



NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

VOLUME 1: PROJECT DOCUMENT

November 2024

ISSUED BY:	PREPARED BY:
The Department of Roads and Public Works P.O. Box 3132 9-11 Stokroos Street Squarehill Park Kimberley 8301 Contact: R Matsoso Tel: (053) 861 9600/96 Fax: (053) 861 9626 E-mail: r.matsoso@vodamail.co.za	ZUTARI IMPACT. ENGINEERED. Riverwalk Office Park 41 Matroosberg Road Ashlea Gardens Extension 6 Pretoria 0081 Contact: Johan Kotzé Tel: (012) 427 2437 E-mail: JCKotze@zutari.com

Tenderer:

Set sequential number

FOREWORD

This document consists of two distinct clusters, namely the TENDER and the CONTRACT.

THE **TENDER** consists of two parts, namely:

- **T1: Tendering procedures** to be complied with by every tenderer submitting a tender offer; and
- **T2: Documents to be returned by the tenderer**, including the returnable schedules and forms to be completed by each tenderer, some of which will eventually be incorporated into the contract between the successful tenderer and the employer.

THE **CONTRACT** consists of four parts, namely:

- **C1: Agreements and Contract Data;**
- **C2: Pricing Data;**
- **C3: Scope of Work** (specifications and project specifications);
- **C4: Site Information.**

Each part of each cluster or volume is preceded by its own table of contents.

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THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

THE TENDER

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PART T2: RETURNABLE DOCUMENTS

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW 018/2019

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

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PART T1: TENDERING PROCEDURES

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

T1.1.1 The DEPARTMENT OF ROADS AND PUBLIC WORKS, Northern Cape Province, invites tenders for the rehabilitation of the following bridges and culverts in the Northern Cape:

- BRIDGE TBC10002 AT km 3.50 ON ROAD MR00858
- BRIDGE B0621 AT km 25.13. ON ROAD MR00858
- BRIDGE B0678 AT km 1.83 ON ROAD MR00875
- BRIDGE B0713 AT km 2.60 ON ROAD MR00779
- BRIDGE B3293 AT km 1.49 ON ROAD DR03273
- BRIDGE B3296 AT km 9.64 ON ROAD DR03321
- BRIDGE B3305 AT km 0.67 ON ROAD DR03266
- BRIDGE B6523 AT km 3.21 ON ROAD DR03269
- BRIDGE B6529 (Old TB008) on unnumbered road connecting to MR0085
- BRIDGE B6546 AT km 0.51 ON ROAD DR03310
- BRIDGE B0689 AT km 9.20 ON ROAD MR00858
- BRIDGE B0689A AT km 14.30 ON ROAD MR00858
- BRIDGE B0689B AT km 18.54 ON ROAD MR00858
- BRIDGE B0690 AT km 2.48 ON ROAD MR00858
- BRIDGE B6570 AT km 9.50 ON ROAD DR03313
- BRIDGE B6571 AT km 9.20 ON ROAD DR03313
- BRIDGE B6572 AT km 9.00 ON ROAD DR03313

T1.1.2 Tenderers should have a CIDB Contractor grading designation of 8 CE or higher.

T1.1.3 Tenderers must be registered with the CIDB in a **CE** class of construction works.

T1.1.4 Preferences

Preferences are offered to tenderers who comply with the criteria stated in the Tender Data.

T1.1.5 Tender Documents

The Tender Documents are obtainable from www.etender.gov.za from **25 November 2024**

T1.1.6 A second compulsory clarification meeting will be held, for contractors who have a CIDB grading of 8 CE or higher and who did not attend the first clarification meeting, at the following time and place:

The Department of Roads and Public Works, Tebogo Leon Tume Complex, 9-11 Stokroos Street, Squarehill Park, KIMBERLEY, on 4 December 2024, commencing at 10h00

T1.1.7 The closing time and date for receipt of tenders is **10:00 on 23 January 2025**

T1.1.8 Telegraphic, telephonic, telex, e-mail, facsimile and late tenders will not be accepted. Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

Queries relating to issues arising from these documents (technical and administrative) may be addressed to

	Technical	Administrative
Name:	Mr Johan Kotzé	Mr V Sidumo
Tel:	012 427 2437	079 877 4020
Email:	JCKotze@zutari.com	vsidumo@ncpg.go.za

T1.2 STANDARD CONDITIONS OF TENDER

Notes to tenderer

- 1. The Conditions of Tender applicable to this contract are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts – August 2019.**
- 2. 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.**
- 3. Tender Data and Tender Schedules are included separately after the tender conditions.**

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STANDARD CONDITIONS OF TENDER

ANNEX C:

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 fulfill 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 who employs that employee.
- b) **Comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **Corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **Fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;

C.1.4 Communication and employer's agent

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

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

- a) Due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
- b) Funds are no longer available to cover the total envisaged expenditure;
- 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.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

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

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

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

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

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

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

C.1.6.3.2 Option 2

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

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

C.2 Tenderer's obligations

C.2.1 Eligibility

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

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

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

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

C.2.4 Confidentiality and copyright of documents

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

C.2.5 Reference documents

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

C.2.6 Acknowledge addenda

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

C.2.7 Clarification meeting

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

C.2.8 Seek clarification

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

C.2.9 Insurance

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

C.2.10 Pricing the tender offer

- C.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.
- C.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.
- C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.
- C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

C.2.11 Alterations to documents

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

C.2.12 Alternative tender offers

- C.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.
- C.2.12.2 Accept that an alternative tender offer must be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.
- C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

- C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.
- C.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.
- C.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.
- C.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.
- C.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.
- C.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.
- C.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.
- C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
- C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

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

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

C.2.15 Closing time

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

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

C.2.16 Tender offer validity

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

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

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

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

C.2.17 Clarification of tender offer after submission

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

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

C.2.18 Provide other material

C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment.

Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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

C.2.19 Inspections, tests and analysis

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

C.2.20 Submit securities, bonds and policies

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

C.2.21 Check final draft

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

C.2.22 Return of other tender documents

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

C.2.23 Certificates

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

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

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

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

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

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

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

C.3.4 Opening of tender submissions

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

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

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

C.3.5 Two-envelope system

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

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

C.3.6 Non-disclosure

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

C.3.7 Grounds for rejection and disqualification

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

C.3.8 Test for responsiveness

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

- a) Complies with the requirements of these Conditions of Tender;
- b) Has been properly and fully completed and signed; and
- c) Is responsive to the other requirements of the tender documents.

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

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

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

C.3.9 Arithmetical errors, omissions and discrepancies

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

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

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

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

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

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

C.3.10 Clarification of a tender offer

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

C.3.11 Evaluation of tender offers

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

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

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

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; and
- h) Confirm the recommendation contained in the tender evaluation report.

C.3.11.2 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.

T1.3 TENDER DATA

1. GENERAL

The Conditions of Tender applicable to this contract are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts – August 2019.

The Tender Data in this Section T1.3 shall be read with the Standard Conditions of Tender in order to expand on the Tenderer's obligations and the employer's undertakings in administering the tender process in respect of the project under consideration.

The Tender Data hereafter shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

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

2. TENDER DATA APPLICABLE TO THIS TENDER

Clause Number	Tender Data				
C.1.1.1	The Employer is: The Department of Roads and Public Works The Employer's domicilium citandi et executandi (permanent physical business address) is: The Department of Roads and Public Works Tebogo Leon Tume Complex 9-11 Stokroos Street Squarehill Park KIMBERLEY 8301 The Employer's address for communication relating to this project is: <table><tr><td>Delivery address:</td><td>Postal address:</td></tr><tr><td>The Department of Roads and Public Works Tebogo Leon Tume Complex 9-11 Stokroos Street Squarehill Park KIMBERLEY 8301</td><td>PO Box 3132 KIMBERLEY 8300</td></tr></table>	Delivery address:	Postal address:	The Department of Roads and Public Works Tebogo Leon Tume Complex 9-11 Stokroos Street Squarehill Park KIMBERLEY 8301	PO Box 3132 KIMBERLEY 8300
Delivery address:	Postal address:				
The Department of Roads and Public Works Tebogo Leon Tume Complex 9-11 Stokroos Street Squarehill Park KIMBERLEY 8301	PO Box 3132 KIMBERLEY 8300				
C.1.2	a) VOLUME 1: PROJECT DOCUMENT containing the following: THE TENDER PART T1: TENDERING PROCEDURES T1.1 TENDER NOTICE AND INVITATION TO TENDER T1.2 CONDITIONS OF TENDER T1.3 TENDER DATA PART T2: RETURNABLE DOCUMENTS T2.1 LIST OF RETURNABLE DOCUMENTS T2.2 RETURNABLE SCHEDULES				

Clause Number	Tender Data
	THE CONTRACT PART C1: AGREEMENTS AND CONTRACT DATA C1.1 FORM OF OFFER AND ACCEPTANCE C1.2 CONTRACT DATA C1.3 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) PART C2: PRICING DATA C2.1 PRICING INSTRUCTIONS C2.2 PRICING SCHEDULE PART C3: SCOPE OF WORK C3.1 DESCRIPTION OF THE WORKS C3.2 ENGINEERING C3.3 PROCUREMENT C3.4 CONSTRUCTION C3.5 PARTICULAR SPECIFICATIONS C3.6 ENVIRONMENTAL SPECIFICATIONS C3.7 HEALTH AND SAFETY SPECIFICATIONS PART C4: SITE INFORMATION C4.1 LOCATION OF THE PROJECT C4.2 AVAILABLE INFORMATION C4.3 DRAWINGS b) VOLUME 2: DRAWINGS The following documents also form part of the tender and contract, but must be purchased by the tenderer her/himself: c) VOLUME 3: General Conditions of Contract for Construction works, Third Edition, Second Print, 2015, issued by the South African Institute of Civil Engineering. d) VOLUME 4: The COTO (Draft Standard) Standard Specifications for Road and Bridge Works for South African Road Authorities, 2020, issued by the Committee of Transport Officials.
C.1.4	The Employer's Agent is: Name: Zutari (Pty) Ltd Postal address: PO Box 74381, Lynnwood Ridge 0040 Physical address: Riverwalk Office Park, 41 Matroosberg Road, Ashlea Gardens, Extension 6, Pretoria, 0081 Contact person: Name: Mr Johan Kotzé Tel: 012 427 2437 Email: JCKotze@zutari.com
C1.6.1	Contract will be awarded to the tenderer who achieved the highest number of evaluation points
C1.6.2	A competitive negotiation procedure will not be followed.

Clause Number	Tender Data
C1.6.3	A two stage-system will not be followed.
C2.1	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders: (a) CIDB registration Registered with the CIDB, at close of tender, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, for a CE class of construction work. Tenderers whose CIDB registration expires within 21 calendar days after close of tender, need to demonstrate that there is a reasonable chance of being registered in the appropriate grading designation, by submitting a copy of their application for CIDB registration, with their tender submission. Tenders received from such tenderers who are not capable of being registered in the required contractor designation, within 21 calendar days after close of tender, will not be considered. Note that in terms of CIDB Act 38 of 2000 a registered contractor must apply for renewal of registration three months before the existing registration expires. Tenderers registered as potentially emerging enterprises but with a CIDB contractor grading designation lower than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, are not eligible to have their tenders evaluated. This contract is classified in terms of CIDB Regulation 25(1B), in terms of which 9CE contractors are also eligible to have their tenders evaluated on condition that the monthly expenditure (which is calculated by dividing the sum tendered, including VAT, by the contract duration in months) is less than R20 million.
	(b) Joint Ventures Subject to subregulation 25(1), joint ventures are eligible to submit tender offers if: (i) every member of the joint venture is a registered contractor in terms of these Regulations and the lead partner has a contractor grading designation of not lower than one level below the required grading designation in the class of construction works under consideration and possesses the required recognition status; and (ii) the category of registration of the joint venture, determined in accordance with subregulation 25(6) is equal to or higher than the category of registration specified in accordance with subregulation 25(3). The contractor grading designation for a joint venture is determined either in accordance with table 9 or in accordance with regulation 25(11) but is calculated based on: (i) the sum of the annual turnover of all members to the joint venture; and (ii) the sum of the available capital of all the members to the joint venture.
	(c) National Treasury Central Supplier Database Tenderers who are not registered on the National Treasury Central Supplier Database at close of tender, shall submit a copy of their application of registration, with their tender submission. Tenders received from such tenderers who have not submitted proof of their registration within 21 calendar days after the closing date for tender submissions, will not be considered. (d) Local content (i) Steel Only locally produced or locally manufactured steel products and components for construction with a minimum threshold for local content and production as stipulated below will be considered.

Clause Number	Tender Data		
	Table 1a: Minimum local content for Steel Value-added Products		
	Steel Construction Materials	Components	Local Content Threshold
	Fabricated Structural Steel	Latticed steelwork, reinforcement steel, columns, beams, plate girders, rafters, bracing, cladding supports, stair stringers & treads, ladders, steel flooring, floor grating, handrailing and balustrading, scaffolding, ducting, gutters, launders, downpipes and trusses	100%
	Joining/Connecting Components	Gussets, cleats, stiffeners, splices, cranks, kinks, doglegs, spacers, tabs and brackets	100%
	Frames	Doors and windows	100%
	Roof and Cladding	Bare steel cladding, galvanised steel cladding and colour coated cladding	100%
	Fasteners	Bolts, nuts, rivets and nails	100%
	Wire Products	All fencing products, all barbed wire and mesh fencing, fabric/mesh reinforcing, gabions, wire rope/strand and chains, welding electrodes, nails/tacks, springs and screws	100%
	Ducting and Structural Pipework	Non-conveyance tubing fabricated from steel sheeting and plate with structural supports	100%
	Gutters, downpipes & launders	Fabricated materials made from sheeting associated with roof drainage systems	100%
	Table 1b: Minimum local content for Primary Steel Products		
	Steel Construction Materials		Local Content Threshold
	Plates (>4.5mm thick and supplied in flat pieces)		100%
	Sheets (<4.5mm thick and supplied in coils)		100%
	Galvanised and Colour Coated coils		100%
	WireRod and Drawn Wire		100%
	Sections (Channels, Angles, I-Beams and H-Beams)		100%
	Reinforcing bars		100%
	In the designation, imported inputs raw materials (i.e. zinc and additives in the surface preparation and protection process (cleaning and coating/galvanising) used in the production of steel products and components for the construction are deemed as locally manufactured input materials. The imported input material, as specified above, used in the manufacture and production of steel products and components for construction will be deemed to have been sourced locally for the purposes of calculating local content. The tenderer shall complete the Declaration Certificate for Local Production and Content (Form K) and the Local Content Declaration: Summary Schedule (Form L) for each product.		

Clause Number	Tender Data												
	(e) Subcontracting The Successful Tenderer must subcontract a minimum of 30% of the contract value to an EME or QSE which is at least 51% owned by black people. The Subcontractor/s shall meet the following requirements, as a single entity or Joint Venture: (i) be an EME or QSE which is at least 51% owned by black people; (ii) CIDB registration for subcontractors as follows: <table><tr><th>Category of tender</th><th>Upper limits per CIDB Regulation 17</th><th>Employer's allowable margins (Incl. VAT)</th></tr><tr><td>CE 4</td><td>R6m</td><td>R7.2m</td></tr><tr><td>CE 5</td><td>R10m</td><td>R12m</td></tr><tr><td>CE 6</td><td>R20m</td><td>R24m</td></tr></table> (iii) Contract Participation Goals (CPG) as per clause D1003(b) are applicable Note to tenderers: A list of suppliers registered on a database approved by the National Treasury as per Regulation 9.3 will be given to successful tenderer. The Tenderer is not limited to this list; however, it remains the responsibility of the Tenderer to verify the QSE or EME status of the Subcontractors with ≥ 51% ownership by Black people.	Category of tender	Upper limits per CIDB Regulation 17	Employer's allowable margins (Incl. VAT)	CE 4	R6m	R7.2m	CE 5	R10m	R12m	CE 6	R20m	R24m
Category of tender	Upper limits per CIDB Regulation 17	Employer's allowable margins (Incl. VAT)											
CE 4	R6m	R7.2m											
CE 5	R10m	R12m											
CE 6	R20m	R24m											
C.2.6	Failure to apply instructions contained in addenda may render a tenderer's offer non-responsive in terms of Condition of Tender C.3.8.												
C.2.7	The arrangements for a compulsory clarification meeting are as specified in the Tender Notice and Invitation to Tender. The onus rests with the tenderer to ensure that the person attending the clarification meeting on his behalf is appropriately qualified to understand all directives and clarifications given at that meeting. Tenderers shall 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	Request clarifications at least 7 working days before the closing time.												
C.2.10	Tenderers are required to state the rates and currencies in Rand.												
C2.10.1	Reference to days means calendar days												
C.2.11	Tenders submitted in accordance with these tender documents shall not have any qualifications. Any point of difficulty of interpretation shall be cleared with the Employer's Agent as early as possible before submission of a tender. Should any query be found to be of significance, all tenderers will be informed accordingly by the Employer's Agent as early as possible. Tenders shall not be qualified by the conditions of tender of the tenderer himself. Failure to comply with this requirement may cause the tender to become invalid. Should the tenderer, notwithstanding the above, wish to make any amendment or qualification of the tender documents, such amendment or qualification shall be set out explicitly in full details on Form A4. Any qualification or amendment not set out on the prescribed form will not have any force and effect despite the fact that it may be contained elsewhere in the tender documents or in the covering letter to the tender. Any qualification or amendment appearing in or to be inferred from a program and submitted with any tender will not have any force and effect unless set out in writing in accordance with the above requirements.												
C.2.12.	A tenderer wishing to submit an alternative offer (excluding alternative offers of different contract duration, retention guarantees or different compliant material sources) shall first												

Clause Number	Tender Data
	apply to the Employer's agent for confirmation that the Employer's standards and requirements envisaged in the design are not compromised or reduced. Such confirmation must have been provided by the Employer's agent in writing within 5 working days after receipt of the application but not later than 5 working days before the date and time of tender closing given in Tender Data clause 4.15.1, or as extended by an addendum sent to all tenderers. The replacement of specified construction items like pipes, in situ culverts, kerbs and channels with similar products constructed of different materials (e.g. plastic products or pre-cast construction) are generally not acceptable as alternatives because construction using such alternative products would have been considered during the design stage and not selected as appropriate and because the Employer is able, post-award, to make proposals to or receive proposals from the contractor. However, if such alternative materials are considered acceptable by the employer's agent as giving the tenderer a financial advantage and/or not transferring risk, the qualification must be recorded on returnable schedule O: Schedule of Deviations or Qualifications by Tenderer. Also, not acceptable as alternative offers are alterations to contingency pay items provided in the bill of quantities (pricing schedule), fixed prices for individual items or a fixed price contract. If an alternative proposal is confirmed to be acceptable, calculations, drawings and all other pertinent technical information and characteristics as well as proposed modification of, or alternative to, the Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set in clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Should an alternative structural design be proposed, the proposed alternative Pricing Data shall include an amount equal to 3% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed. If the alternative offer is accepted, this amount will serve as a negative prime cost sum under section 1200 to be deducted from the contractor's payment certificates. The Employer undertakes to provide full accounting of the amount expended for this contingent sum and if exceeded, no further payments shall be deducted. Failure by a tenderer to include the required amount for confirming the alternative design may render his alternative tender as non-responsive. Acceptance of an alternative offer will mean acceptance in principle of the offer. It will be an obligation of the contract with the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.
C.2.13.1	Only the following needs to be submitted: (a) Volume 1: The following information in a neatly bound file and in the following order: (i) Full Volume Form of Offer (original paper copy) (ii) All returnable schedules (paper copy) (iii) Pricing Schedule (paper copy) (iv) Completed pricing schedule (on flash disc). (b) For alternative offers the tenderer shall submit the following additional documentation, clearly marked as ALTERNATIVE, in a separate neatly bound file in the following order: (i) Form of Offer (paper copy) copy from flash drive and state "Alternative Form of Offer" (ii) All returnable schedules (paper copies) applicable to alternative offer, as is appropriate (iii) Alternative Pricing Schedule (paper copy) (iv) Other relevant information.

Clause Number	Tender Data
	(c) A complete breakdown of all rates in electronic format (Excel) on a flash drive in a clearly marked sealed envelope. The rates are to be clearly referenced to the relevant pay item numbers, with each rate broken down into its labour, materials, plant, fuel, overhead charges and profit components. This requirement is also applicable for each alternative offer. In the event of any discrepancy between the contents of the electronically priced schedule, the print out thereof and the electronically provided pricing schedule in pdf format, the contents of the provided pdf format shall be taken as the valid contents. For the information provided by the tenderer as part of his submission, e.g. rates, the signed print-out shall be taken as the valid submission.
C2.13.4.	Parts of each tender offer communicated on paper shall be submitted as an original, plus NIL copies.
C.2.13.5.	Submit only the signed "Original" Tender offer.
C2.13.7.	Place and seal the printed and completed tender document in an envelope clearly marked "TENDER" and bearing the Employer's name, the contract number and description, the tenderer's authorised representative's name, the tenderer's postal address and contact telephone numbers. Telephonic, facsimile or emailed tender offers will not be accepted.
C2.13.7.	The Employer's address for the delivery of tender offers and identification details to be shown on each tender offer package are: Location of tender box: Head Office Physical address: Tebogo Leon Tume Complex Management Block 9-11 Stokroos Street Squarehill Park KIMBERLEY 8300 Identification details: Place the signed original tender offer in a package marked Tender No.: DRPW009/2024 Contract No: NC254A Contract title: The Maintenance of Bridges in ZF Mgcawu District In The Northern Cape Tenders must be submitted during working hours (08:00 to 16:00) Monday to Friday at the Employer's address.
C.2.15.	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.
C.2.16.1.	The tender offer validity period is 90 calendar days.
C.2.16.3.	Where a tenderer, at any time after the opening of his tender offer but prior to entering into a contract based on his tender offer: (a) withdraws his tender; (b) gives notice of his inability to execute the contract in terms of his tender; or (c) fails to comply with a request made in terms of C2.17, C2.18 or C.3.9, such tenderer shall be barred from tendering on any of the Employer's future tenders for a period to be determined by the Employer, but not less than six (6) months, from the date of tender closure. The Employer may fully or partly exempt a tenderer from the provisions of this condition if he is of the opinion that the circumstances justify the exemption.
C.2.18	Any additional information requested under this clause must be provided within 5 working days of the date of request.

Clause Number	Tender Data
	The Tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the Works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
C2.22	Reference to days means calendar days
C.3.1.	The Employer shall respond to clarifications received up to 7 working days before the tender closing time.
C.3.2.	The Employer shall issue addenda until 5 working days before the tender closing time.
C.3.4.	The time and location for the opening of tender offers are: Time: 10:00 hrs on 23 January 2025 Location: Department of Roads and Public Works Head Office Tebogo Leon Tume Complex Management Building 9-11 Stokroos Street Squarehill Park KIMBERLEY 8300
C.3.5.	The two-envelope system will not be followed for this Tender.
C.3.7.	In the event of disqualification, the Employer may, at his sole discretion, impose a specified period during which tender offers will not be accepted from the offending tenderer and report same to the CIDB and National Treasury.
C.3.9	Arithmetical errors, omissions, discrepancies and imbalanced unit rates: 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 appearing in the summary to the Pricing Schedule shall govern. Check responsive tender offers 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. (d) imbalanced unit rates. Notify shortlisted tenderers of all errors, omissions or imbalanced rates that are identified in their tender offers. Where the tenderer elects to confirm the errors, omissions or re-balancing of imbalanced rates the tender offer shall be corrected as follows: 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 unit rate shall govern and the line item total shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted and the unit rate shall be corrected. 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 be corrected. Where the unit rates are imbalanced adjust such rates by increasing or decreasing them and selected others while retaining the total of the prices derived after any other corrections made under (a) and (b) above.

Clause Number	Tender Data																		
	Where there is an omission of a line item, no correction is possible, and the offer may be declared non-responsive. Declare as non-responsive and reject any offer from a tenderer who elects not to accept the corrections proposed and subject the tenderer to the sanction under 4.16.2. The tenderer is required to submit balanced unit rates for rate only items in the pricing schedule. The rates submitted for these items will be taken into account in the evaluation of tenders.																		
C.3.11	90/10 preference point system for acquisition of goods or services with Rand value above R50 million 5.(1) The following formula must be used to calculate the points out 90 for price in respect of an invitation for tender with a Rand value above R50 million, inclusive of all applicable taxes: $Ps = 90 \left(1 - \frac{Pt - Pmin}{Pmin} \right)$ Where- Ps = Points scored for price of tender under consideration; Pt = Price of tender under consideration; and Pmin = Price of lowest acceptable tender A maximum of 10 points (90/10) preference points system), may be allocated. Bidder may score preference points based on company ownership. If an organ of state applies ownership as specific goal, the department may advertise the tender with a specific tendering preferential procurement requirement that in order for a tenderer to claim 10 points for specific goals, a tendering company must have the following ownership: <table><tr><th>Specific Goal</th><th>Number of Points for Financial Value above R50 000 000</th><th>Number of Points for Financial Value up to and including R50 000 000</th></tr><tr><td>Fifty one percent (51%) or more black owned companies</td><td>5</td><td>10</td></tr><tr><td>Fifty one percent (51%) or more youth owned companies</td><td>3</td><td>5</td></tr><tr><td>Fifty one percent (51%) or more women owned companies</td><td>1</td><td>3</td></tr><tr><td>Fifty one percent (51%) or more companies owned by persons with disabled</td><td>1</td><td>2</td></tr><tr><td>Total</td><td>10</td><td>20</td></tr></table> Ownership will be verified through the Central Suppliers Database by National Treasury and CIPC documentation. In case of JV, the leading partner documentation will be taken into consideration. Original copy or certified copies of verified BBBEE certificate Non-compliance on any of the above-mentioned items will result in bidders forfeiting preference points.	Specific Goal	Number of Points for Financial Value above R50 000 000	Number of Points for Financial Value up to and including R50 000 000	Fifty one percent (51%) or more black owned companies	5	10	Fifty one percent (51%) or more youth owned companies	3	5	Fifty one percent (51%) or more women owned companies	1	3	Fifty one percent (51%) or more companies owned by persons with disabled	1	2	Total	10	20
Specific Goal	Number of Points for Financial Value above R50 000 000	Number of Points for Financial Value up to and including R50 000 000																	
Fifty one percent (51%) or more black owned companies	5	10																	
Fifty one percent (51%) or more youth owned companies	3	5																	
Fifty one percent (51%) or more women owned companies	1	3																	
Fifty one percent (51%) or more companies owned by persons with disabled	1	2																	
Total	10	20																	
C.3.13	In addition to the requirements of the Condition of Tender, offers will only be accepted if: a) the tender offer is signed by a person authorized to sign on behalf of the tenderer; b) the tenderer tax matters with the South African Revenue Services are in order;																		

Clause Number	Tender Data								
	c) tenderer's declaration of compliance with the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2014; d) the tenderer who submitted a tender as a Joint Venture has included an acceptable Joint Venture Agreement with his tender; e) the tenderer or a competent authorized representative of the contractor who submitted the tender has attended the compulsory clarification meeting or site inspection; f) the tenderer has a valid CIDB grade; g) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; h) the tenderer has completed all returnable the tenderer has not abused the Employer's supply chain management system j) the tenderer has not failed to perform on any previous contract and has not been given a written notice to this effect; k) the tenderer is registered on the National Treasury Central Supplier Database. l) The Tenderer must comply with CIDB Board Notice 163 of 2015 (Government Gazette 14/08/2015) in terms of the following: (i) Have a quality management system in compliance with ISO 9001 (ii) Have an environmental management system in compliance with ISO 14001 (iii) Have an OHS management system in compliance with SANS 18001 (iv) Have a construction management system complying with SANS 1393								
C3.17	The number of paper copies of the signed contract to be provided by the Employer is 1.								
ADDITIONAL CONDITIONS OF TENDER CLAUSES:									
C3.19	Jurisdiction Unless stated otherwise in the tender data, each tenderer and the Employer undertake to accept the jurisdiction of the law courts of the Republic of South Africa.								
C3.20 CIDB 3.1	CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)								
3.1.1	The contractor shall attain or exceed the contract skills development goal in the performance of the contract or the execution of an order.								
3.1.2	The contract skills development goal shall be expressed as in 3.1.2.1 for engineering and construction works, design and build and services contracts, and as in 3.1.2.2 for professional services contracts.								
3.1.2.1	In the case of engineering and construction works contracts, design and build contracts and services contracts the contract skills participation goals, expressed in Rand, shall be no less than the sub-total multiplied by a percentage (%) factor given in Table 2 for the applicable class of construction works used in the application of the Construction Industry Development Regulations, issued in terms of the Construction Industry Development Board Act of 2000. Table 2: Contract skills development goals for different classes of engineering and construction works contracts <table><tr><th colspan="2">Class of construction works as identified in terms of Regulation 25(3) of the Construction Industry Regulations 2004</th><th rowspan="2">Construction skills development goal (CSDG) (%)</th></tr><tr><th>Designation</th><th>Description</th></tr><tr><td>CE</td><td>Civil engineering</td><td>0.25</td></tr></table> https://www.cidb.org.za/wp-content/uploads/2023/03/practice-guideline-implementation-of-skills-standard-contractors-version-3.pdf	Class of construction works as identified in terms of Regulation 25(3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)	Designation	Description	CE	Civil engineering	0.25
Class of construction works as identified in terms of Regulation 25(3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)							
Designation	Description								
CE	Civil engineering	0.25							

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

PART T2: RETURNABLE DOCUMENTS

PART T2: RETURNABLE DOCUMENTS

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T2.2 RETURNABLE SCHEDULES	T2-4

T2.1 LIST OF RETURNABLE SCHEDULES

The tenderer must complete the following returnable schedules:

Notes to tenderer:

- 1. Returnable schedules have been based on the CIDB Standard for Uniformity in Construction Procurement and incorporate National Treasury requirements within them. Returnable schedules are separated into the following categories:**
 - (a) Forms, certificates and schedules for completion by the tenderer for use in the quantitative and qualitative evaluation of the tender (Forms A to D)**
 - (b) A list of all returnable documents for completion by the tenderer (Form F1)**
- 2. Failure to submit fully completed relevant returnable documents may render such a tender offer non-responsive.**
- 3. Tenderers shall note that their signature appended to each returnable form represents a declaration that they vouch for the accuracy and correctness of the information provided.**
- 4. Notwithstanding any check or audit conducted by or on behalf of the Employer, the information provided in the returnable documents is accepted in good faith and as justification for entering into a contract with a tenderer. If subsequently any information is found to be incorrect such discovery shall be taken as willful misrepresentation by that tenderer to induce the contract. In such event:**
 - (a) the Employer shall inform the tenderer and give the tenderer an opportunity to make representations within 14 days as to why the tender submitted should not be disqualified and as to why the tenderer should not be restricted by the National Treasury from conducting any business with any organ of state for a period not exceeding 10 years;**
 - (b) if the Employer has already entered into a contract with the Tenderer, the Employer has the discretionary right under FIDIC Particular Condition 15.2(g) to terminate the contract.**
- 5. These forms must be completed in non-erasable ink and any alterations made prior to tender closure countersigned by an authorised signatory.**

T2.2 RETURNABLE SCHEDULES

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**FORM A1: CERTIFICATE CONFIRMING THAT THE TENDERER ATTENDED
THE PRESENTATION BRIEFING**

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NORTHERN CAPE

This is to certify that I,
.....
representative of (tenderer)
of (address)
.....
.....
telephone number
fax number
e-mail
attended the clarification presentation on either 29 October 2024 or 4 December 2024, conducted by
.....
in the presence of the Employer's Representative.

EMPLOYER'S REPRESENTATIVE (Signature).....

TENDERER'S REPRESENTATIVE (Signature)

FORM A2.1: CERTIFICATE OF AUTHORITY FOR SIGNATORY

Notes to tenderer:

1. The signatory for the tenderer shall confirm his/her authority thereto by attaching on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors/partners.
2. In the event that the tenderer is a joint venture, a certificate is required from each member of the joint venture clearly setting out:
 - (a) authority for signatory,
 - (b) undertaking to formally enter into a joint venture contract should an award be made to the joint venture,
 - (c) name of designated lead member of the intended joint venture, as required by tender condition C.2.13.4.
3. The resolution below is given as an example of an acceptable format for authorisation, but submission of this page with the example completed shall not be accepted as authorisation of the tenderer's signatory.

By resolution of the board of directors passed at a meeting held on

Mr/Ms,

whose signature appears below, has been duly authorised to sign all documents in connection with the tender for

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

and any contract which may arise therefrom on behalf of (*enter name of tenderer in block capitals*)

.....

SIGNED ON BEHALF OF THE COMPANY:

IN HIS/HER CAPACITY AS:

DATE:

SIGNATURE OF SIGNATORY:

WITNESS:

SIGNATURE

SIGNATURE

.....

.....

NAME (PRINT)

NAME (PRINT)

FORM A2.2: CERTIFICATE OF SINGLE TENDER SUBMISSION

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. This certificate serves as a declaration by the tenderer that a single tender was submitted.
2. In the case of a Joint Venture (JV), a separate certificate is to be completed and submitted by each JV member.

DECLARATION

I, the undersigned,

in submitting the accompanying tender on behalf of the tenderer do hereby make the following statements that I certify to be true and complete in every respect:

1. I have read and understand the notes to, and the contents of, this certificate.
2. I understand that the accompanying tender and any other tender shall be disqualified in the event that I, including a Joint Venture partner, or Key Person participate in more than 1 (one) tender.

SIGNATURE:

DATE:

NAME:

POSITION:

FORM A2.3: CERTIFICATE OF FRONTING PRACTICES

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Fronting Practices

Window-dressing: This includes cases in which black people are appointed or introduced to an enterprise on the basis of tokenism and may be:

- Discouraged or inhibited from substantially participating in the core activities of an enterprise; and
- Discouraged or inhibited from substantially participating in the stated areas and/or levels of their participation;

Benefit Diversion: This includes initiatives implemented where the economic benefits received as a result of the B-BBEE Status of an enterprise do not flow to black people in the ratio as specified in the relevant legal documentation.

Opportunistic Intermediaries: This includes enterprises that have concluded agreements with other enterprises with a view to leveraging the opportunistic intermediary's favourable B-BBEE status in circumstances where the agreement involves:

- Significant limitations or restrictions upon the identity of the opportunistic intermediary's suppliers, service providers, clients or customers;
- The maintenance of their business operations in a context reasonably considered improbable having regard to resources; and
- Terms and conditions that are not negotiated at arms-length on a fair and reasonable basis.

Responsibility to Report Fronting

In order to effectively deal with the scourge of Fronting, verification agencies, and/or procurement officers and relevant decision makers are encouraged to obtain a signed declaration from the clients or entities that they verify or provide business opportunities to, which states that the client or entity understands and accepts that the verification agency, procurement officer or relevant decision maker may report Fronting practices to **the DTI**. Intentional misrepresentation by measured entities may constitute fraudulent practices, public officials and verification agencies are to report such cases to **the DTI**.

Fronting Indicators

- The black people identified by an enterprise as its shareholders, executives or management are unaware or uncertain of their role within an enterprise;
- The black people identified by an enterprise as its shareholders, executives or management have roles of responsibility that differ significantly from those of their non-black peers;
- The black people who serve in executive or management positions in an enterprise are paid significantly lower than the market norm, unless all executives or management of an enterprise are paid at a similar level;
- There is no significant indication of active participation by black people identified as top management at strategic decision making level;
- An enterprise only conducts peripheral functions and does not perform the core functions reasonably expected of other, similar, enterprises;
- An enterprise relies on a third-party to conduct most core functions normally conducted by enterprises similar to it;
- An enterprise cannot operate independently without a third-party, because of contractual obligations or the lack of technical or operational competence;
- The enterprise displays evidence of circumvention or attempted circumvention;

- An enterprise buys goods or services at a significantly different rate than the market from a related person or shareholder;
- An enterprise obtains loans, not linked to the good faith share purchases or enterprise development initiatives, from a related person at an excessive rate; and
- An enterprise shares all premises and infrastructure with a related person, or with a shareholder with no B-BBEE status or a third-party operating in the same industry where the cost of such premises and infrastructure is disproportionate to market-related costs.

DECLARATION

I, the undersigned,

in submitting the accompanying tender on behalf of the tenderer do hereby make the following statements that I certify to be true and complete in every respect:

1. I have read and understand the contents of this certificate.
2. I accept that the Employer may report fronting practices to the Department of Trade and Industry and the B-BBEE commissioner.
3. I accept that intentional misrepresentation by measured entities may constitute fraudulent practices that shall be reported to the Department of Trade and Industry and the B-BBEE commissioner.

SIGNATURE:

DATE:

NAME:

POSITION:

FORM A2.4: CERTIFICATE OF PERMISSION TO CONDUCT DUE DILIGENCE INVESTIGATION

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. The tenderer shall complete the declaration below.
2. In the case of a Joint Venture (JV), each member of the JV shall comply with the above requirements.

DECLARATION

I, (name)

the undersigned in my capacity as(position)

on behalf of (name of company),

herewith grant consent that DRPW or any of their appointed Service Providers may conduct a due diligence investigation on

..... (name of company)

to evaluate our ability to perform the contract as stipulated in the Standard Conditions of Tender, Clause C.3.13(b).

In addition, any information in this regard requested by DRPW or any of their appointed Service Providers, shall be submitted within the timelines of the request.

SIGNATURE:

DATE:

NAME:

POSITION:

FORM A3.1: BIDDER'S DISCLOSURE

Notes to tenderer: SBD4

1. Definitions:

(a) "State" means:

- (i) any National or Provincial Department, National or Provincial Public Entity or Constitutional Institution within the meaning of the Public Finance Management Act, 1999 (Act No 1 of 1999);
- (ii) any Municipality of Municipal Entity;
- (iii) Provincial Legislature;
- (iv) National Assembly or the National Council of Provinces; or
- (v) Parliament.
- (vi) "Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

(b) "Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2. In the case of a joint venture (JV), a separate declaration form is to be completed and submitted by each JV member.

3. If the Form is omitted or blank; or if the tenderer found to have failed to declare conflict or declare false information, The tender will be declared non-responsive and should it be discovered after the award of a contract, contract maybe terminated and tenderer will be ultimately blacklisted.

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.

BIDDER'S DECLARATION

Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state?

YES/NO

If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

¹ The power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

Full Name	Identity Number	Name of State institution

Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution?

YES/NO

If so, furnish particulars:

.....

.....

Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

If so, furnish particulars:

.....

.....

DECLARATION

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

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

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

The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.

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.

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.

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.

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

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

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

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

FORM A3.2: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE

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The tenderer shall provide a scanned copy in .pdf of the Active Supplier Listing on the National Treasury Central Supplier Database (www.treasury.gov.za). In the case of a Joint Venture (JV), the tenderer shall provide scanned copies in .pdf of the Active Supplier Listing on the National Treasury Central Supplier Database for each member of the Joint Venture.

Name of Contractor:

Central Supplier Database Supplier Number:

Supplier Commodity:

Delivery Location:

SIGNED BY TENDERER:

FORM A3.3: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS (SBD 6.2)

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to Tenderer

- 1. If the minimum threshold/s % local content is below the stipulated minimum threshold for local production and content, or if the Form is omitted, the tender will be declared non-responsive.**

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

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

1. General Conditions

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

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

Where:

x is the imported content in Rand

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

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) on the date of advertisement of the bid as indicated in paragraph 3.1 below.

The SABS approved technical specification number SANS 1286:2017 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.

- 1.6 A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule – Form A3.6) are not submitted as part of the bid documentation.

The stipulated minimum threshold(s) for local production and content (refer to Annex A of SANS 1286:2017) for this bid is/are as follows:

Steel Construction Materials	Components	Stipulated minimum threshold
Steel value-added construction material products		
Fabricated Structural Steel	Latticed steelwork, reinforcement steel, columns, beams, plate girders, rafters, bracing, cladding supports, stair stringers & treads, ladders, steel flooring, floor grating, hand railing and balustrading, scaffolding, ducting, gutters, launders, downpipes, trusses and guardrails	100%
Wire Products	All fencing products, all barbed wire and mesh fencing, fabric/mesh reinforcing, gabions, wire rope/strand and chains, welding electrodes, nails/tacks, springs and screws	100%
Only locally produced or locally manufactured steel products and components for construction with a minimum threshold for local content and production as stipulated above will be considered. In the designation, imported inputs raw materials (i.e. zinc and additives in the surface preparation and protection process (cleaning and coating/galvanising)) used in the production of steel products and components for the construction are deemed as locally manufactured input materials. The imported input raw material, as specified above, used in the manufacture and production of steel products and components for construction will be deemed to have been sourced locally for the purposes of calculating local content.		
Steel Construction Materials		Stipulated minimum threshold
Primary steel construction material products		
Wire Rod and Drawn Wire		100%
Reinforcing bars		100%
Only locally produced or locally manufactured electrical and telecommunication cables for construction with a minimum threshold for local content and production as stipulated above will be considered. Excluded in the designation are mainly primary steel, copper, aluminium, polyvinyl chloride (PVC), cross-linked polyethylene (XLPE), aramid yarn, and optical fibre used for fabrication of cable products. This is to encourage local manufacturers to seek the best global competitive prices for primary materials hence the competitive imported materials used in the manufacture of cables will be deemed to have been sourced locally for the purposes of calculating local content.		
Product type		Stipulated minimum threshold
Plastic Pipes		
Polyvinyl chloride (PVC) pipes		100%
High density polyethylene (HDPE) pipes		100%
Only locally produced or locally manufactured Plastic Pipes with a minimum threshold for local content and production as stipulated above will be considered.		
Textiles, Clothing, Leather and Footwear		
Textiles		100%
Only locally produced or locally manufactured Textiles, Clothing, Leather and Footwear from local raw material or input, with a minimum threshold for local production and content of 100% will be considered.		

Bagged and bulk cement			
Cement Type	Description	Application	Stipulated Minimum Threshold
Cem II	Portland cement containing varying additions of secondary materials, i.e. fly ash, pozzolana, slag, silica fume, or limestone	All civil and building construction as appropriate	100 %
Masonry cement	Mixture of Portland cement and plasticizing materials such as limestone to improve setting time	Use in mortar, brick, block, and stone masonry construction	100 %
Only locally produced or locally manufactured bagged and bulk cement produced using locally produced raw materials with the minimum threshold percentages for local production and content stated below will be considered:			

Copies of Annex D, Annex E, Process for application for exemption, as well as guidelines for the calculation of the local content, is provided in Appendix 8 of Part C4.

