree of criticality on each section of the Work, together with the slippage or impending slippage on any key event and shall be directly related to the contract schedule and supporting detail programmes for sections of work.

The monthly progress report shall be in the format acceptable to the Engineer and written in the English language and shall include:

a) Photographs and detailed descriptions of progress, including each stage of design (if applicable), procurement, manufacture, delivery to the Site, construction, erection, testing and commissioning.

b) Charts showing the status of construction documents, drawings, purchase orders, manufacture and construction.

c) For the manufacture of each main item of plant and materials, the name of manufacturer, manufacture location, percentage progress, and the actual or expected dates of commencement of manufacture, Contractor’s inspections, tests and delivery.

d) Records of personnel and Contractor’s equipment on the Site.

e) Copies of quality assurance documents, test results and certificates of materials.

f) Safety statistics, including details of any hazardous incidents and

activities relating to environmental aspects and public relations; and

g) Comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome such aspects.

h) Financial status of Contract.

C3.6.4.2 Weekly Reports

The Contractor's Site Manager shall prepare a weekly summary report covering all the site activities and submit it to the Engineer. This report shall include projected work activities for at least 2 weeks ahead of those being reported upon. In addition, this report shall include a weekly site labour return giving imported and local labour and each Sub-Contractor's labour, broken down into trades. Full details of site labour disputes (or off site disputes affecting the Contract) shall be reported to the Engineer immediately. The weekly statement shall give details of all construction plant machinery, offices and materials. The Contractor shall submit three (3) copies of weekly report to the Engineer which shall include.

a) Summary of progress.

b) Potential problems and proposed solutions.

c) Project schedule update.

d) Project permit status.

e) Construction photographs.

f) Status of orders and procurement.

g) Drawing list.

h) Plant test schedule.

i) Construction schedule (critical path method, S-curve).

The Contractor shall submit to the Engineer a weekly return detailing the numbers of the various classes of workmen employed by him on the Site, the plant and Contractor's equipment on the Site or on order and any other information that may reasonably be required.

C3.6.4.3 Detailed programme and progress reports

Detailed monitoring of the progress of the Contract by the Contractor is to be achieved by the use of critical path network planning and review techniques.

Following approval of the Programme, the Contractor shall submit within thirty (30) days, detailed programmes for all work to be executed during the Contract. These programmes, which shall embrace design, supply, manufacture and site construction shall be based on the Contract Programme and be used as target programmes and may be subject to revision. Further detailed programmes for progressive stages of the Contract shall be prepared by the Contractor as required by the Engineer.

The Contractor shall, whenever required by the Engineer, also provide in writing for his information a general description and drawing or sketch of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.

The Contractor shall plan in detail his section of the work by the use of bar charts to record progress of the design, manufacturing and delivery elements and by the use of the critical path network procedure for work on site. The issue and approval of drawings shall be covered in detail by the use of appropriate check points in the detailed programme, including in particular design information interface events with others. The manufacturing work shall

be broken down into check points in the detailed programme. The manufacturing work shall be broken down into sufficient detail for the information supplied to relate correctly to the erection detailed programme on which the activity durations shall not exceed four weeks. Activities shall cover all aspects for which the Contractor or his Sub-contractors are responsible and also indicate site access, points at which terminals and access will be available to or required from others and services required from the Employer.

The Contractor shall ensure that the resources required to meet these programmes are available to him and his Sub-contractors. A table shall be prepared indicating the expected level of each type of resource for the duration of the site work.

The detailed programmes must be analysed by the Contractor, either manually or by computer, and three copies of the following tabulations presented:

a) A schedule tabulated in order of increasing total float showing for each activity:
   (i) event numbers,
   (ii) brief description of activity and responsibility,
   (iii) duration,
   (iv) early and late starting and finishing dates,
   (v) total float.

b) A schedule tabulated in order of early start date by total float for eight weeks ahead of the 'up-date' date. The information given in this schedule shall be the same as that indicated above.

All programmes and progress reports shall be provided by the Contractor in a form acceptable to the Engineer. Full access shall be made available to the Engineer to visit the Contractor's and Sub-contractor's works to verify the status of design and manufacture.

Other requirements in respect of programmes are given in the Conditions of Contract.

C3.6.4.4 Progress Meetings

The Contractor will be required to attend regular formal construction progress meetings with the Engineer during manufacture and on site. The site meetings will also involve the other Contractors so that the progress of construction both on this Contract and the entire Project may be reviewed. Such meetings may be monthly and may require the up-dating of the Contractor's Contract and detailed Programmes, in which case three copies of the up-dated programme shall be submitted to the Engineer within 7 days of the agreed up-dating.

The Contractor shall also attend informal weekly meetings with the Engineer on site and provide a weekly estimate of the work anticipated on each work section.

The updated programme, if necessary, after reconciliation and incorporation of changes, shall become the new basis for further execution of the Works without any modification of the Contract's completion date. The updating of the programme shall not give rise either to any extension of time or to any entitlement for any additional payment.

C3.6.4.5 Interface Meetings

The Contractor shall hold regular interface meetings with all other contractors who may be performing work on behalf of the Employer and with representatives of the Employer involved with the activities related to or in the vicinity of the works to be performed under this Contract. The purpose of the interface meetings shall be to ensure that the work the Contractor is performing on the project is efficiently and effectively co-ordinated without duplication or miscommunication and that there is full compatibility between sections that are designed and constructed by the various contractors.

C3.6.4.6 Quality plans and control

a) General

The Contractor shall have a well-organized Quality Management System (QMS) based on ISO 9001 Series) to assure that items and services, including subcontracted items and services, comply with the Works Information.

This clause specifies the minimum requirements necessary to ensure that proper attention is given to the materials used, the standard of workmanship, the manufacturing and construction processes, and the quality of all components.

The Contractor shall include in all his orders to Sub-contractors a note stating that materials and plant covered are subject to inspection by the Engineer.

b) Quality Control and Assurance System

All design, manufacturing, processing, testing and inspection operations affecting the plant or material shall be governed by Quality Assurance procedures in accordance with the directives of the ISO 9001 standards while the production and installation shall be governed by quality assurance procedure in accordance with the directives of the ISO 9002 standards or equivalent. These may be subject to surveillance by the Engineer.

A tentative QMS procedures shall be submitted together with the tender and shall meet the requirements stated in the Design Procedure. Within thirty (30) days of the Commencement Date, the Contractor shall submit six (6) copies of his complete quality control and assurance procedures, manuals for review and acceptance by the Engineer.

The manual shall include pro-forma checklists for all requirements of the Contractor's quality control and assurance program and those called for in the Works Information.

The Quality Control and Assurance System to be submitted shall include but not necessarily be limited to the following:

a) Programme requirements for materials and plant procurement and manufacture with description of design control, purchased material

control, quality verification tools, manufacturing control, materials and components selection, handling and packaging, etc.

b) Programme requirements for plant production with detailed description of Quality Assurance organization of the Contractor, Quality Assurance Functions and Procedures and Performance Monitoring.

c) Quality Assurance Programme Tests with detailed description of the test procedures to be conducted.

In addition to the requirements of these ISO Standards or their equivalents the Contractor shall:

a) Establish procedures for adequate planning and resourcing of all quality related activities including the preparation of quality plans.

b) Establish measures for the identification and control of items throughout all stages of the Contract. This shall include measures to maintain traceability as identified in agreed quality plans.

c) Arrange for the protection of quality of the product to include delivery to the specified destination.

d) Control their measuring and test equipment in accordance with established procedures for measurements and calibration systems and ensure that such equipment that may be used by Sub-contractors to verify work is similarly controlled.

Where any site installation and/or test and commissioning work is involved, the Contractor shall prepare contract specific quality assurance procedures in agreement with the Engineer prior to commencements of such works.

The Contractor shall be responsible for specifying the quality assurance requirements to his Sub-contractors, for approving Sub-Contractors quality assurance programme and for ensuring compliance with the requirements.

The Contractor shall ensure that all appropriate technical information is extracted from the Contract documents and specifications and passed on to the Sub-contractors.