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

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

Tick applicable box

3. If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency on the date of advertisement of the bid 30 September 2023.

The relevant rate of exchange information is accessible on <https://www.resbank.co.za>.

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SANS 1286:2017):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

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

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

IN RESPECT OF BID NO. CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

ISSUED BY: THE DEPARTMENT OF ROADS AND PUBLIC WORKS (the

Procurement Authority / Institution):

N.B.:

1. The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
2. Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on

<http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/?hilite=%27local%27%2C%27content%27%2C%27declaration%27>

Examples of Annex D and E as well as the Process for application for exemption and guidelines for the calculation of the local content is provided in Part C4: Appendix 8. Examples of Annex D and E is also provided in Excel format on the Tender document link. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below. Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

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

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that the goods/services/works to be delivered in terms of the above- specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SANS 1286:2017; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SANS 1286:2017, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declarations D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 2 above)	%
Local content %, as calculated in terms of SATS 1286:2011	%

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

The local content percentage for each product has been calculated using the formula given in clause 3 of SANS 1286:2017, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declarations D and E.

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

SIGNATURE:

DATE:.....

WITNESS No. 1:

WITNESS No. 2:

FORM A3.4: LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE (ANNEXURE C)

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to Tenderer:

If the minimum threshold/s % local content is below the stipulated minimum threshold for local production and content, or if the Form is omitted, the tender will be declared non-responsive.

C1	Tender No.:									Note: VAT to be excluded from all calculations
C2	Tender Description:									
C3	Designated Product(s):									
C4	Tender Authority:									
C5	Tendering Entity Name:									
C6	Tender Exchange Rate:	Pula	P	EU	€	GBP	£	OTHER(stipulate)		

Calculation of Local Content								Tender Summary			
Tender Item No.'s	List of Items	Tender Price Each (Excl. VAT)	Exempted Imported Value	Tender Value Net of Exempted Imported Content	Imported Value	Local Value	Local Content % (Per Item)	Tender Qty	Total Tender Value	Total Exempted Imported Content	Total Imported Content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
Refer to Annexure C											

(C20) Total Tender Value
(C21) Total Exempt Imported Content

Signature of tenderer from Annex B (SATS 1286.2011)

(C22) Total Tender value net of exempt imported Content
(C23) Total Imported Content

R

R

...

Date:
(C24) Total Local Content
(C25) Average Local Content % of tender

R

...

FORM A4: SCHEDULE OF DEVIATIONS OR QUALIFICATIONS BY TENDERER

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

- 1. The Main Tender **MUST** be priced.
- 2. When submitting any alternative tender, condition of clause C.2.12 of Tender Data, shall be followed.

Page	Description

SIGNED BY TENDERER:

FORM A5: SCHEDULE OF ADDENDA TO TENDER DOCUMENTS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

- 1. If an addendum containing material amendments is not incorporated by the tenderer in his tender offer, the tender will be declared non-responsive.**

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.		
9.		
10.		

FORM A6: CERTIFICATE OF INSURANCE COVER

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

In the event of the tenderer being a Joint Venture/consortium the details of the individual members must also be provided.

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

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

SIGNED BY TENDERER:

FORM A7: TENDERER'S REGISTERED FINANCIAL SERVICE PROVIDER LETTER AND BANK DETAILS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. The tenderer shall attach to this form a letter (dated less than 3 months prior to the tender closing date) from a Registered Financial Service Provider (registered with the FSB) confirming his account and confirms the Tenderer's available capital and that the Tenderer has the financial means net of current commitments (independent of any contractual advance payment) available to meet the construction cash flow requirements estimated for the subject contract or a written confirmation from any registered financial institution or the tenderer's independent registered accountant should be requested to submit confirmation of the available working capital to meet the construction workflow requirements estimated for the subject contract. The confirmation by an independent registered accountant must indicate that the review, to be conducted in terms of ISRS4400, was done in terms of the Section 30 and Regulation 29 of the Companies Act No. 71 of 2008.
2. If the Tenderer does not have financial resources, the tender will be declared non- responsive in terms of clause C.3.13 (b) of the Tender Data.
3. The Tenderer (and in the event of a joint venture, the joint venture member's combined) shall have available capital in excess of R20 000 000,
4. In the event that the tenderer is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form.
5. The successful tenderer may be requested to demonstrate its financial capability to execute the contract prior to award at DRPW's discretion in terms of clause C.3.13.
6. In the event that the Employer at its sole discretion is not satisfied with the financial capability of the tenderer as a result of whatsoever nature and reason, the Employer reserves the right to invoke the provisions under tender data C.3.13. In addition, the Employer reserves the right to perform a full risk assessment as per tender data C.3.13. Furthermore, if the aforementioned occur, any and all report/s will be used to evaluate the Tenderer's ability to perform the contract as stated in sub-clause C.3.13.(b) of the CIDB Standard Conditions of Tender.
7. The letter shall contain the information as indicated below.

DATE:

Bank Name

FSB Number

Bank Address

(Letter to be on the Financial Service Provider's letter head)

RE: ACCOUNT CONDUCT AND CASHFLOW CONFIRMATION

To Whom It May Concern:

We hereby confirm that Tenderer Name has been banking with _____ bank for a period of ____ years and the account has been conducted in a satisfactory manner. Tenderer Name has the financial means, net of current commitments available to meet the construction cash flow requirements to the value of _____ for contract NC254A.

- (i) Name of Account Holder:
- (ii) Account Number:
- (iii) Bank name:
- (iv) Branch Number:
- (v) Bank and branch contact details:

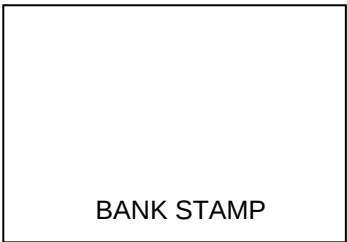
Yours Sincerely,

.....

Name

.....

Signature



FORM A8.1: SCHEDULE OF TENDERER'S LITIGATION HISTORY

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

The tenderer (and in the case of a Joint Venture, each member of the Joint Venture) shall list below details of any litigation with which the tenderer (including its directors, shareholders or other senior members in previous companies) has been involved with any organ of state or state department within the last ten years. The details must include the year, the litigating parties, the subject matter of the dispute, the value of any award or estimated award if the litigation is current and in whose favour the award, if any, was made.

Employer	Other litigating party	Dispute	Award value	Date resolved

SIGNED BY TENDERER:

FORM A8.2: ENVIRONMENTAL, SOCIAL, HEALTH, AND SAFETY PERFORMANCE DECLARATION

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

The tenderer (and in the case of a Joint Venture, each member of the Joint Venture) shall indicate below by marking with an "X" if suspension or termination of a contract occurred or not, and/or if the performance security has been called or not, related to Environmental, Social, Health or Safety (ESHS) performance, in the past five (5) years prior to the tender submission date.

In the event that suspension or termination occurred and/or the performance security has been called, the tenderer shall complete the details of all the suspensions and terminations as well as the details of all performance securities called since the date indicated.

The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

Environmental, Social, Health, and Safety Performance Declaration			
☐ No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental, Social, Health, or Safety (ESHS) performance in the past five (5) years prior to the tender submission date.			
☐ Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, Social, Health, or Safety (ESHS) performance in the past five (5) years prior to the tender submission date. Details are described below:			
Year	Suspended or terminated portion of contract	Contract Identification	Total Contract Amount
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	<i>[insert complete contract name, contract number, Name of Employer, Address of Employer, Reason(s) for suspension or termination]</i>	<i>[insert amount]</i>
Performance Security called by an employer(s) for reasons related to ESHS performance			
Year		Contract Identification	Total Contract Amount
<i>[insert year]</i>		<i>[insert complete contract name, contract number, Name of Employer, Address of Employer, Reason(s) for calling of performance security]</i>	<i>[insert amount]</i>

FORM A9: SCHEDULE OF CURRENT COMMITMENTS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. The tenderer shall list below all contracts currently under construction or awarded and about to commence and tenders for which offers have been submitted but awards not yet made.
2. In the event of a joint venture or consortium, details of all the members of the joint venture or consortium shall similarly be attached to this form.
3. The lists must be restricted to not more than 20 contracts and 20 tenders. If a tenderer's actual commitments or potential commitments are greater than 20 each, those listed should be in descending order of expected final contract value or sum tendered.

Table 1: CONTRACTS AWARDED				
Employer	Project	Expected total value of contract (incl. VAT)	Duration (Months)	Expected completion date

Table 2: TENDERS NOT YET AWARDED				
Employer	Project	Sum Tendered (incl. VAT)	Tendered Duration (Months)	Expected commencement

SIGNED BY TENDERER:

**FORM A10: CERTIFICATE OF COMPLIANCE WITH COMPENSATION FOR
OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT NO. 130
OF 1993)**

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE
NORTHERN CAPE

Notes to tenderer:

1. Discovery that the tenderer has failed to make proper disclosure may result in DRPW terminating a contract that flows from this tender on the ground that it has been rendered invalid by the tenderer's misrepresentation.
2. The tenderer shall attach to this Form evidence that he is registered and in good standing with the compensation fund or with a licensed compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act, 1993 (Act No. 130 of 1993).
3. The tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.
4. In the event of a joint venture or consortium, each and every member of the unincorporated Joint Venture shall comply with the above requirements.

SIGNED BY TENDERER:

FORM A11: CERTIFICATE OF REGISTRATION WITH CIDB

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. The tenderer shall provide a copy of the Active Contractor's Listing off the CIDB website. (www.cidb.org.za). Tenderers whose CIDB registration expires within 21 days after close of tender should attach proof of their application for re-registration (refer to Tender Data Clause C.2.1.1).
2. In the case of a Joint Venture, a copy of the Active Contractor's Listing must be provided for each member of the Joint Venture.
3. The tender will be declared non-responsive if:
 - The Tenderer is not registered on CIDB within the required contractor grading and category at the tender closing date, or
 - the Tenderer is suspended, or
 - the Tenderer has not declared interest of application to upgrade the grading, or
 - the Tenderer failed to submit the new registered grading within 21 days after tender closure.

Name of Contractor:

Contractor Grading Designation:

CIDB Contractor Registration Number:

Expiry Date:

SIGNED BY TENDERER:

FORM A12: FORM SBD1 – INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING

PART A: INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE DEPARTMENT OF ROADS AND PUBLIC WORKS					
BID NUMBER:	DRPW009/2024	CLOSING DATE:	23 January 2025	CLOSING TIME:	11h00
DESCRIPTION	CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:					
The Department of Roads and Public Works Tebogo Leon Tume Complex 9-11 Stockroos Street Squarehill Park Kimberley 8301					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:					
E-MAIL ADDRESS	nmgijima@ncpg.gov.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	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		☐ Yes ☐ No
A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE 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 SA?			☐ 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 ELECTRONICALLY DELIVERED BY THE STIPULATED TIME. 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 SCANNED COPY IN .PDF OF THE 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 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 WHO ARE 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:.....

FORM B1: CONTRACTOR’S ESTABLISHMENT ON SITE

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to Tenderer:

If the tenderer should require additional compensation for his obligations under Part C3 section 1.3 (over and above the total tendered for item C1.3.1) by including such additional compensation in the tendered rates and/or lump sum of items in the pricing schedule, these items and the value of such additional compensation shall also be set out in a letter attached to this form.

Should the combined, extended total tendered for Item C1.3.1 The contractor’s general obligations:

C1.3.1.1 Fixed obligations

C1.3.1.2 Value-related obligations

C1.3.1.3 Time-related obligations

exceed a maximum of 20% of the tender sum, the tenderer shall clearly set out his reasons for tendering in this manner in a letter attached to this page.

The relevant regional project engineer will duly consider these reasons but reserves the right to consider the tendered rates to be imbalanced and to deal with them in terms of Tender Data clause C.3.9 contained in this volume.

Total tendered for Item C1.3.1 expressed as a percentage of the tender sum (excluding VAT) %

SIGNED BY TENDERER:

FORM B2: SCHEDULE OF SPECIAL MATERIALS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. Refer to part C1.2.1 Conditions of Contract where subclause 13.8 of the FIDIC General Conditions of Contract has been amended.
2. Only net bitumen content of asphalt and bituminous products shall be subject to rise and fall and no account shall be taken of transport, emulsifiers, diluents or modifiers that may be supplied ex refinery or added later.
3. For the purpose of clarity when using this form, a supplier is any company (including refineries) that supplies to a tenderer a bituminous product that it manufactures using bitumen as the sole or blended ingredient in the product. A tenderer shall, in compliance with note 4 below, attach to this form a letter of supply from each supplier it intends using in the performance of the contract.
4. Tenderers shall append to this page the following information on a letterhead from their selected supplier:
 - The supplier's company registration and address details; and
 - The product range available including refinery from which the base bitumen is drawn; and
 - The net base bitumen type and content for each product; and
 - The supply price (excluding vat and any discounts but including all other obligatory taxes and levies) to the tenderer for the net bitumen base content of each product; and
 - the date from which the supply prices apply.
5. Rise and fall adjustments shall only be made upon receipt by the engineer of the appropriate letters of supply in compliance to note 4 above, but with the changed supply prices and date of application, as well as reasons for the changes.
6. A change of supplier may be permitted, but only upon application to the engineer with the appropriate letters of supply in compliance to Note 4 above and approval thereof.
7. Non-disclosure of reduction in supply prices shall be deemed a contractor's deliberate action to defraud the Employer and grounds for the Employer, at its sole discretion, to terminate the contract.

Each material dealt with as a special material in terms of FIDIC clause 13.8 as amended is stated in the list below. The rates and prices for the special materials shall be furnished by the tenderer as an attachment to this Form B2, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies.

SPECIAL MATERIAL	UNIT*	RATE OR PRICE FOR THE BASE MONTH
Reinforcing Mild steel	Ton	As stated on supplier's letter attached to this form.
Reinforcing High tensile steel	Ton	

*Indicate whether the material will be delivered in bulk or in containers.

SIGNED BY TENDERER:

FORM C1.1: NCP 6.1 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

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

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

1. GENERAL CONDITIONS

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

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

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

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

- (a) Price; and
- (b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	100

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

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

2. DEFINITIONS

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

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:

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \mathbf{Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)} \end{array}$$

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:

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \mathbf{Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)} \end{array}$$

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)
Fifty one percent (51%) or more black owned companies	5			
Fifty one percent (51%) or more youth owned companies	3			
Fifty one percent (51%) or more women owned companies	1			
Fifty one percent (51%) or more companies owned by persons with disabled	1			
Total	10			

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.

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SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:

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FORM D1: SCHEDULE OF TENDERER’S PLANT AND EQUIPMENT

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

The tenderer shall provide details of the major plant and equipment required for this project.

The tenderer shall state below the number of each construction plant to be used on this project and what constructional plant will be immediately available for this contract, what constructional plant will become available by virtue of outstanding orders, and what further constructional plant will be acquired or hired for the work should the tenderer be awarded the contract.

- a) Constructional plant immediately available (I)
- b) Constructional plant on order (O)
 (State details of arrangements made, with delivery dates)
- c) Constructional plant that will be acquired or hired (H) (State details of delivery arrangements)

PLANT AND EQUIPMENT TYPE	NUMBER TO BE USED ON THIS PROJECT	DATE OF MANUFACTURE	AVAILABILITY (State either I, O or H)

SIGNED BY TENDERER:

FORM D2: TENDERER'S METHOD STATEMENT

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

The tenderer shall provide a method statement with the details as indicated on this form.

The method statement must respond to the Scope of Work and Project Information under Part C4 and outline the proposed approach/methodology. The method statement should articulate what value the Tenderer will add by in achieving the stated objectives for the project.

The Tenderer must as such explain the following:

- Its understanding of the objectives of the assignment and the Employer's stated and implied requirements,
- Highlight the issues of importance and explain the technical approach they would adopt to address them, and
- Explain the methodologies which are to be adopted, demonstrate the compatibility of those methodologies with the proposed approach. The approach should also include a quality plan which outlines processes, procedures and associated resources, applied by whom and when, to meet the requirements and indicate how risks will be managed and what contribution can be made regarding value management.

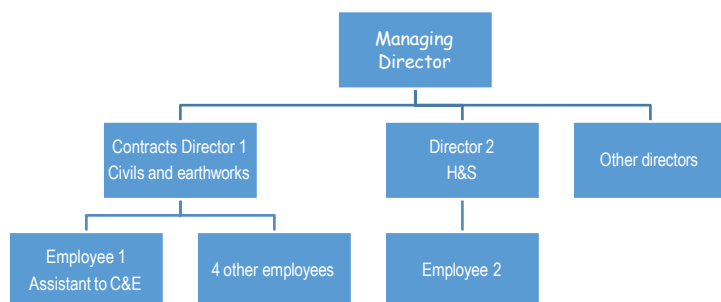
The tenderer must attach his/her approach paper to this page. The approach paper should not be longer than 5 pages.

SIGNED BY TENDERER:

FORM D3: TENDERER'S ORGANISATION AND STAFFING

Notes to tenderer:

1. The intention of this form is to demonstrate the tenderer's project structure, as well as the lines of responsibility between members of the project team and between the project team and the overall company structure. Attach own organogram to this form; do not populate the example diagram below.
2. Tenderers which are large companies may simplify the organogram by 'rolling up' portfolios e.g. combining directors/associates into one box of the organogram. However, the individual positions of the key persons within the structure must still be shown. The same person could fill multiple positions.
3. Joint Venture tenders require each element of the venture to submit separate organograms that show the individual structure of each member company and the lines of responsibility of the proposed personnel involved in the project. In addition, there must also be a combined organogram that indicates how the joint venture itself will function and the proposed share of the work will become a contractual obligation between the members of the joint venture.
4. State the city or town where the company's head office is located. The locality of regional or satellite offices, regardless of degree of autonomy or size is not required. Only submit the number of offices other than the head office. Do not count offices outside RSA.
5. Registered professional engineers, technicians or technologists means those who are involved in the road construction/transport industry. Registered professionals of other disciplines (e.g. mechanical) are considered as employees only.
6. In the lower table list those who will be involved in priority order of most to least responsibility for the service. Provide details of the key staff. Except for the MD, all of others must submit Forms D4. The same person may perform multiple roles.



Head Office:	State City/Town. See note 4.
Other Offices:	Only list number, See note 4
Registered Professionals: ECSA or in terms of ECSAapproved International Agreements (PrEng, PrTechEng, PrCertEng, PrTechniEng)	See note 5
Registered Professionals: SACPCMP (Pr CM)	See note 5
Total Employees :	
% share in JV agreement:	State 100% if no JV

Name of employee	Position in team	Estimated monthly hours	Relevant specialist areas of knowledge demonstrating suitability for position
	Managing Director		
	Contracts Director		
	Contracts Manager		
	Construction manager (Contractor's Representative)		

SIGNED BY TENDERER:

FORM D4.1: TENDERER'S KEY PERSONNEL EXPERIENCE (CONTRACTS DIRECTOR)

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

1. The Tenderer shall provide details of the Contracts Director's professional registration, years' experience as well as details of previous experience required for this project.
2. The Contracts Director must meet the following minimum requirements as stipulated, and the tenderer must append proof of registration to this form:

Professional Registration	Minimum Years of Relevant Experience

3. Where ECSA registration is required, Professional Registration with the Engineering Council of South Africa (ECSA) or any other equivalent registration with an international body recognised by ECSA, i.e. Washington Accord, Dublin Accord and Sydney Accord, is accepted.
4. In the event that the Contracts Director are not in its permanent employment, the tenderer shall provide a signed undertaking from an organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a sub-consultant agreement.
5. If the tenderer's experience does not meet the stipulated minimum requirement, or does not respond within stated period when requested to do so; the tender will be declared non-responsive in terms of clause C.3.13 (b) of the Tender Data.

Name	Position in team	ECSA Reg. No	ECSA Category	SACPCMP Reg No	SACPCMP Category	No. Of Years Experience
	CONTRACTS DIRECTOR					

Technical/Managerial Experience

(List only the most recent 5 projects of the key staff that the tenderer considers relevant to the specified scope of works

Client	Description of project	Project start date	Project end date	Value	Position Held	Contact Person and firm	Contact No.

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D4.2: TENDERER'S KEY PERSONNEL EXPERIENCE (CONTRACTS MANAGER)

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

1. The Tenderer shall provide details of the Contracts Manager's, professional registration, years' experience as well as details of previous experience required for this project.
2. The Contracts Manager must meet the following minimum requirements as stipulated and the tenderer must append proof of registration to this form:

Professional Registration	Minimum Years of Relevant Experience
SACPCMP as PrCM or ECSA as PrEng or PrTech Eng or Pr Techni	5 years' experience in similar projects. Projects shall not be older than 10 years.

3. Where ECSA registration is required, Professional Registration with the Engineering Council of South Africa (ECSA) or any other equivalent registration with an international body recognised by ECSA, i.e. Washington Accord, Dublin Accord and Sydney Accord, is accepted.
4. In the event that the Contracts Manager are not in its permanent employment, the tenderer shall provide a signed undertaking from an organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a sub-consultant agreement.
5. The Contracts Manager shall be; the single point of accountability and responsible for the management of the construction works. Where the Contracts Manager will not be employed on the Works full time, his powers will be delegated to the approved construction manager in accordance with Clause 4.3 of the Conditions of Contract.
6. If the tenderer's experience does not meet the stipulated minimum requirement, or does not respond within stated period when requested to do so; the tender will be declared non-responsive in terms of clause C.3.13 (b) of the Tender Data.

Name	Position in team	ECSA Reg. No	ECSA Category	SACPCMP Reg No	SACPCMP Category	No. Of Years Experience
	CONTRACTS MANAGER					

Technical/Managerial Experience

(List only the most recent 5 projects of the key staff that the tenderer considers relevant to the specified scope of works

Client	Description of project	Project start date	Project end date	Value	Position Held	Contact Person and firm	Contact No.

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D4.3: TENDERER'S KEY PERSONNEL EXPERIENCE (CONSTRUCTION MANAGER (CONTRACTOR'S REPRESENTATIVE))

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

1. The Tenderer shall provide details of the Construction Manager's (Contractor's Representative's), professional registration, years' experience as well as details of previous experience required for this project.
2. The Construction Manager (Contractor's Representative) must meet the following minimum requirements as stipulated and the tenderer must append proof of registration to this form:

Professional Registration	Minimum Years of Relevant Experience
B Eng (Civil) or BSc Civil Engineering or B Tech (Civil) degrees or National Diploma in Civil Engineering.	5 years' experience in similar projects. Projects shall not be older than 10 years

3. Where ECSA registration is required, Professional Registration with the Engineering Council of South Africa (ECSA) or any other equivalent registration with an international body recognised by ECSA, i.e. Washington Accord, Dublin Accord and Sydney Accord, is accepted.
4. In the event that the Construction Manager (Contractor's Representative) are not in its permanent employment, the tenderer shall provide a signed undertaking from an organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a sub-consultant agreement.
5. The Construction Manager (Contractor's Representative) shall be; employed full time on the Works, the single point of accountability and responsible for the management of the construction works.
6. If the tenderer's experience does not meet the stipulated minimum requirement or does not respond within stated period when requested to do so; the tender will be declared non-responsive in terms of clause C.3.13 (b) of the Tender Data.

Name	Position in team	ECSA Reg. No	ECSA Category	SACPCMP Reg No	SACPCMP Category	No. Of Years Experience
	CONSTRUCTION MANAGER (CONTRACTOR'S REPRESENTATIVE)					

Technical/Managerial Experience

(List only the most recent 5 projects of the key staff that the tenderer considers relevant to the specified scope of works

Client	Description of project	Project start date	Project end date	Value	Position Held	Contact Person and firm	Contact No.

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D4.4: TENDERER'S KEY PERSONNEL EXPERIENCE (CONSTRUCTION HEALTH AND SAFETY OFFICER)

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

1. The Tenderer shall provide details of the Construction Health and Safety Officer's, professional registration, years' experience as well as details of previous experience required for this project.
2. The Occupational Health and Safety Officer must meet the following minimum requirements as stipulated and the tenderer must append proof of registration to this form:

Professional Registration	Minimum Years of Relevant Experience
SACPCMP as CHSO	5 years' experience in similar projects. Projects shall not be older than 10 years

3. Where ECSA registration is required, Professional Registration with the Engineering Council of South Africa (ECSA) or any other equivalent registration with an international body recognised by ECSA, i.e. Washington Accord, Dublin Accord and Sydney Accord, is accepted.
4. In the event that the Occupational Health and Safety Officer are not in its permanent employment, the tenderer shall provide a signed undertaking from an organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a sub-consultant agreement.
5. The Construction Health and Safety Officer shall be; employed full time on the Works, the single point of accountability and responsible for the management of the Construction Health and Safety of the project.
6. If the tenderer's experience does not meet the stipulated minimum requirement or does not respond within stated period when requested to do so; the tender will be declared non-responsive in terms of clause C.3.13 (b) of the Tender Data.

Name	Position in team	ECSA Reg. No	ECSA Category	SACPCMP Reg No	SACPCMP Category	No. Of Years Experience
	CONSTRUCTION HEALTH AND SAFETY OFFICER					

Technical/Managerial Experience

(List only the most recent 5 projects of the key staff that the tenderer considers relevant to the specified scope of works

Client	Description of project	Project start date	Project end date	Value	Position Held	Contact Person and firm	Contact No.

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D5.1: TENDERER'S EXPERIENCE BASED ON COMPLETED PROJECTS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

- 1. The tenderer shall provide details of previous experience required for this project in the spaces provided below and attach contract performance evaluation certificates in the form of CIDB Contractor Performance Reports or an official reference letters from previous employer(s)**
- 2. The Tenderer must have satisfactorily completed (at least completed as a prime contractor, joint venture member, management contractor or sub-contractor) a minimum number of 3 similar contracts matching the subject project's scope of work, between 1st January 2013 and tender submission deadline. Each completed contract must have a minimum value that exceeds R 35 000 000 and have a Performance Rating not less than zero (0) Adequate, as rated in terms of the CIDB Performance Rating system or official reference letters from previous employer(s).**
- 3. For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet the minimum value requirement.**
- 4. If the Tenderer is a joint venture, the value of contracts completed by the individual joint venture members can be combined and shall be treated as one contract to determine whether the requirement of the minimum value of a single contract has been met. In the case of combined contracts, each contract performed by each member shall exceed fifty percent (50%) of the minimum value of a single contract as required for single entity. In determining whether the joint venture meets the requirement of total number of contracts, the number of contracts completed by all JV members each of value equal or more than the minimum value required shall be aggregated. For the afore-mentioned purpose, contracts which are combined to meet the minimum value shall be treated as one contract.**
- 5. If the tenderer's experience does not meet the stipulated minimum requirement e.g. less than the minimum stipulated number of recent civil engineering contracts; or If the proposed project is not relevant and as a result the tenderer does not meet the minimum requirement; the tender will be declared non- responsive in terms of clause C.3.13 (b)of the Tender Data.**

(List only the most recent 3 projects of the firm that the tenderer considers relevant to the specified scope of works

Client	Description of project	Project start date	Project end date	Value of Work (i.e. The service provided) inclusive of VAT (Rand)	Contact Person and Firm	Contact Number	CIDB Equivalent Performance Rating (Not required where an official reference letters from previous employer(s) is attached)

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D5.2: TENDERER'S EXPERIENCE BASED ON PROJECTS IN PROGRESS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

- 1. Submission of this form is optional. This form must be submitted if the tenderer does not comply with the requirements of Form D5.1, and elects to list projects that are in progress to comply with afore- mentioned requirements.**
- 2. The Tenderer must list details of similar projects in progress (as a prime contractor, joint venture member, management contractor or sub-contractor) matching the subject project's scope of work, between 1st January 2020 and tender submission deadline. Each project in progress must have a certified value of work that exceeds 80% of the awarded value and exceeds R 35 000 000, and have a Performance Rating not less than zero (0) Adequate, as rated in terms of the CIDB Performance Rating system. The Performance Rating and certified value of work at closing date must be confirmed by the Project Employer or Project Engineer in writing.**
- 3. For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet the minimum value requirement.**
- 4. If the Tenderer is a joint venture, the value of contracts completed by the individual joint venture members can be combined and shall be treated as one contract to determine whether the requirement of the minimum value of a single contract has been met. In the case of combined contracts, each contract performed by each member shall exceed fifty percent (50%) of the minimum value of a single contract as required for single entity. In determining whether the joint venture meets the requirement of total number of contracts, the number of contracts completed by all JV members each of value equal or more than the minimum value required shall be aggregated. For the afore-mentioned purpose, contracts which are combined to meet the minimum value shall be treated as one contract.**
- 5. If the tenderer's experience not meeting minimum requirements (certified value of work that exceeds 80% of the awarded value and exceeds specified rand value); or If the proposed project is not relevant and as a result the tenderer does not meet the minimum requirement; the tender shall be declared non- responsive.**

Client	Description of project	Project start date	Project end date	Award Value of Work (i.e. the service provided) inclusive of VAT (Rand)	Value of works certified by the Engineer	Contact Person and Firm	Contact Number	CIDB Performance Rating

Comments:

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I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D6: TENDERER'S INDICATIVE PROGRAM

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Notes to tenderer:

1. The tenderer shall attach an indicative programme, reflecting the:
Contract period;
 - proposed sequence or order of execution of the work;
 - Resources anticipated; and
 - tempo of execution of the various activities comprising the work for this contract.
2. The programme shall be in accordance with the information provided in Form D1: Schedule of Tenderer's Plant and Equipment, Form D2: Tenderer's Method Statement, Form D7: Schedule of Estimated Monthly Expenditure, Form D8: Schedule of Subcontractors, and with all other aspects of the tender.
3. If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall also be attached to the Pricing Schedule for the alternative proposal.

SIGNED BY TENDERER:

FORM D7: SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall also be attached to the Pricing Schedule for the alternative proposal.

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.

CERTIFICATE / MONTH	VALUE	CERTIFICATE / MONTH	VALUE
1	R.....	TOTAL b/f	R.....
2	R.....	9	R.....
3	R.....	10	R.....
4	R.....	11	R.....
5	R.....	12	R.....
6	R.....		
		13(FINAL)*	R.....
7	R.....		
8	R.....		
TOTAL c/f	R.....		
		TOTAL: R.....	

* Final payment at end of Defects Notification Period is for balance of retention and any other payments due.

SIGNED BY TENDERER:

FORM D8: SCHEDULE OF SUBCONTRACTORS

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

With regard to sub-clause 4.4 of the FIDIC Conditions of Contract as amended:

Notes to tenderer:

- 1. The tenderer shall list below the items of work he intends to subcontract.
- 2. Acceptance of this tender shall not be construed as approval of all or any of the listed subcontractors. Should any or all of the subcontractors not be approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding, even in the event of a subcontractor not listed below being approved by the engineer.

ITEM OF WORK	NAME OF SUBCONTRACTOR (IF KNOWN) AND INDICATE INTENDED SPECIALIST SUBCONTRACTORS WITH “S”	% VALUE OF THE TENDER AMOUNT SUB-CONTRACTED	B-BBEE STATUS LEVEL OF SUB-CONTRACTOR	STATE IF TARGETED ENTERPRISE	STATE IF EME

SIGNED BY TENDERER:

FORM D9: CORPORATE SOCIAL INVESTMENT

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

With regard to clause D1012: Community Development, of the Project Specifications:

Notes to tenderer:

- 1. The tenderer shall list below his own Corporate Social Investment initiatives that will actively be pursued for this project.
- 2. The Corporate Social Investment initiatives will be evaluated and applied as objective criteria in terms of section 2(1)(f) of the Preferential Procurement Policy Framework Act, 2000.

CSI INITIATIVE	COMMUNITY AFFECTED	ESTIMATED PERCENTAGE(%) OF THE VALUE OF WORKS SET ASIDE FOR INITIATIVE	ESTIMATED TIME FOR IMPLEMENTATION

SIGNED BY TENDERER:

FORM F1: SCHEDULE OF TENDER COMPLIANCE

CONTRACT NO. NC254A FOR: THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

Note to tenderer:

This form has been created as an aid to ensure a tenderer's compliance with the completion of the returnable forms and schedules and subsequent uploading into the correct folder.

CERTIFICATE OF SINGLE TENDER SUBMISSION

FORM NO / SBD NO	FORM DESCRIPTION	TICK IF COMPLETED
A1	CERTIFICATE CONFIRMING THAT THE TENDERER READ THE PRESENTATION BRIEFING	
A2.1	CERTIFICATE OF AUTHORITY FOR SIGNATORY	
A2.2	CERTIFICATE OF SINGLE TENDER SUBMISSION	
A2.3	CERTIFICATE OF FRONTING PRACTICES	
A2.4	CERTIFICATE OF PERMISSION TO CONDUCT DUE DILIGENCE INVESTIGATION	
A3.1 / SBD4	BIDDER'S DISCLOSURE	
A3.2	REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE	
A3.3	DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS	
A3.4	LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE	
A4	SCHEDULE OF DEVIATIONS OR QUALIFICATIONS BY TENDERER	
A5	SCHEDULE OF ADDENDA TO TENDER DOCUMENTS	
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SIGNED BY TENDERER:

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

THE CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

PART C2: PRICING DATA

PART C3: SCOPE OF WORK

PART C4: SITE INFORMATION

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

PART C1: AGREEMENTS AND CONTRACT DATA

PART C1: AGREEMENTS AND CONTRACT DATA

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C1.1 FORM OF OFFER AND ACCEPTANCE

C1.1.1 Form of Offer

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

.....

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

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

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

.....

..... Rand (in words);

R (in figures).

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

For the Tenderer:

Signature:; Date:

Name:

Capacity:

Name and address of organisation:

.....

.....

Signature and name of witness:

Signature:

Name: Date:

C1.1.2 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 1 Agreements and Contract Data, (which includes this Agreement)

Part 2 Pricing Data

Part 3 Scope of Work

Part 4 Site Information

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

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto 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, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of 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 at, or just after, the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

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

For the Employer:

Signature:; Date:

Name:

Capacity:

Name and address of organisation:

.....
.....

Signature and name of witness:

Signature:

Name: Date:

C1.1.3 SCHEDULE OF DEVIATIONS

Notes:

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

1	Subject
	Details
	
	
	
2	Subject
	Details
	
	
	
3	Subject
	Details
	
	
	
4	Subject
	Details
	
	
	
5	Subject
	Details
	
	
	

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

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

For the Tenderer:

For the Employer:

.....	Signature	
.....	Name	
.....	Capacity	

Name and address of organisation:

Name and address of organisation:

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

.....	Witness Signature	
.....	Witness Name	
.....	Date	

CONFIRMATION OF RECEIPT

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

the (day)

of (month)

20..... (year)

at(place)

For the Contractor:

Signature:

Name:

Capacity:

Signature and name of witness:

Signature:

Name:

C1.2 CONTRACT DATA

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C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, Third Edition, Second Print, (2015), published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, (Short title: "GCC 2015") is applicable to this Contract and is obtainable from www.saice.org.za.

It is agreed that the only variations from the GCC 2015 are those set out hereafter under "Special Conditions of Contract".

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions of Contract shall amplify, modify or supersede, as the case may be, the GCC 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or subclause in the GCC 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

2. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

SCC1.1 Definitions

Add the following definitions:

- 1.1.1.35 'Pre-construction Period' means the period as stated in the Contract Data, or the period between the Commencement Date and the date that the Contractor starts with the construction of the Works (Commencement of the Works Clause 5.3.3), whichever is the shortest.
- 1.1.1.36 'Construction Period' means the number of days as specified in the Contract Data, within which the Contractor has to complete the construction of the Works as detailed in Part C3."

SCC 3.2.3 Specific Acceptance of the Employer required

The Employer's Agent has to obtain specific acceptance or consent from the Employer for the decisions in the following clauses:

Clauses 3.3.1; 3.3.4; 8.2.2.2; 6.3.2; 6.4.1.4; 5.7.3; 2.2.3; 6.11; 5.14; 5.16.1 and 7.8.2.2.

Add the following new clause:

SCC 4.1.3 Contractors skill development goal

- 4.1.3.1 The contractor shall attain or exceed the contract skills development goal in the performance of the contract or the execution of an order.
- 4.1.3.2 The contract skills development goal shall be expressed as in 4.1.3.2.1 for engineering and construction works.
- 4.1.3.2.1 In the case of engineering and construction works contracts, design and build contracts and services contracts the contract skills participation goals, expressed in Rand, shall be no less than the sub-total multiplied by a percentage (%) factor given in Table 1 for the applicable class of construction works used in the application of the Construction Industry Development Regulations, issued in terms of the Construction Industry Development Board Act of 2000.

Table 1: Contract skills development goals for different classes of engineering and construction works contracts

Class of construction works		Construction skills development goal (CSDG) (%)
Designation	Description	
CE	Civil engineering	0.25

<https://www.cidb.org.za/wp-content/uploads/2023/03/practice-guideline-implementation-of-skills-standard-contractors-version-3.pdf>

SCC 4.3.1 Compliance with applicable laws

Add the following:

"The Occupational Health and Safety Act No. 85 and Amendment Act No 181 of 1993 and the Construction Regulations 2014 will in all respects be applicable to this contract."

Add the following new clause:

“SCC 4.3.3 Compliance with CIDB Board Notice 163 of 2015

The Contractor shall comply with CIDB Board Notice 163 of 2015 (Government Gazette 14/08/2015) in terms of the following:

- (i) Have a quality management system in compliance with ISO 9001
- (ii) Have an environmental management system in compliance with ISO 14001
- (iii) Have an OHS management system in compliance with SANS 18001
- (iv) Have a construction management system complying with SANS 1393”

SCC 4.10.3 Payment of labour force

The Contractor shall pay his labour force the rates as per Bargaining council for the Civil Engineering Industry (BCCEI)

SCC 5.3.3 Time to instruct commencement of the Works

Replace the contents of Sub-clause 5.3.3 with the following:

If the Employer's Agent's instruction to commence carrying out the Works, or to resubmit documentation, is not received by the Contractor within 7 days from the actual date of submission of the documentation referred to in Clause 5.3.1, commencement of the Works shall be taken as either of:

- SCC 5.3.3.1 In respect of Works not requiring a construction work permit to be on the expiry of such 7 days.
- SCC 5.3.3.2 In respect of Works requiring a construction work permit to be on the expiry of the 60 days (2 months) Pre-construction Period, unless otherwise instructed.

SCC 6.10.4 Delivery, dissatisfaction with and payment of payment certificate

Replace ‘within 28 days’ with ‘within 35 days’

C1.2.2 CONTRACT SPECIFIC DATA

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, Second Print, (2015), are applicable to this Contract:

Reference to	Clause	Information
Defects Liability Period	1.1.1.13	12 months
The time for achieving Practical Completion	1.1.1.14	22 months comprising of 18 months Construction Period, 2 months for builders breaks and public holidays and approximately 2 months for Pre-construction Period.
Name of the Employer	1.1.1.15	The Northern Cape Province, Department of Roads and Public Works
Pre-construction Period	1.1.1.35	Approximately 2 months
Construction Period	1.1.1.36	18 months
Address of the Employer	1.2.1.2	P.O. Box 3132, Kimberley, 8300 Tebogo Leon Tume Complex 9-11 Stockroos Street Floors Hostel Squarehill Park KIMBERLEY 8301 Fax Number: 053 839 2290/1
Name of the Employer's Agent	1.1.1.16	Zutari (Pty) Limited (hereinafter referred to as Zutari) represented by an Employee duly authorized thereto in writing
Address of the Employer's Agent	1.2.1.2	Physical address: 41 Matroosberg Road Riverwalk Office Park Ashlea Gardens, X6 Pretoria 0081 Tel: (012) 427 2437 Email: JCKotze@zutari.com
Pricing Strategy	1.1.1.26	Re-measurement Contract
Non-Working Days	5.8.1	Sundays
Special non-working days	5.8.1	All public holidays and year end break
Year end break	5.8.1	Dates as specified by SAFSEC
Documentation required before commencement with Works execution	5.3.1	4.3 Health and Safety Plan
		5.6 Initial Programme
		6.2 Security
		8.6 Insurance
Time to submit the documentation required before commencement with Works	5.3.2	14 Calendar Days
Penalty for failing to complete the works	5.13.1	The penalty for failing to complete any portion/Phase of the Works R 5 000.00 per day. The penalty for failing to complete whole of the Works is R 5 000,00 per day.

Requirements for achieving Practical Completion	5.14.1	The requirements for achieving Practical Completion are set out in Part C3: Scope of Works, clause C3.4.2.7
Latent Defect Period	5.16.3	10 Years
Percentage allowed to cover overhead charges	6.5.1.2.3	7,5% unless stated in bill of quantities
Contract Price Adjustment	6.8.2	The following values for the different factors are to be used: x = 0,1 a = 0,15 – Labour b = 0,2- Contractor's Equipment c = 0.55 – Material d = 0,10 - Fuel
		"L" is the consumer price index for the Province of Northern Cape and as published in the Statistical News Release, P0141, Additional Tables: Table A "Consumer Price Index: Main indices" of Statistics South Africa
		'P' is the 'Contractor's Equipment' and shall be the Producer Price Index applicable to Plant and Equipment and as published in the Statistical Release P0151.1, Table 4 of Statistics South Africa.
		'M' is the 'Materials Index' and shall be the Producer Price Index applicable to Materials – Total Construction and as published in the Statistical Release P0151.1, Table 2 and 3 of Statistics South Africa.
		'F' is the 'Fuel Index' and shall be the Producer Price Index for Coal & Petroleum Products - Diesel and as published in the Statistical News Release P0142.1, Table 1 of Statistics South Africa."
		The Base month is One (1) calendar month before the tender closing date
Adjustments for variations in the costs of special materials	6.8.3	Price adjustments for variations in the cost of special materials are allowed.
Materials on Site	6.10.1.5	80%
Limit of Retention Money	6.10.3	Percentage retention is 10% of the interim payment certificate. The limit of retention money is 5% of the Contact Sum.
Value of Plant and materials supplied by the Employer to be included in the insurance sum	8.6.1.1.2	Not Applicable
Professional fees for repairing damage and loss to be included in the insurance sum	8.6.1.1.3	Nil
Limit of indemnity	8.6.1.3	R 10 000 000 for any single claim, the number of claims to be unlimited during the construction and Defects Liability Period.
The number of Adjudication Board Members to be appointed	10.5.3	One
Minimum Contract Participation goal to:		

- CIDB registration	Registered for CE class work	
- EME or QSE which is at least 51% owned by black people	F1003	30% of Contract Value, minimum of 5% for targeted enterprise development
- Temporary Work Force (target area: ZF Mgcawu District Municipality)	F1008	5% of Contract Value
- Target Groups: (i) Woman (ii) Youth		30% of targeted temporary work force value 30% of targeted temporary work force value
Employ un- and semi-skilled labour from within local community	F1012(a)	All
CPG Penalty	F1011(d)	$0.5 \times \{[TL + TGL] + [TE + TGE]\}$ Where: TL = Monetary value of the shortfall on the Targeted Labour target TGL = Cumulative amount of the monetary value of the shortfall on each individual Target Group for Labour target TE = Monetary value of the shortfall on the Targeted Enterprises target TGE = Cumulative amount of the monetary value of the shortfall on each individual Target Group for Targeted Enterprise target

SIGNED ON BEHALF OF TENDERER:

C1.2.3 DATA PROVIDED BY THE CONTRACTOR

Reference to	Clause	Information
Name of the Contractor	1.1.1.9	
Address of the Contractor	1.2.1.2	Physical
		Postal
		Email
		Telephone number
		Fax number
Security to be provided	6.2.1	Type of Security (Value Added Tax excluded)
		Fixed Performance Guarantee of 10% of Contract Sum plus
		Retention of 10% of Value of the Works up to a maximum of 5%
		of the Contract Sum

SIGNED ON BEHALF OF TENDERER:

C1.3 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT made at
on this the day of in the year
between [hereinafter called "the Employer"] of the one part,
herein represented by
in his capacity as
and [hereinafter called "the Mandatary"] of the other part,
herein represented by
in his capacity as

WHEREAS the Employer is desirous that certain works be constructed, viz *CONTRACT TITLE*

.....
.....
and has accepted a Tender by the Mandatary for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatary have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatary with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1 The Mandatary shall execute the work in accordance with the Contract Documents pertaining to this Contract.
- 2 This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or Employer's Agent requiring him to commence the execution of the Works, to either
 - (a) the date of the Final Approval Certificate issued in terms of 5.16.1 (GCC 2015) of the General Conditions of Contract [hereinafter referred to as "the GCC"], or
 - (b) the date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3 (GCC 2015) of the GCC.
- 3 The Mandatary declares himself to be conversant with the following:
 - (a) All the requirements, regulations and standards of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following sections of The Act:
 - (i) Section 8: General duties of employers to their employees;
 - (ii) Section 9: General duties of employers and self-employed persons to persons other than employees;
 - (iii) Section 37: Acts or omissions by employees or mandataries, and
 - (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.
 - (b) The procedures and safety rules of the Employer as pertaining to the Mandatary and to all his subcontractors.
- 4 In addition to the requirements of Clause 8.4 (GCC 2015) of the GCC and all relevant requirements of the Contract, the Mandatary agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

- 5 The Mandatary is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.
- 6 The Mandatary warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.
- 7 The Mandatary undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:
 - (a) The Mandatary shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatary shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatary obtains such approval and delegates any duty in terms of Section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
 - (b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatary to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
 - (c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Mandatary and/or his employees and/or his subcontractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

WITNESS 1 2

NAME (IN CAPITALS) 1 2

SIGNED FOR AND ON BEHALF OF THE MANDATARY:

WITNESS 1 2

NAME (IN CAPITALS) 1 2

CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatary in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on 20.....,

Mr/Ms

whose signature appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) on behalf of

.....
.....

SIGNED ON BEHALF OF THE COMPANY :

IN HIS/HER CAPACITY AS :

DATE :

SIGNATURE OF SIGNATORY :

WITNESS 1 2

NAME (IN CAPITALS) 1..... 2

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

PART C2: PRICING DATA

PART C2: PRICING DATA

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C2.1 PRICING INSTRUCTIONS

1. GENERAL

The Pricing Schedule forms part of the Contract Documents and must be read and priced in conjunction with section C1.1 in the COTO Standard Specifications and all the other documents comprising the Contract Documents, which include the Conditions of Tender, Conditions of Contract, the Specifications (including the Project Specification) and the Drawings.

2. DESCRIPTION OF ITEMS IN THE SCHEDULE

The Pricing Schedule has been drawn up generally in accordance with Civil Engineering Quantities 1990 issued by the SA Institution of Civil Engineers.

The short descriptions of the items in the Pricing Schedule are for identification purposes only and the measurement and payment clause of the Standardized Specifications, read together with the relevant clauses of the Project Specification and directives on the drawings, set out what ancillary or associated work and activities are included in the rates for the operations specified.

The item numbers appearing in the Pricing Schedule refer to the corresponding item numbers in the COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (October 2020 edition) and additional Project Specifications as per the Scope of Work.

3. QUANTITIES REFLECTED IN THE SCHEDULE

The quantities given in the Pricing Schedule are estimates only, and subject to remeasuring during the execution of the work. The Contractor shall obtain the Employer's Agent detailed instructions for all work before ordering any materials or executing work or making arrangements for it.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Pricing Schedule and in accordance with the General and Special Conditions of Contract, the COTO Standard Specifications, the Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.

The validity of the contract will in no way be affected by differences between the quantities in the Pricing Schedule and the quantities finally certified for payment.

4. PROVISIONAL SUMS

Where Provisional sums or Prime Cost sums are provided for items in the Pricing Schedule, payment for the work done under such items will be made in accordance with Clause 6.6 of the General Conditions of Contract, 2015. The Employer reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

The Tenderer shall not under any circumstances whatsoever delete or amend any of the sums inserted in the "Amount" column of the Pricing Schedule and in the Summary of the Pricing Schedule unless ordered or authorized in writing by the Employer before closure of tenders. Unauthorized changes made by the Tenderer to provisional items in the Pricing Schedule, or to the provisional percentages and sums in the Summary of the Pricing Schedule, may lead to the tender being classified as unresponsive.

5. PRICING OF THE PRICING SCHEDULE

The prices and rates to be inserted in the Pricing Schedule shall be done according to Clause 1.1.3 of the COTO Standard Specifications.

The prices and rates to be inserted by the Tenderer in the Pricing Schedule shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all costs and expenses that may be required in and for the completion and maintenance during the Defects Liability Period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based.

Each item shall be priced and extended to the "Total" column by the Tenderer, with the exception of the items for which only rates are required, or items which already have Prime Cost or Provisional Sums affixed thereto. If the Contractor omits to price any items in the Pricing Schedule, then these items will be considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

The Tenderer shall fill in rates for all items where the words "rate only" appear in the "Total" column. "Rate Only" items have been included where:

- (c) an alternative item or material is contemplated;
- (d) variations of specified components in the make-up of a pay item may be expected; and
- (e) no work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For "Rate Only" items no quantities are given in the "Quantity" column, but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Employer may regard as unbalanced.

All rates and amounts quoted in the Pricing Schedule shall be in rands and cents and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Pricing Schedule.

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

6. CORRECTION OF ENTRIES

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialed by the Tenderer.

7. ARITHMETICAL ERRORS

Arithmetical errors found in the Pricing Schedule as a result of faulty multiplication of addition, will be corrected by the Employer's Agent at the tender evaluation stage, as set out in the Tender Data.

8. MONTHLY PAYMENTS

Unless otherwise specified in the Specifications and Project Specifications, progress payments in Interim Certificates, referred to in Clause 6.10 of the General Conditions of Contract, in respect of "sum" items in the Pricing Schedule shall be by means of interim progress installments assessed by the Employer's Agent and based on the measure in which the work actually carried out relates to the extent of the work to be done by the Contractor.

Payment for items, which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works), will not be made unless they are constructed using labour-intensive methods. Any unauthorized 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.

9. UNITS OF MEASUREMENT

The units of measurement described in the Pricing Schedule are metric units for which the standard international abbreviations are used. Non-standard abbreviations which may appear in the Pricing Schedule are as follows:

%	=	per cent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
km-pass	=	kilometre-pass
kPa	=	kilopascal
kW	=	kilowatt
ℓ	=	litre
m	=	metre
mm	=	millimetre
m ²	=	square metre
m ² -pass	=	square metre-pass
m ³	=	cubic metre
m ³ -km	=	cubic metre-kilometre
MN	=	meganewton
MN.m	=	meganewton-metre
MPa	=	megapascal
No.	=	number
Prov sum	=	Provisional sum
PC Sum	=	Prime Cost sum
R/only	=	Rate only
sum	=	lump sum
t	=	ton (1 000 kg)
W/day	=	Workday

C2.2 PRICING SCHEDULE

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ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
				<i>GENERAL REQUIREMENTS AND PROVISIONS</i>				
C1.2.1				Environmental Management:				
	C1.2.1.1			Monitoring of compliance with and reporting on the EMP	month	18		
	C1.2.1.2			Dedicated environmental officer (if specified in the Contract Documentation)	month	18		
C1.2.2				Programming and Reporting:				
	C1.2.2.1			Submission of a Scheme 1 Programme	lump sum	1		
	C1.2.2.2			Reviewing and updating a Scheme 1 Programme	month	1.5		
	C1.2.2.3			Submission of a Scheme 2 Initial Programme	lump sum	1		
	C1.2.2.4			Submission of a Scheme 2 Full Programme	lump sum	1		
	C1.2.2.5			Reviewing and updating a Scheme 2 programme every month	month	18		
	C1.2.2.6			Preparation and submission of all information and reports specified in the Contract Documentation	month	18		
C1.2.3				Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	C1.2.3.2			Drain cleaning	km	1		
	C1.2.3.4			Collection of rubbish / litter	km	1		
	C1.2.3.9			Grading of temporary gravel deviations and existing roads used as detours	km	3		
	C1.2.3.10			Watering of temporary gravel deviations and existing roads used as detours	kilolitre	0.7		
	C1.2.3.11			Other road maintenance work ordered by the Engineer	prov sum	1	10000	10000
	C1.2.3.12			Handling cost, profit and all other charges in respect of item C1.2.3.11	%	10000	%	
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
C1.2.4	C1.2.3.13		Liaison with the routine road maintenance contractor	month	3		
			Stakeholder liaison	month	4		
C1.2.5			Safety:				
	C1.2.5.1		Health and safety plan	lump sum	1		
	C1.2.5.2		Implementation of health and safety plan	month	36		
C1.2.6			Work adjacent to properties:				
	C1.2.6.1		Survey of adjacent properties	No.	3		
	C1.2.6.2		Preventive and/or mitigation measures	prov sum	1	200000	200000
	C1.2.6.3		Handling cost, profit and all other charges in respect of item C1.2.6.2	%	200000	%	
C1.2.8			Dayworks:				
	C1.2.8.1		Personnel:				
		(a)	Unskilled labourer	hour	360		
		(b)	Semi-skilled labourer	hour	180		
		(c)	Skilled labourer	hour	100		
		(d)	Gang leader	hour	80		
		(e)	Foreman	hour	80		
		(f)	Skilled Artisan	hour	30		
		(g)	Flagmen	hour	80		
	PC1.2.8.2		Construction equipment (<i>specify size and/or model number</i>):				
		(a)	Motor grader (128 kW)	hour	36		
		(b)	Vibratory roller (96 kW)	hour	36		
		(c)	Pneumatic roller (80 kW, 20 ton)	hour	36		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
C1.2.9	C1.2.8.3	(e)		Tractor loader backhoe (55 kW)	hour	55		
		(f)		Excavator (96 kW)	hour	36		
		(g)		250 cfm compressor (7,0 m³/min) complete with tools and operators	hour	36		
		(h)		6,0 m³ tip truck	hour	55		
		(i)		Water spray truck (7 000 litre)	hour	55		
		(j)		Dozer (123 kW)	hour	36		
		(k)		Pedestrian vibrating roller (0,5 ton)	hour	36		
		(l)		Pedestrian vibrating roller (1,4 ton)	hour	36		
				Self-propelled vibrating roller (80 kW)	hour	36		
				Vehicles (<i>specify size</i>):				
	C1.2.8.4	(a)		Light delivery vehicle	km	3500		
		(b)		Flatbed truck	km	3500		
		(c)		Dump truck	km	3500		
		(d)		Other vehicles (specify)	km	3500		
	C1.2.9.2			Materials:				
		(a)		Procurement of materials	prov sum	1	350000	350000
		(b)		Handling cost, profit and all other charges in respect of item C1.2.8.4(a)	%	350000	%	
	C1.2.9.3			Disposal of non-useable assets:				
				Disposal of non-useable assets not identified at time of tender	prov sum	1	35000	35000
			Handling cost, profit and all other charges in respect of item C1.2.9.2	%	35000	%		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
C1.3.1				CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS				
				The Contractor's general obligations:				
	C1.3.1.1			Fixed obligations	lump sum	1		
	C1.3.1.2			Value-related obligations	lump sum	1		
	C1.3.1.3			Time-related obligations				
		(a)		Pre-construction Period (as defined in contract clause 1.1.1.35)	month	3		
		(b)		Construction Period (as defined in contract clause 1.1.1.36)	month	18		
C1.3.2				Contract sign boards	m²	2		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
C1.4.1				<i>FACILITIES FOR THE ENGINEER</i>				
				Site accommodation:				
	C1.4.1.1			Offices and conference room	m ²	20		
	C1.4.1.2			Laboratories	m ²	12		
	C1.4.1.3			Open concrete working floors and verandas	m ²	12		
	C1.4.1.4			Roofs over open concrete working floors and verandas	m ²	12		
	C1.4.1.5			Store rooms inside the laboratory	m ²	4		
	C1.4.1.6			Car ports	No	4		
	C1.4.1.7			Ablution unit (equipped as specified)	No	3		
	C1.4.1.8			Change room with a shower	No	2		
	C1.4.1.9			Kitchen unit (equipped as specified)	No	2		
	C1.4.1.12			Type C prefabricated house (equipped as specified)	No	1		
	C1.4.1.13			Rented housing paid for by the Contractor	prov sum	1	200,000	200,000
	C1.4.1.14			Handling cost, profit and all other charges in respect of item C1.4.1.13	%	200,000	%	
C1.4.3				Items measured by number:				
	C1.4.3.2			Office chair	No	12		
	C1.4.3.3			Draughtsman's stool	No	2		
	C1.4.3.5			Office desk with 3 drawers (at least one lockable drawer)	No	2		
	C1.4.3.7			Drawing table	No	2		
	C1.4.3.8			Conference table	No	1		
	C1.4.3.10			Filing cabinet	No	1		
	C1.4.3.11			General purpose steel cabinet with shelves	No	2		
	C1.4.3.13			220/250 volt power outlet plug point	No	4		
	C1.4.3.17			11 watt compact fluorescent bulb ceiling light	No	6		
	C1.4.3.19			Wash-hand basin	No	2		
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
C1.4.4	C1.4.3.23		Fire extinguisher 9,0 kg, dry powder type	No	4		
	C1.4.3.24		Air-conditioning unit	No	3		
	C1.4.3.25		Heater	No	3		
	C1.4.3.29		A3 / A4 colour printer, copier, scanner	No	1		
	C1.4.3.31		Rain gauge	No	2		
	C1.4.3.33		Digital thermometer	No	1		
	C1.4.3.36		Measuring wheel	No	3		
	C1.4.3.37		First aid kit	No	2		
			Prime cost items:				
	C1.4.4.1		Cell phone costs, including pro-rata rentals, for calls made in connection with contract administration	PC sum	1	30,000	30,000
	C1.4.4.2		Handling costs and profit in respect of item C1.4.4.1	%	30,000	%	
	C1.4.4.5		The provision of internet connectivity and WiFi data for Engineer's site staff	PC sum	1	180,000	180,000
	C1.4.4.6		Handling costs and profit in respect of item C1.4.4.5	%	180,000	%	
	C1.4.4.7		The provision of paper and ink for a combination colour printer/copier/scanner	PC sum	1	5,000	5,000
	C1.4.4.8		Handling costs and profit in respect of item C1.4.4.7	%	5,000	%	
	C1.4.4.9		The provision of a complete 220/250 volt single phase electrical power installation, including all poles, insulators, wiring, switchboards, mains connections, meters etc.	PC sum	1	10,000	10,000
	C1.4.4.10		Handling costs and profit in respect of item C1.4.4.9	%	10,000	%	
	C1.4.4.13		Provision of a 440/231 volt three phase electricity generator if electricity from a power supply authority is not available on site	PC sum	1	10,000	10,000
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
C1.4.5	C1.4.4.14			Handling costs and profit in respect of item C1.4.4.13	%	10,000	%	
				Services at site offices, laboratories and site accommodation:				
C1.4.6	C1.4.5.1			Fixed costs	lump sum	1		
	C1.4.5.2			Running costs	month	36		
C1.4.8	C1.4.6.2			Office staff: Technical assistant	month	36		
	C1.4.8.1			Site security measures for the Engineer's facilities: Supply and installation of all required security measures at the Engineer's site offices and laboratories	lump sum	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
C1.5.3				ACCOMMODATION OF TRAFFIC				
				Liaison with traffic authorities	month	18		
C1.5.5				Maintenance of temporary deviations:				
	C1.5.5.10			Watering of temporary deviations and existing roads used as detours	kilolitre	0.6		
	C1.5.5.11			Other road maintenance work ordered by the Engineer	prov sum	1	10,000	10,000
C1.5.6				Removal of temporary deviations	km	1		
C1.5.7				Temporary traffic control facilities:				
	C1.5.7.1			Delineators including mounting bases and ballast:				
		(a)		Single sided, reversible left or right (<i>size indicated</i>)	No	50		
		(b)		Double sided, reversible left or right (<i>size indicated</i>)	No	150		
	C1.5.7.2			Traffic cones, minimum height 750 mm	No	50		
	C1.5.7.3			Flagmen	man-shift	2		
	C1.5.7.4			Traffic controllers	man-shift	2		
		(f)		Mobile variable message sign with a speed measuring and display capability	month	360		
		(a)		Sign mounted flashing amber lights (a pair of two lights mounted on a separate backing board)	month	36		
C1.5.8				Traffic safety officer	Man-month	18		
C1.5.9				Traffic safety vehicle	month	18		
C1.5.11				Provision of safety equipment for visitors:				
	C1.5.11.1			Provision of reflective safety vests for visitors	No	20		
C1.5.12				Additional traffic accommodation facilities ordered by the Engineer:				
	C1.5.12.1			Provision of additional traffic accommodation facilities	prov sum	1	10,000	10,000
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
1/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
1/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	1/C1.2.3.2		Drain cleaning	km	0.12		
1/C1.5			ACCOMMODATION OF TRAFFIC				
1/C1.5.2			Accommodation of vehicular traffic	month	3		
1/C5.2			FILL				
1/C5.2.2			Fill construction:				
	1/C5.2.2.1		Normal fill material in compacted layer thicknesses of 200 mm and less:				
		(b)	Compacted to 93 % of MDD	m ³	8		
1/C5.3			ROAD PAVEMENT LAYERS				
1/C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers	No.	1		
1/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
1/C5.5.20			Material shortfall or make-up material:				
	1/C5.5.20.1		For selected layer	m ³	6		
	1/C5.5.20.2		For subbase layer	m ³	16		
	1/C5.5.20.3		For base layer	m ³	16		
1/C11.2			NON-STRUCTURAL GABIONS				
1/C11.2.1			Foundation trench excavation:				
	1/C11.2.1.1		Excavating all material situated within the following depth ranges below the surface level:				
		(a)	0 m to 1,5 m	m ³	285		
	1/C11.2.1.2		Extra over sub-item C11.2.1.1 for excavation in hard material, irrespective of depth	m ³	100		
1/C11.2.2			Surface preparation for bedding the gabion boxes and mattresses	m ²	143		
1/C11.2.3			Gabion boxes and mattresses:				
	1/C11.2.3.1		Galvanized gabion boxes:				
		(a)	1,0 m x 1,0 m x 1,0 m with 80 mm x 100 mm mesh and 2,7 mm dia mesh wire	m ³	110		
	1/C11.2.3.3		Galvanized gabion mattresses:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
		(a)	0,3 m deep with 80 mm x 100 mm mesh and diaphragms at 1,0 m centres and 2,7 mm dia mesh wire	m ³	33		
	1/C11.2.3.4		PVC-coated gabion mattresses (dimensions of mattress)				
1/C11.2.4			Geotextile (Synthetic-fibre filter fabric, Grade 5)	m ²	143		
1/C11.4			ROAD RESTRAINT SYSTEMS				
1/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	1/C11.4.1.1		Complete galvanized system compliant to SANS 1350:				
		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	30		
		(b)	On steel posts used at specific locations (see Guardrail Details on Drawings)	m	20		
1/C11.4.6			Reflective plates:				
	1/C11.4.6.1		Steel plates	No.	24		
1/C11.6			ROAD SIGNS				
1/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	1/C11.6.1.1		Warning signs, temporary:				
	1/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
1/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	1/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
1/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	1/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	1/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
1/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	1/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
1/C13.1			FOUNDATIONS				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
1/C13.1.2			Additional foundation investigations:				
	1/C13.1.2.1		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	1/C13.1.2.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
1/C13.1.3			Excavation:				
	1/C13.1.3.1		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m³	250		
		(b)	(b) > 1,5 m and < 3,0 m	m³	25		
	1/C13.1.3.2		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m³	100		
	1/C13.1.3.3		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m³	100		
	1/C13.1.3.4		Extra over subitem C13.1.3.1 for excavation by hand	m³	250		
	1/C13.1.3.5		Extra over subitem C13.1.3.1 for excavation in restricted areas	m³	100		
1/C13.1.6			Access and drainage:				
	1/C13.1.6.1		Access	lump sum	1		
	1/C13.1.6.2		Drainage	lump sum	1		
1/C13.1.7			Backfill to excavations utilising:				
	1/C13.1.7.1		Material from excavation	m³	213		
	1/C13.1.7.2		Imported material	m³	75		
	1/C13.1.7.3		Soil cement	m³	8		
1/C13.1.8			Backfill to excavations utilising labour:				
1/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m³	12		
1/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³-km	415		
1/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
1/C13.2.2			Vertical formwork to provide:				
	1/C13.2.2.1		Class F1 surface finish to:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
1/C13.2.3	1/C13.2.2.2	(c)	Apron slab	m²	45		
		(d)	Wingwalls head wall	m²	18		
			Class F2 surface finish to:				
		(c)	Apron slab	m²	45		
		(d)	Wingwalls head wall	m²	18		
	1/C13.2.3.2	(f)	Piers	m²	146		
			Horizontal formwork to provide:				
			Class F2 surface finish to:				
		(a)	Headwalls and Deck edge	m²	9		
			Permanent formwork:				
1/C13.2.10		Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1			
1/C13.3		STEEL REINFORCEMENT					
1/C13.3.1	1/C13.3.1.1		Reinforcement for:				
			Piers:				
		(a)	Mild-steel bars	t	1		
	1/C13.3.1.2	(b)	High-yield-stress-steel bars	t	5		
			Abutments:				
		(a)	Mild-steel bars	t	1		
	1/C13.3.1.3	(b)	High-yield-stress-steel bars	t	3		
			Headwall/Deck edge:				
		(a)	Mild-steel bars	t	1		
	1/C13.3.1.4	(b)	High-yield-stress-steel bars	t	3		
			Aprons and cut-off walls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	0.5		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
1/C13.3.4 1/C13.4 1/C13.4.1 1/C13.4.3 1/C13.4.5	1/C13.3.1.5	(c)	Welded Steel Fabric	kg	544		
			Wingwalls:				
	1/C13.3.1.9	(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	3		
	1/C13.3.1.9		END BLOCKS:				
			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	4		
		C13.4 CONCRETE					
		Cast in situ concrete (Class of concrete and use or position in structure stated):					
	1/C13.4.1.1		Strength concrete (class C):				
		(a)	Blinding C12/15-20	m³	9		
	1/C13.4.1.2		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	45		
	1/C13.4.1.2	(b)	Abutments D25/30-XC4(100)-20	m³	20		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	29		
	1/C13.4.1.2	(d)	Headwalls/Deck edge D25/30-XC4(100)-20	m³	7		
		(e)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	33		
	1/C13.4.3.2		Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
			Durable concrete (class D):				
	1/C13.4.3.2	(a)	Piers D25/30-XC4(100)-20	m³	45		
		(b)	Abutments D25/30-XC4(100)-20	m³	20		
1/C13.4.3.2	(c)	Wingwalls D25/30-XC4(100)-20	m³	29			
	(d)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	33			
1/C13.4.5.1		Curing and surface protection of cast in situ concrete, as and where specifically required:					
		Piers (Tenderer to specify method of curing)	m²	146			
1/C13.4.5.2		Abutments (Tenderer to specify method of curing)	m²	65			
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
1/C13.6	1/C13.4.5.3		Wingwalls (Tenderer to specify method of curing)	m ²	55		
	1/C13.4.5.4		Headwalls/Deck edge (Tenderer to specify method of curing)	m ²	33		
	1/C13.4.5.5		Aprons & Cut-off walls (Tenderer to specify method of curing)	m ²	45		
1/C13.6.3			BEARINGS				
			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m ²	21		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m ²	14		
1/C13.7			JOINTS				
1/C13.7.2			Filled joints:				
	1/C13.7.2.1	(a)	(Description of joint and thickness of joint filler for joints measured per square metre)				
		(b)	(10mm bitumen impregnated fibreboard)	m ²	4		
1/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
1/C13.8.7			Numbers for structures: (refer to drawings):				
	1/C13.8.7.1		Number plates	No.	2		
	1/C13.8.7.4		Numbers on concrete pedestals	No.	2		
1/C13.8.8			Cast in situ no-fines concrete (D25/30)	m ³	1		
1/C13.8.10			Drainage pipes and weep holes:				
	1/C13.8.10.		Weep holes:				
		(c)	(Type and size indicated)				
1/C13.8.12			Synthetic-fibre filter fabric (grade 3)	m ²	192		
1/C14.1			ACCESS FOR BRIDGE REHABILITATION				
1/C14.1.4			Attendance by (relevant authority):				
1/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
1/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
1/C14.3.1				Demolition of concrete members or elements:				
	1/C14.3.1.1			Full member or element (abutment, piers, deck, aprons, etc. as indicated on drawings)	m ³	35		
1/C14.3.4				Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
1/C14.3.5				Removal of metal sections embedded in concrete (description)	No.	1		
1/C14.4				SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
1/C14.4.1				Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	1,000		
1/C14.4.2				Epoxy mortar	litre	1,000		
1/C14.4.3				Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	1/C14.4.3.1			Class R4 – (Generic description):				
		(a)		As per inspection on site	litre	100		
1/C14.4.4				Curing of repair surfaces:				
	1/C14.4.4.2			Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	378		
1/C14.5				ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
1/C14.5.1				Anchoring of reinforcing steel:				
	1/C14.5.1.1			Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(a)		Reinforcing (Galvanized, Y25 bars) into formed holes (50mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	324		
		(c)		Reinforcing (Galvanized, Y25 bars) into formed holes (50mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	452		
	1/C14.5.1.2			Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
1/C14.5.2				Preparation of contact surfaces for grouting (type, position and size indicated)	No.	776		
1/C14.5.3				Grouting for:				
	1/C14.5.3.2			Gap filling (type, thickness and size indicated) to (description)				
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
1/C14.5.4		(a)	Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	1,220		
		(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	26,000		
			Establishment on site for crack injection	lump sum	1		
1/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
1/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
1/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
1/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	378		
1/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	378		
1/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
1/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
1/C14.9.2			Clear bridge drainage system (deck elements)	No.	15		
1/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
1/C20.1.2			Special tests requested by the Engineer:				
	1/C20.1.2.1		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
1/C20.1.3	1/C20.1.2.2			Employer's contribution to other special tests:				
		(a)		Specify test	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
				Providing testing equipment:				
	1/C20.1.3.1			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
2/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
2/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	2/C1.2.3.1		Grass cutting	ha	0.01		
	2/C1.2.3.2		Drain cleaning	km	0.12		
2/C1.5			ACCOMMODATION OF TRAFFIC				
2/C1.5.2			Accommodation of vehicular traffic	month	3		
2/C4.3			EXISTING ROAD MATERIALS				
2/C4.3.4			Saw-cutting existing materials within the following average depth ranges:				
	2/C4.3.4.1		Asphalt:				
		(a)	Up to 50 mm	m	40		
2/C5.2			FILL				
2/C5.2.2			Fill construction:				
	2/C5.2.2.1		Normal fill material in compacted layer thicknesses of 200 mm and less:				
		(b)	Compacted to 93 % of MDD	m ³	8		
2/C5.3			ROAD PAVEMENT LAYERS				
2/C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers	No.	1		
2/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
2/C5.5.9			Temporarily blading layer material to windrow	m ³	16		
2/C5.5.10			Roller-pass compaction of an exposed pavement layer:				
	2/C5.5.10.1		Smooth drum vibratory rollers	m ²	104		
2/C5.5.14			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised selected layer:				
	2/C5.5.14.1		Chemically stabilised selected layer compacted to 95 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	12		
2/C5.5.15			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised subbase layer:				
	2/C5.5.15.1		Chemically stabilised subbase layer compacted to 97 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	16		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C5.5.16			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised base layer:				
	2/C5.5.16.1		Chemically stabilised base layer compacted to 100 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	16		
2/C5.5.20			Material shortfall or make-up material:				
	2/C5.5.20.1		For selected layer	m³	6		
	2/C5.5.20.2		For subbase layer	m³	16		
	2/C5.5.20.3		For base layer	m³	16		
2/C5.5.22			Excavate pavement layers for patching in existing pavements:				
	2/C5.5.22.1		Excavate the following layers:				
		(a)	(a) Asphalt layers with a surface area:				
		(iii)	(iii) Exceeding 50 m² but not exceeding 100 m², including for edge repairs wider than 250 mm	m³	12		
		(c)	(c) Any other layers (specify layer) with a surface area:				
		(iii)	(iii) Exceeding 50 m² but not exceeding 100 m², including for edge repairs wider than 250 mm	m³	188		
2/C8.5			STANDARD CRACK SEALING				
2/C8.5.1			Standard crack sealing:				
	2/C8.5.1.4		Sealing the cracks:				
		(a)	Sealing using (State crack sealant)	litre	341		
2/C8.8			PATCHING AND EDGE BREAK REPAIR				
2/C8.8.1			Saw cutting pavement layers for patching:				
	2/C8.8.1.1		Asphalt or bituminous surfacing to an average depth:				
		(a)	Not exceeding 50 mm	m	40		
	2/C8.8.1.2		Cemented pavement layers to an average depth:				
		(b)	Exceeding 100 mm but not exceeding 200 mm	m	40		
		(c)	Exceeding 200 mm	m	40		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C8.8.2	2/C8.8.2.1		Excavation in existing pavements for patching (non-milling):				
			Asphalt layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
	2/C8.8.2.2	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Cemented layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Compacting the floor of excavations for patching (95% MDD)	m ²	100		
2/C8.8.3							
2/C8.8.4	2/C8.8.4.1		Backfilling of excavations for patching with:				
			Chemically stabilised pavement material (G5 material and 3% cement) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
	2/C8.8.4.2	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Bitumen Stabilised Material (1.5% net Bitumen and 1% cement to 98% MDD) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	3		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	15		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	30		
		(d)	Exceeding 100 m ²	m ³	45		
			Asphalt for a patch with a surface area (Surface repairs: Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder):				
	2/C8.8.4.3						
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C9.1		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	t	1.92		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	t	9.6		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	t	19.2		
		(d)	Exceeding 100 m ²	t	28.8		
2/C9.1.1			ASPHALT LAYERS				
			Asphalt surfacing:				
			Sand skeletal mixes:				
2/C9.1.8		(a)	Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	Lump sum	1		
	2/C9.1.8.2		Surfacing of bridge decks:				
2/C11.1			Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	m ²	80		
2/C11.1.5			PITCHING, STONWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION				
			Concrete pitching or paving:				
2/C11.1.6			Concrete edge beams (class C15/20-20 concrete)	m ³	2		
2/C11.4			ROAD RESTRAINT SYSTEMS				
2/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	2/C11.4.1.1		Complete galvanized system compliant to SANS 1350:				
2/C11.4.6		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	58		
			Reflective plates:				
	2/C11.4.6.1		Steel plates	No.	47		
2/C11.4.11			New material required for the re-erection guardrails with recovered materials:				
	2/C11.4.11.1		Guardrails, 3,81 m compliant to SANS 1350	No.	120		
2/C11.6			ROAD SIGNS				
2/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
2/C11.6.3	2/C11.6.1.1	Warning signs, temporary:				
	2/PC11.6.1	Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
		Road sign supports (overhead road sign structures excluded):				
	2/C11.6.3.2	Timber:				
2/C11.6.5	(a)	100 mm dia	m	4		
	(b)	125 mm dia	m	4		
2/C11.6.6		Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	2/C11.6.5.1	Excavating soft material and backfilling	m ³	5		
	2/C11.6.5.4	Extra over item C11.6.5.1 for hard material excavation	m ³	1		
2/C11.6.6		Dismantling, storing and re-erecting road signs with a surface area of:				
	2/C11.6.6.1	Area 0 to 0,5 m ²	m ²	1		
2/C13.1		FOUNDATIONS				
2/C13.1.2		Additional foundation investigations:				
	2/C13.1.2.1	Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	2/C13.1.2.2	Handling costs and profit in respect of item C13.1.2.1	%	50,000		
2/C13.1.3		Excavation:				
	2/C13.1.3.1	Excavating soft material situated within the following successive depth ranges:				
	(a)	(a) 0 m up to 1,5 m	m ³	250		
	(b)	(b) > 1,5 m and < 3,0 m	m ³	2.5		
	2/C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	38		
	2/C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	13		
	2/C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m ³	38		
	2/C13.1.3.5	Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	13		
2/C13.1.6		Access and drainage:				
CARRIED FORWARD						

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
2/C13.1.7	2/C13.1.6.1	Access	lump sum	1		
	2/C13.1.6.2	Drainage	lump sum	1		
		Backfill to excavations utilising:				
	2/C13.1.7.1	Material from excavation	m ³	213		
	2/C13.1.7.2	Imported material	m ³	75		
2/C13.1.8	2/C13.1.7.3	Soil cement	m ³	8		
		Backfill to excavations utilising labour:				
2/C13.1.9		Fill within a restricted area (extra over item C5.2.2)	m ³	12		
2/C13.1.10		Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	415		
2/C13.1.14		Foundation fill consisting of:				
C13.1.22	2/C13.1.14.	Mass concrete (C12/15-20)	m ³	21.3		
		Foundation lining, using labour enhanced methods				
2/C13.2	2/C13.1.22.	Polyethylene sheet 0.15mm thick	m ²	60		
		FALSEWORK, FORMWORK AND CONCRETE FINISH				
2/C13.2.2		Vertical formwork to provide:				
2/C13.2.3	2/C13.2.2.2	Class F2 surface finish to:				
	(f)	Piers	m ²	286		
2/C13.2.5		Horizontal formwork to provide:				
	2/C13.2.3.2	Class F2 surface finish to:				
2/C13.2.10	(b)	Piers	m ²	30		
		Permanent formwork:				
2/C13.3		Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
2/C13.3.1		STEEL REINFORCEMENT				
		Reinforcement for:				
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C13.3.4	2/C13.3.1.1		Piers:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	8		
	2/C13.3.1.2		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	2/C13.3.1.8		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
	2/C13.3.1.9		END BLOCKS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
	2/C13.3.4		Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
	2/C13.4		C13.4 CONCRETE				
2/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	2/C13.4.1.2		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m ³	68		
		(b)	Abutments D25/30-XC4(100)-20	m ³	18		
2/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	2/C13.4.3.2		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m ³	68		
		(b)	Abutments D25/30-XC4(100)-20	m ³	18		
2/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	2/C13.4.5.1		Piers (Tenderer to specify method of curing)	m ²	315		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C13.6	2/C13.4.5.2		Abutments (Tenderer to specify method of curing)	m²	155		
2/C13.6.3			BEARINGS				
			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	36		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	8		
2/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
2/C13.8.7			Numbers for structures: (refer to drawings):				
	2/C13.8.7.1		Number plates	No.	2		
	2/C13.8.7.4		Numbers on concrete pedestals	No.	2		
2/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
2/C13.8.10			Drainage pipes and weep holes:				
	2/C13.8.10.		Weep holes:				
		(b)	50 mm dia PVC pipes	No.	27		
2/C14.1			ACCESS FOR BRIDGE REHABILITATION				
2/C14.1.4			Attendance by (relevant authority):				
2/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
2/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
2/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
2/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
2/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
2/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	1,000		
2/C14.4.2			Epoxy mortar	litre	1,000		
2/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	2/C14.4.3.1		Class R4 – (Generic description):				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
2/C14.4.4		(a)	As per inspection on site	litre	100		
	2/C14.4.4.2		Curing of repair surfaces: Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	1,555		
2/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
2/C14.5.1			Anchoring of reinforcing steel:				
	2/C14.5.1.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	280		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	675		
	2/C14.5.1.2		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
2/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	955		
2/C14.5.3			Grouting for:				
	2/C14.5.3.2		Gap filling (type, thickness and size indicated) to (description)				
		(a)	Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	780		
		(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	12,600		
2/C14.5.4			Establishment on site for crack injection	lump sum	1		
2/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
2/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
2/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
2/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	1,555		
2/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	1,555		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
2/C14.7.3				On site monitoring and supply of written product performance guarantee	lump sum	1		
2/C14.9				REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
2/C14.9.2				Clear bridge drainage system (deck elements)	No.	60		
2/C14.9.5				Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
2/C14.9.6				Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	2/C14.9.6.1			Repair of endblock (replace damaged concrete endblock)	m	2		
2/C20.1				TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
2/C20.1.2				Special tests requested by the Engineer:				
	2/C20.1.2.1			Employer's contribution to concrete durability tests:				
		(a)		Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)		Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)		Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)		Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	2/C20.1.2.2			Employer's contribution to other special tests:				
		(a)		Specify test	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
2/C20.1.3				Providing testing equipment:				
	2/C20.1.3.1			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
3/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
3/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	3/C1.2.3.2		Drain cleaning	km	0.54		
3/C1.5			ACCOMMODATION OF TRAFFIC				
3/C1.5.2			Accommodation of vehicular traffic	month	2.5		
3/C4.3			EXISTING ROAD MATERIALS				
3/C4.3.1			Additional material investigations:				
	3/C4.3.1.1		Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	3/C4.3.1.2		Handling costs and profit in respect of item C4.3.1.1	%	100,000		
3/C4.3.4			Saw-cutting existing materials within the following average depth ranges:				
	3/C4.3.4.1		Asphalt:				
		(a)	Up to 50 mm	m	40		
3/C4.3.9			Excavating material by using conventional road construction equipment:				
	3/C4.3.9.1		Asphalt material	m³	12		
	3/C4.3.9.5		Coarse fill and rock fill	m³	106		
3/C4.4			COMMERCIAL MATERIALS				
3/C4.4.2			Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	3/C4.4.2.1		Pavement layer material:				
		(b)	Type G2 material	m³	30		
		(f)	Type G5A material	m³	45		
3/C4.4.4			Cementitious stabilising agents:				
	3/C4.4.4.1		Cement	t	8		
3/C4.4.5			Bituminous stabilising agents:				
	3/C4.4.5.1		Penetration grade bitumen (SS60)	t	1		
3/C4.4.7			Sampling and material testing by a commercial laboratory for the stabilisation designs:				
	3/C4.4.7.1		Cost of sampling and material testing	prov sum	1	100,000.00	100,000.00
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C5.1	3/C4.4.7.2		Handling costs and profit in respect of item C4.4.7.1	%	100,000		
3/C5.1.1			ROADBED				
	3/C5.1.1.5		Roadbed construction and compaction: Compaction of in-situ sand roadbed to 95 % of MDD	m³	15		
	3/C5.1.1.6		Compaction of in-situ sand roadbed to 100 % of MDD	m³	16		
3/C5.2			FILL				
3/C5.2.2			Fill construction:				
	3/C5.2.2.1		Normal fill material in compacted layer thicknesses of 200 mm and less:				
		(b)	Compacted to 93 % of MDD	m³	5		
3/C5.3			ROAD PAVEMENT LAYERS				
3/C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers	No.	1		
3/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
3/C5.5.9			Temporarily blading layer material to windrow	m³	10		
3/C5.5.10			Roller-pass compaction of an exposed pavement layer:				
	3/C5.5.10.1		Smooth drum vibratory rollers	m²	61.6		
3/C5.5.14			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised selected layer:				
	3/C5.5.14.1		Chemically stabilised selected layer compacted to 95 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	7		
3/C5.5.15			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised subbase layer:				
	3/C5.5.15.1		Chemically stabilised subbase layer compacted to 97 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	10		
3/C5.5.16			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised base layer:				
	3/C5.5.16.1		Chemically stabilised base layer compacted to 100 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	10		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C5.5.20			Material shortfall or make-up material:				
	3/C5.5.20.1		For selected layer	m³	4		
	3/C5.5.20.2		For subbase layer	m³	10		
	3/C5.5.20.3		For base layer	m³	10		
3/C5.5.22			Excavate pavement layers for patching in existing pavements:				
	3/C5.5.22.1		Excavate the following layers:				
		(a)	(a) Asphalt layers with a surface area:				
		(iii)	(iii) Exceeding 50 m² but not exceeding 100 m², including for edge repairs wider than 250 mm	m³	7		
		(c)	(c) Any other layers (specify layer) with a surface area:				
		(iii)	(iii) Exceeding 50 m² but not exceeding 100 m², including for edge repairs wider than 250 mm	m³	76		
3/C6.2			SEGMENTAL BLOCK PAVING LAYERS				
3/C6.2.1			Segmental block paving:				
	3/C6.2.1.1		Concrete block paving:				
3/C6.2.2			Cast in-situ concrete edge and intermediate beams	m³	3.6		
3/C8.5			STANDARD CRACK SEALING				
3/C8.5.1			Standard crack sealing:				
	3/C8.5.1.4		Sealing the cracks:				
		(a)	Sealing using (State crack sealant)	litre	341		
3/C8.8			PATCHING AND EDGE BREAK REPAIR				
3/C8.8.1			Saw cutting pavement layers for patching:				
	3/C8.8.1.1		Asphalt or bituminous surfacing to an average depth:				
		(a)	Not exceeding 50 mm	m	40		
	3/C8.8.1.2		Cemented pavement layers to an average depth:				
		(b)	Exceeding 100 mm but not exceeding 200 mm	m	40		
		(c)	Exceeding 200 mm	m	40		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C8.8.2	3/C8.8.2.1		Excavation in existing pavements for patching (non-milling):				
			Asphalt layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
	3/C8.8.2.2	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Cemented layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
	3/C8.8.2.2	(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Compacting the floor of excavations for patching (95% MDD)	m ²	100		
			Backfilling of excavations for patching with:				
	3/C8.8.4.1		Chemically stabilised pavement material (G5 material and 3% cement) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
	3/C8.8.4.2	(d)	Exceeding 100 m ²	m ³	195		
			Bitumen Stabilised Material (1.5% net Bitumen and 1% cement to 98% MDD) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	3		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	15		
	3/C8.8.4.3	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	30		
		(d)	Exceeding 100 m ²	m ³	45		
			Asphalt for a patch with a surface area (Surface repairs: Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder):				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C9.1		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	t	1.92		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	t	9.6		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	t	19.2		
		(d)	Exceeding 100 m ²	t	28.8		
3/C9.1.1			ASPHALT LAYERS				
			Asphalt surfacing:				
			Sand skeletal mixes:				
3/C9.1.8		(a)	Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	Lump sum	1		
	3/C9.1.8.2		Surfacing of bridge decks:				
3/C11.1			Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	m ²	80		
3/C11.1.5			PITCHING, STONWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION				
			Concrete pitching or paving:				
3/C11.1.6			Concrete edge beams (class C15/20-20 concrete)	m ³	1		
3/C11.4			ROAD RESTRAINT SYSTEMS				
3/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	3/C11.4.1.1		Complete galvanized system compliant to SANS 1350:				
		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	58		
3/C11.4.6			Reflective plates:				
	3/C11.4.6.1		Steel plates	No.	157		
3/C11.6			ROAD SIGNS				
3/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	3/C11.6.1.1		Warning signs, temporary:				
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
3/C11.6.3	3/PC11.6.1	Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
		Road sign supports (overhead road sign structures excluded):				
3/C11.6.5	3/C11.6.3.2	Timber:				
	(a)	100 mm dia	m	4		
3/C11.6.5	(b)	125 mm dia	m	4		
		Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
3/C11.6.6	3/C11.6.5.1	Excavating soft material and backfilling	m ³	5		
	3/C11.6.5.4	Extra over item C11.6.5.1 for hard material excavation	m ³	1		
3/C11.6.6		Dismantling, storing and re-erecting road signs with a surface area of:				
	3/C11.6.6.1	Area 0 to 0,5 m ²	m ²	1		
3/C13.1		FOUNDATIONS				
3/C13.1.2		Additional foundation investigations:				
3/C13.1.2	3/C13.1.2.1	Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	3/C13.1.2.2	Handling costs and profit in respect of item C13.1.2.1	%	50,000		
3/C13.1.3		Excavation:				
3/C13.1.3	3/C13.1.3.1	Excavating soft material situated within the following successive depth ranges:				
	(a)	(a) 0 m up to 1,5 m	m ³	102		
3/C13.1.3	(b)	(b) > 1,5 m and < 3,0 m	m ³	1.02		
	3/C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	16		
3/C13.1.3	3/C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	6		
	3/C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m ³	16		
3/C13.1.6	3/C13.1.3.5	Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	6		
		Access and drainage:				
	3/C13.1.6.1	Access	lump sum	1		
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C13.1.7	3/C13.1.6.2		Drainage	lump sum	1		
			Backfill to excavations utilising:				
	3/C13.1.7.1		Material from excavation	m ³	87		
	3/C13.1.7.2		Imported material	m ³	31		
	3/C13.1.7.3		Soil cement	m ³	4		
3/C13.1.8			Backfill to excavations utilising labour:				
3/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m ³	5		
3/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	175		
3/C13.1.14			Foundation fill consisting of:				
	3/C13.1.14.		Mass concrete (C12/15-20)	m ³	8.7		
C13.1.22			Foundation lining, using labour enhanced methods				
	3/C13.1.22.		Polyethylene sheet 0.15mm thick	m ²	60		
3/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
3/C13.2.2			Vertical formwork to provide:				
	3/C13.2.2.1		Class F1 surface finish to:				
	(e)		Approach slab	m ²	74		
	3/C13.2.2.2		Class F2 surface finish to:				
	(e)		Approach slab	m ²	74		
	(f)		Piers	m ²	188		
3/C13.2.3			Horizontal formwork to provide:				
	3/C13.2.3.2		Class F2 surface finish to:				
	(b)		Piers	m ²	18		
3/C13.2.5			Permanent formwork:				
3/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
CARRIED FORWARD							