The Contractor shall ensure that all computer systems and software to be utilized on the project is qualified for the application under consideration and such qualification is documented.

c) Quality Management Audit

The Contractor shall carry out periodic assessments of the adherence to the Quality Plan and Quality Control Plans by senior qualified staff who are not normally employed on the Site. The Engineer and/or his representative shall be invited to attend at the periodic assessments meeting and be afforded the opportunity to report on the implementation of the Quality System at the Site. The assessment reports shall be copied to the Engineer.

d) Corrective Actions

The Contractor’s quality assurance programme shall provide for prompt detection and correction of all events and conditions adversely affecting quality, including failures, malfunctions, incidents, trends, deficiencies, deviations, non-conformances, and defective materials.

The Contractor shall establish and maintain methods for verifying and determining the cause of an adverse condition and for initiating necessary improvement and corrections to preclude repetition. Quality trends shall be analysed to furnish a basis for improvement in work performance. The Contractor's corrective action system shall extend to the performance of other participating Contractors and Sub-contractors when necessary and shall provide for the interchange of corrective action information. Identification of the adverse condition, its cause, and the corrective action taken shall be recorded and reported to appropriate levels of management.

The Contractor shall establish and implement procedures for reporting, verifying, analysing, and correcting failures, including those that occur during development and qualification testing. The procedure shall provide assurance that the cause and mode of each failure are determined that the potential safety and availability implication is evaluated, and that corrective action is taken.

A failure report shall be prepared to identify the failed item and its origin or source of manufacture and shall describe the failure, the test status at time of failure, and the probable cause and mode of failure, and recommended corrective action.

Failure to conform to the specified requirements will result in the issuing by the Engineer of a Corrective Action Request. Failure to rectify the deficiencies covered by a Corrective Action Request within the period stated will result in the Engineer invoking the provisions of GCC.

e) Design revision and substitution of Material

Any revision affecting the design and manufacturing of the Works, or any substitution of materials that is deemed necessary shall be notified by the Contractor to the Engineer for the latter's review and approval.

f) Contractor's responsibility

Acceptance by the Engineer of the Contractor's quality assurance programme, quality plans and inspection and test plans, or of those of his Sub-contractors will not relieve the Contractor of his obligation to provide goods and services which meet the requirements of the Contract.

g) Environment

The Contractor shall strictly comply with the requirements of the EMP issued for this Works. He shall be liable for any damages/destruction to the environment including penalties that will be imposed by the relevant government agency arising from non-compliance of the requirements of EMP occasioned in any manner by his acts or neglect, or his agents, employees, or workmen in the execution of the works.

h) Accommodation of traffic on public roads occupied by the Contractor

The Contractor shall draft a traffic accommodation plan and submit to the Engineer prior to commencement of work on any road. The approval by the Engineer shall not relieve the Contractor of any of his responsibilities or obligation.

i) Other Contractors on site

The Contractor needs to take note that other contractors may also be working on the same site and allow therefore in his planning/work scheduling.

j) Testing, completion, commissioning and correction of defects

The Contractor shall be responsible for conducting all testing as described herein. Work under this section shall include all labour, materials, and support services required to completely test all hardware and software. If a type of equipment does not meet the specifications or requirements as stated in these Specifications or the System Design Document, it shall be the Contractor's responsibility to correct the problem in all units of that equipment furnished, at no additional cost to the Employer.

All of the components, sub-systems, interfaces and systems processes constituting the works shall be tested individually and together to demonstrate that they meet the contract requirements and provide a system that functions in accordance with the contract.

The Contractor shall be responsible for the performance of all of the tests described below to satisfy the objectives of each testing phase as determined by the Engineer. The Employer shall have the right to witness any and all tests. Test plans shall be submitted to the Engineer a minimum twenty-one (21) days prior to the planned start of testing. Testing shall not commence until the plans have been approved.

Unless otherwise specified, all test plans shall include at a minimum the following:

a) Overview of test including test objectives
b) Pass/fail criteria
c) Traceability matrix listing of all requirements and specifications from the Contract that are included/to be verified in the test and their cross-reference to the Specifications and System Design Document.
d) Test setup and test measuring equipment (including descriptive diagrams)
e) Listing of tools, test applications, simulators, etc. required to perform the test
f) Entry/start-up conditions
g) Exit/closing conditions
h) Test procedures and scripts to be executed
i) Test recording form
j) Test comments form
k) Signatures and verification form

The Employer reserves the right to direct at no additional cost, the following changes to the test plans:

a) The addition of procedural changes and other reasonable tests to reasonably assure System performance and conformance;
b) Investigation into any apparent troubles or anomalies with respect to the System;
c) An audit of all test reports and verification of any or all previous tests and Measurements.

The Contractor shall provide written notification of readiness to test for all required test stages a minimum of two (2) weeks in advance of the testing.

Upon successful completion of any test, the Contractor shall prepare and submit within two (2) weeks a report summarizing the results with relevant test records appended. All such test reports will be reviewed by the Engineer.

The Contractor shall develop and maintain a standard set of regression tests for each device or subsystem. Regression tests shall be run for any affected device or subsystem in the event that any testing is halted and restarted in accordance with the requirements of the defect resolution.

k) Training

The Contractor needs to take note that the Employer aims to use the infrastructure contracts to expose students from various institutions to construction activities as part of their training programme. Full support needs to be provided by the Contractor in this programme to obtain maximum benefits for the students allocated to the contract.

The Contractor shall be responsible to train the Employer's designated personnel according to the requirements specified herein. The Contractor shall be responsible for the supply of all training materials including, at a minimum:

a) Training setups of equipment, including mounting and all power supplies and simulators required to simulate normal operation.
b) Instructor guides.
c) Student guides.
d) Operations manuals.
e) Training presentations.
f) Training handouts.
g) Quick reference guides.
h) Interactive videos or demonstrations.
i) Course and instructor comments sheets

l) A Training Program shall be developed and submitted a minimum forty-five (45) days before delivery of training materials that describes:

a) Each course to be conducted.
b) An overview of delivery methods for each course, including hands-on and group work experience.
c) The course objectives for trainees.
d) An evaluation plan, including criteria for success of the course, based upon the goals and objectives, and evaluation steps and instruments to be employed.
e) A proposed schedule for each class, keyed to the installation process and constrained by availability of trainees away from regular duties.
f) A plan for developing or customizing course material.
g) Resumes of personnel proposed to be trainers for each class, demonstrating that they are experienced, effective training professionals.

Training shall include course development, providing instructors, and supplying all handouts, materials, classroom aids, etc. required to conduct the training. Training shall take place at the site facilities. Practical training on equipment shall occupy a significant portion of all training classes. The training presentations and material shall be in English.

m) Recording of weather

The Contractor shall be permitted to take his own rainfall measurements on site subject to the Engineer's approval, but access to the measuring gauge(s) shall be under the Engineer's control. The Contractor is to provide and install all the necessary equipment for accurately measuring the rainfall as well as to provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost.

C3.7 HIV/AIDS REQUIREMENTS

C3.7.1 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers
- Informing Workers of their rights with regard to HIV/AIDS in the workplace
- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices

C3.7.2 DEFINITIONS AND ABBREVIATIONS

C3.7.2.1 Definitions

Service Provider: The natural or juristic person recognised and approved by the Lepelle Northern Water as a specialist in conducting HIV/AIDS awareness programmes.

Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in all.

C3.7.2.2 Abbreviations

HIV	:	Human Immunodeficiency Virus
AIDS	:	Acquired Immune Deficiency Syndrome
STI	:	Sexually Transmitted Infection

C3.7.3 BASIC METHOD REQUIREMENT

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- Number of Workers and Sub-contractors on site
- When new Workers or Sub-contractors will join the construction project
- Duration of Workers and Sub-contractors on site
- How the maximum number of Workers can be targeted with workshops
- How the Contractor prefers workshops to be scheduled, *e.g.* three hourly sessions per Worker, or one 2.5 hour workshop per Worker
- Profile of Workers, including educational level, age and gender (if available)
- Preferred time of day or month to conduct workshops
- A Gantt chart reflecting the construction programme, for scheduling of workshops
- Suitable venues for workshops The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Lepelle Northern Water Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training.

The Service Provider Workshop Plan shall address, but will not be limited to the following:

3.1 The nature of the disease;

3.2 How it is transmitted;

3.3 Safe sexual behaviour;

3.4 Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;

3.5 Attitudes towards other people with HIV/AIDS;

3.6 Rights of the Worker in the workplace;

3.7 How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;

3.8 How the Service Provider will support the Awareness Champion;

3.9 Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;

3.10 How the workshops will be presented, including frequency and duration;

3.11 How the workshops will fit in with the construction programme;

3.12 How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;

3.13 How the video will be used;

3.14 How the Service Provider will elicit maximum participation from the Workers;

3.15 A questions and answers slot (interactive session)

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated.