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
3/C13.3				STEEL REINFORCEMENT				
3/C13.3.1				Reinforcement for:				
	3/C13.3.1.1			Piers:				
		(a)		Mild-steel bars	t	1		
		(b)		High-yield-stress-steel bars	t	5		
	3/C13.3.1.2			Abutments:				
		(a)		Mild-steel bars	t	1		
		(b)		High-yield-stress-steel bars	t	1.5		
	3/C13.3.1.6			Approach slab:				
		(a)		Mild-steel bars	t	1		
		(b)		High-yield-stress-steel bars	t	4		
	3/C13.3.1.8			PARAPETS:				
		(a)		Mild-steel bars	t	0.1		
		(b)		High-yield-stress-steel bars	t	0.5		
	3/C13.3.1.9			END BLOCKS:				
		(a)		Mild-steel bars	t	0.1		
		(b)		High-yield-stress-steel bars	t	0.5		
3/C13.3.4				Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
3/C13.4				C13.4 CONCRETE				
3/C13.4.1				Cast in situ concrete (Class of concrete and use or position in structure stated):				
	3/C13.4.1.2			Durable concrete (class D):				
		(a)		Piers D25/30-XC4(100)-20	m³	40		
		(b)		Abutments D25/30-XC4(100)-20	m³	17		
		(f)		Approach slab D25/30-XC4(100)-20	m³	30		
3/C13.4.3				Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
CARRIED FORWARD								

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
3/C13.4.5	3/C13.4.3.2		Durable concrete (class D):					
		(a)	Piers D25/30-XC4(100)-20	m³	40			
		(b)	Abutments D25/30-XC4(100)-20	m³	17			
		(e)	Approach slab D25/30-XC4(100)-20	m³	30			
			Curing and surface protection of cast in situ concrete, as and where specifically required:					
	3/C13.4.5.1		Piers (Tenderer to specify method of curing)	m²	206			
	3/C13.4.5.2		Abutments (Tenderer to specify method of curing)	m²	67			
	3/C13.4.5.6		Approach slab (Tenderer to specify method of curing)	m²	111			
3/C13.6			BEARINGS					
3/C13.6.3			Bearing strips					
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	20			
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	3			
3/C13.7			JOINTS					
3/C13.7.5			Supply and installation of Agrément South Africa certified proprietary expansion joints					
	3/C13.7.5.1		Claw and other modular joints in nosings:					
		(a)	Concrete nosing with silicone sealant as indicated on drawing (maximum expected movement of 25mm)	m	136			
	3/C13.7.5.2		Asphaltic plug type joints:					
	3/C13.7.5.3		Provision of Engineering Drawings of proprietary joints and certification after installation by an ECSA registered professional Engineer or technologist	lump sum	1			
3/C13.7.6			Joint terminations in:					
	3/C13.7.6.1		Barriers and Parapets (type of joint indicated)	No.	22			
3/C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:					
3/C13.7.8			Additional water tests for joints ordered by the Engineer	No.	1			
3/C13.8			ANCILLARY STRUCTURAL ELEMENTS					
3/C13.8.1			Concrete barriers and parapets (refer to drawings):					
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C13.8.2			End blocks (length as indicated on drawing)	No.	4		
3/C13.8.7			Numbers for structures: (refer to drawings):				
	3/C13.8.7.1		Number plates	No.	2		
3/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
3/C13.8.10			Drainage pipes and weep holes:				
	3/C13.8.10.		Weep holes:				
		(b)	50 mm dia PVC pipes	No.	18		
3/C14.1			ACCESS FOR BRIDGE REHABILITATION				
3/C14.1.1			CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES				
	3/C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):				
		(a)	Bridges as indicated on drawings:				
		(a) (i)	Decks	No.	1		
		(a) (ii)	Piers	No.	1		
3/C14.1.2			Mobile access units:				
	3/C14.1.2.1		Establishment of mobile access unit on site (description of type of unit)	lump sum	1		
	3/C14.1.2.2		Setting up of mobile access unit at each structure location and removal after completion	No.	1		
	3/C14.1.2.3		Operation of mobile access unit during repair work at each location (structure)	days	1		
	3/C14.1.2.4		Operation of mobile access unit during inspections by the Engineer	hours	1		
	3/C14.1.2.5		De-establishing and removal of mobile access unit from site after completion of work	lump sum	1		
3/C14.1.3			Access at end of defects liability period (description of location)	lump sum	1		
3/C14.1.4			Attendance by (relevant authority):				
3/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
3/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
3/C14.3.1			Demolition of concrete members or elements:				
	3/C14.3.1.2		Partial member or element (Spalled concrete, deck edges, wingwalls, abutments, etc. as confirmed on site)	m ³	5		
3/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
3/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
3/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
3/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	3,000		
3/C14.4.2			Epoxy mortar	litre	3,000		
3/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	3/C14.4.3.1		Class R4 – (Generic description):				
		(a)	As per inspection on site	litre	100		
3/C14.4.4			Curing of repair surfaces:				
	3/C14.4.4.2		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	4,140		
3/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
3/C14.5.1			Anchoring of reinforcing steel:				
	3/C14.5.1.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	58		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	504		
		(e)	Reinforcing (Galvanized, Y20 bars) into formed holes (40mm diameter and 1.43m in depth) in (endblock) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	1.43		
		(g)	Reinforcing (Galvanized, Y12 bars) into formed holes (24mm diameter and 0.25m in depth) in (parapet) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	8		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
		(h)	Reinforcing (Galvanized, Y25 bars) into formed holes (50mm diameter and 0.6m in depth) in (deck upstand) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	52		
	3/C14.5.1.2		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
3/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	580		
3/C14.5.3			Grouting for:				
	3/C14.5.3.2		Gap filling (type, thickness and size indicated) to (description)				
		(a)	Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	540		
		(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	6,000		
3/C14.5.4			Establishment on site for crack injection	lump sum	1		
3/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
3/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
3/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
3/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m²	4,140		
3/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m²	4,140		
3/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
3/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
3/C14.9.1			Removal of debris from expansion gaps (at piers and abutments)	m	136		
3/C14.9.2			Clear bridge drainage system (deck elements)	No.	269		
3/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
3/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	3/C14.9.6.1		Repair of endblock (replace damaged concrete endblock)	m	2		
3/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT	
BROUGHT FORWARD									
3/C20.1.2	3/C20.1.2.1			Special tests requested by the Engineer:					
				Employer's contribution to concrete durability tests:					
				(a) Tests for water sorptivity	PC sum	1	20,000.00	20,000.00	
				(i) Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000			
				(b) Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00	
				(i) Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000			
				(c) Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00	
				(i) Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000			
				(d) Tests for concrete cover	PC sum	1	20,000.00	20,000.00	
				(i) Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000			
				3/C20.1.2.2	Employer's contribution to other special tests:				
				(a) Specify test	PC sum	1	20,000.00	20,000.00	
	(i) Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000						
3/C20.1.3				Providing testing equipment:					
3/C20.1.3.1				Core drill	No.	1			
TOTAL CARRIED FORWARD TO SUMMARY									

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
4/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
4/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	4/C1.2.3.2		Drain cleaning	km	0.04		
4/C1.5			ACCOMMODATION OF TRAFFIC				
4/C1.5.2			Accommodation of vehicular traffic	month	3		
4/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
4/C5.5.22			Excavate pavement layers for patching in existing pavements:				
	4/C5.5.22.1		Excavate the following layers:				
		(a)	(a) Asphalt layers with a surface area:				
		(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	1		
4/C11.4			ROAD RESTRAINT SYSTEMS				
4/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	4/C11.4.1.1		Complete galvanized system compliant to SANS 1350:				
		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	58		
		(b)	On steel posts used at specific locations (see Guardrail Details on Drawings)	m	40		
	4/C11.4.1.2		Terminal sections for 3,81 m guardrails comprising of:				
		(a)	End wings to SANS 1350	No.	2		
		(b)	Bullnoses to SANS 1350	No.	2		
4/C11.4.6			Reflective plates:				
	4/C11.4.6.1		Steel plates	No.	26		
4/C11.6			ROAD SIGNS				
4/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	4/C11.6.1.1		Warning signs, temporary:				
	4/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
4/C11.6.3			Road sign supports (overhead road sign structures excluded):				
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
4/C11.6.5	4/C11.6.3.2	Timber:				
	(a)	100 mm dia	m	4		
	(b)	125 mm dia	m	4		
4/C11.6.5		Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	4/C11.6.5.1	Excavating soft material and backfilling	m³	5		
	4/C11.6.5.4	Extra over item C11.6.5.1 for hard material excavation	m³	1		
4/C11.6.6		Dismantling, storing and re-erecting road signs with a surface area of:				
	4/C11.6.6.1	Area 0 to 0,5 m²	m²	1		
4/C13.1		FOUNDATIONS				
4/C13.1.2		Additional foundation investigations:				
	4/C13.1.2.1	Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	4/C13.1.2.2	Handling costs and profit in respect of item C13.1.2.1	%	50,000		
4/C13.1.3		Excavation:				
	4/C13.1.3.1	Excavating soft material situated within the following successive depth ranges:				
	(a)	(a) 0 m up to 1,5 m	m³	0.5		
	(b)	(b) > 1,5 m and < 3,0 m	m³	1		
	4/C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m³	1		
	4/C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m³	1		
	4/C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m³	1		
	4/C13.1.3.5	Extra over subitem C13.1.3.1 for excavation in restricted areas	m³	1		
4/C13.1.6		Access and drainage:				
	4/C13.1.6.1	Access	lump sum	1		
	4/C13.1.6.2	Drainage	lump sum	1		
4/C13.1.7		Backfill to excavations utilising:				
CARRIED FORWARD						

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
4/C13.1.8	4/C13.1.7.1	(a)	Material from excavation	m³	1		
	4/C13.1.7.2		Imported material	m³	1		
	4/C13.1.7.3		Soil cement	m³	1		
			Backfill to excavations utilising labour:				
	4/C13.1.9		Fill within a restricted area (extra over item C5.2.2)	m³	1		
	4/C13.1.10		Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³-km	10		
	4/C13.1.14		Foundation fill consisting of:				
	4/C13.1.14.		Mass concrete (C12/15-20)	m³	0.1		
	4/C13.2		FALSEWORK, FORMWORK AND CONCRETE FINISH				
	4/C13.2.3		Horizontal formwork to provide:				
	4/C13.2.3.2		Class F2 surface finish to:				
	4/C13.2.5		Headwalls and Deck edge	m²	26		
	4/C13.2.10		Permanent formwork:				
	4/C13.3		Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
	4/C13.3.1		STEEL REINFORCEMENT				
	4/C13.3.1		Reinforcement for:				
	4/C13.3.1.3		Headwall/Deck edge:				
	4/C13.3.1.3		Mild-steel bars	t	1		
	4/C13.3.1.3		High-yield-stress-steel bars	t	3		
4/C13.3.1.9	END BLOCKS:						
4/C13.3.4	Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1				
4/C13.4	C13.4 CONCRETE						
4/C13.4.1	Cast in situ concrete (Class of concrete and use or position in structure stated):						
4/C13.4.1.2	Durable concrete (class D):						
4/C13.4.1.2	Headwalls/Deck edge D25/30-XC4(100)-20	m³	15				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
4/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	4/C13.4.5.4		Headwalls/Deck edge (Tenderer to specify method of curing)	m ²	71		
4/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
4/C13.8.7			Numbers for structures: (refer to drawings):				
	4/C13.8.7.1		Number plates	No.	2		
	4/C13.8.7.4		Numbers on concrete pedestals	No.	2		
4/C13.8.8			Cast in situ no-fines concrete (D25/30)	m ³	1		
4/C14.1			ACCESS FOR BRIDGE REHABILITATION				
4/C14.1.4			Attendance by (relevant authority):				
4/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
4/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
4/C14.3.1			Demolition of concrete members or elements:				
	4/C14.3.1.2		Partial member or element (Spalled concrete, deck edges, wingwalls, abutments, etc. as confirmed on site)	m ³	15		
4/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
4/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
4/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
4/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	500		
4/C14.4.2			Epoxy mortar	litre	500		
4/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	4/C14.4.3.1		Class R4 – (Generic description):				
		(a)	As per inspection on site	litre	100		
4/C14.4.4			Curing of repair surfaces:				
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
4/C14.5	4/C14.4.4.2	Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	476		
4/C14.5.1		ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
		Anchoring of reinforcing steel:				
	4/C14.5.1.2	Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
4/C14.5.2		Preparation of contact surfaces for grouting (type, position and size indicated)	No.	52		
4/C14.5.3		Grouting for:				
	4/C14.5.3.2	Gap filling (type, thickness and size indicated) to (description)				
		(a) Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	70		
4/C14.5.4		Establishment on site for crack injection	lump sum	1		
4/C14.5.5		Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
4/C14.5.6		Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
4/C14.7		PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
4/C14.7.1		Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	476		
4/C14.7.2		Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	476		
4/C14.7.3		On site monitoring and supply of written product performance guarantee	lump sum	1		
4/C14.9		REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
4/C14.9.2		Clear bridge drainage system (deck elements)	No.	20		
4/C20.1		TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
4/C20.1.2		Special tests requested by the Engineer:				
	4/C20.1.2.1	Employer's contribution to concrete durability tests:				
		(a) Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i) Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
CARRIED FORWARD						

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
4/C20.1.3	4/C20.1.2.2	(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000			
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000			
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000			
	4/C20.1.3.1		Employer's contribution to other special tests:					
		(a)	Specify test	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000			
			Providing testing equipment:					
		Core drill	No.	1				
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
5/C1.2				GENERAL REQUIREMENTS AND PROVISIONS				
5/C1.2.3				Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	5/C1.2.3.1			Grass cutting	ha	0.02		
	5/C1.2.3.2			Drain cleaning	km	0.1		
5/C1.5				ACCOMMODATION OF TRAFFIC				
5/C1.5.2				Accommodation of vehicular traffic	month	3		
5/C4.3				EXISTING ROAD MATERIALS				
5/C4.3.1				Additional material investigations:				
	5/C4.3.1.1			Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	5/C4.3.1.2			Handling costs and profit in respect of item C4.3.1.1	%	100,000		
5/C4.3.4				Saw-cutting existing materials within the following average depth ranges:				
	5/C4.3.4.1			Asphalt:				
		(a)		Up to 50 mm	m	40		
5/C4.3.9				Excavating material by using conventional road construction equipment:				
	5/C4.3.9.1			Asphalt material	m ³	12		
	5/C4.3.9.5			Coarse fill and rock fill	m ³	106		
5/C4.4				COMMERCIAL MATERIALS				
5/C4.4.2				Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	5/C4.4.2.1			Pavement layer material:				
		(b)		Type G2 material	m ³	30		
		(f)		Type G5A material	m ³	45		
5/C4.4.4				Cementitious stabilising agents:				
	5/C4.4.4.1			Cement	t	8		
5/C4.4.5				Bituminous stabilising agents:				
	5/C4.4.5.1			Penetration grade bitumen (SS60)	t	1		
5/C4.4.7				Sampling and material testing by a commercial laboratory for the stabilisation designs:				
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
5/C5.1	5/C4.4.7.1		Cost of sampling and material testing	prov sum	1	100,000.00	100,000.00
	5/C4.4.7.2		Handling costs and profit in respect of item C4.4.7.1	%	100,000		
5/C5.1.1			ROADBED				
			Roadbed construction and compaction:				
	5/C5.1.1.5		Compaction of in-situ sand roadbed to 95 % of MDD	m³	15		
	5/C5.1.1.6		Compaction of in-situ sand roadbed to 100 % of MDD	m³	16		
5/C5.2			FILL				
5/C5.2.2			Fill construction:				
	5/C5.2.2.1		Normal fill material in compacted layer thicknesses of 200 mm and less:				
		(b)	Compacted to 93 % of MDD	m³	6		
5/C5.3			ROAD PAVEMENT LAYERS				
5/C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers	No.	1		
5/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
5/C5.5.9			Temporarily blading layer material to windrow	m³	8		
5/C5.5.10			Roller-pass compaction of an exposed pavement layer:				
	5/C5.5.10.1		Smooth drum vibratory rollers	m²	49		
5/C5.5.14			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised selected layer:				
	5/C5.5.14.1		Chemically stabilised selected layer compacted to 95 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	6		
5/C5.5.15			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised subbase layer:				
	5/C5.5.15.1		Chemically stabilised subbase layer compacted to 97 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m³	8		
5/C5.5.16			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised base layer:				
	5/C5.5.16.1		Chemically stabilised base layer compacted to 100 % of MDD:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
5/C5.5.20		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	8		
			Material shortfall or make-up material:				
	5/C5.5.20.1		For selected layer	m ³	3		
	5/C5.5.20.2		For subbase layer	m ³	8		
5/C5.5.22	5/C5.5.20.3		For base layer	m ³	8		
			Excavate pavement layers for patching in existing pavements:				
	5/C5.5.22.1		Excavate the following layers:				
		(a)	(a) Asphalt layers with a surface area:				
5/C6.2		(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	6		
		(c)	(c) Any other layers (specify layer) with a surface area:				
		(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	58		
			SEGMENTAL BLOCK PAVING LAYERS				
5/C6.2.1			Segmental block paving:				
	5/C6.2.1.1		Concrete block paving:				
5/C6.2.2			Cast in-situ concrete edge and intermediate beams	m ³	3.6		
5/C8.5			STANDARD CRACK SEALING				
5/C8.5.1			Standard crack sealing:				
	5/C8.5.1.4		Sealing the cracks:				
		(a)	Sealing using (State crack sealant)	litre	341		
5/C8.8			PATCHING AND EDGE BREAK REPAIR				
5/C8.8.1			Saw cutting pavement layers for patching:				
	5/C8.8.1.1		Asphalt or bituminous surfacing to an average depth:				
		(a)	Not exceeding 50 mm	m	40		
	5/C8.8.1.2		Cemented pavement layers to an average depth:				
		(b)	Exceeding 100 mm but not exceeding 200 mm	m	40		
CARRIED FORWARD							

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
5/C8.8.2	5/C8.8.2.1	(c)	Exceeding 200 mm	m	40			
			Excavation in existing pavements for patching (non-milling):					
			Asphalt layers:					
		(a)	Not exceeding 10 m² including for edge repairs wider than 250 mm	m³	13			
5/C8.8.3	5/C8.8.2.2	(b)	Exceeding 10 m² but not exceeding 50 m² including for edge repairs wider than 250 mm	m³	65			
		(c)	Exceeding 50 m² up to 100 m² including for edge repairs wider than 250 mm	m³	130			
		(d)	Exceeding 100 m²	m³	195			
			Cemented layers:					
		(a)	Not exceeding 10 m² including for edge repairs wider than 250 mm	m³	13			
		(b)	Exceeding 10 m² but not exceeding 50 m² including for edge repairs wider than 250 mm	m³	65			
		(c)	Exceeding 50 m² up to 100 m² including for edge repairs wider than 250 mm	m³	130			
		(d)	Exceeding 100 m²	m³	195			
5/C8.8.3			Compacting the floor of excavations for patching (95% MDD)	m²	100			
5/C8.8.4	5/C8.8.4.1		Backfilling of excavations for patching with:					
			Chemically stabilised pavement material (G5 material and 3% cement) for a patch with a surface area:					
		(a)	Not exceeding 10 m² including for edge repairs wider than 250 mm	m³	13			
		(b)	Exceeding 10 m² but not exceeding 50 m² including for edge repairs wider than 250 mm	m³	65			
		(c)	Exceeding 50 m² up to 100 m² including for edge repairs wider than 250 mm	m³	130			
		(d)	Exceeding 100 m²	m³	195			
		5/C8.8.4.2		Bitumen Stabilised Material (1.5% net Bitumen and 1% cement to 98% MDD) for a patch with a surface area:				
			(a)	Not exceeding 10 m² including for edge repairs wider than 250 mm	m³	3		
(b)	Exceeding 10 m² but not exceeding 50 m² including for edge repairs wider than 250 mm		m³	15				
(c)	Exceeding 50 m² up to 100 m² including for edge repairs wider than 250 mm		m³	30				
	(d)	Exceeding 100 m²	m³	45				
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT	
BROUGHT FORWARD								
5/C9.1	5/C8.8.4.3		Asphalt for a patch with a surface area (Surface repairs: Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder):					
			(a)	Not exceeding 10 m² including for edge repairs wider than 250 mm	t	1.92		
			(b)	Exceeding 10 m² but not exceeding 50 m² including for edge repairs wider than 250 mm	t	9.6		
			(c)	Exceeding 50 m² up to 100 m² including for edge repairs wider than 250 mm	t	19.2		
			(d)	Exceeding 100 m²	t	28.8		
	5/C9.1.1			ASPHALT LAYERS				
	5/C9.1.1.1			Asphalt surfacing:				
				Sand skeletal mixes:				
	5/C9.1.8	5/C9.1.8.2	(a)	Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	Lump sum	1		
			Surfacing of bridge decks:					
	5/C11.1			Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	m²	80		
	5/C11.1.5			PITCHING, STONEWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION				
5/C11.1.6			Concrete edge beams (class C15/20-20 concrete)	m³	1			
5/C11.4			ROAD RESTRAINT SYSTEMS					
5/C11.4.1			Erecting of guardrails at 3,81 m spacing:					
5/C11.4.6	5/C11.4.6.1	(a)	Complete galvanized system compliant to SANS 1350:					
			(a) On timber posts (Typical detail, as shown on drawings)	m	58			
5/C11.4.11			Reflective plates:					
			Steel plates	No.	53			
5/C11.6			New material required for the re-erection guardrails with recovered materials:					
	5/C11.4.11.		Guardrails, 3,81 m compliant to SANS 1350	No.	104			
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
5/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	5/C11.6.1.1		Warning signs, temporary:				
	5/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
5/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	5/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
5/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	5/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	5/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
5/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	5/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
5/C13.1			FOUNDATIONS				
5/C13.1.2			Additional foundation investigations:				
	5/C13.1.2.1		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	5/C13.1.2.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
5/C13.1.3			Excavation:				
	5/C13.1.3.1		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	80		
		(b)	(b) > 1,5 m and < 3,0 m	m ³	1		
	5/C13.1.3.2		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	12		
	5/C13.1.3.3		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	4		
	5/C13.1.3.4		Extra over subitem C13.1.3.1 for excavation by hand	m ³	12		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
5/C13.1.6	5/C13.1.3.5		Extra over subitem C13.1.3.1 for excavation in restricted areas	m³	39		
			Access and drainage:				
	5/C13.1.6.1		Access	lump sum	1		
5/C13.1.7			Backfill to excavations utilising:				
	5/C13.1.7.1		Material from excavation	m³	68		
	5/C13.1.7.2		Imported material	m³	24		
	5/C13.1.7.3		Soil cement	m³	3		
5/C13.1.8			Backfill to excavations utilising labour:				
5/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m³	4		
5/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³-km	135		
5/C13.1.14			Foundation fill consisting of:				
	5/C13.1.14.		Mass concrete (C12/15-20)	m³	6.8		
C13.1.22			Foundation lining, using labour enhanced methods				
	5/C13.1.22.		Polyethylene sheet 0.15mm thick	m²	60		
5/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
5/C13.2.2			Vertical formwork to provide:				
	5/C13.2.2.1	(e)	Class F1 surface finish to:				
		(e)	Approach slab	m²	72		
	5/C13.2.2.2	(e)	Class F2 surface finish to:				
		(e)	Approach slab	m²	72		
5/C13.2.5			Permanent formwork:				
5/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
5/C13.3			STEEL REINFORCEMENT				
5/C13.3.1			Reinforcement for:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
5/C13.3.4	5/C13.3.1.2		Abutments:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	2		
	5/C13.3.1.6		Approach slab:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	5		
	5/C13.3.1.9		END BLOCKS:				
	5/C13.3.4		Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
	5/C13.4		C13.4 CONCRETE				
	5/C13.4.1		Cast in situ concrete (Class of concrete and use or position in structure stated):				
	5/C13.4.1.2		Durable concrete (class D):				
	5/C13.4.3		(f) Approach slab D25/30-XC4(100)-20	m³	29		
	5/C13.4.3		Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	5/C13.4.3.2		Durable concrete (class D):				
	5/C13.4.5		(e) Approach slab D25/30-XC4(100)-20	m³	29		
5/C13.4.5	Curing and surface protection of cast in situ concrete, as and where specifically required:						
5/C13.4.5.6	Approach slab (Tenderer to specify method of curing)	m²	107				
5/C13.6	BEARINGS						
5/C13.6.3	Bearing strips						
5/C13.6.3	(c) Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	8				
5/C13.7	JOINTS						
5/C13.7.5	Supply and installation of Agrément South Africa certified proprietary expansion joints						
5/C13.7.5.2	Asphaltic plug type joints:						
5/C13.7.5.2	(c) 400 x 75 mm	m	25				
5/C13.7.5.2	(g) Extra over for variation in joint depth of asphaltic joints	litre	100				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
	5/C13.7.5.3		Provision of Engineering Drawings of proprietary joints and certification after installation by an ECSA registered professional Engineer or technologist	lump sum	1		
5/C13.7.6			Joint terminations in:				
	5/C13.7.6.1		Barriers and Parapets (type of joint indicated)	No.	5		
5/C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
	5/C13.7.8		Additional water tests for joints ordered by the Engineer	No.	1		
5/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
5/C13.8.7			Numbers for structures: (refer to drawings):				
	5/C13.8.7.1		Number plates	No.	2		
	5/C13.8.7.4		Numbers on concrete pedestals	No.	2		
5/C13.8.10			Drainage pipes and weep holes:				
	5/C13.8.10.		Weep holes:				
		(b)	50 mm dia PVC pipes	No.	16		
5/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
	5/C14.4.1		Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	500		
	5/C14.4.2		Epoxy mortar	litre	500		
5/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	5/C14.4.3.1		Class R4 – (Generic description):				
		(a)	As per inspection on site	litre	100		
5/C14.4.4			Curing of repair surfaces:				
	5/C14.4.4.2		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m²	637		
5/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
5/C14.5.1			Anchoring of reinforcing steel:				
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
	5/C14.5.1.1	Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
	(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	172		
	5/C14.5.1.2	Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
5/C14.5.2		Preparation of contact surfaces for grouting (type, position and size indicated)	No.	172		
5/C14.5.3		Grouting for:				
	5/C14.5.3.2	Gap filling (type, thickness and size indicated) to (description)				
	(a)	Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	70		
	(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	1,200		
5/C14.5.4		Establishment on site for crack injection	lump sum	1		
5/C14.5.5		Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
5/C14.5.6		Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
5/C14.7		PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
5/C14.7.1		Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m²	637		
5/C14.7.2		Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m²	637		
5/C14.7.3		On site monitoring and supply of written product performance guarantee	lump sum	1		
5/C14.9		REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
5/C14.9.1		Removal of debris from expansion gaps (at piers and abutments)	m	25		
5/C14.9.2		Clear bridge drainage system (deck elements)	No.	52		
5/C20.1		TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
5/C20.1.2		Special tests requested by the Engineer:				
	5/C20.1.2.1	Employer's contribution to concrete durability tests:				
CARRIED FORWARD						

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
5/C20.1.3	5/C20.1.2.2	(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000			
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000			
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000			
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000			
	5/C20.1.3.1		Employer's contribution to other special tests:					
		(a)	Specify test	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000			
				Providing testing equipment:				
		Core drill	No.	1				
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
6/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
6/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	6/C1.2.3.2		Drain cleaning	km	0.18		
6/C1.5			ACCOMMODATION OF TRAFFIC				
6/C1.5.2			Accommodation of vehicular traffic	month	2.5		
6/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
6/C5.5.22			Excavate pavement layers for patching in existing pavements:				
	6/C5.5.22.1		Excavate the following layers:				
		(a)	(a) Asphalt layers with a surface area:				
		(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	3		
6/C11.4			ROAD RESTRAINT SYSTEMS				
6/C11.4.11			New material required for the re-erection guardrails with recovered materials:				
	6/C11.4.11.1		Guardrails, 3,81 m compliant to SANS 1350	No.	180		
6/C11.6			ROAD SIGNS				
6/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	6/C11.6.1.1		Warning signs, temporary:				
	6/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
6/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	6/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
6/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	6/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	6/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
6/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
6/C13.1	6/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
			FOUNDATIONS				
6/C13.1.2			Additional foundation investigations:				
	6/C13.1.2.1		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	6/C13.1.2.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
6/C13.1.3			Excavation:				
	6/C13.1.3.1		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	3		
		(b)	(b) > 1,5 m and < 3,0 m	m ³	1		
	6/C13.1.3.2		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	1		
	6/C13.1.3.3		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	1		
	6/C13.1.3.4		Extra over subitem C13.1.3.1 for excavation by hand	m ³	1		
	6/C13.1.3.5		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	1		
6/C13.1.6			Access and drainage:				
	6/C13.1.6.1		Access	lump sum	1		
	6/C13.1.6.2		Drainage	lump sum	1		
6/C13.1.7			Backfill to excavations utilising:				
	6/C13.1.7.1		Material from excavation	m ³	3		
	6/C13.1.7.2		Imported material	m ³	2		
	6/C13.1.7.3		Soil cement	m ³	1		
6/C13.1.8			Backfill to excavations utilising labour:				
6/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m ³	1		
6/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	15		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
6/C13.1.14				Foundation fill consisting of:				
	6/C13.1.14.			Mass concrete (C12/15-20)	m³	0.3		
6/C13.2				FALSEWORK, FORMWORK AND CONCRETE FINISH				
6/C13.2.2				Vertical formwork to provide:				
	6/C13.2.2.2			Class F2 surface finish to:				
		(f)		Piers	m²	247		
6/C13.2.3				Horizontal formwork to provide:				
	6/C13.2.3.2			Class F2 surface finish to:				
		(b)		Piers	m²	26		
6/C13.2.5				Permanent formwork:				
6/C13.2.10				Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
6/C13.3				STEEL REINFORCEMENT				
6/C13.3.1				Reinforcement for:				
	6/C13.3.1.1			Piers:				
		(a)		Mild-steel bars	t	1		
		(b)		High-yield-stress-steel bars	t	7		
	6/C13.3.1.8			PARAPETS:				
		(a)		Mild-steel bars	t	0.1		
		(b)		High-yield-stress-steel bars	t	0.5		
	6/C13.3.1.9			END BLOCKS:				
		(a)		Mild-steel bars	t	0.1		
		(b)		High-yield-stress-steel bars	t	0.5		
6/C13.3.4				Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
6/C13.4				C13.4 CONCRETE				
6/C13.4.1				Cast in situ concrete (Class of concrete and use or position in structure stated):				
CARRIED FORWARD								

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
6/C13.4.3	6/C13.4.1.2	Durable concrete (class D):				
	(a)	Piers D25/30-XC4(100)-20	m ³	62		
		Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
6/C13.4.5	6/C13.4.3.2	Durable concrete (class D):				
	(a)	Piers D25/30-XC4(100)-20	m ³	62		
		Curing and surface protection of cast in situ concrete, as and where specifically required:				
6/C13.6	6/C13.4.5.1	Piers (Tenderer to specify method of curing)	m ²	272		
		BEARINGS				
6/C13.6.3		Bearing strips				
6/C13.7	(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m ²	29		
		JOINTS				
6/C13.7.5		Supply and installation of Agrément South Africa certified proprietary expansion joints				
	6/C13.7.5.1	Claw and other modular joints in nosings:				
	(a)	Concrete nosing with silicone sealant as indicated on drawing (maximum expected movement of 25mm)	m	23		
	6/C13.7.5.2	Asphaltic plug type joints:				
	6/C13.7.5.3	Provision of Engineering Drawings of proprietary joints and certification after installation by an ECSA registered professional Engineer or technologist	lump sum	1		
6/C13.7.6		Joint terminations in:				
	6/C13.7.6.1	Barriers and Parapets (type of joint indicated)	No.	6		
6/C13.7.7		Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
6/C13.7.8		Additional water tests for joints ordered by the Engineer	No.	1		
6/C13.8		ANCILLARY STRUCTURAL ELEMENTS				
6/C13.8.1		Concrete barriers and parapets (refer to drawings):				
	6/C13.8.1.2	Parapets	m	12		
CARRIED FORWARD						