C3.7.4 HIV/ AIDS AWARENESS EDUCATION AND TRAINING

4.1 **Workshops**

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Offices of the Lepelle Northern Water, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

4.2 **Recommended practice**

4.2.1 Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan. Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session.

4.2.2 Service Providers

A database of recommended Service Providers is available from all Offices of the Lepelle Northern Water.

4.2.3 HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met

4.2.3.1 UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:
1. Define and describe HIV and AIDS
2. List and describe the progression of HIV/AIDS

4.2.3.2 UNIT 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:
1. Record in what bodily fluids the HI virus can be found
2. Describe how HIV/AIDS can be transmitted
3. Demonstrate the ability to distinguish between how HIV/AIDS transmitted and misconceptions around transmittance of HIV/AIDS

4.2.3.3 UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HIV virus from entering the bloodstream.

Assessment Criteria:
1. Report on how to minimise the risk of HIV/AIDS infection
2. Report on precautions that can be taken to prevent HIV/AIDS infection
3. Explain or demonstrate how to use a male and female condom.
4. List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission

4.2.3.4 UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able

to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling.

Assessment Criteria:
1. Describe methods of testing for HIV/AIDS infection
2. Report on why voluntary testing is important
3. Report on why pre- and post-test counselling is important

4.2.3.5 UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria:
1. List and describe ways to manage HIV/AIDS
2. Describe nutritional needs of people living with HIV/AIDS
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AID
4. Explain the need for counselling and support to people living with HIV/AIDS

4.2.3.6 UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:
1. Discuss anti-retroviral therapy
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS
4. Describe post exposure prophylactics.

4.3 Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from Offices of the Lepelle Northern Water.

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover.

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.

The posters on display must always be intact, clear and readable.

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site.

5. PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

C3.7.5 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

C3.7.6 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the instruction period.

The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

The Awareness Champion shall be responsible for:

7.1 Liaising with the Service Provider on organizing awareness workshops;
7.2 Filling condom dispensers and monitoring condom distribution;
7.3 Handing out information booklets;
7.4 Placing and maintaining posters

C3.7.7 MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

C3.8 OCCUPATIONAL HEALTH AND SAFETY

C3.8.1 GENERAL

C3.8.1.1 Tender Document

This document is the pre-contract Health and Safety Specification which must be used by the Principal Contractor and Sub Contractors appointed by the Principal Contractor to compile Health and Safety Plans for this project and forms part of the tender documentation.

The Principal Contractor and Sub Contractors' particular attention is drawn to this specification whereby

"Upon award of the contract, the contractor is to assume and adopt the function and duties of the Principal Contractor as set out in the Construction Regulations 2003 No. R. 1010 promulgated 18 July 2003."

The health and safety specifications outlined herein must be taken into account and due allowance made within the pricing of appropriate items contained within the specification. Where the tenderer is of the opinion that a requirement is missing or is not adequately specified then this shall be drawn to the Client attention during the tender period. In the absence of any direction to the contrary, the tenderer shall as part of the tender submission, set out the details of such discrepancy together with the costs associated therewith, separately identified and included within the tender figure.

C3.8.1.2 Principal Contractor

The successful tenderer will on signing of the contract for:

Project Name: CONSTRUCTION, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF SLUDGE LAGOONS AND DISINFECTION FACILITIES COMPLETE WITH THE ASSOCIATED EQUIPMENT AND ANCILLARIES.

be required to fulfil the function and duties of the Principal Contractor as set out in the Construction Regulations 2003 No. R.1010 promulgated 18 July 2003.

C3.8.1.3 Start of Construction Phase

The construction phase shall not commence until the Principal Contractor's Health and Safety Plan was considered and approved by the Client and Design Team. The Client shall discuss and negotiate with the Principal Contractor the contents of the Health and Safety Plan submitted by the Principal Contractor before finally approving it for implementation.

The construction phase shall not commence until written permission is received from the Client. In this respect the Client may rely on the advice of the Technical Team as to the adequacy and comprehensiveness of the Plan offered by the Principal Contractor.

In preparing their detailed Health and Safety Plan based on the relevant sections of this Health and safety Specifications supplied to them by the Client, contractors must allow for the adoption of safe working procedures and co-ordinate and rationalize activities to avoid controllable hazards arising due to clashes of activities.

C3.8.2 SUB-CONTRACTORS, SUPPLIERS & DESIGNERS

The Principal Contractor shall ensure that all direct appointments in connection with this project include provisions for the compliance of his sub-contractors, suppliers and designers, etc, with the relevant provision of the Occupational Health and Safety Act (Act 85 of 1993) and it's Regulations, in particular the Construction Regulations 2003 No. R. 1010 promulgated 18 July 2003.

C3.8.2.1 liaison

The Principal Contractor shall together with all his appointees, liaison with the Client as required under the Regulations and agrees procedures for the transfer of relevant Information in respect of designs and in connection with the preparation of the Health and Safety File.

C3.8.2.2 Advice

The tenderer shall, as part of the tender submission, indicate where advice will or may be required of the Client in respect of the competence of the tenderer's designers and the adequacy of resources allocated or to be allocated by them.

C3.8.2.3 Undertaking by Principal Contractor and Sub-Contractors appointed by the Principal Contractor.

The Principal Contractor as well as Sub-Contractors appointed by him / her shall undertake in writing to ensure that the provisions of the Occupational Health and Safety Act (Act 85 of 1993) and it's Regulations, in particular the Construction Regulation of 2003 No. R 1010 and any amendments or re-enactments thereto are complied with.

The attached Occupational Health and Safety provisions undertaking form for the Principal Contractor shall be completed and signed by the Project Manager of the company / firm awarded the tender.

Client's Occupational Health and Safety Agent: To be appointed

C3.8.3 INFORMATION REQUIREMENTS

The contractor must provide the following information.

C3.8.3.1 General

- The Principal Contractor / Sub-Contractor shall have an OHS Policy in accordance with the OHS(Occupational Health and Safety Act, Act 85 of 1993) and include a copy of the Policy in the Health and Safety Plan to be submitted by the Principal Contractor / Sub-Contractor.

- The Principal Contractor / Sub-Contractor shall promptly display a copy of the Company's OHS Policy on the OHS Notice Board for the duration of the contract and include it into information provided to persons at the contract OHS induction.

- The Principal Contractor shall develop a Contract specific OHS Management Commitment Statement based on the Company's OHS Policy.

- The Principal Contractor's Project Managing shall sign the Commitment statement and prominently display a copy on the OHS Notice Board for the duration of the contract. A copy of the Commitment Statement shall be included in information provided to persons at the Contract OHS induction and a copy shall also be supplied to each sub-contractor.

C3.8.3.2 Management

- of the personnel and management systems to be put in place to prepare, manage, implement, conduct and monitor the Health and Safety Plan for the project.

  Broadly speaking your:

- Organization's internal structure that establishes SHE (Safety, Health and Environmental) ROLES, RESPONSIBILITIES, ACCOUNTABILITIES, and REPORTING RELATIONSHIPS,

- SHE (Safety, Health and Environmental) PLANS, POLICIES, PROCEDURES, DIRECTIVES and STANDARDS that provide instructions as to how activities and functions are to be carried out,
- SHE (Safety, Health and Environmental) CONTROLS, INSPECTIONS, REVIEWS, etc. built into construction operations to ensure that performance is consistent with SHE (Safety, Health and Environmental) objectives and requirements,

- SHE (Safety, Health and Environmental) COMMUNICATION MECHANISMS for collecting, handling and reporting information.

  In other words, Management Systems that specifies WHO is going to do WHAT, WHERE, WHEN, WHY and HOW.

- Details of relevant qualifications and experience held by the persons nominated above, including recent health and safety education and training undertaken.

- Procedures for determining the competence of contractors engaged on the project, whether employed by the contractor directly or by others, to fulfill their duties under the Construction Regulations 2003 (No. R.1010 Promulgated 18 July 2003)

C3.8.3.3 HAZARD IDENTIFICATION, RISK MANAGEMENT AND CONTROL

- The Principal Contractor / Sub-Contractor shall detail and implement procedures that will identify hazards, assess risks and determine suitable control measures as they arise throughout term of the contract. These procedures shall both comply with and be implemented and managed in accordance with the specification.

- The Principal Contractor / Sub-Contractor shall detail and implement procedures that ensure control measures are evaluated for effectiveness and modified as necessary. The evaluation procedure shall detail the responsibilities, timelines and records that will be kept as part of the process.

- Where Risk is controlled through administrative control measures, the Principal Contractor / Sub-Contractor shall ensure that the administrative measures are:

a) Clearly documented and those personnel responsible for implementation and management are explicitly defined;

b) Understood by all relevant personnel through training and assessment;

c) Implemented as documented and promptly reviewed for effectiveness following initial implementation;

d) Amended and authorised as required;

e) Adequately supervised, managed and audited to ensure continuing compliance;

f) Available at all times wherever the measures are being implemented.

❖ Any piece of plant or equipment not complying with the specification shall cease operation until the Principal Contractor / Sub-Contractor can demonstrate to the satisfaction of the Client / Client's Agent that the piece of non-conforming plant or equipment conforms to these requirements.

C3.6.3.4 Health and Safety Plan

The Principal Contractor / Sub-Contractor shall develop a Health & Safety Plan to reflect variations in design or changes in site conditions and liaise with the Client / Client's Agent.

The Principal Contractor shall develop this Heath and Safety Plan so that it:

a) Incorporates the contractor's approach to managing the construction work to ensure the health and safety of all persons carrying out the construction work and all persons who may be affected by their work.

b) Includes the risk assessments prepared by all Contractors under their duties set out in the Construction Regulations 2003 and any other relevant legislation (i.e. the OHS Act and Regulations, etc).

c) Includes the arrangements for ensuring that, where appropriate or specifically requested, all Contractors / Sub-Contractors prepare suitable and sufficient method statements for their construction works which incorporate adequate measures for ensuring the health and safety of all persons who may be affected by these works.

d) Incorporates the common arrangements for site safety, statutory notices and registers etc.

e) Includes the site rules to be adopted for controlling the risks to health and safety during the construction phase(s) or the project.

f) Includes reasonable arrangements for monitoring compliance with health and safety legislation and site rules.

g) g)Includes reasonable measures to ensure co-operation between all Contractors and Sub-Contractors in respect of health and safety provisions and prohibitions.

h) Includes the steps to be taken to ensure that only authorised persons are allowed into any premises or parts of the site / premises where construction work is being carried out.

i) Includes arrangements for emergency procedures.

j) Includes arrangements for ensuring that, so far as is reasonably practicable, every Contractor and Sub-Contractor is provided with comprehensible information about the risks to health and safety of that Contractor / Sub-Contractor, or of any employees or other persons under their control, arising out of the construction works, including the emergency procedures

k) Includes details of the arrangements for ensuring, so far as is reasonably practicable, that the employees or other persons under the control of any Contractor / Sub-Contractor, and any visitors to the site, receive adequate information about the risks to their health and safety arising out of the construction works and, where necessary, adequate training to carry out their work in a safe and healthy manner.

l) Includes arrangements for providing all persons at work on the site and visitors to the site with the opportunity and means of discussing and offering advice on health and safety issues relating to the construction works.

m) Includes arrangements for the reporting of any accidents, injuries or dangerous occurrences, including conforming with the statutory requirements.

n) Can be modified as the work proceeds to take account of any information received from Contactors / Sub-Contractors, any experience gained during the course of the project or any changes necessary as a result of unforeseen circumstances or alterations to the design.

C3.8.3.5 PROGRAMME

A time estimate required by the contractor to implement the Health & Safety Plan sufficiently for works to commence on site.

C3.8.3.6 Cost

A detailed breakdown of costs allowed in the contractor's tender for preparing, managing, implementing and monitoring the Health and Safety Plan, and for complying with the requirements imposed on the Principal Contractors under the Construction Regulations of 2003(No. R. 1010 Promulgated 18 July 2003).

C3.8.4 GENERAL SITE SAFETY

C3.8.4.1 Safety training & education

The Principal Contractor shall detail the OHS competencies and training received by its contract management personnel.

The Principal Contractor's Health and Safety Plan shall have a detailed register of the skills and competencies for all personnel for the activities that the personnel will undertake under the contract. (E.g. Mobile plant operators, crane operators etc.)

The Principal Contractor shall demonstrate and maintain documentary evidence of competencies on site for the duration of the contract.

C3.8.4.2 Induction Training

The Principal Contractor / Sub-Contractor shall develop and detail a Site Induction Training Programme as part of the Occupational Health and Safety Plan to be submitted to the Client prior to commencement of construction that includes as a minimum:

a) Training related to hazards likely to be encountered on Site and control measures that have been developed in response to these hazards;
b) Roles and Responsibilities;
c) The requirements of the Health and Safety Plan submitted and approved
d) Address the identified issues in the Fire Safety, Emergency, Evacuation and Rescue Plan to ensure that all Site personnel are aware of procedures in the event of an incident or emergency occurring;

The Principal Contractor / Sub-Contractor shall evaluate all persons undertaking the site Induction Training through a written test to ensure that inductees have an understanding of the OHS (Occupational Health and Safety) requirements for the contract. The written tests shall be signed and dated by the person undertaking the induction training to attest to their understanding and be retained by the Principal Contractor / Sub-Contractor as a record that the training has been completed.

C3.8.4.3 Induction training for specified work

The Principal Contractor / Sub-Contractor shall conduct Site Specific Occupational Health and Safety Induction Training for all personnel, the Client and all visitors not escorted on Site by inducted persons.

The Principal Contractor / Sub-Contractor shall evaluate all persons undertaking the Site Induction Training through a written test to ensure that inductees have an understanding of the OHS (Occupational Health and Safety) requirements for the contract. The written tests shall be signed and dated by the person undertaking the induction training to attest to their understanding and be retained by the Principal Contractor / Sub-Contractor as a record that the training has been completed.

C3.8.4.4 Recording & reporting of injuries

Make arrangements for all contractors to report accidents, ill health and dangerous occurrences notifiable to the Department of Labour under Section 24 of the OHS Act (Occupational Health and Safety Act, Act 85 of 1993) (Reporting to DOL (Department of Labour) Inspector regarding certain incidents).

All lost time incidents associated with the contract works or reportable as defined by **Section 24** of the OHS Act shall be immediately reported to the Client.

The Principal Contractor / Sub-Contractor shall provide a detailed report of all accidents / incidents, including events that could have become lost time incidents were it not for fortuitous circumstances to the Client within 5 days of the incident occurring. The Principal Contractor / Sub-Contractor shall provide copies of all reports and information associated with the incidents to the Client. Copies of reports must be placed on the Health and Safety File.

Where the Principal Contractor / Sub-Contractor has been:

- Served with a prohibition, contravention or improvement notice under the OHS Act; or
- Required to comply with any order issued by an inspector for the Department of Labour;

- The Principal Contractor / Sub-Contractor shall immediately supply a copy of that notice, order or notification to the Client.

- Where the Principal Contractor / Sub-Contractor have been served with a summons or is convicted of any offence in relation to occupational health and safety, the Principal Contractor / Sub Contractor shall immediately supply a copy of that summons to the Client.

- The Principal Contractor / Sub-Contractor shall detail the reporting and investigation procedures for incident investigation. The procedures shall include the investigating officer responsible and the time limits imposed for reporting and investigating the incident and to implement corrective action in a timely manner so as to prevent a recurrence.

- The client may participate in or undertake an investigation into the incident, injury or illness at its discretion and the Principal Contractor / Sub-Contractor shall cooperate with and provide assistance to the investigation organized and undertaken by the Client.

C3.8.4.5 First Aid

- Establish and implement a first-aid programme to provide emergency treatment to victims of accidents, chemical substances or excessive exposure to toxic substances.