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
6/C13.8.7		Numbers for structures: (refer to drawings):				
	6/C13.8.7.1	Number plates	No.	2		
	6/C13.8.7.4	Numbers on concrete pedestals	No.	2		
6/C13.8.8		Cast in situ no-fines concrete (D25/30)	m³	1		
6/C14.1		ACCESS FOR BRIDGE REHABILITATION				
6/C14.1.1		CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES				
	6/C14.1.1.1	Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):				
	(a)	Bridges as indicated on drawings:				
	(a) (i)	Decks	No.	1		
	(a) (ii)	Piers	No.	1		
6/C14.1.2		Mobile access units:				
	6/C14.1.2.1	Establishment of mobile access unit on site (description of type of unit)	lump sum	1		
	6/C14.1.2.2	Setting up of mobile access unit at each structure location and removal after completion	No.	1		
	6/C14.1.2.3	Operation of mobile access unit during repair work at each location (structure)	days	1		
	6/C14.1.2.4	Operation of mobile access unit during inspections by the Engineer	hours	1		
	6/C14.1.2.5	De-establishing and removal of mobile access unit from site after completion of work	lump sum	1		
6/C14.1.3		Access at end of defects liability period (description of location)	lump sum	1		
6/C14.1.4		Attendance by (relevant authority):				
6/C14.1.5		Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
6/C14.3		DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
6/C14.3.1		Demolition of concrete members or elements:				
	6/C14.3.1.2	Partial member or element (Spalled concrete, deck edges, wingwalls, abutments, etc. as confirmed on site)	m³	2		
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
6/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
6/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
6/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
6/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	1,000		
6/C14.4.2			Epoxy mortar	litre	1,000		
6/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
6/C14.4.3.1			Class R4 – (Generic description):				
	(a)		As per inspection on site	litre	100		
6/C14.4.4			Curing of repair surfaces:				
6/C14.4.4.2			Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	843		
6/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
6/C14.5.1			Anchoring of reinforcing steel:				
6/C14.5.1.1			Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
	(d)		Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	798		
	(f)		Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and 1.42m in depth) in (endblock) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	1.42		
	(g)		Reinforcing (Galvanized, Y12 bars) into formed holes (24mm diameter and 0.25m in depth) in (parapet) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	8		
6/C14.5.1.2			Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
6/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	816		
6/C14.5.3			Grouting for:				
6/C14.5.3.2			Gap filling (type, thickness and size indicated) to (description)				
	(a)		Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	800		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
6/C14.5.4		(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	4,800		
			Establishment on site for crack injection	lump sum	1		
6/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
6/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
6/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
6/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	843		
6/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	843		
6/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
6/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
6/C14.9.1			Removal of debris from expansion gaps (at piers and abutments)	m	23		
6/C14.9.2			Clear bridge drainage system (deck elements)	No.	91		
6/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
6/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	8		
	6/C14.9.6.1		Repair of endblock (replace damaged concrete endblock)	m	2		
6/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
6/C20.1.2			Special tests requested by the Engineer:				
	6/C20.1.2.1		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
6/C20.1.3	6/C20.1.2.2		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		20,000.00
			(d)	Tests for concrete cover	PC sum	1	20,000.00	
			(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	6/C20.1.3.1			Employer's contribution to other special tests:				20,000.00
			(a)	Specify test	PC sum	1	20,000.00	
			(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
				Providing testing equipment:				
				Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
7/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
7/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	7/C1.2.3.2		Drain cleaning	km	0.62		
7/C1.5			ACCOMMODATION OF TRAFFIC				
7/C1.5.2			Accommodation of vehicular traffic	month	3		
7/C4.3			EXISTING ROAD MATERIALS				
7/C4.3.1			Additional material investigations:				
	7/C4.3.1.1		Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	7/C4.3.1.2		Handling costs and profit in respect of item C4.3.1.1	%	100,000		
7/C4.3.4			Saw-cutting existing materials within the following average depth ranges:				
	7/C4.3.4.1		Asphalt:				
		(a)	Up to 50 mm	m	40		
7/C4.3.9			Excavating material by using conventional road construction equipment:				
	7/C4.3.9.1		Asphalt material	m ³	12		
	7/C4.3.9.5		Coarse fill and rock fill	m ³	106		
7/C4.4			COMMERCIAL MATERIALS				
7/C4.4.2			Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	7/C4.4.2.1		Pavement layer material:				
		(b)	Type G2 material	m ³	30		
		(f)	Type G5A material	m ³	45		
7/C4.4.4			Cementitious stabilising agents:				
	7/C4.4.4.1		Cement	t	8		
7/C4.4.5			Bituminous stabilising agents:				
	7/C4.4.5.1		Penetration grade bitumen (SS60)	t	1		
7/C4.4.7			Sampling and material testing by a commercial laboratory for the stabilisation designs:				
	7/C4.4.7.1		Cost of sampling and material testing	prov sum	1	100,000.00	100,000.00
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C5.1	7/C4.4.7.2		Handling costs and profit in respect of item C4.4.7.1	%	100,000		
7/C5.1.1			ROADBED				
			Roadbed construction and compaction:				
	7/C5.1.1.5		Compaction of in-situ sand roadbed to 95 % of MDD	m ³	15		
	7/C5.1.1.6		Compaction of in-situ sand roadbed to 100 % of MDD	m ³	16		
7/C5.2			FILL				
7/C5.2.2			Fill construction:				
	7/C5.2.2.1		Normal fill material in compacted layer thicknesses of 200 mm and less:				
		(b)	Compacted to 93 % of MDD	m ³	4		
7/C5.3			ROAD PAVEMENT LAYERS				
7/C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers	No.	1		
7/C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
7/C5.5.9			Temporarily blading layer material to windrow	m ³	8		
7/C5.5.10			Roller-pass compaction of an exposed pavement layer:				
	7/C5.5.10.1		Smooth drum vibratory rollers	m ²	52		
7/C5.5.14			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised selected layer:				
	7/C5.5.14.1		Chemically stabilised selected layer compacted to 95 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	6		
7/C5.5.15			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised subbase layer:				
	7/C5.5.15.1		Chemically stabilised subbase layer compacted to 97 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	8		
7/C5.5.16			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised base layer:				
	7/C5.5.16.1		Chemically stabilised base layer compacted to 100 % of MDD:				
		(b)	(b) Using G5 with 3% cemented 150 mm thick layer	m ³	8		
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
7/C5.5.20		Material shortfall or make-up material:				
	7/C5.5.20.1	For selected layer	m ³	3		
	7/C5.5.20.2	For subbase layer	m ³	8		
	7/C5.5.20.3	For base layer	m ³	8		
7/C5.5.22		Excavate pavement layers for patching in existing pavements:				
	7/C5.5.22.1	Excavate the following layers:				
	(a)	(a) Asphalt layers with a surface area:				
	(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	6		
	(c)	(c) Any other layers (specify layer) with a surface area:				
	(iii)	(iii) Exceeding 50 m ² but not exceeding 100 m ² , including for edge repairs wider than 250 mm	m ³	62		
7/C6.2		SEGMENTAL BLOCK PAVING LAYERS				
7/C6.2.1		Segmental block paving:				
	7/C6.2.1.1	Concrete block paving:				
7/C6.2.2		Cast in-situ concrete edge and intermediate beams	m ³	3.6		
7/C8.5		STANDARD CRACK SEALING				
7/C8.5.1		Standard crack sealing:				
	7/C8.5.1.4	Sealing the cracks:				
	(a)	Sealing using (State crack sealant)	litre	341		
7/C8.8		PATCHING AND EDGE BREAK REPAIR				
7/C8.8.1		Saw cutting pavement layers for patching:				
	7/C8.8.1.1	Asphalt or bituminous surfacing to an average depth:				
	(a)	Not exceeding 50 mm	m	40		
	7/C8.8.1.2	Cemented pavement layers to an average depth:				
	(b)	Exceeding 100 mm but not exceeding 200 mm	m	40		
	(c)	Exceeding 200 mm	m	40		
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C8.8.2	7/C8.8.2.1		Excavation in existing pavements for patching (non-milling):				
			Asphalt layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
	7/C8.8.2.2	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Cemented layers:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
	7/C8.8.2.2	(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
		(d)	Exceeding 100 m ²	m ³	195		
			Compacting the floor of excavations for patching (95% MDD)	m ²	100		
			Backfilling of excavations for patching with:				
	7/C8.8.4.1		Chemically stabilised pavement material (G5 material and 3% cement) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	13		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	65		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	130		
	7/C8.8.4.2	(d)	Exceeding 100 m ²	m ³	195		
			Bitumen Stabilised Material (1.5% net Bitumen and 1% cement to 98% MDD) for a patch with a surface area:				
		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	m ³	3		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	m ³	15		
	7/C8.8.4.3	(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	m ³	30		
		(d)	Exceeding 100 m ²	m ³	45		
			Asphalt for a patch with a surface area (Surface repairs: Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder):				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C9.1		(a)	Not exceeding 10 m ² including for edge repairs wider than 250 mm	t	1.92		
		(b)	Exceeding 10 m ² but not exceeding 50 m ² including for edge repairs wider than 250 mm	t	9.6		
		(c)	Exceeding 50 m ² up to 100 m ² including for edge repairs wider than 250 mm	t	19.2		
		(d)	Exceeding 100 m ²	t	28.8		
7/C9.1.1			ASPHALT LAYERS				
			Asphalt surfacing:				
			Sand skeletal mixes:				
7/C9.1.8		(a)	Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	Lump sum	1		
	7/C9.1.8.2		Continuously graded cold asphalt surfacing, 40mm thick (NMPS 10mm) using PG64S-16 binder, SABITA manual 35, design level IB	m ²	80		
7/C11.1			PITCHING, STONEWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION				
7/C11.1.5			Concrete pitching or paving:				
7/C11.1.6			Concrete edge beams (class C15/20-20 concrete)	m ³	1		
7/C11.4			ROAD RESTRAINT SYSTEMS				
7/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	7/C11.4.1.1		Complete galvanized system compliant to SANS 1350:				
		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	58		
7/C11.4.6			Reflective plates:				
	7/C11.4.6.1		Steel plates	No.	83		
7/C11.4.11			New material required for the re-erection guardrails with recovered materials:				
	7/C11.4.11.1		Guardrails, 3,81 m compliant to SANS 1350	No.	310		
7/C11.6			ROAD SIGNS				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	7/C11.6.1.1		Warning signs, temporary:				
	7/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
7/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	7/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
7/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	7/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	7/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
7/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	7/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
7/C11.7			ROAD MARKINGS AND ROAD STUDS				
7/C11.7.1			Road marking:				
	7/C11.7.1.1		White lines broken or unbroken (paint type and width of line indicated)	km	0.35		
	7/C11.7.1.2		Yellow lines broken or unbroken (paint type and width of line indicated)	km	0.06		
	7/C11.7.1.4		White lettering and symbols (paint type indicated)	m ²	2		
7/C13.1			FOUNDATIONS				
7/C13.1.2			Additional foundation investigations:				
	7/C13.1.2.1		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	7/C13.1.2.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
7/C13.1.3			Excavation:				
	7/C13.1.3.1		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	85		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C13.1.6	(b)		(b) > 1,5 m and < 3,0 m	m ³	1		
		7/C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	15		
		7/C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	5		
		7/C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m ³	15		
		7/C13.1.3.5	Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	5		
			Access and drainage:				
		7/C13.1.6.1	Access	lump sum	1		
		7/C13.1.6.2	Drainage	lump sum	1		
			Backfill to excavations utilising:				
		7/C13.1.7.1	Material from excavation	m ³	73		
		7/C13.1.7.2	Imported material	m ³	26		
		7/C13.1.7.3	Soil cement	m ³	3		
			Backfill to excavations utilising labour:				
		7/C13.1.9	Fill within a restricted area (extra over item C5.2.2)	m ³	4		
7/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	145		
7/C13.1.14			Foundation fill consisting of:				
		7/C13.1.14	Mass concrete (C12/15-20)	m ³	7.3		
C13.1.22			Foundation lining, using labour enhanced methods				
		7/C13.1.22	Polyethylene sheet 0.15mm thick	m ²	60		
7/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
7/C13.2.2			Vertical formwork to provide:				
		7/C13.2.2.1	Class F1 surface finish to:				
	(e)		Approach slab	m ²	56		
		7/C13.2.2.2	Class F2 surface finish to:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C13.2.3	7/C13.2.3.2	(e)	Approach slab	m²	56		
		(f)	Piers	m²	786		
			Horizontal formwork to provide:				
			Class F2 surface finish to:				
7/C13.2.5		(b)	Piers	m²	77		
		(c)	Abutment	m²	6		
			Permanent formwork:				
7/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
7/C13.3			STEEL REINFORCEMENT				
7/C13.3.1			Reinforcement for:				
	7/C13.3.1.1		Piers:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	26		
	7/C13.3.1.2		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	7/C13.3.1.3		Headwall/Deck edge:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	1		
	7/C13.3.1.6		Approach slab:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	3		
	7/C13.3.1.8		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
7/C13.3.4	7/C13.3.1.9	END BLOCKS:				
	(a)	Mild-steel bars	t	0.1		
	(b)	High-yield-stress-steel bars	t	0.5		
7/C13.3.4		Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	5		
7/C13.4		C13.4 CONCRETE				
7/C13.4.1		Cast in situ concrete (Class of concrete and use or position in structure stated):				
	7/C13.4.1.1	Strength concrete (class C):				
	(b)	Ramp to sidewalks C16/20-20	m ³	1		
	7/C13.4.1.2	Durable concrete (class D):				
	(a)	Piers D25/30-XC4(100)-20	m ³	175		
	(b)	Abutments D25/30-XC4(100)-20	m ³	13		
	(f)	Approach slab D25/30-XC4(100)-20	m ³	21		
7/C13.4.3		Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	7/C13.4.3.1	Strength concrete (class C):				
	(b)	Ramp to sidewalks C16/20-20	m ³	1		
	7/C13.4.3.2	Durable concrete (class D):				
	(a)	Piers D25/30-XC4(100)-20	m ³	175		
	(b)	Abutments D25/30-XC4(100)-20	m ³	13		
	(e)	Approach slab D25/30-XC4(100)-20	m ³	21		
7/C13.4.5		Curing and surface protection of cast in situ concrete, as and where specifically required:				
	7/C13.4.5.1	Piers (Tenderer to specify method of curing)	m ²	282		
	7/C13.4.5.6	Approach slab (Tenderer to specify method of curing)	m ²	80		
7/C13.4.9		Manufacturing precast concrete members				
	7/C13.4.9.2	12900 mm long 840 mm deep reinforced concrete precast I-beams with anchor steel on top - refer to drawing number 1002996-B3305-DRG-BB-07007	No.	20		
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C13.4.11	7/C13.4.9.3		1460 mm by 550 mm precast slabs - refer to drawing number 1002996-B3305-DRG-BB-07005	No.	500		
			Transporting and erecting precast concrete members				
	7/C13.4.11.1		12900 mm long and 840 mm deep reinforced concrete I-beams, mass = 6.920 ton per beam - refer to drawing number 1002996-B3305-DRG-BB-07007	No.	20		
	7/C13.4.11.1		1460 mm by 550 mm precast slabs, mass = 0.44 ton per beam - refer to drawing number 1002996-B3305-DRG-BB-07005	No.	500		
7/C13.6			BEARINGS				
7/C13.6.3			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m ²	30		
7/C13.7			JOINTS				
7/C13.7.5			Supply and installation of Agrément South Africa certified proprietary expansion joints				
	7/C13.7.5.1		Claw and other modular joints in nosings:				
		(a)	Concrete nosing with silicone sealant as indicated on drawing (maximum expected movement of 25mm)	m	130		
	7/C13.7.5.2		Asphaltic plug type joints:				
		(c)	400 x 75 mm	m	130		
		(g)	Extra over for variation in joint depth of asphaltic joints	litre	100		
	7/C13.7.5.3		Provision of Engineering Drawings of proprietary joints and certification after installation by an ECSA registered professional Engineer or technologist	lump sum	1		
7/C13.7.6			Joint terminations in:				
	7/C13.7.6.1		Barriers and Parapets (type of joint indicated)	No.	25		
7/C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
7/C13.7.8			Additional water tests for joints ordered by the Engineer	No.	1		
7/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
7/C13.8.1			Concrete barriers and parapets (refer to drawings):				
7/C13.8.4			Concrete pedestrian railings	m	258		
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
7/C13.8.7		Numbers for structures: (refer to drawings):				
	7/C13.8.7.1	Number plates	No.	2		
7/C14.1		ACCESS FOR BRIDGE REHABILITATION				
7/C14.1.1		CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES				
	7/C14.1.1.1	Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):				
	(a)	Bridges as indicated on drawings:				
	(a) (i)	Decks	No.	1		
	(a) (ii)	Piers	No.	1		
7/C14.1.2		Mobile access units:				
	7/C14.1.2.1	Establishment of mobile access unit on site (description of type of unit)	lump sum	1		
	7/C14.1.2.2	Setting up of mobile access unit at each structure location and removal after completion	No.	1		
	7/C14.1.2.3	Operation of mobile access unit during repair work at each location (structure)	days	1		
	7/C14.1.2.4	Operation of mobile access unit during inspections by the Engineer	hours	1		
	7/C14.1.2.5	De-establishing and removal of mobile access unit from site after completion of work	lump sum	1		
7/C14.1.3		Access at end of defects liability period (description of location)	lump sum	1		
7/C14.1.4		Attendance by (relevant authority):				
7/C14.1.5		Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
7/C14.3		DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
7/C14.3.1		Demolition of concrete members or elements:				
	7/C14.3.1.2	Partial member or element (Spalled concrete, deck edges, wingwalls, abutments, etc. as confirmed on site)	m³	7		
7/C14.3.4		Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
7/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
7/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
7/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,000		
7/C14.4.2			Epoxy mortar	litre	2,000		
7/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	7/C14.4.3.1		Class R4 – (Generic description):				
		(a)	As per inspection on site	litre	100		
7/C14.4.4			Curing of repair surfaces:				
	7/C14.4.4.2		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	4,025		
7/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
7/C14.5.1			Anchoring of reinforcing steel:				
	7/C14.5.1.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	208		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	1,676		
		(j)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and minimum 0.2m deep) in (deck edge)	No.	1,000		
		(k)	Reinforcing (Galvanized, Y20 bars) into formed holes (40mm diameter and minimum of 0.25m in depth in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	8		
	7/C14.5.1.2		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
		(a)	Reinforcing (Galvanized, Y16 bars) into formed pockets (see drawing 1002996-B3305-DRG-BB-07005) in (precast sidewalk panel) with cementitious non-shrink grout	No.	1,000		
7/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	680		
7/C14.5.3			Grouting for:				
	7/C14.5.3.2		Gap filling (type, thickness and size indicated) to (description)				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
		(a)	Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	660		
		(b)	Gap filling (non-shrink grout, 200mm gap to be filled) between (deck and 250-350mm thick concrete strengthening on abutment and/or pier)	litre	6,000		
7/C14.5.4			Establishment on site for crack injection	lump sum	1		
7/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
7/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
7/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
7/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	4,025		
7/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	4,025		
7/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
7/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
7/C14.9.1			Removal of debris from expansion gaps (at piers and abutments)	m	130		
7/C14.9.2			Clear bridge drainage system (deck elements)	No.	310		
7/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
7/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	7/C14.9.6.1		Repair of endblock (replace damaged concrete endblock)	m	2		
7/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
7/C20.1.2			Special tests requested by the Engineer:				
	7/C20.1.2.1		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
CARRIED FORWARD							

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
7/C20.1.3	7/C20.1.2.2	(i)	Handling costs and profit in respect of item C20.1.2.1(b)		%	20,000		
		(c)	Tests for chloride conductivity		PC sum	1	20,000.00	20,000.00
		(d)	(i) Handling costs and profit in respect of item C20.1.2.1(c)		%	20,000		
	Tests for concrete cover		PC sum	1	20,000.00	20,000.00		
	7/C20.1.3.1	(i)	Handling costs and profit in respect of item C20.1.2.1(d)		%	20,000		
			Employer's contribution to other special tests:					
		(a)	Specify test		PC sum	1	20,000.00	20,000.00
(i)		Handling costs and profit in respect of item C20.1.2.2(a)		%	20,000			
	Providing testing equipment:							
			Core drill		No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
8/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
8/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	8/C1.2.3.2		Drain cleaning	km	0.14		
8/C1.5			ACCOMMODATION OF TRAFFIC				
8/C1.5.2			Accommodation of vehicular traffic	month	1		
8/C11.6			ROAD SIGNS				
8/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	8/C11.6.1.1		Warning signs, temporary:				
	8/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
8/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	8/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
8/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	8/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	8/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
8/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	8/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
8/C13.1			FOUNDATIONS				
8/C13.1.2			Additional foundation investigations:				
	8/C13.1.2.1		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	8/C13.1.2.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
8/C13.1.3			Excavation:				
	8/C13.1.3.1		Excavating soft material situated within the following successive depth ranges:				
		(b)	(b) > 1,5 m and < 3,0 m	m ³	1		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
8/C13.1.6			Access and drainage:				
	8/C13.1.6.1		Access	lump sum	1		
	8/C13.1.6.2		Drainage	lump sum	1		
8/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
8/C13.2.5			Permanent formwork:				
8/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
8/C13.3			STEEL REINFORCEMENT				
8/C13.3.1			Reinforcement for:				
	8/C13.3.1.3		Headwall/Deck edge:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	8/C13.3.1.9		END BLOCKS:				
8/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
8/C13.4			C13.4 CONCRETE				
8/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	8/C13.4.1.2		Durable concrete (class D):				
		(d)	Headwalls/Deck edge D25/30-XC4(100)-20	m³	1		
8/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	8/C13.4.5.4		Headwalls/Deck edge (Tenderer to specify method of curing)	m²	64		
8/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
8/C13.8.7			Numbers for structures: (refer to drawings):				
	8/C13.8.7.1		Number plates	No.	2		
	8/C13.8.7.4		Numbers on concrete pedestals	No.	2		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
8/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
8/C14.1			ACCESS FOR BRIDGE REHABILITATION				
8/C14.1.1			CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES				
	8/C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):				
		(a)	Bridges as indicated on drawings:				
		(a) (i)	Decks	No.	1		
		(a) (ii)	Piers	No.	1		
8/C14.1.2			Mobile access units:				
	8/C14.1.2.1		Establishment of mobile access unit on site (description of type of unit)	lump sum	1		
	8/C14.1.2.2		Setting up of mobile access unit at each structure location and removal after completion	No.	1		
	8/C14.1.2.3		Operation of mobile access unit during repair work at each location (structure)	days	1		
	8/C14.1.2.4		Operation of mobile access unit during inspections by the Engineer	hours	1		
	8/C14.1.2.5		De-establishing and removal of mobile access unit from site after completion of work	lump sum	1		
8/C14.1.3			Access at end of defects liability period (description of location)	lump sum	1		
8/C14.1.4			Attendance by (relevant authority):				
8/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
8/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
8/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
8/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
8/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
8/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,500		
8/C14.4.2			Epoxy mortar	litre	2,500		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
8/C14.4.3	8/C14.4.3.1	(a)	Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1: Class R4 – (Generic description): As per inspection on site	litre	100		
8/C14.4.4	8/C14.4.4.2		Curing of repair surfaces: Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m ²	657		
8/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
8/C14.5.1	8/C14.5.1.1	(i)	Anchoring of reinforcing steel: Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved Reinforcing (Galvanized, Y16 bars) into formed holes (24mm diameter and 0.35m in depth) in (guide blocks) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	256		
	8/C14.5.1.2		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
8/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	256		
8/C14.5.3	8/C14.5.3.2	(a)	Grouting for: Gap filling (type, thickness and size indicated) to (description) Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	80		
8/C14.5.4			Establishment on site for crack injection	lump sum	1		
8/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
8/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
8/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
8/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	657		
8/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	657		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
8/C14.7.3				On site monitoring and supply of written product performance guarantee	lump sum	1		
8/C14.9				REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
8/C14.9.2				Clear bridge drainage system (deck elements)	No.	68		
8/C20.1				TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
8/C20.1.2				Special tests requested by the Engineer:				
	8/C20.1.2.1			Employer's contribution to concrete durability tests:				
		(a)		Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)		Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)		Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)		Tests for concrete cover	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	8/C20.1.2.2			Employer's contribution to other special tests:				
		(a)		Specify test	PC sum	1	20,000.00	20,000.00
			(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
8/C20.1.3				Providing testing equipment:				
	8/C20.1.3.1			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
9/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
9/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	9/C1.2.3.2		Drain cleaning	km	0.17		
9/C1.5			ACCOMMODATION OF TRAFFIC				
9/C1.5.2			Accommodation of vehicular traffic	month	3		
9/C11.6			ROAD SIGNS				
9/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	9/C11.6.1.1		Warning signs, temporary:				
	9/PC11.6.1		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
9/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	9/C11.6.3.2		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
9/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	9/C11.6.5.1		Excavating soft material and backfilling	m ³	5		
	9/C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
9/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	9/C11.6.6.1		Area 0 to 0,5 m ²	m ²	1		
9/C12.1			PILING				
9/C12.1.1			Additional foundation investigations	prov sum	1	350,000.00	350,000.00
9/C12.1.2			Access and drainage:				
	9/C12.1.2.1		Access	lump sum	1		
9/C12.1.3			Establishment on site for piling (Rotapiles)	lump sum	1		
9/C12.1.4			Moving to, and setting up equipment at each position for installing piles (Rotapiles)	No.	4		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
9/C12.1.5			Bored holes temporary encased where required for piles through material situated within the following successive depth ranges:				
	9/C12.1.5.2		Bored piles (610 mm diameter):				
		(a)	0 m up to 10 m	m	40		
		(b)	10 m up to 15 m	m	20		
		(c)	15 m up to 20 m	m	20		
		(c)	20 m up to 25 m	m	20		
9/C12.1.6			Extra over item C12.1.5 irrespective of the depth, to form augered and bored pile holes through identified materials consisting of:				
	9/C12.1.6.1		Coarse gravel with a matrix content of less than (50% maximum)	m	6		
	9/C12.1.6.2		Boulders (300 mm maximum size)	m	8		
		(a)	Soft rock	m	4		
		(b)	Hard rock	m	4		
9/C12.1.7			Driving temporary casing for driven displacement piling systems (system indicated) for forming holes for piles with a diameter of (diameter indicated) through material situated within the following successive depth ranges:				
9/C12.1.8			Forming bored pile holes through unidentified materials	prov sum	1	20,000.00	20,000.00
9/C12.1.11			Installing and removing temporary casings for piles of:				
	9/C12.1.11.		610 mm diameter	m	18		
9/C12.1.15			Steel reinforcement in cast in situ piles:				
	9/C12.1.15.		Mild-steel bars	t	1		
	9/C12.1.15.		High-yield-stress-steel bars	t	3		
9/C12.1.16			Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m³	29		
9/C12.1.17			Extra over item C12.1.16 for concrete cast underwater	m³	29		
9/C12.1.24			Stripping/cutting the pile heads				
	9/C12.1.24.		610 mm diameter	No.	4		
9/C12.1.25			Establishment on site for the load testing of piles	lump sum	1		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
9/C12.1.26				Load tests on piles (compression test, as per load on drawings)		0		
	9/C12.1.26.			610 mm diameter	No.	1		
9/C12.1.27				Establishment on site for core drilling	lump sum	1		
9/C12.1.28				Moving equipment to and assembling at each location where cores are to be drilled	No.	4		
9/C12.1.29				Drilling the cores (NX size) in:				
	9/C12.1.29.			Concrete	m	6		
	9/C12.1.29.			Founding formation:				
		(a)		Irrespective of hardness	m	12		
9/C12.1.30				Standing time for pile-installation frame	hour	80		
9/C12.1.31				Pile Integrity Testing on augered/bored piles:				
	9/C12.1.31.			Providing and installing (85 mm diameter) mild steel tubes for "Cross Hole Sonic Logging" in all designated piles	m	54		
	9/C12.1.31.			Carrying out of Impact Frequency Response (IFR) measurements or Sonic Tapping tests and interpretation of results (per pile diameter)	No.	4		
	9/C12.1.31.			Cross-Hole Sonic Logging tests and interpreted results (per pile diameter)	m	54		
9/C13.1				FOUNDATIONS				
9/C13.1.2				Additional foundation investigations:				
	9/C13.1.2.1			Provisional sum allowed for additional foundation investigations	prov sum	1	250,000.00	250,000.00
	9/C13.1.2.2			Handling costs and profit in respect of item C13.1.2.1	%	250,000		
9/C13.1.3				Excavation:				
	9/C13.1.3.1			Excavating soft material situated within the following successive depth ranges:				
		(a)		(a) 0 m up to 1,5 m	m ³	1		
		(b)		(b) > 1,5 m and < 3,0 m	m ³	1		
	9/C13.1.3.2			Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	1		
	9/C13.1.3.3			Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	1		
CARRIED FORWARD								

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
9/C13.1.6	9/C13.1.3.4		Extra over subitem C13.1.3.1 for excavation by hand	m³	1		
	9/C13.1.3.5		Extra over subitem C13.1.3.1 for excavation in restricted areas	m³	1		
			Access and drainage:				
	9/C13.1.6.1		Access	lump sum	1		
9/C13.1.7	9/C13.1.6.2		Drainage	lump sum	1		
			Backfill to excavations utilising:				
	9/C13.1.7.1		Material from excavation	m³	1		
	9/C13.1.7.2		Imported material	m³	1		
9/C13.1.8	9/C13.1.7.3		Soil cement	m³	1		
			Backfill to excavations utilising labour:				
	9/C13.1.9		Fill within a restricted area (extra over item C5.2.2)	m³	1		
	9/C13.1.10		Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³-km	10		
9/C13.1.14			Foundation fill consisting of:				
	9/C13.1.14.		Concrete blinding				
	(a)		50mm Blinding layer, Class C15/20)	m³	2		
	9/C13.2		FALSEWORK, FORMWORK AND CONCRETE FINISH				
9/C13.2.2			Vertical formwork to provide:				
	9/C13.2.2.1		Class F1 surface finish to:				
	(a)		Abutment	m²	24		
	9/C13.2.2.2		Class F2 surface finish to:				
9/C13.2.3		(a)	Abutment	m²	24		
			Horizontal formwork to provide:				
	9/C13.2.3.1		Class F1 surface finish to:				
	(a)		Abutments	m²	11		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
9/C13.2.5			Permanent formwork:				
9/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
9/C13.3			STEEL REINFORCEMENT				
9/C13.3.1			Reinforcement for:				
	9/C13.3.1.2		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	5		
	9/C13.3.1.9		END BLOCKS:				
9/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
9/C13.4			C13.4 CONCRETE				
9/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	9/C13.4.1.2		Durable concrete (class D):				
		(b)	Abutments D25/30-XC4(100)-20	m ³	12		
9/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	9/C13.4.3.2		Durable concrete (class D):				
		(b)	Abutments D25/30-XC4(100)-20	m ³	12		
		(h)	Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m ³	29		
9/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	9/C13.4.5.2		Abutments (Tenderer to specify method of curing)	m ²	65		
9/C13.6			BEARINGS				
9/C13.6.1			Bearings:				
	9/C13.6.1.1		Bearings (200x300x61 Laminated Elastomeric bearings)	No.	4		
	9/C13.6.1.2		Provision of Engineering drawings of proprietary bearings and certification after installation, by an ECSA Registered Professional Engineer or Technologist.	lump sum	1		
9/C13.6.3			Bearing strips				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
9/C13.8		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m ²	4		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m ²	4		
9/C13.8.7			ANCILLARY STRUCTURAL ELEMENTS				
			Numbers for structures: (refer to drawings):				
	9/C13.8.7.1		Number plates	No.	2		
	9/C13.8.7.4		Numbers on concrete pedestals	No.	2		
9/C13.8.8			Cast in situ no-fines concrete (D25/30)	m ³	1		
9/C14.1			ACCESS FOR BRIDGE REHABILITATION				
9/C14.1.1			CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES				
	9/C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):				
		(a)	Bridges as indicated on drawings:				
		(a) (i)	Decks	No.	1		
		(a) (ii)	Piers	No.	1		
9/C14.1.2			Mobile access units:				
	9/C14.1.2.1		Establishment of mobile access unit on site (description of type of unit)	lump sum	1		
	9/C14.1.2.2		Setting up of mobile access unit at each structure location and removal after completion	No.	1		
	9/C14.1.2.3		Operation of mobile access unit during repair work at each location (structure)	days	1		
	9/C14.1.2.4		Operation of mobile access unit during inspections by the Engineer	hours	1		
	9/C14.1.2.5		De-establishing and removal of mobile access unit from site after completion of work	lump sum	1		
9/C14.1.3			Access at end of defects liability period (description of location)	lump sum	1		
9/C14.1.4			Attendance by (relevant authority):				
9/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
9/C14.3			DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
9/C14.3.1	9/C14.3.1.1		Demolition of concrete members or elements: Full member or element (abutment, piers, deck, aprons, etc. as indicated on drawings)	m ³	12		
9/C14.3.4			Demolition of structural steel structures, members or elements by labour optimised construction (location and description):				
9/C14.3.5			Removal of metal sections embedded in concrete (description)	No.	1		
9/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
9/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,500		
9/C14.4.2			Epoxy mortar	litre	2,500		
9/C14.4.3			Proprietary cementitious repair system (Class and generic description) in positions as indicated in accordance with Table A14.4.5-1:				
	9/C14.4.3.1		Class R4 – (Generic description):				
		(a)	As per inspection on site	litre	100		
9/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
9/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	702		
9/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	702		
9/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
9/C14.9.2			Clear bridge drainage system (deck elements)	No.	86		
9/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
9/C20.1.1			Special tests on elastomeric bearings (150 % vertical load and 150 % shear distortion)	No.	4		
9/C20.1.2	9/C20.1.2.1		Special tests requested by the Engineer: Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
9/C20.1.3	9/C20.1.2.2	(c)		Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)		Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	9/C20.1.3.1			Employer's contribution to other special tests:				
		(a)		Specify test	PC sum	1	20,000.00	20,000.00
		(i)		Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
				Providing testing equipment:				
				Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
10/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
10/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	10/C1.2.3.1		Grass cutting	ha	0.01		
	10/C1.2.3.2		Drain cleaning	km	0.5		
10/C1.5			ACCOMMODATION OF TRAFFIC				
10/C1.5.2			Accommodation of vehicular traffic	month	1		
10/C11.4			ROAD RESTRAINT SYSTEMS				
10/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
	10/C11.4.1.		Complete galvanized system compliant to SANS 1350:				
		(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	116		
10/C11.4.6			Reflective plates:				
	10/C11.4.6.		Steel plates	No.	19		
10/C11.6			ROAD SIGNS				
10/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	10/C11.6.1.		Warning signs, temporary:				
	10/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
10/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	10/C11.6.3.		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
10/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	10/C11.6.5.		Excavating soft material and backfilling	m ³	5		
	10/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
10/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	10/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
11/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
11/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	11/C1.2.3.2		Drain cleaning	km	1		
11/C1.5			ACCOMMODATION OF TRAFFIC				
11/C1.5.2			Accommodation of vehicular traffic	month	1		
11/C11.6			ROAD SIGNS				
11/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	11/C11.6.1.		Warning signs, temporary:				
	11/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
11/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	11/C11.6.3.		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
11/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	11/C11.6.5.		Excavating soft material and backfilling	m ³	5		
	11/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
11/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	11/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
11/C13.1			FOUNDATIONS				
11/C13.1.2			Additional foundation investigations:				
	11/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	11/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
11/C13.1.3			Excavation:				
	11/C13.1.3.		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	380		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C13.1.6	11/C13.1.3.	(b)	(b) > 1,5 m and < 3,0 m	m ³	127		
			Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	60		
	11/C13.1.3.		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	20		
	11/C13.1.3.		Extra over subitem C13.1.3.1 for excavation by hand	m ³	60		
	11/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	20		
			Access and drainage:				
	11/C13.1.6.		Access	lump sum	1		
	11/C13.1.6.		Drainage	lump sum	1		
			Backfill to excavations utilising:				
	11/C13.1.7.		Material from excavation	m ³	323		
11/C13.1.7	11/C13.1.7.		Imported material	m ³	114		
	11/C13.1.7.		Soil cement	m ³	12		
			Backfill to excavations utilising labour:				
11/C13.1.8							
11/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m ³	18		
11/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	630		
11/C13.1.14			Foundation fill consisting of:				
	11/C13.1.14		Compacted granular material	m ³	250		
	11/C13.1.14		Concrete blinding				
11/C13.2		(a)	50mm Blinding layer, Class C15/20)	m ³	14		
11/C13.2.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
			Vertical formwork to provide:				
	11/C13.2.2		Class F1 surface finish to:				
		(d)	Wingwalls head wall	m ²	49		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C13.2.5	11/C13.2.2	(d)	Class F2 surface finish to:	m²	49		
	Wingwalls head wall						
11/C13.2.1 0			Permanent formwork:				
			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
11/C13.3			STEEL REINFORCEMENT				
11/C13.3.1			Reinforcement for:				
	11/C13.3.1		Piers:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	4		
	11/C13.3.1		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	3		
	11/C13.3.1		Aprons and cut-off walls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	9		
	11/C13.3.1		Wingwalls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	1		
	11/C13.3.1.8		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
	11/C13.3.1.9		END BLOCKS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
11/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C13.4			C13.4 CONCRETE				
11/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	11/C13.4.1		Strength concrete (class C):				
		(a)	Blinding C12/15-20	m³	14		
	11/C13.4.1		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	31		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	11		
		(e)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	81		
11/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	11/C13.4.3		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	31		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	11		
		(d)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	81		
11/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	11/C13.4.5		Piers (Tenderer to specify method of curing)	m²	66		
	11/C13.4.5		Abutments (Tenderer to specify method of curing)	m²	33		
	11/C13.4.5		Wingwalls (Tenderer to specify method of curing)	m²	24		
	11/C13.4.5		Aprons & Cut-off walls (Tenderer to specify method of curing)	m²	49		
11/C13.6			BEARINGS				
11/C13.6.3			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	20		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	10		
11/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C13.8.7			Numbers for structures: (refer to drawings):				
	11/C13.8.7		Number plates	No.	2		
	11/C13.8.7		Numbers on concrete pedestals	No.	2		
11/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
11/C13.8.10			Drainage pipes and weep holes:				
	11/C13.8.10		Weep holes:				
		(b)	50 mm dia PVC pipes	No.	24		
11/C14.1			ACCESS FOR BRIDGE REHABILITATION				
11/C14.1.4			Attendance by (relevant authority):				
11/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
11/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
11/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,000		
11/C14.4.2			Epoxy mortar	litre	2,000		
11/C14.4.4			Curing of repair surfaces:				
	11/C14.4.4		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m²	253		
11/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
11/C14.5.1			Anchoring of reinforcing steel:				
	11/C14.5.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	388		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	228		
	11/C14.5.1		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
11/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	616		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C14.5.3	11/C14.5.3.	(a)	Grouting for: Gap filling (type, thickness and size indicated) to (description) Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	160		
11/C14.5.4			Establishment on site for crack injection	lump sum	1		
11/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
11/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
11/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
11/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	632		
11/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	632		
11/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
11/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
11/C14.9.2			Clear bridge drainage system (deck elements)	No.	25		
11/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
11/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	11/C14.9.6.		Repair of endblock (replace damaged concrete endblock)	m	2		
11/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
11/C20.1.2			Special tests requested by the Engineer:				
	11/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
11/C20.1.3	11/C20.1.2.	(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	11/C20.1.3.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
			Providing testing equipment:				
			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
12/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
12/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	12/C1.2.3.2		Drain cleaning	km	1		
12/C1.5			ACCOMMODATION OF TRAFFIC				
12/C1.5.2			Accommodation of vehicular traffic	month	1		
12/C11.6			ROAD SIGNS				
12/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	12/C11.6.1.		Warning signs, temporary:				
	12/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
12/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	12/C11.6.3.		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
12/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	12/C11.6.5.		Excavating soft material and backfilling	m ³	5		
	12/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
12/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	12/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
12/C13.1			FOUNDATIONS				
12/C13.1.2			Additional foundation investigations:				
	12/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	12/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
12/C13.1.3			Excavation:				
	12/C13.1.3.		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	244		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C13.1.6	12/C13.1.3.	(b)	(b) > 1,5 m and < 3,0 m	m ³	82		
			Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	40		
	12/C13.1.3.		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	14		
	12/C13.1.3.		Extra over subitem C13.1.3.1 for excavation by hand	m ³	40		
	12/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	15		
			Access and drainage:				
	12/C13.1.6.		Access	lump sum	1		
	12/C13.1.6.		Drainage	lump sum	1		
			Backfill to excavations utilising:				
	12/C13.1.7.		Material from excavation	m ³	208		
12/C13.1.7	12/C13.1.7.		Imported material	m ³	73		
	12/C13.1.7.		Soil cement	m ³	8		
			Backfill to excavations utilising labour:				
12/C13.1.8							
12/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m ³	11		
12/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	405		
12/C13.1.14			Foundation fill consisting of:				
	12/C13.1.14		Compacted granular material	m ³	200		
	12/C13.1.14		Concrete blinding				
12/C13.2		(a)	50mm Blinding layer, Class C15/20)	m ³	11		
12/C13.2.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
			Vertical formwork to provide:				
	12/C13.2.2.		Class F1 surface finish to:				
		(d)	Wingwalls head wall	m ²	33		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C13.2.5	12/C13.2.2	(d)	Class F2 surface finish to: Wingwalls head wall Permanent formwork:	m²	33		
12/C13.2.10	12/C13.2.1		Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
12/C13.3			STEEL REINFORCEMENT				
12/C13.3.1			Reinforcement for:				
	12/C13.3.1		Piers:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	12/C13.3.1		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	3		
	12/C13.3.1		Aprons and cut-off walls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	9		
	12/C13.3.1		Wingwalls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	1		
	12/C13.3.1.8		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
	12/C13.3.1.9		END BLOCKS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.25		
12/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C13.4			C13.4 CONCRETE				
12/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	12/C13.4.1		Strength concrete (class C):				
		(a)	Blinding C12/15-20	m³	11		
	12/C13.4.1		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	28		
		(b)	Abutments D25/30-XC4(100)-20	m³	14		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	17		
		(e)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	65		
12/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	12/C13.4.3		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	28		
		(b)	Abutments D25/30-XC4(100)-20	m³	14		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	17		
		(d)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	65		
12/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	12/C13.4.5		Piers (Tenderer to specify method of curing)	m²	80		
	12/C13.4.5		Abutments (Tenderer to specify method of curing)	m²	80		
	12/C13.4.5		Wingwalls (Tenderer to specify method of curing)	m²	47		
	12/C13.4.5		Aprons & Cut-off walls (Tenderer to specify method of curing)	m²	33		
12/C13.6			BEARINGS				
12/C13.6.3			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	12		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	12		
12/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C13.8.7			Numbers for structures: (refer to drawings):				
	12/C13.8.7		Number plates	No.	2		
	12/C13.8.7		Numbers on concrete pedestals	No.	2		
12/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
12/C13.8.10			Drainage pipes and weep holes:				
	12/C13.8.10		Weep holes:				
		(b)	50 mm dia PVC pipes	No.	29		
12/C14.1			ACCESS FOR BRIDGE REHABILITATION				
12/C14.1.4			Attendance by (relevant authority):				
12/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
12/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
12/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,000		
12/C14.4.2			Epoxy mortar	litre	2,000		
12/C14.4.4			Curing of repair surfaces:				
	12/C14.4.4		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m²	163		
12/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
12/C14.5.1			Anchoring of reinforcing steel:				
	12/C14.5.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	602		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	193		
	12/C14.5.1		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
12/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	795		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C14.5.3	12/C14.5.3.	(a)	Grouting for: Gap filling (type, thickness and size indicated) to (description) Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	600		
12/C14.5.4			Establishment on site for crack injection	lump sum	1		
12/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
12/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
12/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
12/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	406		
12/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	406		
12/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
12/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
12/C14.9.2			Clear bridge drainage system (deck elements)	No.	17		
12/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
12/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	12/C14.9.6.		Repair of endblock (replace damaged concrete endblock)	m	2		
12/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
12/C20.1.2			Special tests requested by the Engineer:				
	12/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
12/C20.1.3	12/C20.1.2.	(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	12/C20.1.3.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
			Providing testing equipment:				
			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
13/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
13/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	13/C1.2.3.2		Drain cleaning	km	1		
13/C1.5			ACCOMMODATION OF TRAFFIC				
13/C1.5.2			Accommodation of vehicular traffic	month	1		
13/C11.6			ROAD SIGNS				
13/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	13/C11.6.1.		Warning signs, temporary:				
	13/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
13/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	13/C11.6.3.		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
13/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	13/C11.6.5.		Excavating soft material and backfilling	m ³	5		
	13/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
13/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	13/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
13/C13.1			FOUNDATIONS				
13/C13.1.2			Additional foundation investigations:				
	13/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	13/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
13/C13.1.3			Excavation:				
	13/C13.1.3.		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	230		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C13.1.6	(b)	(b) > 1,5 m and < 3,0 m	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	77		
			Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	35		
			Extra over subitem C13.1.3.1 for excavation by hand	m ³	15		
			Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	35		
			Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	15		
			Access and drainage:				
			Access	lump sum	1		
			Drainage	lump sum	1		
			Backfill to excavations utilising:				
			Material from excavation	m ³	196		
13/C13.1.7	(b)	(b) > 1,5 m and < 3,0 m	Imported material	m ³	69		
			Soil cement	m ³	7		
			Backfill to excavations utilising labour:				
13/C13.1.8	(b)	(b) > 1,5 m and < 3,0 m	Fill within a restricted area (extra over item C5.2.2)	m ³	11		
			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	380		
			Foundation fill consisting of:				
13/C13.1.14	(b)	(b) > 1,5 m and < 3,0 m	Compacted granular material	m ³	200		
			Concrete blinding				
			50mm Blinding layer, Class C15/20)	m ³	11		
13/C13.2	(a)		FALSEWORK, FORMWORK AND CONCRETE FINISH				
13/C13.2.2	(d)	(d)	Vertical formwork to provide:				
			Class F1 surface finish to:				
	(d)	(d)	Wingwalls head wall	m ²	34		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C13.2.5	13/C13.2.2	(d)	Class F2 surface finish to: Wingwalls head wall Permanent formwork:	m ²	34		
13/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
13/C13.3			STEEL REINFORCEMENT				
13/C13.3.1			Reinforcement for:				
	13/C13.3.1		Piers:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	13/C13.3.1		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	3		
	13/C13.3.1		Aprons and cut-off walls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	9		
	13/C13.3.1		Wingwalls:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	1		
	13/C13.3.1.8		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.5		
	13/C13.3.1.9		END BLOCKS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.5		
13/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C13.4			C13.4 CONCRETE				
13/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	13/C13.4.1		Strength concrete (class C):				
		(a)	Blinding C12/15-20	m³	11		
	13/C13.4.1		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	23		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	14		
		(e)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	63		
13/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	13/C13.4.3		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	23		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	14		
		(d)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	63		
13/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	13/C13.4.5		Piers (Tenderer to specify method of curing)	m²	64		
	13/C13.4.5		Abutments (Tenderer to specify method of curing)	m²	64		
	13/C13.4.5		Wingwalls (Tenderer to specify method of curing)	m²	39		
	13/C13.4.5		Aprons & Cut-off walls (Tenderer to specify method of curing)	m²	34		
13/C13.6			BEARINGS				
13/C13.6.3			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	12		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	12		
13/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C13.8.7			Numbers for structures: (refer to drawings):				
	13/C13.8.7		Number plates	No.	2		
	13/C13.8.7		Numbers on concrete pedestals	No.	2		
13/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
13/C13.8.10			Drainage pipes and weep holes:				
	13/C13.8.10	(b)	Weep holes: 50 mm dia PVC pipes	No.	28		
13/C14.1			ACCESS FOR BRIDGE REHABILITATION				
13/C14.1.4			Attendance by (relevant authority):				
13/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
13/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
13/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,000		
13/C14.4.2			Epoxy mortar	litre	2,000		
13/C14.4.4			Curing of repair surfaces:				
	13/C14.4.4		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m²	153		
13/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
13/C14.5.1			Anchoring of reinforcing steel:				
	13/C14.5.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
		(b)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	508		
		(d)	Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	158		
	13/C14.5.1		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
13/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	666		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C14.5.3	13/C14.5.3.	(a)	Grouting for: Gap filling (type, thickness and size indicated) to (description) Gap filling (epoxy, thickness refer to drawing and size of hole =2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	830		
13/C14.5.4			Establishment on site for crack injection	lump sum	1		
13/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20		
13/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000		
13/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE				
13/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m ²	382		
13/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m ²	382		
13/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1		
13/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS				
13/C14.9.2			Clear bridge drainage system (deck elements)	No.	17		
13/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:				
13/C14.9.6			Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3		
	13/C14.9.6.		Repair of endblock (replace damaged concrete endblock)	m	2		
13/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
13/C20.1.2			Special tests requested by the Engineer:				
	13/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
13/C20.1.3	13/C20.1.2.	(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	13/C20.1.3.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
			Providing testing equipment:				
			Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
14/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
14/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	14/C1.2.3.2		Drain cleaning	km	1		
14/C1.5			ACCOMMODATION OF TRAFFIC				
14/C1.5.2			Accommodation of vehicular traffic	month	1		
14/C11.6			ROAD SIGNS				
14/C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:				
	14/C11.6.1		Warning signs, temporary:				
	14/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	4		
14/C11.6.3			Road sign supports (overhead road sign structures excluded):				
	14/C11.6.3		Timber:				
		(a)	100 mm dia	m	4		
		(b)	125 mm dia	m	4		
14/C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	14/C11.6.5		Excavating soft material and backfilling	m ³	5		
	14/C11.6.5		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
14/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	14/C11.6.6		Area 0 to 0,5 m ²	m ²	1		
14/C13.1			FOUNDATIONS				
14/C13.1.2			Additional foundation investigations:				
	14/C13.1.2		Provisional sum allowed for additional foundation investigations	prov sum	1	50,000.00	50,000.00
	14/C13.1.2		Handling costs and profit in respect of item C13.1.2.1	%	50,000		
14/C13.1.3			Excavation:				
	14/C13.1.3		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	242		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
14/C13.1.6	14/C13.1.3	(b)	(b) > 1,5 m and < 3,0 m	m ³	81		
	14/C13.1.3		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	40		
	14/C13.1.3		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	15		
	14/C13.1.3		Extra over subitem C13.1.3.1 for excavation by hand	m ³	37		
	14/C13.1.3		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	15		
			Access and drainage:				
	14/C13.1.6		Access	lump sum	1		
	14/C13.1.6		Drainage	lump sum	1		
			Backfill to excavations utilising:				
	14/C13.1.7		Material from excavation	m ³	206		
	14/C13.1.7		Imported material	m ³	73		
	14/C13.1.7		Soil cement	m ³	8		
			Backfill to excavations utilising labour:				
	14/C13.1.9		Fill within a restricted area (extra over item C5.2.2)	m ³	11		
14/C13.1.14	14/C13.1.10		Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	405		
			Foundation fill consisting of:				
	14/C13.1.11		Compacted granular material	m ³	180		
	14/C13.1.11		Concrete blinding				
14/C13.2		(a)	50mm Blinding layer, Class C15/20)	m ³	9		
			FALSEWORK, FORMWORK AND CONCRETE FINISH				
14/C13.2.2			Vertical formwork to provide:				
	14/C13.2.2		Class F1 surface finish to:				
		(d)	Wingwalls head wall	m ²	33		
CARRIED FORWARD							

ITEM	DESCRIPTION			UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
14/C13.2.5	14/C13.2.2		Class F2 surface finish to:				
	(d)		Wingwalls head wall	m²	33		
14/C13.2.10			Permanent formwork:				
14/C13.3			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
14/C13.3.1			STEEL REINFORCEMENT				
			Reinforcement for:				
	14/C13.3.1		Piers:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	2		
	14/C13.3.1		Abutments:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	3		
	14/C13.3.1		Aprons and cut-off walls:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	9		
	14/C13.3.1		Wingwalls:				
	(a)		Mild-steel bars	t	1		
	(b)		High-yield-stress-steel bars	t	1		
	14/C13.3.1.8		PARAPETS:				
	(a)		Mild-steel bars	t	0.1		
	(b)		High-yield-stress-steel bars	t	0.25		
	14/C13.3.1.9		END BLOCKS:				
	(a)		Mild-steel bars	t	0.1		
	(b)		High-yield-stress-steel bars	t	0.25		
14/C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	2		
CARRIED FORWARD							

ITEM	DESCRIPTION			UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
14/C13.4			C13.4 CONCRETE				
14/C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	14/C13.4.1		Strength concrete (class C):				
		(a)	Blinding C12/15-20	m³	9		
	14/C13.4.1		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	23		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	17		
		(e)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	55		
14/C13.4.3			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	14/C13.4.3		Durable concrete (class D):				
		(a)	Piers D25/30-XC4(100)-20	m³	23		
		(b)	Abutments D25/30-XC4(100)-20	m³	12		
		(c)	Wingwalls D25/30-XC4(100)-20	m³	17		
		(d)	Aprons & Cut-off walls D25/30-XC4(100)-20	m³	55		
14/C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	14/C13.4.5		Piers (Tenderer to specify method of curing)	m²	65		
	14/C13.4.5		Abutments (Tenderer to specify method of curing)	m²	65		
	14/C13.4.5		Wingwalls (Tenderer to specify method of curing)	m²	47		
	14/C13.4.5		Aprons & Cut-off walls (Tenderer to specify method of curing)	m²	33		
14/C13.6			BEARINGS				
14/C13.6.3			Bearing strips				
		(b)	Bearing strips (2 layers of 3-ply roofing felt on Piers as shown on drawing)	m²	10		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m²	10		
14/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
14/C13.8.7			Numbers for structures: (refer to drawings):				
	14/C13.8.7		Number plates	No.	2		
	14/C13.8.7		Numbers on concrete pedestals	No.	2		
14/C13.8.8			Cast in situ no-fines concrete (D25/30)	m³	1		
14/C13.8.10			Drainage pipes and weep holes:				
	14/C13.8.1		Weep holes:				
	(b)		50 mm dia PVC pipes	No.	24		
14/C14.1			ACCESS FOR BRIDGE REHABILITATION				
14/C14.1.4			Attendance by (relevant authority):				
14/C14.1.5			Provision of designs and drawings of access structures and platforms by an ECSA Registered Professional Engineer or Technologist	lump sum	1		
14/C14.4			SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
14/C14.4.1			Cementitious mortar or concrete (D25/30-XC4(100)) to (piers, abutments, deck, parapets, end blocks. etc.)	litre	2,000		
14/C14.4.2			Epoxy mortar	litre	2,000		
14/C14.4.4			Curing of repair surfaces:				
	14/C14.4.4		Curing by (Tenderer to specify method of curing) to (piers, abutments, deck, parapets, end blocks. etc)	m²	162		
14/C14.5			ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION				
14/C14.5.1			Anchoring of reinforcing steel:				
	14/C14.5.1		Reinforcing (type, bar diameter) into formed holes (hole diameter and depth stated) in (description of member) with HIT-RE 500 V3 Injection Mortar or similar approved				
	(b)		Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (abutment) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	530		
	(d)		Reinforcing (Galvanized, Y16 bars) into formed holes (32mm diameter and varying in depth) in (pier) with HIT-RE 500 V3 Injection Mortar or similar approved	No.	159		
	14/C14.5.1		Reinforcing (type, bar diameter) into pockets (pocket size and depth stated) in (description of member)				
14/C14.5.2			Preparation of contact surfaces for grouting (type, position and size indicated)	No.	689		
CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
14/C14.5.3	14/C14.5.3	(a)		Grouting for:				
			Gap filling (type, thickness and size indicated) to (description)					
			Gap filling (epoxy, thickness refer to drawing and size of hole ≈2 x diameter of anchoring reinforcement) to (drilled holes for anchoring reinforcement)	litre	1,200			
14/C14.5.4			Establishment on site for crack injection	lump sum	1			
14/C14.5.5			Surface preparation and surface sealing for crack injection to (spalled and (or) cracked surfaces)	m	20			
14/C14.5.6			Crack injection adhesive to (spalled and (or) cracked surfaces)	litre	2,000			
14/C14.7			PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE					
14/C14.7.1			Cleaning and preparation of concrete surface (Exposed concrete, silane and flexible sealant membrane coating)	m²	403			
14/C14.7.2			Application of protective coatings and treatments (Exposed concrete, silane and flexible sealant membrane coating)	m²	403			
14/C14.7.3			On site monitoring and supply of written product performance guarantee	lump sum	1			
14/C14.9			REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS					
14/C14.9.2			Clear bridge drainage system (deck elements)	No.	17			
14/C14.9.5			Cover plates (non-metallic) in barriers, parapets and sidewalks as specified on the drawings in:					
14/C14.9.6	14/C14.9.6		Repair of handrails (replace damaged horizontal and vertical concrete posts)	m	3			
		Repair of endblock (replace damaged concrete endblock)	m	2				
14/C20.1		TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP						
14/C20.1.2			Special tests requested by the Engineer:					
	14/C20.1.2		Employer's contribution to concrete durability tests:					
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000			
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000			
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000			
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000			
	14/C20.1.2		Employer's contribution to other special tests:					
		(a)	Specify test	PC sum	1	20,000.00	20,000.00	
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000			
14/C20.1.3			Providing testing equipment:					
	14/C20.1.3		Core drill	No.	1			
TOTAL CARRIED FORWARD TO SUMMARY								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
15/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
15/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	15/C1.2.3.2		Drain cleaning	km	1		
15/C1.5			ACCOMMODATION OF TRAFFIC				
15/C1.5.2			Accommodation of vehicular traffic	month	1		
15/C4.3			EXISTING ROAD MATERIALS				
15/C4.3.1			Additional material investigations:				
	15/C4.3.1.1		Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	15/C4.3.1.2		Handling costs and profit in respect of item C4.3.1.1	%	100,000		
15/C4.3.13			Lifting of existing paving blocks (specify the type or size and thickness):				
	15/C4.3.13.		Using labour enhanced methods of construction	m ²	620		
15/C4.3.14			Removing of existing road edging and services structures:				
	15/C4.3.14.		Removing of existing road edging using construction equipment:				
		(a)	Kerbing and edge beams:				
		(b)	In situ concrete kerbing and edge beams	m ³	10		
15/C4.3.15			Stockpiling of road layer materials:				
	15/C4.3.15.		Cemented material	m ³	46.5		
15/C4.3.16			Stacking paving blocks and road edging:				
	15/C4.3.16.		Paving blocks (Type S-A)	No.	31,000		
15/C4.3.20			Spoiling of paving blocks and road edging in spoil sites designated by the Contractor:				
	15/C4.3.20.		Paving blocks	m ³	65		
	15/C4.3.20.		Precast and in situ concrete kerbing, edge beams and channels at precast kerbing	m ³	10		
15/C4.4			COMMERCIAL MATERIALS				
15/C4.4.2			Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	15/C4.4.2.1		Pavement layer material:				
		(f)	Type G5A material	m ³	155		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C4.4.4	15/C4.4.4.1	(i)	Type G7 material	m³	95		
		(q)	Natural or crushed gravel material for the wearing course of an unsealed road	m³	12		
			Cementitious stabilising agents:				
15/C5.3			Cement	t	15		
15/C5.3.2			ROAD PAVEMENT LAYERS				
15/C5.3.2	15/C5.3.2.1		Construction of pavement layers:				
			Construction of layers using conventional construction methods:				
		(c)	Upper selected subgrade layer (150mm) compacted to 96% of MDD	m³	95		
15/C5.4	15/C5.4.2	(h)	Gravel shoulder layer (100mm) compacted to 95 % of MDD	m³	12		
		(l)	Upper subbase gravel layer (chemically stabilised), (250mm) compacted to 95 % of MDD	m³	155		
			STABILISATION				
15/C5.4.5	15/C5.4.5.1		Chemical stabilisation:				
		(a)	G7 150mm +2.5% cement selected layer	m³	95		
		(b)	C3 (G5A 250mm parent material) subbase	m³	155		
15/C5.4.5	15/C5.4.5.1		Cementitious stabilisation agents for pavement layers:				
			Addition of cementitious stabilisation agents (specify agent separately) for pavement layers:				
		(a)	Cement (for selected pavement layer)	t	5		
15/C6.2	15/C6.2.1	(b)	Cement (for subbase pavement layer)	t	10		
			SEGMENTAL BLOCK PAVING LAYERS				
			Segmental block paving:				
15/C6.2.1	15/C6.2.1.1		Concrete block paving:				
		(a)	80 mm thick, class 30, Type S-A (placed in herringbone pattern)	m²	65		
			Cast in-situ concrete edge and intermediate beams	m³	10		
15/C6.2.2							
15/C11.4			ROAD RESTRAINT SYSTEMS				
15/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
CARRIED FORWARD							

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD					
15/C11.4.3	15/C11.4.1.				
	(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	66	
	15/C11.4.1.	Terminal sections for 3,81 m guardrails comprising of:			
	(b)	Bullnoses to SANS 1350	No.	4	
	(c)	Bridge adapters to SANS 1350	No.	4	
	(e)	End treatments where double guardrail sections are specified (see DWG no 113142-0-DRG-RR-04-0006/7)			
	(g)	Extra over C11.4.1.2(d) and C11.4.1.2(e) for excavating holes for posts using labour enhanced methods (soft and intermediate)	No.	76	
		Project specific concrete barrier systems:			
	15/C11.4.3.	In situ cast concrete barriers (see DWG no 1002996-B6572-DRG-BB-16005, 1002996-B6572-DRG-BB-16005, and 1002996-B6572-DRG-BB-16005)	m	40	
	15/C11.4.3.	Installation and removal of precast concrete barrier system	No.	20	
15/C11.4.6	15/C11.4.3.	Relocating or stacking precast barrier moved in excess of 1,0 km	No.	20	
		Reflective plates:			
15/C11.6	15/C11.4.6.	Steel plates	No.	25	
		ROAD SIGNS			
15/C11.6.1		Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:			
	15/C11.6.1.	Regulatory signs, temporary:			
	(b)	900 mm diameter 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	12	
	(c)	1200 mm diameter, 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	6	
	15/C11.6.1.	Warning signs, temporary:			
15/C11.6.3	15/PC11.6.	Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	10	
		Road sign supports (overhead road sign structures excluded):			
	15/C11.6.3.	Timber:			
CARRIED FORWARD					

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C11.6.5		(a)	100 mm dia	m	72		
		(b)	125 mm dia	m	72		
			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	15/C11.6.5.		Excavating soft material and backfilling	m ³	10		
	15/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
15/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	15/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
15/C11.6.8			Danger plates at culverts/structures:				
	15/C11.6.8.		Size 200 x 800mm, 2,35 mm long, 2,0 mm thick, 50 mm x 50 mm galvanized square tubing post with Class III reflectivity	No.	4		
15/C11.7			ROAD MARKINGS AND ROAD STUDS				
15/C11.7.1			Road marking:				
	15/C11.7.1.		White lines broken or unbroken (paint type and width of line indicated)	km	0.11		
	15/C11.7.1.		Yellow lines broken or unbroken (paint type and width of line indicated)	km	0.22		
15/C11.7.2			Retro-reflective road marking:				
	15/C11.7.2.		White lines broken or unbroken (Type 1 paint)				
		(a)	100 mm wide	km	0.11		
		(a)	100 mm wide	km	0.22		
15/C11.7.5			Variations in rate of application:				
	15/C11.7.5.		White paint	litre	20		
	15/C11.7.5.		Yellow paint	litre	20		
	15/C11.7.5.		Retro-reflective beads	kg	10		
15/C11.7.9			Re-establishing the painting unit during the defects notification period and at other instances on instruction of the Engineer	No.	1		
15/C11.7.10			Removal of existing, temporary or final road markings by:				
	15/C11.7.10.		Sandblasting	m ²	15		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C12.1			PILING				
15/C12.1.1			Additional foundation investigations	prov sum	1	350,000.00	350,000.00
15/C12.1.2			Access and drainage:				
	15/C12.1.2.		Access	lump sum	1		
15/C12.1.3			Establishment on site for piling (Rotapiles)	lump sum	1		
15/C12.1.4			Moving to, and setting up equipment at each position for installing piles (Rotapiles)	No.	14		
15/C12.1.5			Bored holes temporary encased where required for piles through material situated within the following successive depth ranges:				
	15/C12.1.5.		Bored piles (355 mm diameter):				
		(a)	0 m up to 10 m	m	140		
15/C12.1.6			Extra over item C12.1.5 irrespective of the depth, to form augered and bored pile holes through identified materials consisting of:				
	15/C12.1.6.		Coarse gravel with a matrix content of less than (50% maximum)	m	14		
	15/C12.1.6.		Boulders (300 mm maximum size)	m	14		
		(a)	Soft rock	m	14		
		(b)	Hard rock	m	2		
15/C12.1.7			Driving temporary casing for driven displacement piling systems (system indicated) for forming holes for piles with a diameter of (diameter indicated) through material situated within the following successive depth ranges:				
15/C12.1.8			Forming bored pile holes through unidentified materials	prov sum	1	20,000.00	20,000.00
15/C12.1.1.1			Installing and removing temporary casings for piles of:				
	15/C12.1.1.1		355 mm diameter	m	140		
15/C12.1.1.5			Steel reinforcement in cast in situ piles:				
	15/C12.1.1.5		Mild-steel bars	t	1		
	15/C12.1.1.5		High-yield-stress-steel bars	t	1.6		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C12.1.1 6	(a)		Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m³	16		
15/C12.1.1 7			Extra over item C12.1.16 for concrete cast underwater	m³	16		
15/C12.1.2 4			Stripping/cutting the pile heads				
15/C12.1.2 5			355 mm diameter	No.	14		
15/C12.1.2 6			Establishment on site for the load testing of piles	lump sum	1		
15/C12.1.2 7			Load tests on piles (compression test, as per load on drawings)		0		
15/C12.1.2 8			355 mm diameter	No.	1		
15/C12.1.2 9			Establishment on site for core drilling	lump sum	1		
15/C12.1.3 0			Moving equipment to and assembling at each location where cores are to be drilled	No.	14		
15/C12.1.3 1			Drilling the cores (NX size) in:				
			Concrete	m	21		
			Founding formation:				
			Irrespective of hardness	m	42		
			Standing time for pile-installation frame	hour	80		
			Pile Integrity Testing on augered/bored piles:				
			Providing and installing (85 mm diameter) mild steel tubes for "Cross Hole Sonic Logging" in all designated piles	m	420		
	Carrying out of Impact Frequency Response (IFR) measurements or Sonic Tapping tests and interpretation of results (per pile diameter)	No.	14				
	Cross-Hole Sonic Logging tests and interpreted results (per pile diameter)	m	420				
15/C13.1			FOUNDATIONS				
15/C13.1.2			Additional foundation investigations:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C13.1.3	15/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	250,000.00	250,000.00
	15/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	250,000		
			Excavation:				
	15/C13.1.3.		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	48		
		(b)	(b) > 1,5 m and < 3,0 m	m ³	10		
	15/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	40		
	15/C13.1.3.		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	5		
	15/C13.1.3.		Extra over subitem C13.1.3.1 for excavation by hand	m ³	4		
	15/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	50		
15/C13.1.7			Backfill to excavations utilising:				
	15/C13.1.7.		Material from excavation	m ³	10		
	15/C13.1.7.		Imported material	m ³	30		
	15/C13.1.7.		Soil cement	m ³	2		
15/C13.1.8			Backfill to excavations utilising labour:				
	15/C13.1.9		Fill within a restricted area (extra over item C5.2.2)	m ³	40		
15/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	240		
15/C13.1.12			Overbreak in excavation in hard material	m ²	15		
15/C13.1.14			Foundation fill consisting of:				
	15/C13.1.14		Compacted granular material	m ³	20		
	15/C13.1.14		Mass concrete (C12/15-20)	m ³	1		
	15/C13.1.14		Concrete blinding				
		(b)	75mm Blinding layer, Class C15/20	m ³	3		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
C13.1.22			Foundation lining, using labour enhanced methods				
	15/C13.1.22		Polyethylene sheet 0.25mm thick	m ²	82		
15/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
15/C13.2.2			Vertical formwork to provide:				
	15/C13.2.2.		Class F1 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
	15/C13.2.2.		Class F2 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
15/C13.2.4			Inclined formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
	15/C13.2.4.		Class F1 surface finish to:				
		(a)	Abutment	m ²	6		
		(b)	Approach slabs	m ²	4		
15/C13.2.5			Permanent formwork:				
15/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
15/C13.3			STEEL REINFORCEMENT				
15/C13.3.1			Reinforcement for:				
	15/C13.3.1.		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	15/C13.3.1.		Approach slab:				
		(a)	Mild-steel bars	t	1		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C13.3.4	15/C13.3.1	(b)	High-yield-stress-steel bars	t	2		
			Deck:				
	15/C13.3.1.8	(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	15/C13.3.1.9		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.5		
	15/C13.3.4		END BLOCKS:				
			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
			C13.4 CONCRETE				
	15/C13.4.1		Cast in situ concrete (Class of concrete and use or position in structure stated):				
			Durable concrete (class D):				
		(g)	Abutment class D32/40-XC4(100)-20	m ³	10		
	15/C13.4.3	(h)	Deck D32/40-XC4(100)-20	m ³	28		
		(i)	Approach slabs D32/40-XC4(100)-20	m ³	12		
			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
15/C13.4.5	15/C13.4.3		Durable concrete (class D):				
		(f)	Abutment class D32/40-XC4(100)-20	m ³	10		
		(g)	Approach slabs D32/40-XC4(100)-20	m ³	12		
	15/C13.4.5	(h)	Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m ³	16		
			Curing and surface protection of cast in situ concrete, as and where specifically required:				
		15/C13.4.5	Abutments (Tenderer to specify method of curing)	m ²	26		
	15/C13.4.5		Approach slab (Tenderer to specify method of curing)	m ²	46		
CARRIED FORWARD							

ITEM		DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD						
15/C13.4.9	15/C13.4.5	Deck (Tenderer to specify method of curing)	m ²	66		
		Manufacturing precast concrete members				
	15/C13.4.9	350x150x7780mm beams with steel lattice - refer to drawings number 10021996-B6570(1,2)-DRG-15004 (16004, 17004) Deck Concrete	No.	20		
15/C13.4.1 1		Transporting and erecting precast concrete members				
	15/C13.4.11	350x150x7780mm beams with steel lattice, B6570: 1.06, B6571: 1.03, B6572: 1.04 ton per member - refer to drawing number 10021996-B6570(1,2)-DRG-15004 (16004, 17004)	No.	20		
15/C13.4.1 4		Controlled demolition of concrete from structural elements:				
	15/C13.4.14	Existing superstructure	m ³	15		
	15/C13.4.14	Existing substructure	m ³	5		
15/C13.6		BEARINGS				
15/C13.6.3		Bearing strips				
	(a)	200x12mm elastomeric bearing strip	m ²	4		
	(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m ²	4		
15/C13.6.4		Dowels or guides (2m galvanised dowels between abutment and approach slab at 200 centres)	No.	78		
15/C13.7		JOINTS				
15/C13.7.1		Expansion joints:				
	15/C13.7.1.1	Roll over joints with glass grid at abutments as detailed on drawing	m	16		
15/C13.7.3		Unfilled joints:				
	15/C13.7.3.1	Joint between parapets	m ²	0.1		
15/C13.7.4		Sealing joints with:				
	15/C13.7.4.1	Sealant (precast units with 5mm dry mortar)	m	150		
15/C13.8		ANCILLARY STRUCTURAL ELEMENTS				
15/C13.8.1		Concrete barriers and parapets (refer to drawings):				
	15/C13.8.1.1	Parapets	m	18		
CARRIED FORWARD						

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
15/C13.8.7			Numbers for structures: (refer to drawings):				
	15/C13.8.7.		Number plates	No.	2		
15/C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
15/C20.1.2			Special tests requested by the Engineer:				
	15/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	15/C20.1.2.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
15/C20.1.3			Providing testing equipment:				
	15/C20.1.3.		Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMT
16/C1.2				GENERAL REQUIREMENTS AND PROVISIONS				
16/C1.2.3				Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	16/C1.2.3.2			Drain cleaning	km	1		
16/C1.5				ACCOMMODATION OF TRAFFIC				
16/C1.5.2				Accommodation of vehicular traffic	month	1		
16/C4.3				EXISTING ROAD MATERIALS				
16/C4.3.1				Additional material investigations:				
	16/C4.3.1.1			Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	16/C4.3.1.2			Handling costs and profit in respect of item C4.3.1.1	%	100,000		
16/C4.3.13				Lifting of existing paving blocks (specify the type or size and thickness):				
	16/C4.3.13.			Using labour enhanced methods of construction	m ²	620		
16/C4.3.14				Removing of existing road edging and services structures:				
	16/C4.3.14.			Removing of existing road edging using construction equipment:				
		(a)		Kerbing and edge beams:				
		(b)		In situ concrete kerbing and edge beams	m ³	10		
16/C4.3.15				Stockpiling of road layer materials:				
	16/C4.3.15.			Cemented material	m ³	46.5		
16/C4.3.16				Stacking paving blocks and road edging:				
	16/C4.3.16.			Paving blocks (Type S-A)	No.	31,000		
16/C4.3.20				Spoiling of paving blocks and road edging in spoil sites designated by the Contractor:				
	16/C4.3.20.			Paving blocks	m ³	65		
	16/C4.3.20.			Precast and in situ concrete kerbing, edge beams and channels at precast kerbing	m ³	10		
16/C4.4				COMMERCIAL MATERIALS				
16/C4.4.2				Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	16/C4.4.2.1			Pavement layer material:				
		(f)		Type G5A material	m ³	155		
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C4.4.4	16/C4.4.4.1	(i)	Type G7 material	m³	95		
		(q)	Natural or crushed gravel material for the wearing course of an unsealed road	m³	12		
			Cementitious stabilising agents:				
16/C5.3			Cement	t	15		
16/C5.3.2			ROAD PAVEMENT LAYERS				
16/C5.3.2	16/C5.3.2.1		Construction of pavement layers:				
			Construction of layers using conventional construction methods:				
		(c)	Upper selected subgrade layer (150mm) compacted to 96% of MDD	m³	95		
16/C5.4	16/C5.4.2	(h)	Gravel shoulder layer (100mm) compacted to 95 % of MDD	m³	12		
		(l)	Upper subbase gravel layer (chemically stabilised), (250mm) compacted to 95 % of MDD	m³	155		
			STABILISATION				
16/C5.4.2			Chemical stabilisation:				
16/C5.4.5	16/C5.4.5.1	(a)	G7 150mm +2.5% cement selected layer	m³	95		
		(b)	C3 (G5A 250mm parent material) subbase	m³	155		
			Cementitious stabilisation agents for pavement layers:				
16/C6.2	16/C6.2.1		Addition of cementitious stabilisation agents (specify agent separately) for pavement layers:				
		(a)	Cement (for selected pavement layer)	t	5		
		(b)	Cement (for subbase pavement layer)	t	10		
16/C6.2.1			SEGMENTAL BLOCK PAVING LAYERS				
16/C6.2.1	16/C6.2.1.1		Segmental block paving:				
			Concrete block paving:				
		(a)	80 mm thick, class 30, Type S-A (placed in herringbone pattern)	m²	65		
16/C6.2.2			Cast in-situ concrete edge and intermediate beams	m³	10		
16/C11.4			ROAD RESTRAINT SYSTEMS				
16/C11.4.1			Erecting of guardrails at 3,81 m spacing:				
CARRIED FORWARD							

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD					
16/C11.4.3	16/C11.4.1.				
	(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	66	
	16/C11.4.1.	Terminal sections for 3,81 m guardrails comprising of:			
	(b)	Bullnoses to SANS 1350	No.	4	
	(c)	Bridge adapters to SANS 1350	No.	4	
	(e)	End treatments where double guardrail sections are specified (see DWG no 113142-0-DRG-RR-04-0006/7)			
	(g)	Extra over C11.4.1.2(d) and C11.4.1.2(e) for excavating holes for posts using labour enhanced methods (soft and intermediate)	No.	76	
		Project specific concrete barrier systems:			
	16/C11.4.3.	In situ cast concrete barriers (see DWG no 1002996-B6572-DRG-BB-16005, 1002996-B6572-DRG-BB-16005, and 1002996-B6572-DRG-BB-16005)	m	40	
	16/C11.4.3.	Installation and removal of precast concrete barrier system	No.	20	
16/C11.4.6	16/C11.4.3.	Relocating or stacking precast barrier moved in excess of 1,0 km	No.	20	
		Reflective plates:			
16/C11.6	16/C11.4.6.	Steel plates	No.	25	
		ROAD SIGNS			
16/C11.6.1		Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:			
	16/C11.6.1.	Regulatory signs, temporary:			
	(b)	900 mm diameter 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	12	
	(c)	1200 mm diameter, 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	6	
	16/C11.6.1.	Warning signs, temporary:			
16/C11.6.3	16/PC11.6.	Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m ²	10	
		Road sign supports (overhead road sign structures excluded):			
	16/C11.6.3.	Timber:			
CARRIED FORWARD					

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C11.6.5		(a)	100 mm dia	m	72		
		(b)	125 mm dia	m	72		
			Excavation and backfilling for road sign supports (not applicable to kilometre posts):				
	16/C11.6.5.		Excavating soft material and backfilling	m ³	10		
	16/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m ³	1		
			Dismantling, storing and re-erecting road signs with a surface area of:				
	16/C11.6.6.		Area 0 to 0,5 m ²	m ²	1		
			Danger plates at culverts/structures:				
	16/C11.6.8.		Size 200 x 800mm, 2,35 mm long, 2,0 mm thick, 50 mm x 50 mm galvanized square tubing post with Class III reflectivity	No.	4		
			ROAD MARKINGS AND ROAD STUDS				
			Road marking:				
	16/C11.7.1.		White lines broken or unbroken (paint type and width of line indicated)	km	0.11		
	16/C11.7.1.		Yellow lines broken or unbroken (paint type and width of line indicated)	km	0.22		
			Retro-reflective road marking:				
	16/C11.7.2.		White lines broken or unbroken (Type 1 paint)				
		(a)	100 mm wide	km	0.11		
		(a)	100 mm wide	km	0.22		
			Variations in rate of application:				
	16/C11.7.5.		White paint	litre	20		
	16/C11.7.5.		Yellow paint	litre	20		
	16/C11.7.5.		Retro-reflective beads	kg	10		
16/C11.7.9			Re-establishing the painting unit during the defects notification period and at other instances on instruction of the Engineer	No.	1		
			Removal of existing, temporary or final road markings by:				
	16/C11.7.10		Sandblasting	m ²	15		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C12.1			PILING				
16/C12.1.1			Additional foundation investigations	prov sum	1	350,000.00	350,000.00
16/C12.1.2			Access and drainage:				
	16/C12.1.2.		Access	lump sum	1		
16/C12.1.3			Establishment on site for piling (Rotapiles)	lump sum	1		
16/C12.1.4			Moving to, and setting up equipment at each position for installing piles (Rotapiles)	No.	14		
16/C12.1.5			Bored holes temporary encased where required for piles through material situated within the following successive depth ranges:				
	16/C12.1.5.		Bored piles (355 mm diameter):				
		(a)	0 m up to 10 m	m	140		
16/C12.1.6			Extra over item C12.1.5 irrespective of the depth, to form augered and bored pile holes through identified materials consisting of:				
	16/C12.1.6.		Coarse gravel with a matrix content of less than (50% maximum)	m	14		
	16/C12.1.6.		Boulders (300 mm maximum size)	m	14		
		(a)	Soft rock	m	14		
		(b)	Hard rock	m	2		
16/C12.1.7			Driving temporary casing for driven displacement piling systems (system indicated) for forming holes for piles with a diameter of (diameter indicated) through material situated within the following successive depth ranges:				
16/C12.1.8			Forming bored pile holes through unidentified materials	prov sum	1	20,000.00	20,000.00
16/C12.1.1.1			Installing and removing temporary casings for piles of:				
	16/C12.1.1.1		355 mm diameter	m	140		
16/C12.1.1.5			Steel reinforcement in cast in situ piles:				
	16/C12.1.1.5		Mild-steel bars	t	1		
	16/C12.1.1.5		High-yield-stress-steel bars	t	1.6		
CARRIED FORWARD							

ITEM	DESCRIPTION			UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C12.1.1.1.6	(a)		Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m³	16		
16/C12.1.1.1.7			Extra over item C12.1.16 for concrete cast underwater	m³	16		
16/C12.1.2.4			Stripping/cutting the pile heads				
16/C12.1.2.5			355 mm diameter	No.	14		
16/C12.1.2.6			Establishment on site for the load testing of piles	lump sum	1		
16/C12.1.2.7			Load tests on piles (compression test, as per load on drawings)		0		
16/C12.1.2.8			355 mm diameter	No.	1		
16/C12.1.2.9			Establishment on site for core drilling	lump sum	1		
16/C12.1.3.0			Moving equipment to and assembling at each location where cores are to be drilled	No.	14		
16/C12.1.3.1			Drilling the cores (NX size) in:				
16/C12.1.3.2			Concrete	m	21		
16/C12.1.3.3			Founding formation:				
16/C12.1.3.4			Irrespective of hardness	m	42		
16/C12.1.3.5			Standing time for pile-installation frame	hour	80		
16/C12.1.3.6			Pile Integrity Testing on augered/bored piles:				
16/C12.1.3.7			Providing and installing (85 mm diameter) mild steel tubes for "Cross Hole Sonic Logging" in all designated piles	m	420		
16/C12.1.3.8	Carrying out of Impact Frequency Response (IFR) measurements or Sonic Tapping tests and interpretation of results (per pile diameter)	No.	14				
16/C12.1.3.9	Cross-Hole Sonic Logging tests and interpreted results (per pile diameter)	m	420				
16/C13.1	FOUNDATIONS						
16/C13.1.2	Additional foundation investigations:						
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C13.1.3	16/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	250,000.00	250,000.00
	16/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	250,000		
			Excavation:				
	16/C13.1.3.		Excavating soft material situated within the following successive depth ranges:				
		(a)	(a) 0 m up to 1,5 m	m ³	44		
		(b)	(b) > 1,5 m and < 3,0 m	m ³	10		
	16/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³	30		
	16/C13.1.3.		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³	5		
	16/C13.1.3.		Extra over subitem C13.1.3.1 for excavation by hand	m ³	3		
	16/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in restricted areas	m ³	45		
16/C13.1.7			Backfill to excavations utilising:				
	16/C13.1.7.		Material from excavation	m ³	10		
	16/C13.1.7.		Imported material	m ³	30		
	16/C13.1.7.		Soil cement	m ³	2		
16/C13.1.8			Backfill to excavations utilising labour:				
16/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m ³	40		
16/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m ³ -km	220		
16/C13.1.12			Overbreak in excavation in hard material	m ²	14		
16/C13.1.14			Foundation fill consisting of:				
	16/C13.1.14		Compacted granular material	m ³	20		
	16/C13.1.14		Mass concrete (C12/15-20)	m ³	1		
	16/C13.1.14		Concrete blinding				
		(b)	75mm Blinding layer, Class C15/20	m ³	2		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
C13.1.22			Foundation lining, using labour enhanced methods				
	16/C13.1.22		Polyethylene sheet 0.25mm thick	m ²	82		
16/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
16/C13.2.2			Vertical formwork to provide:				
	16/C13.2.2.		Class F1 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
	16/C13.2.2.		Class F2 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
16/C13.2.4			Inclined formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
	16/C13.2.4.		Class F1 surface finish to:				
		(a)	Abutment	m ²	6		
		(b)	Approach slabs	m ²	4		
16/C13.2.5			Permanent formwork:				
16/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
16/C13.3			STEEL REINFORCEMENT				
16/C13.3.1			Reinforcement for:				
	16/C13.3.1.		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	16/C13.3.1.		Approach slab:				
		(a)	Mild-steel bars	t	1		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C13.3.4	16/C13.3.1	(b)	High-yield-stress-steel bars	t	2		
			Deck:				
	16/C13.3.1.8	(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	16/C13.3.1.9		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.5		
	16/C13.3.4		END BLOCKS:				
			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
	16/C13.4		C13.4 CONCRETE				
	16/C13.4.1		Cast in situ concrete (Class of concrete and use or position in structure stated):				
	16/C13.4.3		Durable concrete (class D):				
		(g)	Abutment class D32/40-XC4(100)-20	m ³	10		
		(h)	Deck D32/40-XC4(100)-20	m ³	26		
16/C13.4.5	16/C13.4.3	(i)	Approach slabs D32/40-XC4(100)-20	m ³	12		
			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
	16/C13.4.5		Durable concrete (class D):				
		(f)	Abutment class D32/40-XC4(100)-20	m ³	10		
		(g)	Approach slabs D32/40-XC4(100)-20	m ³	12		
	16/C13.4.5	(h)	Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m ³	16		
			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	16/C13.4.5		Abutments (Tenderer to specify method of curing)	m ²	24		
	16/C13.4.5		Approach slab (Tenderer to specify method of curing)	m ²	44		
	16/C13.4.5		Deck (Tenderer to specify method of curing)	m ²	64		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C13.4.9	16/C13.4.9.		Manufacturing precast concrete members				
			350x150x7780mm beams with steel lattice - refer to drawings number 10021996-B6570(1,2)-DRG-15004 (16004, 17004) Deck Concrete	No.	20		
16/C13.4.1 1	16/C13.4.11		Transporting and erecting precast concrete members				
			350x150x7780mm beams with steel lattice, B6570: 1.06, B6571: 1.03, B6572: 1.04 ton per member - refer to drawing number 10021996-B6570(1,2)-DRG-15004 (16004, 17004)	No.	20		
16/C13.4.1 4	16/C13.4.14		Controlled demolition of concrete from structural elements:				
	16/C13.4.14		Existing superstructure	m ³	15		
	16/C13.4.14		Existing substructure	m ³	5		
16/C13.6			BEARINGS				
16/C13.6.3			Bearing strips				
		(a)	200x12mm elastomeric bearing strip	m ²	3		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m ²	4		
16/C13.6.4			Dowels or guides (2m galvanised dowels between abutment and approach slab at 200 centres)	No.	73		
16/C13.7			JOINTS				
16/C13.7.1			Expansion joints:				
	16/C13.7.1.		Roll over joints with glass grid at abutments as detailed on drawing	m	16		
16/C13.7.3			Unfilled joints:				
	16/C13.7.3.		Joint between parapets	m ²	0.1		
16/C13.7.4			Sealing joints with:				
	16/C13.7.4.		Sealant (precast units with 5mm dry mortar)	m	150		
16/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
16/C13.8.1			Concrete barriers and parapets (refer to drawings):				
	16/C13.8.1.		Parapets	m	18		
16/C13.8.7			Numbers for structures: (refer to drawings):				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
16/C20.1	16/C13.8.7.		Number plates	No.	2		
			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
16/C20.1.2			Special tests requested by the Engineer:				
	16/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	16/C20.1.2.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
16/C20.1.3			Providing testing equipment:				
	16/C20.1.3.		Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
17/C1.2			GENERAL REQUIREMENTS AND PROVISIONS				
17/C1.2.3			Routine road maintenance of existing public roads within the Site of the Works or other public roads outside the Site of the Works which are used as detours:				
	17/C1.2.3.2		Drain cleaning	km	1		
17/C1.5			ACCOMMODATION OF TRAFFIC				
17/C1.5.2			Accommodation of vehicular traffic	month	1		
17/C4.3			EXISTING ROAD MATERIALS				
17/C4.3.1			Additional material investigations:				
	17/C4.3.1.1		Cost of additional trial pits and/or drilling and laboratory testing	prov sum	1	100,000.00	100,000.00
	17/C4.3.1.2		Handling costs and profit in respect of item C4.3.1.1	%	100,000		
17/C4.3.13			Lifting of existing paving blocks (specify the type or size and thickness):				
	17/C4.3.13.		Using labour enhanced methods of construction	m ²	620		
17/C4.3.14			Removing of existing road edging and services structures:				
	17/C4.3.14.		Removing of existing road edging using construction equipment:				
		(a)	Kerbing and edge beams:				
		(b)	In situ concrete kerbing and edge beams	m ³	10		
17/C4.3.15			Stockpiling of road layer materials:				
	17/C4.3.15.		Cemented material	m ³	46.5		
17/C4.3.16			Stacking paving blocks and road edging:				
	17/C4.3.16.		Paving blocks (Type S-A)	No.	31,000		
17/C4.3.20			Spoiling of paving blocks and road edging in spoil sites designated by the Contractor:				
	17/C4.3.20.		Paving blocks	m ³	65		
	17/C4.3.20.		Precast and in situ concrete kerbing, edge beams and channels at precast kerbing	m ³	10		
17/C4.4			COMMERCIAL MATERIALS				
17/C4.4.2			Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers:				
	17/C4.4.2.1		Pavement layer material:				
		(f)	Type G5A material	m ³	155		
CARRIED FORWARD							