  The programme shall include:

  - proper first aid facilities administered by qualified personnel,
  - first-aid boxes,
  - first-aid room, where there are 500 or more workers on site,
  - training and re-training of first-aiders,
  - first-aid treatment procedures,
  - standard procedures,
  - special procedures, e.g. for poisoning,
  - maintenance of first-aid facilities

- All first-aid provisions shall comply with the OHS Act (Act 85 of 1993)

C3.8.4.6 Fire protection and prevention

- Appropriate measures must be taken to avoid the risk of fire.
- Sufficient and suitable storage must be provided for flammable liquids, solids and gases.
- Smoking must be prohibited and notices in this regard must be prominently displayed in all places containing readily combustible or flammable materials;
- Combustible materials must not accumulate on the construction site.
- Welding, flame cutting and other hot work may only be done after the appropriate precautions have been taken to reduce the risk of fire.
- Suitable and sufficient fire-extinguishing equipment must be placed at strategic locations and such equipment must be maintained in good working order.
- A sufficient number of workers must be trained in the use of fire-extinguishing equipment.

C3.8.4.7 Site Emergency Procedures

The Principal Contractor / Sub-Contractor shall establish an Emergency Evacuation and Rescue plan.

The plan shall include the following detail:

- The role and responsibility of every individual in the work area on fire safety emergency evacuation and rescue;
- General work area precautions, fire prevention, detection, protection and warning alarm systems;

- Fire fighting and rescue equipment including types of fire extinguishers;
- Fire safety measures for Site accommodation;
- Escape and communication;
- Fire brigade access, facilities and coordination;
- Fire drills and training including the use of fire fighting equipment;
- Material storage including flammable liquids, gasses and waste;

The Principal Contractor / Sub-Contractor shall ensure that all procedures, precautionary measures and safety standards stipulated in the Plan are communicated, implemented and complied with by all workers including other interfacing contractors on Site.

The Principal Contractor / Sub-Contractor shall practice their emergency preparedness within six (6) weeks of the commencement of work and at least four (4) monthly intervals thereafter.

The Principal Contractor / Sub-Contractor shall review and ensure the adequacy of the Plan as the work progress.

The Principal Contractor / Sub-Contractor shall conduct monthly checks on fire fighting equipment and test alarms and detection devices installed on Site and document findings in a register which shall be on site at all times for inspection.

The Principal Contractor / Sub-Contractor shall conduct weekly inspections of escape routes, fire brigade access, fire fighting facilities and working areas to ensure that the requirements stipulated in the Fire Safety, Emergency, Evacuation and Rescue Plan are complied with. All inspection records shall be documented in registers and kept in the Health and Safety file for inspection at any time.

C3.8.4.8 Housekeeping

Suitable housekeeping must continuously be implemented on the construction site, including:

- proper storage of materials and equipment
- removal of scrap, waste and debris at appropriate intervals;

Loose materials shall not be placed or allowed to accumulate on the site so as to obstruct access and egress from workplaces and passageways.

C3.8.4.9 Stacking & Storage

- Adequate storage areas are must be provided.
- Storage areas must be kept neat and under control.

C3.8.4.10 Illumination

Provide adequate artificial lighting when work is carried out after dark or inside buildings.

C3.8.4.11 Sanitation / Hygiene

Provision of site hygiene facilities:

- One sanitary facility for every 30 workers.
- Adequate washing facilities.
- One shower facility for every 15 workers.

Drying sheds, huts, rooms or other accommodation for sheltering during bad weather, storing clothes and taking meals. Facilities should include tables and chairs, suitable means for boiling water and a supply of wholesome drinking water.

The contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

C3.8.4.12 Personal Protective Equipment

The Principal Contractor / Sub-Contractor shall provide and maintain suitable PPE (Personal Protective Equipment) for all employees employed on the Site.

The Principal Contractor / Sub-Contractor shall ensure that such PPE comply with the requirements of the OHS Act (Occupational Health and Safety Act, Act 85 of 1993).

The Principal Contractor / Sub-Contractor shall also ensure that all equipment is properly used by his / her employees during the course of their work.

The Principal Contractor / Sub-Contractor shall record all issues of all equipment to his / her employees in documented registers and such registers shall be kept in the Health and Safety File on site and made available for inspection at all times.

The Principal Contractor / Sub-Contractor shall provide the Client / Client's Agent with a colour code by which employees will be identified with regard to occupations, responsibilities, accountabilities, reporting relationships and access to different locations on site. (e.g. hard hats, overalls).

PPE shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards.

All personal protective equipment shall be of safe design and construction for the work to be performed.

C3.8.4.13 Permit to Work Requirements

Institute a "hot work" permit system in respect of:

- metalwork flame cutting,
- site welding,

C3.8.4.14 Lock-Out

Institute a "Lock-out" procedure in respect of controlling energy so as to prevent unexpected operation or activation of machinery or equipment. This procedure must include a written policy, specific procedures, rules and supervisory follow-up, covering the positive locking of switches and valves to ensure that alterations, maintenance, set-up and or other work can be performed safely.

C3.8.4.15 Monthly Health and Safety Audits

The Principal Contractor shall carry out monthly Health and Safety Audits on the measures contained within his / her Health and Safety Plan submitted to the Client as well as Health and Safety Plans submitted by Sub-Contractors appointed by the Principal Contractor to demonstrate that the required level of health and safety are being achieved and maintained and compile a full report to the Client on such audit.

The Client will audit the Principal Contractor as well as his / her Sub-contractor's Health and Safety Plans from time to time and will advise the Principal Contractor of any matter with which he / she is not satisfied and the Principal Contractor shall take such steps as are necessary to satisfy the Client.

The Client will carry out such audits as he / she considers necessary but not less than monthly.

The Principal Contractor shall make available, specialist personnel as the Client may consider necessary for the performance of such audits.

The Principal Contractor shall develop and maintain an Audit Schedule that details the audits planned to be undertaken by the Principal Contractor of the work under the contract, including sub-contractors, for the duration of the contract. The Audit Schedule shall form part of the Health and Safety Plan that needs to be submitted by the Principal Contractor.

Audit reports shall detail the scope of the audit, the audit questions and the audit findings.

The Client shall be promptly provided with copies of all audit reports together with other documentation to show that all matters raised have been appropriately addressed.

Unless otherwise directed by the Client the Principal Contractor / Sub-Contractor shall undertake its initial OHS Audit within 4 weeks of commencement of work. The Principal Contractor / Sub-Contractor shall undertake subsequent OHS Audits at a frequency not less than once every 3 months.

All Principal Contractor's OHS Audits shall include an assessment of Sub-Contractor compliance with the approved OHS Plan.

C3.8.4.16 Management Review

The Principal Contractor shall undertake an independent review of the Health and Safety Plan for the contract in accordance with the requirements of the OHS Act, relevant Regulations and in particular the Construction Regulations 2003.

A review shall be undertaken 3 months after commencement of the contract and every 6 months thereafter for the duration of the contract.

Following the completion of the review, the Principal Contractor shall submit a written report that details the suitability, adequacy and effectiveness of the OHS Plan and to certify that the Site procedures, practices and operations are in accordance with the contract.

C3.8.4.17 Provision of Information

- Provide Sub-Contractors appointed by him / her with the relevant sections of the Health and Safety specifications pertaining to the construction work which has to be performed.

- Where changes are brought to the design and construction, provide sufficient information and appropriate resources to the Sub-Contractor to execute the work safely.

- Discuss and negotiate with Sub-Contractors the contents of the Health and Safety Plan / Plans submitted by them and finally approve such plans for implementation.

- Ensure that copies of Health and Safety plans compiled by the Principal Contractor and his / her Sub-Contractors are available on request to an employee, DOL Inspector, contractor, Client.

- The Principal Contractor / Sub-Contractor shall detail procedures that will ensure that personnel are suitably consulted and communicated with during the planning and application of work activities associated with the contract.

- The Principal Contractor / Sub-Contractor shall detail the procedures for the identification, assessment and control of hazards associated with the day-to-day work activities. These procedures shall include requirements for consultation with personnel involved in the work activity.

- The Principal Contractor / Sub-Contractor shall have procedures for ensuring that OHS information is communicated to and from its personnel. The Principal Contractor / Sub-Contractor shall hold OHS meetings with all personnel or their representatives at the site on a weekly basis.

- Minutes shall be recorded for all OHS meetings and posted on OHS notice boards within 48 hours of the meeting.

- The Principal Contractor / Sub-Contractor shall maintain at the Site an OHS Notice Board located in a prominent position and accessible to all personnel, for the distribution of OHS information.

- The Principal Contractor / Sub-Contractor shall as a minimum, establish and implement procedures for reporting relevant and timely information with regard to OHS Performance and incidents.

- The Principal Contractor / Sub-Contractor shall establish, implement and maintain a controlled copy of all Contract OHS documentation on Site.

- Where the Principal Contractor / Sub-Contractor's Health and Safety Plan references other documentation including the contract, the Principal Contractor / Sub-Contractor shall ensure that section and clause numbers are clearly denoted in its Health and Safety Plan. All documentation referenced in the Health and Safety Plan shall be available on Site for the duration of the contract.

- Ensure that Health and Safety Files kept by Sub-Contractors appointed by the Principal Contractor is kept on site and made available to an inspector, Client.

- Hand over a consolidated health and safety file to the Client upon completion of construction work, including all drawings, designs, materials used and other similar information concerning the completed structure.

- In addition to the Health and Safety File compile a comprehensive and updated list of all contractors on site accountable to the Principal Contractor as well as the agreements between the parties and the type of work done by them.

C3.8.4.18 Stop the Execution of Construction Work

Stop any construction / construction related work conducted by any person on the construction site, which is not in accordance with the Principal Contractor's health and safety plan and or the health and safety plans of Sub-Contractors which possess a threat to the health and or safety of persons.

C3.8.4.19 Handing over of Project Health and Safety File

- Hand over a consolidated health and safety file to the Client upon completion of construction work, including all drawings, designs, materials used and other similar information concerning the completed structure.

- In addition to the Health and Safety File compile and hand over a comprehensive and updated list of all contractors on site accountable to the Principal Contractor as well as the agreements between the parties and the type of work done by them.

C3.8.4.20 Records and Records Management

- The control of records shall be in accordance with the Principal Contractor's / Sub-Contractor's approved Health and Safety Plan for the contract.

- Records shall be registered, ordered and retained on Site in the Health and Safety File for the duration of the contract.

C3.8.5 CHEMICAL HAZARDS

The following construction materials and substances to be used in the works have been identified as potentially posing special health and/or safety hazards during the project:

NOTE:

The above mentioned is not a definitive list of all potential harmful products. Other materials and substances commonly used during construction may also present health or safety hazards, however, it is deemed that these should be familiar to the average competent Contractor as part of routine risk and OHSH (Occupational Health, Safety and Hygiene) assessments and are therefore not included here.

Adopt all precautionary measures provided by manufacturers for storage, use and application of specified materials.

Data sheets for these, and any other materials that will be used for the works, are to be obtained by the contractor from the manufacturers.

C3.8.6 SAFETY HAZARDS

C3.8.6.1 Tools

C3.8.5.1.1 Hand tools

- Employers shall not issue or permit the use of unsafe hand tools.

- Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.
- Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

C3.8.6.2 Portable Electrical Tools

No person shall use a portable electric tool with an operating voltage which exceeds 50 to earth unless –

- it is connected to a source of electrical energy incorporating an earth leakage protection device which meets the requirements of section 36 of the OHS Act or,
- it is connected to a source of high frequency electrical energy derived from a generator which is used solely for supplying energy to such portable electric tool and which arrangement is approved by the chief inspector; or
- it is clearly marked that it is constructed with double or reinforced insulation.

Portable electric tools, together with its flexible cord and plug shall be maintained in a serviceable condition.

C3.7.7 EXCAVATIONS

- The contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.
- The contractor shall evaluate the stability of the ground before excavation work begins.
- The Contractor shall take suitable and sufficient steps in order to prevent any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- The contractor shall not permit any person to work in an excavation which has not been adequately shored or braced.
- 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 being given in writing by the appointed competent person 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 shall be decisive and such a decision shall be noted in writing and signed by both the competent person and a professional engineer or technologist, as the case may be;

- Take steps to ensure that the shoring or bracing is designed and constructed in such manner rendering it strong enough to support the sides of the excavation in question;

- Ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering 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;

- Cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;

- Cause every excavation, including all bracing and shoring, to be inspected-

  - ✓ daily, prior to each shift;
  - ✓ after every blasting operation;
  - ✓ after an unexpected fall of ground;
  - ✓ after substantial damage to supports; and
  - ✓ after rain,

- by a competent person in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request;

- 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 meter 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
  - Cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

C3.8.8 FORMWORK & SUPPORT WORK

The contractor shall ensure that-

- all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;
- all formwork and support work structures, are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand.
- The designs of formwork and support work structures are done with close reference to the structural design drawings and where any uncertainty exists, the structural designer should be consulted.
- All drawing pertaining to the design of formwork or support work structures are kept on the site and are available on request by an inspector, contractor, client, client's agent or employee.
- All equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used.

- All formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site.
- If, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be 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 support work or formwork due to the application of formwork or support work release agents.
- The health of any person is not affected through the use of solvents or oils or any other similar substances.
- Upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight but also any imposed loads and not removed until authorization has been given by a competent person.
- Provision is made for safe access by means of secure ladders or staircases for all work to be carried out above the foundation bearing level.

- All employees required to erect, ,move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely
- The foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads, such that the formwork and support work structure are stable.

C3.8.9 CONSTRUCTION VEHICLES

The contractor shall ensure that all construction vehicles and mobile plants-

- 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;

i. have received appropriate training and been certified competent and been authorised to operate such machinery; and
ii. are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;

- have safe and suitable means of access;
- are properly organized and controlled by providing adequate signaling 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 guardrails and crash barriers;

- where appropriate, 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 electrically operated acoustic signaling device and a reversing alarm;
- are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

The contractor shall furthermore ensure that-

- no person rides or be required or permitted to ride on any 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 pedestrians and vehicles can move safely and without risks to health;
- the traffic routes are suitable for the persons using them, 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 freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- tools and material are secured 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
- when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

C3.8.10 ELECTRICAL INSTALLATIONS

- Before construction commences and during the progress thereof, adequate steps must be taken to ascertain the 'presence of and guard against danger to workers from any electrical cable or apparatus.
- All parts of electrical installations and machinery must be of adequate strength to withstand the working conditions on construction sites;
- In working areas where the exact location of underground electric power lines unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, must be provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;
- All temporary electrical installations must be inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections must be recorded in a register to be kept on site.
- The control of all temporary electrical installations on the construction site must be designated to a competent person who has been appointed in writing.

C3.8.11 USE & STORAGE OF FLAMMABLE LIQUIDS

- Where flammable liquids are being used, applied or stored it must be done in such a manner that would cause no fire or explosion hazard, and that the workplace is effectively ventilated:

  - Provided that where the workplace cannot effectively be ventilated-

i. every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and
ii. steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;

  - No person smokes in any place in which flammable liquid is used or stored, and the contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
  - Flammable liquids on a construction site is stored in a well-ventilated reasonably fire resistant container, cage or room and kept locked with proper access control measures in place;
  - 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 to be 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, to be removed from the construction site and safely disposed of;
  - Where flammable liquids are decanted, the metal containers are bonded or earthed;
  - No flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

C3.8.12 WELDING & CUTTING

No contractor shall require or permit welding or flame cutting operations to be undertaken, unless –

- the person operating the equipment has been fully instructed in the safe operation and use of such equipment and in the hazards which may arise from its use;
- effective protection is provided and used for the eyes and respiratory system and, where necessary, for the face, hands, feet, legs, body and clothing of persons performing such operations, as well as against heat, incandescent or flying particles or dangerous radiation;
- leads and electrode holders are effectively insulated; and
- the workplace is effectively partitioned off and where not practicable all other persons exposed to the hazards are warned and provided with suitable protective equipment.

No contractor shall require or permit electric welding to be undertaken in wet or damp places, inside metal vessels or in contact with large masses of metal, unless –

- the insulation of the electrical leads is in a sound condition;

- the electrode holder is completely insulated to prevent accidental contact with current-carrying parts;
- the welder is completely insulated by means of boots, gloves or rubber mats; and
- at least one other person who has been properly instructed to assist the welder in case of an emergency is and remains in attendance during operations

No contractor shall require or permit welding, flame cutting, grinding, soldering or similar work to be undertaken in respect of any tube, tank, drum, vessel or similar object or container where such object or container –

- is completely closed, unless a rise in internal pressure cannot render it dangerous; or
- contains any substance which, under the action of heat, may –
  i. ignite or explode; or
  ii. react to form dangerous or poisonous substances,

Where hot work involving welding, cutting, brazing or soldering operations is carried out at places, other than workplaces which have been specifically designated and equipped for such work, the employer shall take steps to ensure that proper and adequate fire precautions are taken.