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
17/C4.4.4	17/C4.4.4.1	(i)	Type G7 material	m³	95			
		(q)	Natural or crushed gravel material for the wearing course of an unsealed road	m³	12			
			Cementitious stabilising agents:					
17/C5.3			Cement	t	15			
ROAD PAVEMENT LAYERS								
17/C5.3.2			Construction of pavement layers:					
	17/C5.3.2.1		Construction of layers using conventional construction methods:					
		(c)	Upper selected subgrade layer (150mm) compacted to 96% of MDD	m³	95			
		(h)	Gravel shoulder layer (100mm) compacted to 95 % of MDD	m³	12			
		(l)	Upper subbase gravel layer (chemically stabilised), (250mm) compacted to 95 % of MDD	m³	155			
17/C5.4			STABILISATION					
17/C5.4.2			Chemical stabilisation:					
		(a)	G7 150mm +2.5% cement selected layer	m³	95			
		(b)	C3 (G5A 250mm parent material) subbase	m³	155			
17/C5.4.5			Cementitious stabilisation agents for pavement layers:					
	17/C5.4.5.1		Addition of cementitious stabilisation agents (specify agent separately) for pavement layers:					
		(a)	Cement (for selected pavement layer)	t	5			
		(b)	Cement (for subbase pavement layer)	t	10			
17/C6.2			SEGMENTAL BLOCK PAVING LAYERS					
17/C6.2.1			Segmental block paving:					
	17/C6.2.1.1		Concrete block paving:					
		(a)	80 mm thick, class 30, Type S-A (placed in herringbone pattern)	m²	65			
17/C6.2.2			Cast in-situ concrete edge and intermediate beams	m³	10			
17/C11.4			ROAD RESTRAINT SYSTEMS					
17/C11.4.1			Erecting of guardrails at 3,81 m spacing:					
	17/C11.4.1.1		Complete galvanized system compliant to SANS 1350:					
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C11.4.3	17/C11.4.1.	(a)	(a) On timber posts (Typical detail, as shown on drawings)	m	66		
			Terminal sections for 3,81 m guardrails comprising of:				
		(b)	Bullnoses to SANS 1350	No.	4		
		(c)	Bridge adapters to SANS 1350	No.	4		
		(e)	End treatments where double guardrail sections are specified (see DWG no 113142-0-DRG-RR-04-0006/7)				
17/C11.4.3	17/C11.4.3.	(g)	Extra over C11.4.1.2(d) and C11.4.1.2(e) for excavating holes for posts using labour enhanced methods (soft and intermediate)	No.	76		
			Project specific concrete barrier systems:				
			In situ cast concrete barriers (see DWG no 1002996-B6572-DRG-BB-16005, 1002996-B6572-DRG-BB-16005, and 1002996-B6572-DRG-BB-16005)	m	40		
			Installation and removal of precast concrete barrier system	No.	20		
			Relocating or stacking precast barrier moved in excess of 1,0 km	No.	20		
17/C11.4.6			Reflective plates:				
17/C11.6	17/C11.4.6.		Steel plates	No.	25		
17/C11.6.1			ROAD SIGNS				
17/C11.6.1	17/C11.6.1.		Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:				
			Regulatory signs, temporary:				
		(b)	900 mm diameter 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	12		
		(c)	1200 mm diameter, 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols	No.	6		
			Warning signs, temporary:				
17/C11.6.3	17/PC11.6.		Movable barricade/road sign combination 1200 mm x 1600 mm x 1.4 mm thick pre-painted galvanized steel plate, Class III background and symbols, mounted	m²	10		
			Road sign supports (overhead road sign structures excluded):				
	17/C11.6.3.		Timber:				
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C11.6.5		(a)	100 mm dia	m	72		
		(b)	125 mm dia	m	72		
		Excavation and backfilling for road sign supports (not applicable to kilometre posts):					
	17/C11.6.5.		Excavating soft material and backfilling	m³	10		
	17/C11.6.5.		Extra over item C11.6.5.1 for hard material excavation	m³	1		
17/C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:				
	17/C11.6.6.		Area 0 to 0,5 m²	m²	1		
17/C11.6.8			Danger plates at culverts/structures:				
	17/C11.6.8.		Size 200 x 800mm, 2,35 mm long, 2,0 mm thick, 50 mm x 50 mm galvanized square tubing post with Class III reflectivity	No.	4		
17/C11.7			ROAD MARKINGS AND ROAD STUDS				
17/C11.7.1			Road marking:				
	17/C11.7.1.		White lines broken or unbroken (paint type and width of line indicated)	km	0.11		
	17/C11.7.1.		Yellow lines broken or unbroken (paint type and width of line indicated)	km	0.22		
17/C11.7.2			Retro-reflective road marking:				
	17/C11.7.2.		White lines broken or unbroken (Type 1 paint)				
17/C11.7.5		(a)	100 mm wide	km	0.11		
		(a)	100 mm wide	km	0.22		
	Variations in rate of application:						
	17/C11.7.5.		White paint	litre	20		
	17/C11.7.5.		Yellow paint	litre	20		
	17/C11.7.5.		Retro-reflective beads	kg	10		
17/C11.7.9			Re-establishing the painting unit during the defects notification period and at other instances on instruction of the Engineer	No.	1		
17/C11.7.10			Removal of existing, temporary or final road markings by:				
	17/C11.7.10.		Sandblasting	m²	15		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C12.1			PILING				
17/C12.1.1			Additional foundation investigations	prov sum	1	350,000.00	350,000.00
17/C12.1.2			Access and drainage:				
	17/C12.1.2.		Access	lump sum	1		
17/C12.1.3			Establishment on site for piling (Rotapiles)	lump sum	1		
17/C12.1.4			Moving to, and setting up equipment at each position for installing piles (Rotapiles)	No.	14		
17/C12.1.5			Bored holes temporary encased where required for piles through material situated within the following successive depth ranges:				
	17/C12.1.5.		Bored piles (355 mm diameter):				
		(a)	0 m up to 10 m	m	140		
17/C12.1.6			Extra over item C12.1.5 irrespective of the depth, to form augered and bored pile holes through identified materials consisting of:				
	17/C12.1.6.		Coarse gravel with a matrix content of less than (50% maximum)	m	14		
	17/C12.1.6.		Boulders (300 mm maximum size)	m	14		
		(a)	Soft rock	m	14		
		(b)	Hard rock	m	2		
17/C12.1.7			Driving temporary casing for driven displacement piling systems (system indicated) for forming holes for piles with a diameter of (diameter indicated) through material situated within the following successive depth ranges:				
17/C12.1.8			Forming bored pile holes through unidentified materials	prov sum	1	20,000.00	20,000.00
17/C12.1.1.1			Installing and removing temporary casings for piles of:				
	17/C12.1.1.1		355 mm diameter	m	140		
17/C12.1.1.5			Steel reinforcement in cast in situ piles:				
	17/C12.1.1.5		Mild-steel bars	t	1		
	17/C12.1.1.5		High-yield-stress-steel bars	t	1.6		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C12.1.1 6	(a)		Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m³	16		
17/C12.1.1 7			Extra over item C12.1.16 for concrete cast underwater	m³	16		
17/C12.1.2 4			Stripping/cutting the pile heads				
17/C12.1.2 5			355 mm diameter	No.	14		
17/C12.1.2 6			Establishment on site for the load testing of piles	lump sum	1		
17/C12.1.2 7			Load tests on piles (compression test, as per load on drawings)		0		
17/C12.1.2 8			355 mm diameter	No.	1		
17/C12.1.2 9			Establishment on site for core drilling	lump sum	1		
17/C12.1.3 0			Moving equipment to and assembling at each location where cores are to be drilled	No.	14		
17/C12.1.3 1			Drilling the cores (NX size) in:				
			Concrete	m	21		
			Founding formation:				
			Irrespective of hardness	m	42		
			Standing time for pile-installation frame	hour	80		
			Pile Integrity Testing on augered/bored piles:				
			Providing and installing (85 mm diameter) mild steel tubes for "Cross Hole Sonic Logging" in all designated piles	m	420		
	Carrying out of Impact Frequency Response (IFR) measurements or Sonic Tapping tests and interpretation of results (per pile diameter)	No.	14				
	Cross-Hole Sonic Logging tests and interpreted results (per pile diameter)	m	420				
17/C13.1			FOUNDATIONS				
17/C13.1.2			Additional foundation investigations:				
CARRIED FORWARD							

ITEM			DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD								
17/C13.1.3	17/C13.1.2.		Provisional sum allowed for additional foundation investigations	prov sum	1	250,000.00	250,000.00	
	17/C13.1.2.		Handling costs and profit in respect of item C13.1.2.1	%	250,000			
			Excavation:					
	17/C13.1.3.		Excavating soft material situated within the following successive depth ranges:					
		(a)	(a) 0 m up to 1,5 m	m³	46			
		(b)	(b) > 1,5 m and < 3,0 m	m³	10			
	17/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m³	40			
	17/C13.1.3.		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m³	5			
	17/C13.1.3.		Extra over subitem C13.1.3.1 for excavation by hand	m³	4			
	17/C13.1.3.		Extra over subitem C13.1.3.1 for excavation in restricted areas	m³	50			
17/C13.1.7			Backfill to excavations utilising:					
	17/C13.1.7.		Material from excavation	m³	10			
	17/C13.1.7.		Imported material	m³	30			
	17/C13.1.7.		Soil cement	m³	2			
17/C13.1.8			Backfill to excavations utilising labour:					
17/C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m³	40			
17/C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³-km	230			
17/C13.1.12			Overbreak in excavation in hard material	m²	14			
17/C13.1.14			Foundation fill consisting of:					
	17/C13.1.14		Compacted granular material	m³	20			
	17/C13.1.14		Mass concrete (C12/15-20)	m³	1			
	17/C13.1.14		Concrete blinding					
		(b)	75mm Blinding layer, Class C15/20)	m³	2			
CARRIED FORWARD								

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
C13.1.22			Foundation lining, using labour enhanced methods				
	17/C13.1.22		Polyethylene sheet 0.25mm thick	m ²	82		
17/C13.2			FALSEWORK, FORMWORK AND CONCRETE FINISH				
17/C13.2.2			Vertical formwork to provide:				
	17/C13.2.2.		Class F1 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
	17/C13.2.2.		Class F2 surface finish to:				
		(a)	Abutment	m ²	15		
		(b)	Deck	m ²	4		
		(e)	Approach slab	m ²	4		
17/C13.2.4			Inclined formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
	17/C13.2.4.		Class F1 surface finish to:				
		(a)	Abutment	m ²	6		
		(b)	Approach slabs	m ²	4		
17/C13.2.5			Permanent formwork:				
17/C13.2.10			Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist	lump sum	1		
17/C13.3			STEEL REINFORCEMENT				
17/C13.3.1			Reinforcement for:				
	17/C13.3.1.		Abutments:				
		(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	17/C13.3.1.		Approach slab:				
		(a)	Mild-steel bars	t	1		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C13.3.4	17/C13.3.1	(b)	High-yield-stress-steel bars	t	2		
			Deck:				
	17/C13.3.1.8	(a)	Mild-steel bars	t	1		
		(b)	High-yield-stress-steel bars	t	2		
	17/C13.3.1.9		PARAPETS:				
		(a)	Mild-steel bars	t	0.1		
		(b)	High-yield-stress-steel bars	t	0.5		
	17/C13.3.4		END BLOCKS:				
			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	1		
			C13.4 CONCRETE				
	17/C13.4.1		Cast in situ concrete (Class of concrete and use or position in structure stated):				
			Durable concrete (class D):				
		(g)	Abutment class D32/40-XC4(100)-20	m ³	10		
	17/C13.4.3	(h)	Deck D32/40-XC4(100)-20	m ³	28		
		(i)	Approach slabs D32/40-XC4(100)-20	m ³	12		
			Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:				
17/C13.4.5	17/C13.4.3		Durable concrete (class D):				
		(f)	Abutment class D32/40-XC4(100)-20	m ³	10		
		(g)	Approach slabs D32/40-XC4(100)-20	m ³	12		
	17/C13.4.5	(h)	Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class C25/30-20)	m ³	16		
			Curing and surface protection of cast in situ concrete, as and where specifically required:				
		17/C13.4.5	Abutments (Tenderer to specify method of curing)	m ²	26		
		17/C13.4.5	Approach slab (Tenderer to specify method of curing)	m ²	46		
	17/C13.4.5		Deck (Tenderer to specify method of curing)	m ²	64		
CARRIED FORWARD							

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C13.4.9	17/C13.4.9.		Manufacturing precast concrete members				
			350x150x7780mm beams with steel lattice - refer to drawings number 10021996-B6570(1,2)-DRG-15004 (16004, 17004) Deck Concrete	No.	20		
17/C13.4.1 1	17/C13.4.11		Transporting and erecting precast concrete members				
			350x150x7780mm beams with steel lattice, B6570: 1.06, B6571: 1.03, B6572: 1.04 ton per member - refer to drawing number 10021996-B6570(1,2)-DRG-15004 (16004, 17004)	No.	20		
17/C13.4.1 4	17/C13.4.14		Controlled demolition of concrete from structural elements:				
	17/C13.4.14		Existing superstructure	m ³	15		
	17/C13.4.14		Existing substructure	m ³	5		
17/C13.6			BEARINGS				
17/C13.6.3			Bearing strips				
		(a)	200x12mm elastomeric bearing strip	m ²	4		
		(c)	Bearing strips (2 layers of 3-ply roofing felt on Abutment as shown on drawing)	m ²	4		
17/C13.6.4			Dowels or guides (2m galvanised dowels between abutment and approach slab at 200 centres)	No.	76		
17/C13.7			JOINTS				
17/C13.7.1	17/C13.7.1.		Expansion joints:				
			Roll over joints with glass grid at abutments as detailed on drawing	m	16		
17/C13.7.3	17/C13.7.3.		Unfilled joints:				
			Joint between parapets	m ²	0.1		
17/C13.7.4	17/C13.7.4.		Sealing joints with:				
			Sealant (precast units with 5mm dry mortar)	m	150		
17/C13.8			ANCILLARY STRUCTURAL ELEMENTS				
17/C13.8.1	17/C13.8.1.		Concrete barriers and parapets (refer to drawings):				
			Parapets	m	18		
17/C13.8.7			Numbers for structures: (refer to drawings):				
CARRIED FORWARD							

ITEM		DESCRIPTION		UNIT	QTY	RATE	AMT
BROUGHT FORWARD							
17/C20.1	17/C13.8.7.		Number plates	No.	2		
			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
17/C20.1.2			Special tests requested by the Engineer:				
	17/C20.1.2.		Employer's contribution to concrete durability tests:				
		(a)	Tests for water sorptivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(a)	%	20,000		
		(b)	Tests for oxygen permeability	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(b)	%	20,000		
		(c)	Tests for chloride conductivity	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(c)	%	20,000		
		(d)	Tests for concrete cover	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.1(d)	%	20,000		
	17/C20.1.2.		Employer's contribution to other special tests:				
		(a)	Specify test	PC sum	1	20,000.00	20,000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	20,000		
17/C20.1.3			Providing testing equipment:				
	17/C20.1.3.		Core drill	No.	1		
TOTAL CARRIED FORWARD TO SUMMARY							

SUMMARY OF SCHEDULE OF QUANTITIES
THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAI
TENDER NO. DRPW009/2024
CONTRACT NO. NC254A

C1.2	GENERAL REQUIREMENTS AND PROVISIONS	R
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS	R
C1.4	FACILITIES FOR THE ENGINEER	R
C1.5	ACCOMMODATION OF TRAFFIC	R
PART 1	TBC1002	R
PART 2	B0621	R
PART 3	B0678	R
PART 4	B0713	R
PART 5	B3293	R
PART 6	B3296	R
PART 7	B3305	R
PART 8	B6523	R
PART 9	B6529	R
PART 10	B6546	R
PART 11	B0689	R
PART 12	B0689A	R
PART 13	B0689B	R
PART 14	B0690	R
PART 15	B6570	R
PART 16	B6571	R
PART 17	B6572	R
TOTAL OF SCHEDULES:		R
CONTRACT PRICE ADJUSTMENT		
The Tenderer shall add 10% of the Total of Schedules for contract price ajustment in terms of the provisions in the General Conditions of Contract		R
SUBTOTAL		R
CONTINGENCIES		
The Tenderer shall add 10% of the subtotal and the sum provided here is under the sole control of the Engineer and may be deducted in whole or in part		R
SUBTOTAL		R
VALUE-ADDED TAX (VAT)		
The Tenderer shall add 15% of the subtotal for VAT		R
CONTRACT SUM CARRIED TO FORM OF TENDER		R

Signed by Tenderer:

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

PART C3: SCOPE OF WORK

PART C3: SCOPE OF WORK

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C3.2 ENGINEERING	C3-12
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C3.1 DESCRIPTION OF THE WORKS

C3.1.1 General

The Employer's objective is to rehabilitate bridges and associated works in the Northern Cape Province.

C3.1.2 Site location

The Contract will be executed at the following structures:

- BRIDGE TBC10002 AT km 3.50 ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B0621 AT km 25.13. ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B0678 AT km 1.83 ON ROAD MR00875 connecting N14 and R359 over Kanoneiland
- BRIDGE B0713 AT km 2.60 ON ROAD MR00779 over the Kuikendraai stream between Groblershoop and Skerpioenpunt
- BRIDGE B3293 AT km 1.49 ON ROAD DR03273 over the Orange River between Augrabies town and farms
- BRIDGE B3296 AT km 9.64 ON ROAD DR03321 over Orange River between N14 and farm
- BRIDGE B3305 AT km 0.67 ON ROAD DR03266 over the Orange River near Marchand
- BRIDGE B6523 AT km 3.21 ON ROAD DR03269 on secondary gravel road between Keimoes and Eksteenskuil over a tributary to the Orange River
- BRIDGE B6529 (Old TB008) on unnumbered road connecting to MR0085. Carries the gravel road over a tributary of the Orange River
- BRIDGE B6546 AT km 0.51 ON ROAD DR03310 between Oranjevallei and unnamed gravel road
- BRIDGE B0689 AT km 9.20 ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B0689A AT km 14.30 ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B0689B AT km 18.54 ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B0690 AT km 2.48 ON ROAD MR00858 between Kakamas and Augrabies
- BRIDGE B6570 AT km 9.50 ON ROAD DR03313 between Upington and Louisvale
- BRIDGE B6571 AT km 9.20 ON ROAD DR03313 between Upington and Louisvale
- BRIDGE B6572 AT km 9.00 ON ROAD DR03313 between Upington and Louisvale

C3.1.3 Basis of the works

The list of structures and their respective coordinate locations are summarized as follows:

Count	Bridge No	GPS co-ordinates	
		South	East
1	TBC10002	28° 44' 10.13" S	20° 30' 41.09" E
2	B0621	28° 37' 26.74" S	20° 20' 47.26" E
3	B0678	28° 38' 9.46" S	21° 5' 24.22" E
4	B0713	28° 53' 57.41" S	22° 1' 9.19" E
5	B3293	28° 39' 43.70" S	20° 25' 31.66" E
6	B3296	28° 25' 49.57" S	21° 25' 22.38" E

Count	Bridge No	GPS co-ordinates	
		South	East
7	B3305	28° 43' 26.83" S	20° 30' 34.78" E
8	B6523	28° 43' 9.15" S	21° 0' 23.86" E
9	B6529	28° 42' 18.07" S	21° 4' 1.88" E
10	B6546	28° 32' 25.84" S	21° 10' 23.45" E
11	B0689	28° 42' 5.71" S	20° 28' 24.9" E
12	B0689A	28° 40' 34.33" S	20° 25' 35.61" E
13	B0689B	28° 39' 36.54" S	20° 23' 21.05" E
14	B0690	28° 44' 34.62" S	20° 31' 5.41" E
15	B6570	28° 31' 44.53" S	21 °12' 10.99" E
16	B6571	28° 31' 35.00" S	21° 12' 7.34" E
17	B6572	28° 31' 28.57" S	21° 12' 5.68" E

The project is to rehabilitate all eighteen structures. The work included in this Contract will consist mainly of the following which should be read in conjunction with the supplied drawings:

C3.1.3.1 Culvert TBC10002

- Widen existing road formation and install guardrails
- Construct reinforced concrete encapsulation around all piers.
- Construct new reinforced walls in front of both abutments.
- Construct new reinforced concrete wingwalls.
- Repair existing headwalls.
- Construct new apron slab at inlet and outlet.
- Treat all deck concrete faces to prevent water ingress and slow down Alkali Aggregate Reaction (AAR).
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.2 Bridge B0621

- Repair defected concrete on piers and abutments.
- Clear stream channel of overgrown vegetation.
- Treat all abutment and pier concrete faces to prevent ingress and slow Alkali Aggregate Reaction (AAR)
- Construct reinforced concrete encapsulation around all piers.
- Construct new reinforced concrete walls in front of both abutments.
- Cut back spalled deck edge concrete, treat reinforcement, and repair deck edges.
- Treat all deck concrete faces to prevent water ingress and slow down AAR.
- Surface approaches with cold asphalt, do not touch joints as they are in good condition.
- Install new guardrails.
- Accommodation of traffic.

- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.3 Bridge B0678

- Remove south return wall of the west abutment, due to spalling, as it might have been caused by being founded on unstable approach fill.
- Build new return wall with new end block and balustrade.
- Repair cracking/spalling on deck diaphragms and beam ends.
- Repair concrete parapet.
- Repair cracking/spalling pier seat edges.
- Repair cracking/spalling deck edges.
- Remove weak concrete from all abutments and piers.
- Seal deck top hogging cracks by injection.
- Construct reinforced concrete encapsulation around piers indicated on drawings.
- Repair concrete nosings of joints. Clean out joint gaps, surface decks and install Thorma joints.
- Clean out deck drainpipes and top of deck.
- Reinstate settled end block on western abutment using procedure shown on the drawings.
- Re-construct approach road layers with new approach slab behind abutments to eliminate sag from settlement of approach fills.
- Clear debris at piers.
- Accommodation of traffic
- Install new guardrails.
- Install bridge number and hazard plates.

C3.1.3.4 Bridge B0713

- Remove debris around piers and existing concrete invert slabs between piers.
- Clear trees from stream channel.
- Repair pier 2 and deck soffit concrete spalling.
- Clear blocked deck drains.
- Repair deck edges.
- Install new guardrails.
- Install bridge number and hazard plates.

C3.1.3.5 Bridge B3293

- Clear stream channel of overgrown vegetation.
- Repair pier defects, waterproofing coating.
- Construct reinforced concrete encapsulation around piers.
- Repair abutment defects, using anti-AAR coating.
- Construct reinforced concrete walls both abutments.
- Excavate approach roads and install new approach slabs both abutments and construct new layer works.
- Resurface approach roads and deck with cold asphalt.
- Install new bridge joints – thorma joints.
- Install new guardrails on approach roads and deck.

- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.6 Bridge B3296

- Clear debris around piers.
- Repair damaged parapets.
- Repair spalled concrete and corroded reinforcement on parapets.
- Repair spalled concrete and corroded reinforcement on bearing seats of piers 3 and 6.
- Construct reinforced concrete encapsulation around piers.
- Repair any defects in existing concrete, treat surface for durability.
- Repair spalled bridge joint nosings and repair corroded reinforcement at nosings.
- Clean out joint gaps, surface decks and install Thorma joints.
- Install scuppers to improve deck drainage.
- Seal any cracks on top end edges of deck.
- Fill by injection flexural cracks on soffit of deck span 1.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.7 Bridge B3305

- Remove debris at piers and excessive vegetation at abutments.
- Repair concrete defects – bearing seats, pier 3 deck restraint and other.
- Repair reinforced concrete cracking/spalling defects.
- Construct reinforced concrete encapsulation around piers indicated on drawings.
- Clean out bridge joint gaps full width and depth, and repair nosings where broken.
- Cut back spalled concrete on parapets, clean and treat reinforcement, splicing in additional reinforcement as necessary, and repair concrete sections.
- Excavate approach roads and install new approach slabs both abutments and construct new layer works.
- Install new bridge joints – thorma joints.
- Clean out bridge joint gaps full width and depth, and repair nosings where broken.
- Install new guardrails.
- Road paint marking.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.8 Bridge B6523

- Clear debris at piers.
- Clean the riverbed to allow inspection of piers and abutments.
- Repair concrete cracking/spalling defects.
- Construct concrete deck slab.
- Construct reinforced concrete guide blocks on deck.

- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.9 Bridge B6529

- Clean the riverbed to allow inspection of piers and abutments.
- Haul waste concrete to approved disposal site.
- Repair concrete cracking/spalling defects.
- Construct new rotapiles .
- Construct new abutment and return walls in front of the existing abutments, supported by new piles.
- Install new elastomeric rubber bearings to support the existing deck.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.10 Bridge B6546

- Accommodation of traffic.
- Install road signs and safety markers.
- Install guardrails

C3.1.3.11 Bridge B0689

- Clear debris at structure.
- Construct reinforced concrete apron slab and cutoff walls between abutments and piers.
- Backfill material underneath constructed apron slab.
- Existing piers and abutment walls to be roughened.
- Construct reinforced concrete encapsulation around all piers.
- Construct reinforced concrete wall on abutment wall and wingwalls.
- Seal all cracks at deck soffit and sides by crack injections.
- Repair cracking on deck surface.
- Install bridge number and hazard plates.

C3.1.3.12 Bridge B0689A

- Construct reinforced concrete apron slab and cutoff walls between abutments and piers.
- Backfill material underneath constructed apron slab.
- Existing pier and abutment walls to be roughened.
- Construct reinforced concrete encapsulation around pier.
- Construct reinforced concrete wall on abutment wall and wingwalls.
- Seal all cracks at deck soffit and sides by crack injections.
- Repair cracking on deck surface.
- Install bridge number and hazard plates.

C3.1.3.13 Bridge B0689B

- Repair damaged parapet and end block.
- Remove existing reinforcement on site at abutments and pier.
- Construct reinforced concrete apron slab and cutoff walls between abutments and piers.

- Backfill material underneath constructed apron slab.
- Existing pier and abutment walls to be roughened.
- Construct reinforced concrete encapsulation around pier.
- Construct reinforced concrete wall on abutment wall and wingwalls.
- Seal all cracks at deck soffit and sides by crack injections.
- Repair cracking on deck surface.
- Install bridge number and hazard plates.

C3.1.3.14 Bridge B0690

- Remove existing reinforcement on site at abutments and pier.
- Construct reinforced concrete apron slab and cutoff walls between abutments and piers.
- Backfill material underneath constructed apron slab.
- Existing pier and abutment walls to be roughened.
- Construct reinforced concrete encapsulation around pier.
- Construct reinforced concrete wall on abutment wall and wingwalls.
- Seal all cracks at deck soffit and sides by crack injections.
- Repair cracking on deck surface.
- Install bridge number and hazard plates.

C3.1.3.15 Bridge B6570

- Demolish and construct a new bridge.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.16 Bridge B6571

- Demolish and construct a new bridge.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.3.17 Bridge B6572

- Demolish and construct a new bridge.
- Accommodation of traffic.
- Install road signs and safety markers.
- Install bridge number and hazard plates.

C3.1.4 General

In addition the following shall also apply:

- (a) Appurtenant works such as the construction of diversions for the accommodation of traffic, the erection of road signs, the painting of road markings and landscaping;
- (b) Correction of defects in the Works in accordance with the requirements specified in the Contract Documents.

This description of the Works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract.

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

C3.1.5 Environmental matters

Notwithstanding what is stated in clauses A1.23.3. and A1.6.7 in COTO the following shall also apply.

To ensure an understanding of the issues and standards expected under this contract the Contractor shall take due cognizance of the requirements as set out in the environmental plan included in Part C3 – section E as well as the following:

- Ensure safety of borrow pits after use, limit stagnant water, avoid deep water and steep banks, and reinstate farmland where crossed by temporary access routes in accordance with the technical specifications.
- Take care when storing hazardous materials, fuel and refuelling machinery.
- No unnecessary disturbance of vegetation at the camp site locations, stockpiling of material in locations and other areas adjacent to the road shall take place.
- All shrubs, trees and woody material cleared where necessary shall remain the property of the local community irrespective of compensation paid for its removal.
- Permission from owners of neighbouring land should be sought prior to the following:
 - constructing new mitre drains
 - establishing the contractor's camp site
 - construction of diversions, particularly for bridge works
- Water should be applied to the gravel road surface during construction to prevent health hazards to construction workers and to reduce dust effects.
- Near residences or any other areas where noise may be a nuisance, the working hours shall be restricted to daylight hours, unless otherwise authorised by the Engineer.

Payment shall be included in the rates in the Bill of Quantities to cover the Contractor's cost for compliance with the Environmental Management Plan.

C3.1.6 Material and Plant

The Employer will not provide any plant or material for the Contract.

C3.1.7 Features requiring special attention

(a) Site maintenance

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

(b) Subcontractors

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

The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

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

(c) Access to properties

Notwithstanding what is stated in clause A1.5.3.1 in COTO the following shall also apply.

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 8.1.2 of the Conditions of Contract.

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

(d) Existing residential areas

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

C3.1.8 Monthly statements and Payment Certificates

The statement to be submitted by the Contractor in terms of Clause 6.10 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit three (3) A4 size paper copies of the statement.

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

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

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Clause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

C3.1.9 Workmanship and Quality Control

Definitions of Acceptance Quality and Process Quality Control are given in clause A1.2.2 in COTO.

Full descriptions of what Process Quality Control and Acceptance Quality Control entails are given in clause A1.2.8 in COTO.

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

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

C3.1.10 Liaison with Local Authorities and landowners

A definition of Stakeholder liaison is given in clause A1.2.2 in COTO and a full description of what it entails in clause A1.2.3.18.

There is also a payment item (C1.2.4) measured in month for Stakeholder liaison.

Clause A1.5.7.7 describes Liaison with traffic authorities.

There is also a payment item (C1.5.3) measured in month for Traffic authority liaison.

C3.1.11 Specialist skills required

C3.1.11.1 Structural steelwork on bridge deck

At B6523 bridge specialist skills will be required to do the structural steel work on the deck. The skills of the entity undertaking this task must be approved by the Engineer before commencement of the work.

C3.2 ENGINEERING

C3.2.1 Design

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

C3.2.2 Employer's Design

- (d) The Employer's design is as detailed in the documentation and on the Drawings.

C3.2.3 Contractor's Design

See clause A1.2.4.2 in COTO

The Contractor will be responsible for the design of temporary Works and he shall supply full working drawings supported by a professional engineer's design certificate.

C3.2.4 Drawings

Definition of Drawings is given in clause A1.1.2 in COTO

The reduced drawings that form part of the Tender Documents are to be used for tender purposes only.

The Contractor will be supplied with one (1) A2 paper print of each of the Drawings as well as electronically in PDF format.

Any information in the possession of the Contractor that is required by the Engineer's Representative to complete his as-built drawings must be supplied to the Engineer's Representative before a Certificate of Completion will be issued.

Only figured dimensions must be used and Drawings must not be scaled unless required by the Engineer. The Engineer will supply any figured dimensions that may have been omitted from the Drawings.

The levels given on the Structural Drawings, if applicable, are subject to confirmation on the Site and the Contractor shall submit all levels to the Engineer for confirmation before he commences construction of any structure. The Contractor shall also check all clearances given on the Drawings and shall inform the Engineer of discrepancies.

One full size set of prints of the Drawings shall be kept by the Contractor on the site and these shall at all reasonable times be available for inspection and use by the Engineer and Engineer's Representative, or by any other persons so authorised by the Engineer in writing.

The Contractor shall notify the Engineer in writing of any additional drawings or specifications required for the proper execution of the works, a reasonable period before these are required.

The issue of Contract drawings to the Contractor is on the explicit condition that they shall only be used for the execution of the works.

C3.2.5 Design procedures

See clause A1.2.4.2 in COTO

C3.2.6 Construction in confined areas

See clause A1.2.3.23 in COTO

See Clause C1.1.3.2 b) for compensation to the Contractor for working in restricted areas.

It may be necessary for the Contractor to work in confined areas. Except in the case of structures, no additional payment will be made for work in "restricted areas" as described in Clause C1.1.3.2 b) of the Standard Specifications. In certain areas, the width of the fill material and pavement layers may reduce to zero and the working space may be confined. The method of construction in these confined areas depends on the Contractor's Constructional Plant. However, the Contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the methods 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.

C3.2.7 Water for construction purposes

See clause A1.2.3.21 in COTO

The Contract will be undertaken in an arid area with scarce water resources. The Contractor must make adequate provision in his Tender for all negotiations and procurement of water for construction activities, and all related costs will be deemed to be included in his tendered rates.

C3.2.8 Construction Programme

See clause A1.2.7.1 in COTO.

A scheme 2 programme will be required for this project

(a) General

The Contractor's programme to be submitted in terms of Clause 5.6 of the Conditions of Contract shall take full account of all matters that may impact on the sequence of executing the various components of the Works and the requisite rate of progress of the Works, as are specified in or reasonably to be inferred from the Contract.

(b) Format

The construction programme to be submitted by the Contractor in accordance with the provisions of Clause 5.6 of the Conditions of Contract and clause A1.2.7.1 c) & d) shall:

- (a) be in accordance with the indicative grouping of bridges as indicated on the programme on the next page for each Contract respectively;
- (b) be in the form of a bar chart;
- (c) take full cognizance of all the Contractor's risks and obligations in terms of the Contract.

C3.3 PROCUREMENT

C3.3.1 Preferential procurement procedures

Procurement will be on the 80/20 points system.

C3.4 CONSTRUCTION

C3.4.1 STANDARD SPECIFICATIONS

(a) The following specifications shall apply for the construction of the Works.

- (i) The COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard) (2020) which the Contractor can download from SANRAL's website at <https://www.nra.co.za/download/coto-standard-specifications/>
- (ii) SABS or BS Specifications and Codes of Practice

Wherever any reference is made to the South African Bureau of Standards (SABS) and the British Standards Specification (BSS) in either these Bill of Quantities or the Specification of Materials and Methods to be Used (OOG-001E), this reference shall be deemed to read "SABS or equivalent standard and BS or equivalent standard" respectively.

The Project Specifications form an integral part of the Contract Documents and supplement the Standard Specifications.

In the event of any discrepancy with a part or parts of the standard specifications, the schedule of rates or the Drawings, the project specifications shall take precedence.

C3.4.2 PROJECT SPECIFICATIONS: GENERAL

C3.4.2.1 Accommodation of traffic

See section 1.5 in COTO

All powered vehicles used on the Contract shall be fitted with warning signboards mounted across the back and front of the vehicle. These boards shall be the same width as the vehicle, 400 mm high, display the word "CONSTRUCTION VEHICLE" in bold black lettering on a yellow background and be subject to the approval of the Engineer.

In addition, all vehicles and items of mobile plant operating on site shall be supplied with electrically operated amber rotating beacons of robust construction. The amber lens shall have a height of at least 200 mm and an output of at least 50 W. The beacons shall be placed to be clearly visible from all directions for approximately 300 metres.

No additional payments shall be made for the furnishing of these boards and rotating beacons.

The Contractor shall provide, at his expense, reflective waistcoats, overalls, protective goggles, gloves, hard hats, waterproof clothing etc., which may be necessary for the execution of the contract.

All normal work will be limited to the periods specified in the Conditions of Contract.

The traffic accommodation reflected in the Bill of Quantities consists of the following:

- Traffic accommodation in half-widths should be provided according to the drawing where required and as stated in A1.5.7.3.
- A temporary traffic bypass road according to the drawing, shall be provided where specified.
- Provision is made for two traffic safety officers for the duration of the entire contract.

Where temporary road signs are required, this will be provided by the Contractor and the Contractor shall at all times ensure proper maintenance thereof.

Failure to maintain road signs, warning signs or rotating lights, etc., in a good condition shall constitute ample reason for the Engineer to bring the works to a stop until the defective items have been repaired to the satisfaction of the Engineer.

The Contractor may not commence constructional activities before adequate provision has been made to accommodate the traffic in accordance with the Drawings and/or as instructed by the Engineer.

Any cost associated with the accommodation of traffic must be included in the relevant payment items.

C3.4.2.2 Contractor's camp site

See clause A1.3.3.1 in COTO

The Contractor shall make his own arrangements for a suitable site for his camp. The Bill of Quantities provides

C3.4.2.3 Security

See clause A1.2.3.17 and A1.3.3.4 in COTO

The Contractor shall be responsible for the security of his personnel and equipment on and around the site of the works and for the security of his camp. No claims in this regard will be considered.

C3.4.2.4 Power supply and other services

See clause A1.3.3.1 in COTO

The Contractor must 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.

C3.4.2.5 Existing services

See clause A2.1.3.2 in COTO

C3.4.2.6 Samples

See clause A1.2.5.1 paragraph 3 in COTO

The Contractor has to ensure that the building material provided, conforms to the specifications. This is also applicable to bitumen used on the site and the Contractor shall make provision to have bitumen samples tested by SABS at his own cost.

C3.4.2.7 Certificate of practical completion of the works

The notice to the Engineer, i.t.o clause 5.14.1 of the Conditions of Contract applying for a Certificate of Practical Completion, shall include the Contractor's own list of what he considers to be the outstanding minor works that do not substantially affect the use of the Works.

The outstanding works contained in the lists produced by the Contractor and the Engineer shall be considered for practical completion only if the following criteria have been met:

- (i) The estimated cost to complete the listed outstanding work is less than 2% of the tendered value of work plus the cost of any variation or extra work orders, but excluding CPA and VAT.
- (ii) The written lists of outstanding items of work can be completed within 28 days of the lists having been issued.
- (iii) Any information in the Contractor's possession, which is required by the Engineer and has been requested in writing, has been supplied.
- (iv) The Regional Manager of the Department of Mineral Resources (DMR) has issued written confirmation to the contractor that they are satisfied with the final shaping to all quarries, borrow pits, stockpile areas, and spoil sites used or intended to be used under this contract. In the event this written confirmation is not obtained from DMR, acceptance by the Environmental Assessment Practitioner (EAP) will be sufficient for the issuing of the Taking-Over Certificate.
- (v) The Contractor has supplied reasonable evidence that all the labourers have been paid and Subcontractors have received all amounts due in terms of the subcontract agreement provisions.

If any of the listed criteria (i) through (v) are not met at the date of the Contractor's notice of application, the Engineer is to reject the application without providing any corresponding list of outstanding work. If an application is rejected, the Contractor shall rectify what has been identified as deficient before submitting a new notice of application.

C3.5 PARTICULAR SPECIFICATIONS

COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES

SECTION 14.5: ANCHORING OF REINFORCEMENT, GROUTING AND CRACK INJECTION

PART C: MEASUREMENT AND PAYMENT

Item

Unit

C14.5.1 Anchoring of Reinforcing steel:

Add the following at the end of the pay item specification:

“The tendered rate shall exclude the reinforcing steel. The reinforcing steel shall be measured under item C13.3.1”

This section includes particular specifications to the standard COTO specifications

Item no	Description	Applicable to this contract
Chapter 1: General – Section 1.1 – General preamble		
A1.1.2	Conditions of contract	General Conditions of Contract for Construction Works, Third Edition, Second Print, (2015)
A1.1.2	Contract	The Works are defined in Part C3 – Scope of Works.
A1.1.2	Contractor	The Contractor is defined in Part C1.2 – Contract Data
A1.1.2	Defects Notification Period	The defects notification period is specified in Part C1.2 – Contract Data.
A1.1.2	Drawings	The tender drawings refer to project document Part C4.3
A1.1.2	Employer	The Employer is defined in Part C1.2 – Contract Data
A1.1.2	Engineer	The Engineer is defined in Part C1.2 – Contract Data
A1.1.2	Guideline documents	No guideline documents are specified for this project.
B1.1.1	Scope	No specific labour -enhanced construction activities required
C1.1.1	Preamble	Refer to part C2.1 for additional information pertaining to the Pricing Schedule
C1.1.2.1	Pricing Schedule	The quantities in the pricing schedule will be increased and decreased as described in the Pricing Instructions and Contract Data
C1.1.3.5	Payment of material on Site	Payment for material on site shall be made in accordance to clause 6.10.2 of the General Conditions of Contract
Chapter 1: General – Section 1.2 – General requirements and provisions		
A1.2.3.3.	Environmental management	The Contractor must provide a dedicated, full-time environmental officer who will be responsible for the environmental monitoring, compliance and reporting duties.
A1.2.3.4	Extension of Time for delays cause	Method 2 (Critical Path method with consequential delays) “N” = 24 days
A1.2.3.5	Handing over of Site of the Works	Refer to conditions of contract clause 5.3.1 & 5.4
A1.2.3.6	Health and safety requirement	Refer to the Occupational Health and Safety specification in Part C3.5 Section D
A1.2.3.9	Monthly Report	The Contractor must submit monthly progress reports at the monthly site meetings

Item no	Description	Applicable to this contract
A1.2.3.12	Ownership of assets and disposal of non-useable assets	The Employer is the owner of all existing moveable and immovable assets in the road reserve.
A1.2.3.20	Road safety Audits	No road safety Audit will be required for this project.
A1.2.3.22 (b)	Permits and other approval	- Construction work will be obtained by the employer - Water use licences to be obtained by the employer
A1.2.3.23	Work in restricted areas	The Contractor shall take due cognizance of the following restrictive conditions, as follows: - Fill behind abutments and walls - Excavations next to road - Casting concrete below exiting bridge. - Construction work over river For this contract all rates include the additional cost for working in restricted areas except for section 13 where payment will be made for construction of fill in restricted areas.
A1.2.4.1	Designs and drawings for the permanent Works provided by the Contractor	The Contractor will not be required to design any permanent Works.
A1.2.4.2	Designs and drawings for temporary works provided by the Contractor	Time frames for submission and resubmission are as follows: Concrete mix design 30 calendar days from commencement date Comments on submission to be provided within 10 working days by Engineer. Specific products, materials, temporary works design to be submitted 30 days before planned construction requirement.
A1.2.5.1	General	Change seven calendar days to ten working days.
A1.2.5.1	General	All manufactured articles or materials supplied by the Contractor for the permanent Works shall be new and unused.
A1.2.7.1	Programme of work	Scheme 2
A1.2.7.4	Work on, over, under or adjacent to utilities	Unidentified utilities on project are: Pipes attached to bridges Pipes crossing below bridges
Chapter 3: Drainage – Section 3.1 – Drains		
A3.1.5.2	Subsoil drainage material, Pipes	The pipes to be used for subsoil drainage systems must be u-PVC pipes with an internal diameter of 110 mm
A3.1.5.3 (c)	Subsoil drainage material, Geotextile	The different grades of geotextile to be used must be: - Grade 3 for Gabions - Grade 2 for walls
A1.4	Facilities for the Engineer	Office space to be provided
A1.5	Accommodation of Traffic	Where required and typical drawing to be provided
A4.1.5.12	Wearing course gravel material	Rural and urban road

Item no	Description	Applicable to this contract
A12.11	Properties of Geotextile material	Geotextile shall be classified in grades as given in Table A12.11.8 - 2
Chapter 13: Structures– Section 13.4 – Concrete		
C13.4.3	Projection of concrete from adverse environmental conditions	Concrete to be sulphate resistant

Table A12.11.8 - 2

PROPERTIES	LIMITING VALUES*					
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
THICKNESS	AS SPECIFIED BY THE MANUFACTURER					
Mass per unit area (g/m ²)	100	140	200	240	300	350
Tensile strength (kN/m)	6	10	13	18	25	30
Penetration load (kN)	1,0	1,5	2,5	3,0	4,0	5,0
Penetration resistance* (max) (mm)	35	30	25	18	16	10
Permeability (litre/s/m ²)	25	20	15	15	10	5

C3.6 ENVIRONMENTAL SPECIFICATION

C3.6.1 SCOPE

This EMP prescribes the methods by which proper environmental controls are to be implemented by the Contractor for construction and maintenance projects. The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by this Conditions of Contract for Construction as the Defects Notification Period (maintenance period).