C3.8.13 BLASTING & USE OF EXPLOSIVES

C3.8.13.1 Safety distances

The contractor shall –

- apply the safety distances for the respective categories of explosives as stipulated in Annexure 1 of the Explosives regulations;
- where less than five kilograms of explosives is used, apply to the chief inspector of occupational health and safety for a determination of a safety distance which the employer shall enforce;

C3.8.13.2 Supervision of Explosives

In order to ensure that the provisions of the Act and it's regulations in relation to explosives workplaces are complied with, the contractor shall in writing appoint a competent and certified person in a full-time capacity to be explosives manager in respect of every workplace where explosives are being used, tested, stored or manufactured:
The contractor shall appoint one or more persons, who are suitably qualified and experienced, as authorized supervisors to assist the explosives manager.

The contractor shall ensure that –

- the explosives manager
  a. approves in writing the rules, methods, materials, equipment and tools to be used in the danger area;
  b. ensures that ail persons under his or her control are informed of the hazards related to their tasks and are thoroughly trained in safe work procedures, in

particular with respect to shock, friction risk of fire, or static electricity, and are familiar with the requirements of the Explosives regulations
c. prescribes all protective clothing and equipment to be used in the danger area
d. ensures that the processes and equipment specified in schedule licences are safe and appropriate for the manufacturing processes envisaged for the workplace.

- the supervising official
  a. is at all times in a position to exercise control over the operations
  b. reports without delay to the explosives manager any plant or
  c. equipment under his or her control that has or may have posed a risk:
  d. ensures that all rules implemented in the interest of health and safety are at all times complied with;
  e. stops all work involving explosives if he or she becomes aware of any risk posed to the health and safety of persons.

C3.8.13.3 Safe Handling of Explosives

The contractor shall ensure that –

- all explosives or ingredients thereof are at all times free of foreign material;
- all reasonable precautions are taken to prevent the spillage of explosives;
- cleaning procedures in the case of a spillage of explosives are prescribed in writing by the explosives manager: Provided that where no cleaning procedures have been prescribed any unusual spillage of explosives shall be reported immediately to the supervising official:
- all waste, paper, timber, rags, cotton and similar materials that have been in contact with explosives or an ingredient of an explosive are disposed of in a manner prescribed in writing by the explosives manager: Provided that at the end of the working day all waste and floor sweepings from danger areas shall be deposited in the designated places;
- the explosives or partly mixed explosives are conveyed as soon and as carefully as possible and taking such precautions and in such a manner as will effectively guard against any accidental ignition or explosion
- only containers provided for the conveyance of explosives are used for transporting explosives or partly mixed explosives and that such containers are at all times kept clean, free from grit and in a good state of repair:
- vehicles containing explosives are left unattended only in designated places

The contractor shall ensure that –

- all material, equipment, tools or similar articles used in a danger area are decontaminated after such use, and that no person makes use of any such article that has not been decontaminated after use in a contaminated area;
- the certification of the decontamination process is certified and approved by the explosives manager or a person authorized by the explosives manager.

- Unless permission has been granted by the chief inspector of occupational health and safety, no contractor shall use –

- explosives in workplaces other than explosives workplaces approved by the chief inspector of occupational health and safety;
- any explosives for which no provision is made in Explosives regulations.

No contractor shall allow unauthorized access to such explosives or bury, dump, hide or abandon any explosives.

No contractor shall use any explosive material for blasting purposes unless

- he or she is in possession of a written permission issued by or under the authority of the chief inspector of occupational health and safety;
- he or she is undergoing training while using such blasting material under the immediate and constant supervision of a person who is in possession of permission

C3.8.13.4 Dangerous Areas

The contractor shall ensure that entry and exit from danger areas is only permitted

- at the permanent authorized point of entry or exit: Provided that entry or exit at any other point may be authorized by the explosives manager or a person authorized by him if the authorized gatekeeper has been informed thereof;
- for persons and vehicles authorized thereto by the explosives manager or a person authorized by him:
- to visitors under escort by an authorized person who is aware of the hazards attached to the danger area.

The contractor shall keep a register of the entries and exits and that register shall be available on the premises for inspection by an inspector.

No person shall –

- enter the danger area with –
  a. tobacco;
  b. matches, cigarette lighters or other devices capable of generating heat or spark sources;
  c. intoxicating liquor or narcotics;
  d. food, medicine or drinkable fluids: Provided that authorization to enter with such articles may be granted by the explosives manager for purposes of consumption in licensed mess rooms and smoking areas: Provided further that special rules for the control of such consumption and smoking, approved by the chief inspector of occupational health and safety shall be made in writing and shall be enforced by the employer, self-employed person or user; or
  e. radio transmitters or cellular telephones; or

The contractor shall ensure that hazard warning signs are clearly displayed at the entrance to any danger area.

C3.8.14 VESSELS UNDER PRESSURE

C3.8.14.1 Manufacturer's Data Plate

Every user of a boiler or pressure vessel shall cause a manufacturer's plate with the following minimum particulars to be securely fixed in a conspicuous place to the shell of every such a boiler or pressure vessel:

a) Name of manufacturer;
b) country or origin;
c) year of manufacture;
d) manufacturer's serial number;
e) name, number and date of the standard of design;
f) design gauge pressure in Pascal's; (design pressure)
g) maximum permissible operating pressure in Pascal's;
h) operating temperature;
i.) capacity in cubic meters; and
j) mark of an approved inspection authority.

No person shall remove such a manufacturer's plate or willfully damage or alter the particulars stamped thereon.

C3.8.14.2 Portable Gas Containers

No user shall use or require or permit a portable gas container to be used, and no user shall fill, place in service, handle, modify, repair, inspect or test any portable gas container, other than in compliance with standards incorporated into the Vessels under Pressure regulations.

C3.8.14.3 Hand -held Fire extinguishers

No user shall use, require or permit the use of a hand held fire extinguisher unless designed, constructed, filled, recharged, reconditioned, modified, repaired, inspected or tested in accordance with a safety standard incorporated into the Vessels under Pressure regulations. No person shall fill, recharge, recondition, modify, repair, inspect or test any hand held fire extinguisher unless a holder of a permit issued by the South African Bureau of Standards in terms of SABS 1475.

C3.8.14.4 Gas Fuel use, Equipment and Systems

No person shall handle, store or distribute a gas fuel in any manner, including the filling of a container, other than in accordance with a health and safety standards.

C3.8.14.5 Inspection and Test

Any user of a boiler or pressure vessel shall cause, where reasonably practicable, such a boiler or pressure vessel, including the appurtenances and automatic controls and indicators, to be subjected to an internal and external inspection, and a hydraulic pressure test to 1.25 times the maximum permissible safe operating pressure as the case may be –

- by an approved inspection authority before commissioning after installation, re-erection or repairs;
- by a person appointed in writing by the user and who is competent to do such inspections and tests by virtue of their training, knowledge and experience in the operation, maintenance, inspection and testing of a boiler or pressure vessel within 36

months from the date of the previous internal and external inspection and hydraulic pressure test: Provided that where a pressure vessel is not subjected to corrosion, the user may dispense with the internal inspection and hydraulic pressure test subject to the written approval of an approved inspection authority:

Provided further that an inspector may require a specific boiler or pressure vessel to be inspected or tested more frequently or permit a specific boiler or pressure vessel to be inspected or tested less frequently:

C3.8.14.6 Recordkeeping

Any user of a vessel under pressure shall keep on his premises a record which shall be open for inspection by an inspector in which the results of inspections, tests, modifications and repairs shall be recorded, dated and signed by the competent person.

C3.8.14.7 Maintenance

No user shall use, cause or permit a vessel under pressure or gas fuel system, including all automatic controls, indicators and appurtenances, to be used unless it is at all times maintained in a safe working condition and the efficiency thereof is proved by regular testing.

No user shall use or cause or permit a vessel under pressure to be used unless it is kept clean and free from any:

- carbonized oil or other inflammable material which may ignite under working conditions;
- material which may cause corrosion; or
- material which is liable to chemical reaction which may cause an uncontrolled rise in pressure.

C3.8.15 PHYSICAL HAZARDS

C3.8.15.1 Ergonomics

- Ensure that assigned tasks do not exceed the limits of the performance capacities of the worker.
- Prevent injury or any detrimental effects to the health of the worker
- Provide that tasks and working conditions will not lead to impairments.

C3.8.15.2 Noise

No contractor shall require or permit an employee to work in an environment in which he is exposed to an equivalent noise level equal to 85 dB(A) or higher. The contractor shall reduce the equivalent noise level to below 85 dB(A) or, where this is not reasonably practicable, he shall reduce the level to as low as is reasonably practicable and take all reasonable steps to isolate the source of the noise acoustically. Where the equivalent noise level in any workplace cannot be reduced to below 85 dB(A) the contractor shall –

- prohibit any person from entering a noise zone unless such person wears hearing protectors.

The contractor shall provide, free of charge, hearing protectors to each employee who works in or, to any person who is required or permitted to enter a noise zone, and no contractor shall require or permit any person to work in or enter such noise zone, and no person shall work in or enter such noise zone, unless he wears such hearing protectors in the correct manner: Provided that where the

equivalent noise level to which employees are exposed, is such that the attenuation of the hearing protectors does not reduce the said noise to below 85 dB(A) the employer concerned shall limit the time during which employees work in that noise zone in such a way that they are not exposed to an equivalent noise level equal to 85 dB(A) or higher.

The contractor shall properly instruct any person who is required to wear hearing protectors in the use of such protectors and inform him of noise zones where the wearing thereof is compulsory.
The contractor shall –

- ensure that every employee employed in a noise zone is subjected to audiometric examinations conducted in accordance with section 7 of SABS 083, by an audiometrist approved by the chief inspector;
- keep records of the results of each audiometric examination and make such records available for inspection by an inspector if he so requires; and

- keep such records for a minimum period of 30 years after termination of employment: Provided that if the employer ceases activities all such records shall be forwarded to the regional director.

C3.8.15.3 Vibration

Whole-body vibration occurs when the body is supported on a surface which is vibrating (e.g., when sitting on a seat which vibrates, standing on a vibrating floor or recumbent on a vibrating surface). Whole-body vibration occurs in all forms of transport and when working near some industrial machinery.

Hand-transmitted vibration is the vibration that enters the body through the hands. It is caused by various processes where vibrating tools or work pieces are grasped or pushed by the hands or fingers. Exposure to hand-transmitted vibration can lead to the development of several disorders.

C3.8.16 SITE WIDE ELEMENTS

C3.8.16.1 Site Access and Egress

- Access to the site will involve crossing the public footpath.
- Store materials and plant away from means of access for the general public and occupants.
- Remove rubbish and demolition materials regularly. Do not allow to accumulate on flat roofs.
- Maintain free access through designated means of escape at all times

- Agree with the Client / Client's Agent delivery points for materials before commencing works.

C3.8.16.2 Visitors to the site

- All visitors to report to the Principal Contractor's reception area for OHS Induction training.
- All visitors to sign the visitor's registration document.
- All visitors to be provided with a Visitors Permit to enable them to access the construction site.
- All un-inducted visitors must be accompanied on the construction site by an inducted person.
- No visitors shall be allowed to access the construction site without wearing the necessary PPE.

C3.8.16.3 Deliveries

Access will involve crossing the public footpath.

C3.8.16.4 Emergencies

Ensure that there are adequate escape routes and that they are kept clear at all times.

C3.8.16.5 Location of Temporary Site Accommodation

See Site Lay-out Plan.

C3.8.16.6 Location of Materials unloading and storage

Materials are to be unloaded and stored in locations which will not in any way affect access or egress to the site nor the works.

C3.8.16.7 Traffic and Pedestrian Routes

The road, public footpaths and access way are to be kept open at all times. All necessary signage and barriers are to be put in place to protect pedestrians at the site entrance and access and egress points.

C3.8.16.8 Safety

- Ensure that all employees are aware of the Health and Safety policy and put into place arrangements to ensure that all visitors and workers new to the site are aware of the site safety provisions.
- Locate underground electricity cables, mark and take precautions to avoid.
- Ensure that cartridge operated tools are operated by trained personnel and in accordance with the maker's instructions that the gun is cleaned regularly and kept in a secure place when not in use.
- Protect people who may be exposed to health risks arising from hazardous substances.

C3.8.17 CONTINUING LIAISON

The procedures for consideration and evaluation of the health and safety implications of Contractor designed elements of the works must follow the recognised principles of prevention and protection and take account of the issues highlighted in this OHS Specification.

The following information is to be submitted by the Contractor to the Client / Client's Agent in sufficient time to allow adequate consideration by the Client / Client's Agent and, where appropriate, the design team, and the provision of relevant information to those persons affected by the works, prior to the commencement of the relevant works:

- Suitable and sufficient information to demonstrate that health or safety issues have been adequately considered.
- Risk assessments.
- A list of health and/or safety hazards identified which cannot be designed out.
- A list of any materials or substances which are specified or inherent in the design which is potentially hazardous to health and/or safety.

C3.8.17.1 Unforeseen Eventualities

The following action is to be taken in the event of unforeseen eventualities arising during the construction stage of the project which require significant design changes, or affect the resources required to carry out the work without risk to health and/or safety, or have other health or safety implications.

The Client / Client's Agent and, where possible, the Principal Contractor are to be advised as soon as possible.

Full details of the relevant health and safety issues involved are to be reviewed with the Client / Client's Agent and Principal Contractor as soon as possible.

Full details of any revised designs, risk assessments and identified hazards and/or hazardous materials and substances are to be issued to the Client / Client's Agent and Principal Contractor in sufficient time to allow for the revision of the Health and Safety Plan and notification of all persons affected by the health and/or safety implications of the changes prior to the commencement of the affected works.

C3.8.17.2 Site Liaison

Liaise with all other contractors and implement any agreed changes to the Health and Safety Plan arising from such liaison. Set up regular training for all operatives including induction training for all staff upon arrival to site.

C3.8.17.3 Health and Safety File

Provide the Planning Supervisor with any relevant information which the contractor believes should be incorporated into the Health and Safety File.

C3.8.17.4 Design Development

Provide the Client with all design information prepared by sub-Contractors.

Arrange liaison meetings with sub-contractors to discuss and review health and safety issues arising from the sub-contractors' designs.

C3.8.18 CONCLUSION

The hazards listed above were identified posing potential threats to the health and or safety of persons that will work on the contract. Although every effort were made to ensure that every possible hazard was identified the Employer cannot guarantee this, therefore it is imperative for the contractor to conduct a comprehensive risk identification and hazard assessment in order to make certain that all hazards are identified.

C3.8.19 MANAGEMENT

Management of the works

The management of the site shall be in accordance with the provisions of the SANS Standard Specification for Road and Bridge Works for State Authorities (1998 edition).

C4 SITE INFORMATION

C4.1 LOCATION OF SITE

The Phalaborwa Scheme is in the Ba-Phalaborwa Municipality within the Mopani District Municipality (MDM) in Limpopo Province. The GPS coordinates of the plant are: 24°03'57.6"S 31°08'28.2"E (-24.066007; 31.141166). Bidders are permitted to visit the site for detailed assessment of the site. **Phalaborwa Scheme is a National Key point; therefore, an appointment is to be made with the technical personnel of LNW via email and an ID shall be presented at the gate before entry.**

The site map is attached hereunder.

C5 DRAWINGS

C5.1. CIVIL & STRUCTURAL TENDER DRAWINGS

PHALABORWA WTW: SLUDGE LAGOONS AND DISINFECTION FACILITIES	
DRAWING NUMBER	**DRAWING DESCRIPTION**
MC/LNW-XX/12-02	Sludge Lagoon Layout Plan
MC/LNW-XX/12-03	Sludge Lagoon Cross Sections
MC/LNW-XX/12-04	Sludge Lagoon Channel Long Sections
MC/LNW-XX/12-11	Typical Details of Gates and Down Chutes
MC/LNW-XX/12-12	Gates Arrangement at Take Off Channels

C6 ANNEXURES

The following list of Annexures is attached to this tender document.

ANNEXURE A : LNW CV Template

ANNEXURE B: LNW Project Reference Form

ANNEXURE C: Tender Drawings