The provisions of this specifications are binding on the Contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract, particularly the conditions of any environmental authorisation and associated site-specific Environmental Management Programme (EMPr). In the event that any conflict occurs between the terms of the EMP and the project specifications or environmental authorisation, the terms herein shall be subordinate.

This specifications is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification.

The EMP identifies the following:

- Relevant parties and their responsibilities;
- Construction activities that will impact on the environment;
- Specifications with which the Contractor shall comply in order to protect the environment from the identified impacts; and
- Actions that shall be taken in the event of non-compliance.

C3.6.2 DEFINITIONS

Alien Vegetation: undesirable plant growth which includes but is not limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA), 1983 and the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). Other vegetation deemed to be alien are those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: any action taken by the Contractor, his sub-contractors, suppliers or personnel during the construction process as defined in the contract documents.

Environment: the surroundings within which the contract exists and comprises land, water, atmosphere, micro-organisms, plant and animal life (including humans) in any part or combination thereof as well as any physical, chemical, aesthetic or cultural inter-relationship among and between them.

Environmental Aspect: any component of a contractor's construction activity that is likely to interact with the environment.

Environmental authorisation: a written statement from a Competent Authority, with the general and specific conditions and the EMPr recording its approval of an application for a planned undertaking that triggers listed activities in the Environmental Impact Assessment (EIA) regulations of the National Environmental Management Act (NEMA).

Environmental Impact: any change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

Environmental Impact Assessment (EIA): a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and scoping and environmental impact reporting.

Environmental Management Plan: An Environmental Management Plan (EMP) is an environmental management tool used to ensure that adverse impacts of the construction and operation and decommissioning of a project are prevented and/or minimised, and that the positive benefits are enhanced.

Environmental Management Programme (EMPr): A project-specific Environmental Management Plan approved by a competent authority through an environmental impact assessment process.

Road Reserve: a corridor of land, defined by co-ordinates and/or proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Site; the site is defined in the scope of works. It is bound by the limits of construction as shown in the drawings or the title of the project and extends to also include the following:

- Areas outside the construction zones where accommodation of traffic is placed;
- All borrowpits defined in the applications approved by the Department of Mineral Resources (DMR);
- All haul roads constructed by the Contractor for purposes of access;
- Any non-adjacent sites specified in the contract documentation;
- The Contractor's and his subcontractors' camp sites.

For the purposes of this specifications, the site includes areas outside of, but adjacent to, the road reserve that may be affected by construction activities.

Spoil material: is material that is unsuitable for construction of the road pavement and for which no other useful purpose can be found in additional works on the project (e.g. for the provision of protection berms). Such material requires spoiling at convenient areas to be identified by the Engineer and/or Contractor within the Site. Spoil material does not require removal to a designated landfill site unless it contains identifiable hazardous contaminants.

C3.6.3 LEGAL REQUIREMENTS

(a) General

Construction shall be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the Contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The Contractor should note that obligations imposed by the EMP are legally binding in terms of this contract. In the event that any rights and obligations contained in this EMP contradict those specified in the standard or project specifications then the latter shall prevail.

(b) Statutory and other applicable legislation

The Contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

Major environmental legislation, as amended from time to time, includes but is not limited to the following:

(i) Conservation of Agricultural Resources Act (Act No. 43 of 1983)

This act provides for control over the utilisation of the natural agricultural resources of South Africa in order to promote the conservation of soil, water sources and vegetation, as well as combating weeds and invader plants.

(ii) The Constitution (Act 6 of 1996)

The Constitution states that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected through reasonable legislative and other measures to prevent pollution and ecological degradation; promote conservation and ensure ecologically sustainable development and use of natural resources.

(iii) Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)

This act makes provision for equitable access to, and sustainable development of, minerals and petroleum resources.

(iv) National Environmental Management Act (NEMA), (Act No. 107 of 1998)

This act supports the Bill of Rights within the Constitution and highlights principles of sustainable development including preservation of ecosystems and biological diversity and avoidance, minimisation and remediation of pollution and environmental degradation. It also sets the stage for the EIA Regulations.

(v) National Environmental Management: Air Quality Act (Act No. 39 of 2004)

This act provides reasonable measures for the prevention of pollution and ecological degradation; and provides for specific air quality measures; for national norms and standards regulating air quality monitoring, management and control by all spheres of government.

(vi) National Environmental Management: Biodiversity Act (Act No. 10 of 2004)

This act makes provisions to accomplish the objectives of the United Nations' Convention on Biological Diversity. The employer may be required to apply for permits to conduct certain listed activities which, together with the listed threatened or protected species, may be identified by the Minister.

Section 73 (3) of this act empowers a competent authority to direct a person to take steps to remedy any harm to biodiversity resulting from the actions of that person or as a result of occurrence of listed invasive species occurring on land on which that person is the owner. Thus the employer may be directed to remedy harm caused by listed invasive species.

(vii) National Environmental Management: Protected Areas Act (Act No. 57 of 2003)

This act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity, natural landscapes and seascapes.

(viii) National Environmental Management: Waste Act (Act No. 59 of 2008)

This act aims to regulate waste management practices through provision of national norms and standards, specific waste measures, licensing and control of waste activities, remediation of contaminated land as well as providing for compliance and law enforcement.

(ix) National Forests Act (Act No. 84 of 1998)

This act makes provision for promoting the sustainable management and development of forests, and for the protection of certain forests and trees for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

(x) National Heritage Resources Act (Act No. 25 of 1999)

This act provides for an integrated and interactive system for identification, assessment and management of South Africa's heritage resources, and empowers civil society to nurture and conserve their heritage resources.

(xi) National Water Act (Act No. 36 of 1998)

This act makes provision for the protection of surface water and groundwater and their sustainable management for the prevention and remediation of the effects of pollution, as well as for the management of emergency situations.

C3.6.4 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

Copies of this EMP shall be kept at the site office and must be distributed to all senior contract personnel who shall familiarise themselves with its contents.

Implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role as outlined herein, to ensure sound environmental management during the construction phase of a project.

(a) Employer

Employer and anyone acting on Employer behalf is accountable for the potential environmental impacts of any activities that are undertaken and is responsible for managing these impacts.

(b) The Engineer

The Engineer has been appointed by, and acts for, the Employer as its on-site implementing agent and carries the responsibility to ensure that the Contractor undertakes its construction activities in such a way that the Employer's environmental responsibilities are not compromised.

The Engineer will, within seven days of receiving a contractor's request for approval of a nominated Designated Environmental Officer (DEO), approve, reject or call for more information on the nomination. The Engineer will be responsible for issuing instructions to the DEO where environmental considerations call for action to be taken.

If in the opinion of the Engineer the DEO is not fulfilling his/her duties in terms of this EMP, the Engineer may, after discussion and agreement with the Employer, exercise his powers under the conditions of contract instruct replacement of the DEO in writing and with stated reasons.

(c) The Contractor

The Contractor is responsible for project delivery in accordance with the prescribed specifications, among which this environmental specification shall be included.

The Contractor shall receive and implement any instruction issued by the Engineer relating to compliance with the EMP including the removal of personnel or equipment.

Compliance with the provisions contained herein or any condition imposed by the environmental approvals shall become the responsibility of the Contractor through an approved Designated Environmental Officer (DEO). The Contractor shall nominate a person from among his site personnel to fulfil this function and submit to the Engineer for his approval the curriculum vitae of the proposed DEO. This request for approval shall be given, in writing, at least fourteen days before the commencement of any construction activity clearly setting out reasons for the nomination, and with sufficient detail to enable the Engineer to make a decision.

(d) The Designated/Dedicated Environmental Officer (DEO)

Once a nominated representative of the Contractor has been approved, he/she shall become the DEO and shall be the responsible person for ensuring that the provisions of this EMP are complied with during the life of the contract. The DEO shall submit regular written reports to the Engineer, but not less frequently than once a month.

The DEO may undertake other construction duties unless Section B: Specification Data, prescribes this position as 'Full-time' or 'dedicated' as opposed to the standard position being 'designated'. However, the DEO's environmental duties shall hold primacy over other contractual duties and the Engineer has the authority to instruct the Contractor to reduce the DEO's other duties or to replace the DEO if, in the Engineer's opinion, he/she is not fulfilling his/her duties in terms of the requirements of this EMP. Such instruction will be in writing clearly setting out the reasons why a replacement is required.

As a minimum the DEO shall have an accredited National Qualifications Framework (NQF) level 6 qualification in environmental or natural sciences or equivalent and a minimum of 2 years' experience in a similar role in construction or other environmental regulatory field.

In addition to the compliance duties relating to EMP the DEO shall also provide full cooperation whenever the Contractor is subjected to environmental audits.

(e) Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is an independent environmental specialist appointed by the Employer or the Engineer to objectively and regularly monitor the Contractor's compliance with the conditions of the authorisations issued for the project and the approved EMPr (that is this EMP augmented with specifics of the project). These are external audits, and the regularity is determined by the environmental authorisations.

C3.6.5 TRAINING

(a) Qualifications

The (DEO) shall have the minimum qualifications as prescribed above and must be conversant with all legislation pertaining to the environment applicable to the contract. He/she must be appropriately trained in environmental management and possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The Contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees.

(b) Content

Apart from induction environmental training should, as a minimum, include the course content below and no induction or course should be given until the Engineer has been afforded the opportunity to appraise it and provide comment.

(i) The importance of conformance with all environmental policies and the consequences of departure from standard operating procedures;

(ii) Environmental impacts, actual or potential, caused by work activities, prevention measures to avoid them and mitigation measures when they occur;

(iii) Work force roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements;

(iv) The environmental benefits of improved personnel performance and

(v) Consequences of non- compliance

(c) Induction

In the case of permanent staff the Contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Contractor shall inform the Engineer when and how he intends concluding his environmental training obligations.

C3.6.6 ACTIVITIES/ASPECTS CAUSING IMPACTS

Typical environmental aspects and impacts associated with road construction are listed in Table 1: Aspects and Impacts Associated with Road Construction. Actual impacts will differ from project to project and, therefore, so may the mitigation measures employed. The most common aspects and impacts are addressed separately, and typical avoidance and/or mitigation measures described. The list and descriptions are not by any means exhaustive, and they shall be used for guideline purposes only.

Table 1: Aspects and Impacts Associated with Road Construction

Aspect	Potential Impact
Waste generation/storage	Water pollution; nuisance; visual impact
Water use and stormwater discharge	Change in flow regime and/or reduction in downstream availability; soil erosion: water pollution
Vehicle use and maintenance	Air pollution; noise
Chemical/fuel storage	Water/air/soil pollution; health impacts; accidents e.g. spills, fire
Site clearing; earthworks; layer-works; seal works	Change in landform; impact on heritage resources; noise; soil erosion; air pollution
River bridges; installing drainage structures	Water pollution; impact on river flows; noise
Land acquisition	Loss of land and/or livelihood; change in land use;
Acquisition of building material from borrow pits	Change in landform and use

(a) General approach

The role of the DEO cannot be underestimated and once approved he/she shall be on the site at all times, and before the Contractor begins each construction activity, he/she shall give to the Engineer a written statement setting out the following:

- (i) The type of construction activity about to be started.
- (ii) Locality where the activity will take place.
- (iii) Identification of the environmental aspects and impacts that might result from the activity.
- (iv) The methodology of impact prevention for each activity or aspect.
- (v) The methodology of impact containment for each activity or aspect.
- (vi) Identification of the emergency/disaster potential for each activity (if any) and the reaction procedures necessary to mitigate impact severity.
- (vii) Treatment and continued maintenance of impacted environment.

The Contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified, and the activity planned so as to prevent any impact from happening and shall demonstrate that he is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce method statements for each construction activity in compliance with the provisions of these project specifications.

The Contractor shall provide such information in advance of any or all construction activities provided that new submissions shall be given to the Engineer whenever there is a change or variation to the original.

The Engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the Contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the Contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

(b) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, the Contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill containment and treatment (whether hazardous or not) lies with the Contractor. The individual causing a spill, or who discovers a spill, must report the incident to his/her DEO or to the Engineer. The DEO will assess the situation in consultation with the Engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/water shall be determined by the Contractor in consultation with the DEO and the Engineer. Areas cleared of hazardous waste shall be re-vegetated according to the Engineer's instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Engineer. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input as well as the sampling and testing of the water quality upstream and downstream of the spill. Water quality sampling and testing, and further treatment shall continue until upstream and downstream results correspond with each other.

(c) Water use and control

The Contractor's use of water shall take into consideration that it is a scarce commodity and shall be optimised. Authorisation shall be obtained from the Department of Water and Sanitation (DWS) before water is drawn from streams or new boreholes developed.

The Contractor shall also ensure that any stream deviations or diversions are undertaken in such a manner that the impact on the environment is minimised. Method statements shall be submitted to the Engineer for comment, detailing how the work will be undertaken, what risks are foreseen and what measures will be employed to minimise such risks. Notwithstanding any comments by the Engineer, no work on stream deviations or diversions shall be undertaken in accordance with GN 509 in GG 40229 of 26 August 2016 - General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 Of 1998) for Water Uses as defined in sections 21(c) and (i) .

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users/receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and flooding by dredging, daylighting, removal of debris and vegetation, etc. These shall also be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products.

The Contractor shall submit to the Engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions up to 1:5 year severity.

The Contractor shall submit to the Engineer the results of the baseline water quality test taken above and below the site of the proposed activity, and thereafter monthly testing results or at the frequency as may be specified by the Water Use Licence/General Authorisation, where applicable. No taking-over can be authorised until the water quality is shown to be at pre-construction levels or better.

(d) Vegetation management

The Contractor shall be responsible for the management of vegetation by protection of indigenous vegetation, especially identified protected species, and the prevention of alien vegetation germinating in areas disturbed by road construction activities within and outside the road reserve. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily. This responsibility shall continue for the duration of the defects notification period. The project specification may instruct the removal of CARA and/or NEMBA-listed category 1 and 2 alien species and planting of specified indigenous species.

(e) Dust control

Dust caused by construction activities shall be controlled by appropriate means and applied at sufficient frequency so as not to cause nuisance to adjacent habitation or affect farming activities or natural vegetation. Vegetation cover should also be kept for as long as possible to reduce the area of exposed surfaces. Dust emissions from batching and screening plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant authorities.

(f) Noise control

The Contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during the hours prescribed by the conditions of contract (i.e. normal hours). Should such noise generating activities have to occur at any time outside normal hours the people in the vicinity of the noise-generating activity shall be warned about the noise well in advance and the activities kept to a minimum. Relevant legislation shall also be taken into consideration, and any practical mitigation measures adopted. No noise generating activity outside of normal hours, regardless of its proximity to residences, can take place without application to the Engineer for approval. The application shall be accompanied by the noise containment measures proposed.

(g) Energy consumption

The Contractor shall take into consideration the impacts of high energy consumption, both from a cost and emissions point of view. Energy use shall be minimised, and where possible, alternative energy sources such as solar utilised.

Furthermore, the Contractor shall measure and keep records of the consumption of carbon units his chosen method of construction produces in the execution of his programme. In conjunction with the Engineer who will provide complete cooperation, a month by month output shall be compiled and efforts made to see how these outputs can be curtailed and reduced.

C3.6.7 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

The Contractor shall undertake “good housekeeping” practices during construction as stated in the COTO Standard Specifications for Roads and Bridges and the contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

The construction activities addressed below shall become part of the Contractor’s obligations regarding his programme of work and incorporated into the required method statements for workmanship and quality control.

a) Site establishment

i) Site Plan

The site refers to an area with defined limits on which the project is located. The Contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before any site establishment can begin, the Contractor shall submit to the ECO for his comments and to the Engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste management facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course. No camp establishment, including satellite camps, can be placed within 150 metres of an identified watercourse unless the Contractor has applied to DWS and received authorisation to do so. Regardless of the chosen site, the Contractor’s intended mitigation measures shall be indicated on the plan. The site plan shall have been submitted and approved before establishment commences. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These

records are to be kept by the ECO and the Engineer for consultation during rehabilitation of the site in order that rehabilitation is, as a minimum, done to a standard similar to pre-construction activities.

ii) Vegetation

The Contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the Engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-established. Protected trees may not be removed without a permit from the Department of Forestry, Fisheries and Environment.

Contravention of a notice of listed protected tree species under the National Forests Act, 1998 is regarded as a first category offence that may result in a fine or imprisonment for a period up to three years, or to both a fine and imprisonment. The DEO must be conversant with the latest gazette of declared protected trees.

Rehabilitation shall be undertaken using only indigenous tree, shrub and grass species. Special attention shall be given to any search and rescue operation identified during the environmental assessment process and any removal to an on-site nursery for continuous nurturing and protection and later replanting.

Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding.

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. The need for a firebreak shall be determined in consultation with the Engineer and the relevant authorities, and if required a firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Water management

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans, dams etc.). Only domestic type wastewater shall be allowed to enter this system.

iv) Heating and cooking fuel

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage management

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Engineer, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a specialist service provider. The type of sewage management will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the Engineer. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system and shall be approved by the Engineer in consultation with the ECO.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer.

c) Waste management

The Contractor's intended methods for waste management shall be outlined and implemented at the outset of the contract and shall be to the satisfaction of the Engineer. A waste inventory shall be drawn up of all waste streams that will possibly be generated by the site/project and an integrated approach shall be taken to its management. Records shall be kept of all waste disposed. Opportunities for avoiding, reducing, reusing and recycling of materials should be identified upfront, as should constraints for their implementation. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid waste

Solid waste shall be stored in an appointed area in covered, tip-proof metal drums or similar container for collection and disposal. Disposal of solid waste shall be at a licensed landfill site or at a site approved by the relevant authority in the event that an existing operating landfill site is not within reasonable distance from the project area. No waste shall be burned or buried at or near the project area.

ii) Litter

No littering by construction workers shall be allowed and particular emphasis on litter control measures shall apply at stop/go facilities.

During the construction period, the various contractors' facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. At all places of work the Contractor shall provide litter collection facilities for later safe disposal at approved sites.

iii) Hazardous waste

Hazardous waste such as oils shall be disposed of at an approved landfill site and proof of such disposal kept by the Contractor. Special care shall be taken to avoid spillage of bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating surface water.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be returned to the supplier's production plant. Any spillage of bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the Engineer.

iv) Construction and demolition waste

The opportunity for recycling and reuse of construction and demolition waste as fill for road embankments, land reclamation and drainage control must first be explored and take priority before the option of declaring these materials a 'waste'.

The Contractor is encouraged to actively engage with authorities and landowners adjacent to the site and identify where such materials can be usefully deployed to repair existing environmentally damaged areas such as erosion dongas.

d) Control at the workshop

The Contractor's management and maintenance of his plant and machinery will be monitored according to the criteria given below.

i) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials such as bitumen binders shall be stored in a secured, appointed area that is suitably fenced, bunded and has restricted entry. Storage of bituminous products shall only take place using suitable containers to the approval of the ECO and the Engineer.

The Contractor shall provide proof to the Engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected, the Contractor shall furnish the Engineer with details of the preventative measures he proposes to install in order to mitigate pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

ii) Fuel and gas storage

The Contractor shall take cognisance of the limits set by legislation for the storage of fuels and acquire the necessary authorisation for storage capacity beyond these. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored chained in a secure, well-ventilated area exterior to any building wall.

iv) Oil and lubricant waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by a specialist oil recycling company.

Drip trays shall be used to collect any lubricants or fuel spilled where any vehicle and machinery are repaired or refuelled. The lubricants and fuel collected shall be handled as specified above.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) Clearing the site

In all areas where the Contractor intends to or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the Engineer for his approval. Working areas shall be clearly defined and demarcated on site to minimise the construction footprint. 'No-go- areas' and other sensitive areas shall also be clearly demarcated on site, and staff must be made aware of them.

The plan of action shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the Engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during inspections.

f) Soil management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil

from the site for later re-use. Topsoil is the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include all storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved waste disposal site. The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water.

The Contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be top-soiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The Contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The Contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the Engineer. The Contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Engineer, and if not used for road building it shall be stored and maintained separately from the topsoil so that neither stockpile is contaminated by the other. This soil shall be used for rehabilitation purposes by first spreading it over the excavated slopes without interfering with or contaminating the stockpiled topsoil.

Whilst in stockpile it shall be maintained free from erosion and weed infestation in the same way as for topsoil stockpile maintenance.

g) Earthworks and layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the Contractor shall have complied with the requirements of this EMP. In addition, the Contractor shall take cognisance of the requirements set out below.

i) Quarries and borrow pits

The Contractor's attention is drawn to the requirement of the Department of Mineral Resources, that before entry into any quarry or borrow pit, an Environmental Authorisation for the establishment, operation and closure of a quarry or borrow pit shall have been approved by the Department where applicable. It is the responsibility of the Contractor to ensure that he is in possession of the authorisation prior to entry into the quarry or borrow pit. The conditions imposed by the relevant authorisation are legally binding on the Contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific authorisation and this EMP, the former shall apply.

ii) Excavation, hauling and placement

The Contractor shall provide the ECO and the Engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail measures by which the impacts of pollution (noise, dust, litter, fuel, oil and sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The Contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition.

iii) Spoil sites

The Contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality,

intended method of operation, maintenance and rehabilitation shall be given to the ECO for his/her comments and to the Engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the ECO and the Engineer. No spoil site shall be located within 50m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of any waste shall be prohibited. Spoil sites will be shaped to fit the natural topography. Depending on availability these sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Appropriate grassing measures to minimise soil erosion shall be undertaken by the Contractor. This may include both strip and full sodding. The Contractor may motivate to the Engineer for other acceptable stabilising methods. The Engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the Contractor of a landowner's clearance notice.

iv) Stockpiles

The Contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the Engineer for his approval. The Contractor's proposed measures for prevention of environmental damage, containment and subsequent rehabilitation shall also be submitted.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the Contractor shall at all times ensure that they are positioned and sloped to create the least visual impact, constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment and kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated/deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the Contractor's cost until clearance from the Engineer and the landowner is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the Engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in situ milling or any leftover material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract documentation or under instruction from the Engineer.

The ECO shall comment on and the Engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their closure only when they have been satisfactorily rehabilitated.

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the Contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives.

h) On site plant

i) Crusher, screening plants and concrete batching plants

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relevant authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1007(g)(i) of this EMP, with the exception that the Contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the Contractor shall provide plans that take into account such additional

measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant authority, as shall approval of closure. The Engineer will assist the Contractor in his applications to the relevant authority.

Screening activities shall be undertaken so that dust and noise is minimised. This can be done by carefully choosing the site for the activity, and by using slightly damp material.

Effluent from concrete batch plants and crusher plants shall be reused where possible or treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the Engineer for approval.

ii) Asphalt Plant

Asphalt plants shall be subject to the applicable legislation that governs establishment and operation of batching plants. The Contractor shall be responsible to obtain the necessary permit from the relevant authority.

Operation of the plant shall conform to the same requirements as for a crushing plant or concrete batching plant under C3.6.7(h)(i) above.

C3.6.8 AREAS OF SPECIFIC IMPORTANCE

Any area, as determined and identified within the project documents as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the specific environmental authorisation, as well as the approved EMP. The Contractor may offer alternative solutions to the Engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection should not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall receive ad hoc treatment.

a) Archaeological sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The South African Heritage Resource Agency (SAHRA) is to be contacted, and a SAHRA-registered archaeological consultant may undertake the necessary work involved in confirming the find and advising on how it should be preserved or removed. Work may only resume once clearance is given in writing by the archaeologist.

If a grave or midden is uncovered on site then all work in the immediate vicinity of the graves/middens shall be stopped, and the Engineer informed of the discovery. The South African Heritage Resource Agency and the South African Police Services (SAPS) should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with SAHRA, be responsible for attempts to contact family of the deceased and for the place where the exhumed remains can be re-interred.

C3.6.9 REHABILITATION

The Contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, construction has to be stored temporarily, and designated or instructed areas outside the road reserve. It also includes the area where site offices were erected which may require rehabilitation at the end of the contract. All construction material, including concrete slabs and barbecue (braai) areas shall be removed from the site on completion of the contract unless written approval from the relevant landowner demonstrates it is to be left in place.

Responsibility for re-establishment of vegetation shall extend until expiry of the defects notification period. However, the Employer reserves the right to continue holding retention monies (or not releasing guarantees in lieu of retention) depending upon the state of cover at the end of the defects notification period. Such extension may continue until closure of the relevant quarry or borrow pit has been secured,

Rehabilitation of affected areas should be undertaken as early as possible when the relevant activities are done in order to reduce further environmental damage. All re-vegetation should be undertaken using indigenous vegetation. The standard of rehabilitation should be to the satisfaction of the Engineer and the relevant authorities. The Department of Minerals Resources will only issue closure certificates for borrow pits and quarries when they are satisfied with the rehabilitation undertaken. It should also be noted that in some cases there is a requirement for a final environmental audit covering the extent of the project.

C3.6.10 RECORD KEEPING

The Engineer and the DEO will continuously monitor the Contractor's adherence to the approved impact prevention procedures and the DEO shall submit regular written reports to the ECO and to the Engineer at least once a month. The DEO will report the environmental compliance performance of the project at regular site meeting. The Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO shall document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the Engineer in the monthly report.

Copies of all authorisations shall be kept on site and made available for inspection by visiting officials from the Employer, relevant authorities or internal/external auditors.

C3.6.11 COMPLIANCE AND PENALTIES

The Contractor shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and an oral report given at the monthly site meetings.

Any non-compliance/omissions with the procedures in this EMP, environmental authorisations and the approved EMPr constitute a breach of the Conditions of Contract. Regulatory financial penalties imposed on the Employer shall be passed onto the defaulting parties.

C3.6.12 PROJECT SPECIFIC CONDITIONS (EMPr)

C3.6.12.1 CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1. <u>ACTIVITY:</u> PERMITS AND AUTHORISATIONS				
1.1	<u>Aspects:</u> Legislative compliance. <u>Impact:</u> Non-compliance with South African environmental legislation. <u>Objective:</u> Ensure compliance with all triggered environmental legislation. <u>Mitigation/Management Measures:</u> a. The Developer is to have the following permits on commencement: • Environmental Authorisation; • Environmental Management Program; and, • Building approval from the Municipality	Developer	<u>Monitoring Action:</u> Obtain copies of all permits; Record Keeping <u>Responsible Person/Party:</u> Developer <u>Monitoring Frequency:</u> Once-off	
2. <u>ACTIVITY:</u> SITE LAYOUT PLANNING				
2.1	<u>Aspects:</u> Site Layout Plan. <u>Impact:</u> Negative impact on the environment of unmanaged and unplanned placement of Infrastructure. <u>Objective:</u> To ensure acceptable impact and management of environmental issues at the main site and storage site during construction by proper planning of layout of infrastructure placement.	Developer	<u>Monitoring Action:</u> Record Keeping <u>Responsible Person/Party:</u>	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<u>Mitigation/Management Measures:</u> a. Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure, b. The planning for layout must be done in consultation with the ECO. c. The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes; d. No servicing of vehicles may be permitted on site, unless for emergency purposes; e. Stockpiles must not be situated such that they obstruct pathways; and, f. Place infrastructure as far as possible on sites that have already been transformed.		Contract Manager / Project Engineer <u>Monitoring</u> <u>Frequency:</u> Once off	
3. <u>ACTIVITY:</u> CONSTRUCTION PROGRAMME / SCHEDULE				
3.1	<u>Aspects:</u> Project Management. <u>Impact:</u> Order and timing of construction activities and associated impacts. <u>Objective:</u> To Provide a clear indication of the order by which key construction activities will transpire.	Contract Project Manager / Contractor	<u>Monitoring Action:</u> Meetings; Risk Register; ECO Audit Checklist; Photographs <u>Responsible Person/Party:</u> Contract Project	
	<u>Mitigation/Management Measures:</u> a. Draw up and sign off a project schedule with all contributing parties and service providers to commit to a timeline during which time construction milestones will be completed; b. Communicate any deviation from this schedule with all parties, so as to provide parties with sufficient opportunity for alternative arrangements to be made; c. Establish a Risk Register to identify and monitor potential factors which may result in setbacks/ delays on tasks within the project schedule;			

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	d. Hold management meetings with representatives of the Project Manager, Contractor, Engineer and other contributing parties to monitor and anticipate changes; and, e. Should circumstances/ incidents arise which may pose a risk to the project schedule, the Construction Contractor, and Engineer and ECO are to keep records of this and the latter communicate this in the ECO Bi-Weekly Audit Checklist.		Manager / Contractor / ECO Monitoring Frequency: Once off	
4. ACTIVITY: COMMUNICATION WITH LAND-OWNERS				
4.1	Aspects: Landowner Consent. Impact: Disturbance of existing land use. Objective: Maintain a conflict-free relationship with landowners / users. Mitigation/Management Measures: a. Landowners are to be aware and in agreement of site access arrangements; b. The landowner has to be requested to liaise with the Site Supervisor of the construction contractor prior to entering the construction footprint area for safety purposes; c. All property gates are to be kept closed when not in use (or kept in the open/closed state in which it was found); and, d. Any complaint or liaison with regard to environmental aspects, compensation or disorder to economic activities, must not be addressed by the contractor. A Public Complaint Register must be kept on site and the contract Project Manager must inform the Developer and/or ECO to take further action.	Contract Project Manager / Contractor	Monitoring Action: Meetings; Risk Register. Responsible Person/Party: Contract Project Manager / Contractor / ECO Monitoring Frequency: Once off	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
5. ACTIVITY: SITE ESTABLISHMENT				
5.1	Aspects: Demarcation of the site and vegetation removal. Impact: Direct impact on vegetation during construction and loss of species. Objective: Prevent unnecessary habitat destruction. Mitigation/Management Measures: - No natural surfaces are to be marked other than using droppers, beacons or other artificial object; - Ensure the upkeep of demarcation boundaries throughout the period of construction until rehabilitation has been completed; - Construction areas must be fenced; - Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated foundation footprint area; - Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible; - There must be a pre-construction environmental induction for all construction staff on site to ensure that basic environmental biodiversity principles are adhered to; - Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation; and, - No vegetation may be gathered for the purpose of creating fire;	Construction Contractor	Monitoring Action: ECO to take photographs of site before clearance; ECO Audit Checklist. Responsible Person/Party: ECO Monitoring Frequency: Monthly	
5.2	Aspects: Topsoil stripping and conservation. Impact: Destruction of topsoil. Objective: Conserve and protect topsoil from erosion and destruction.	Construction Contractor		

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<u>Mitigation/Management Measures:</u> a. In the absence of a distinguishable topsoil layer, strip the uppermost 300 mm of soil; b. Stockpile topsoil separately from subsoil, in heaps no higher than 2m; c. Topsoil stockpiles are to be kept free of weeds; d. Limit unnecessarily prolonged exposure of stripped areas and stockpiles; e. Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rains/ storm water; f. Topsoil need to be stored in designated areas only. This need to be planned and indicated on the site-layout plan; g. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction/ earthworks in that area; h. Strip and stockpile herbaceous vegetation, overlying grass and other fine organic matter along with the topsoil; i. Ensure that topsoil is not mixed with subsoil and/or any other excavated material; j. Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer need to be managed according to a detailed Topsoil Management Plan; k. Topsoil must be used in all rehabilitation activities, and may not be compacted to ensure that its plant support capacity remain of high quality; l. Do not strip topsoil when it is wet; and, m. Do not mix topsoil obtained from different sites, unless the ECO gives permission.		<u>Monitoring Action:</u> ECO Audit Checklist; Photographs; <u>Responsible Person/Party:</u> ECO <u>Monitoring Frequency:</u> Monthly	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
6. ACTIVITY: SITE INFRASTRUCTURE PLACEMENT AND OPERATION				
6.1	Aspects: Structures and lay-down areas. Impact: Deterioration of site features and surrounding areas. Objective: Prevent the deterioration of site features like soil, rainwater runoff and erosion. Mitigation/Management Measures: - Locate all structures and storage areas, including offices, workshops and stores in approved locations are per the Site Layout Plan; - The camp with storage and laydown areas are to be kept secure and neat with access control measures adopted during construction; - Clearly define which activities are to occur within which areas of the site by erecting signage; and, - All hazardous substances, such as fuel, oil, diesel, paint, etc., must be stored in a secondary containment system (trays or bund) which is capable of storing at least 110% of the liquid capacity. If bund areas are used, it must be sealed to avoid seepages.	Construction Contractor	Monitoring Action: Photographs; ECO Audit Checklist Responsible Person/Party: ECO Monitoring Frequency: Monthly	
7. ACTIVITY: CONSTRUCTION SITE OPERATIONS				
7.1	Aspects: Security and fencing. Impact: Prevent danger to trespassing of persons. Objective: Keep the site secure from trespassing or theft and keep animals out. Mitigation/Management Measures: - Be responsive to open or closed status of gates; - New or the upkeep of fences must be align to ensure safety of animals and maintain a reliable boundary area;		Monitoring Action: Photographs; ECO Audit Checklist Responsible Person/Party:	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	c. Limit clearing of vegetation for fencing to the removal of trees and shrubs within 1 m of the fence line. All undergrowth must be maintained; d. Should construction activities require the removal of fences or gates to execute tasks, this must be replaced as soon as possible following completion; and, e. In all cases, the landowners on whose property any use of fences or gates, must be consulted, to ensure that parties are informed of construction activity, schedules and vehicle movement.		ECO <u>Monitoring Frequency:</u> Monthly	
7.2	Aspects: Existing Services and Infrastructure. Impact: Damage to existing services and infrastructure. Objective: No damages to existing services and infrastructure. Target: No damages to existing services and infrastructure. Mitigation/Management Measures: a. Take cognisance of the position of existing services and infrastructure (e.g. roads, pipelines, power lines and telephone services) that may get damaged due to construction activities; b. Ensure that existing services are not damaged or disrupted unless required by the contract and with the permission of the Project Manager; and c. In the event that infrastructure is damaged or services interrupted during construction, it will be done at the expense of the Contractor and shall receive top priority over all other activities.	Construction Contractor	Monitoring Action: Photographs; ECO Audit Checklist Responsible Person/Party: Contractor Monitoring Frequency: Monthly	
7.3	Aspects: Traffic. Impact: Impact on traffic. Objective: Minimise the disruption of road users.	Construction Contractor	Monitoring Action: Incident Register;	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<u>Mitigation/Management Measures:</u> a. All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits; b. Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces; c. Construction vehicles may not leave the designated roads and tracks and turnaround points must be limited to specific sites; d. Abnormal loads must not be transported after dark; e. Abnormal loads must be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods; f. Transport of materials must be limited to the least amount of trips possible; and g. Traffic deviations around the construction area must be planned in conjunction with the local authority to ensure safe and free flow of traffic. Safety signs must be utilised.		Photographs; ECO Audit Checklist <u>Responsible Person/Party:</u> Contractor <u>Monitoring Frequency:</u> Monthly	
7.4	<u>Aspects:</u> Traffic. <u>Impact:</u> Traffic impacts associated with the movement of construction vehicles on site. <u>Objective:</u> To minimise the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.	Construction Contractor	<u>Monitoring Action:</u> Incident Register; Photographs; ECO Audit Checklist <u>Responsible Person/Party:</u> Contractor	
	<u>Mitigation/Management Measures:</u> a. During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas;			

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	b. Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated. c. Monitor the establishment of (Alien) Invasive Species and remove as soon as detected, before regenerative material can be formed; d. Abnormal loads and machinery must avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams; e. All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to be licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so; f. Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads; g. Signage is to be placed on vehicles at all times; h. All construction vehicles must adhere to construction sites and avoid off road to minimise impact on vegetation and soil; i. After decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program; and, j. Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.		<u>Monitoring Frequency:</u> Monthly	
7.5	<u>Aspects:</u> Erosion Control. <u>Impact:</u> Loss of topsoil, formation of bare soil and deterioration of habitat quality. <u>Objective:</u> Prevent soil erosion. <u>Target:</u> No signs of soil erosion are evident on site.	Construction Contractor	<u>Monitoring Action:</u> Incident Register; Photographs; ECO Audit Checklist	

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	<u>Mitigation/Management Measures:</u> a. Disturb as little ground area as possible, stabilize that area as quickly as possible, control drainage through the area, and trap sediment on site; b. Conserve topsoil with its leaf litter and organic matter, and re-apply this material to local disturbed areas to promote the growth of local native vegetation; c. Apply erosion control measures before the rainy season begins and after each season of construction, preferably immediately following construction; and, d. Maintain and reapply erosion control measures until vegetation is successfully established.		<u>Responsible Person/Party:</u> Contractor <u>Monitoring Frequency:</u> Monthly	
7.6	<u>Aspects:</u> Handling of general – and hazardous waste materials on the construction site. <u>Impact:</u> The presence of personnel and construction operations will increase the likelihood of littering and dumping of solid waste. <u>Objective:</u> Management and disposal of general – and hazardous waste in an appropriate manner. <u>Mitigation/Management Measures:</u> a. An adequate number of scavenger proof litter bins are to be placed throughout the site. Two (2) waste bins; at least; must be present, one (1) for hazardous waste and one (1) for general waste at each working station. Dumping of waste on site is prohibited; b. Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately; c. Keep all work sites including storage areas, offices and workshops neat and tidy; d. Dedicate a demarcated and signposted storage area on site for the collection of construction waste;	Construction Contractor	<u>Monitoring Action:</u> ECO Audit Checklist <u>Responsible Person/Party:</u> ECO <u>Monitoring Frequency:</u> Monthly	

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	e. All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site; as mentioned in the Basic Assessment Report; f. Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; g. The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; h. Littering by construction workers shall not be permitted; i. Workers from the immediate area need to be encouraged to take their waste with them at the end of each day; j. General refuse/rubbish shall be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity; k. Minimise waste by sorting waste into recyclable and non-recyclable waste; l. Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office; m. A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Control Officer (ECO); n. Hazardous waste must be sorted general waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and, o. Do not dump waste of any nature, or any foreign material in the Bath River or any drainage line.			
7.7	Aspects: Sewage waste. Impact: Pollution and site contamination due to sewage.	Construction Contractor	Monitoring Action: ECO to take	

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	Objective: Provide facilities for appropriate collection and disposal of sewage. Target: No record of pollution or site contamination by sewage. Mitigation/Management Measures: - Provide portable chemical ablution facilities, situated at convenient locations in proximity to work areas. This must be in relation to the quantity of users on site, with 1 ablution facility per 15 users and for each gender; - Locations for the placement of ablution facilities include the workshop and areas for resting and eating. - Ablution facilities are to be maintained and cleaned regularly to ensure functionality and an adequate level of hygiene; - Drinking water facilities, comprising of a water tank with a manual tap can be combined with hand washing facilities near site ablution; and, - Only toilet paper is to be flushed down the chemical ablution facility. Personnel are to be informed on sanitary implementation as part of the environmental awareness.		photographs of site before clearance; ECO Audit Checklist Responsible Person/Party: ECO Monitoring Frequency: Monthly	
7.8	Aspects: Dust Generation and visual Impact. Impact: Dust nuisance from site operations and visual impact of site operations on surrounding land owners. Objective: To avoid dust from excavated materials and construction activity and unnecessary visual impact caused by site operations. Mitigation/Management Measures: - Implement dust suppression measures by watering (or acceptable methods) areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; - Ensure all vehicles remain on designated roads; - Dust masks are to be supplied to workers;	Construction Contractor	Monitoring Action: ECO to take photographs of site before clearance; ECO Audit Checklist Responsible Person/Party: ECO	

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	d. The transfer of soil or aggregate must be done over the shortest possible distance; e. Access roads are to be kept clean; f. Surface material that is scraped off during construction must be conserved and used for rehabilitation. Any spoil material must be disposed of in a manner that appears natural; g. Lay-down area(s) must be screened with shade cloth in an earth tone or other appropriate neutral colour; h. Site offices and structures must be limited to one location and carefully situated to reduce visual intrusion. Roofs must be grey and non-reflective; i. Lights within the construction camp must face directly downwards (angle of 90°); j. Avoid shiny materials in structures. Where possible shiny metal structures must be darkened or screened to prevent glare; k. Litter must be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and, l. The minimum amount of topsoil and vegetation must be removed during construction, must be conserved and used for final rehabilitation.		<u>Monitoring Frequency:</u> Monthly	
7.9	<u>Aspects:</u> Noise Generation. <u>Impact:</u> Noise nuisance from site operations. <u>Objective:</u> To avoid excessive noise generation from site operations. <u>Mitigation/Management Measures:</u> a. Should multiple activities result in the excessive generation of noise, it must be strived to coordinate the incidence of these at the same time; b. Fit machinery with silencers;	Construction Contractor	<u>Monitoring Action:</u> ECO to take photographs of site before clearance; ECO Audit Checklist	

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	c. All stationary noisy equipment such as compressors and pumps must be contained behind acoustic covers, screens or sheds where possible; d. The regular inspection and maintenance of equipment must be undertaken to ensure that all components function optimally; e. Vehicles must avoid the use of their reverse gear as far as possible so as to avoid the sounding of sirens. This must not be considered for temporary access routes as disturbance of adjacent vegetation is to be avoided; f. Where recurrent use of machinery is frequent, machines must be shut down during intermediate periods; g. Unless otherwise specified by the ESA, normal working hours will apply (i.e. from 07H00–18H00, Mondays to Fridays); h. No loud music is permitted on site or in the Camp; i. Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during working hours and after hours; and, j. Vehicles are to abide by speed restrictions on access roads and limit trip generation so as to minimise disturbance to surrounding land users.		<u>Responsible Person/Party:</u> ECO <u>Monitoring Frequency:</u> Monthly	
7.10	<u>Aspects:</u> Fire Prevention. <u>Impact:</u> Uncontrollable fire. <u>Objective:</u> Prevent the outbreak of fires emanating from construction activity.			
	<u>Mitigation/Management Measures:</u> a. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months;	Construction Contractor	<u>Monitoring Action:</u> ECO to take photographs of site	

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	b. Assume acceptable pre-cautions to guarantee that fires are not started as a result of works on site as specified below: the Contractor will be held responsible for any damage to structures or property on or neighbouring the Site as a result of any fire caused by personnel; c. The Contractor must ensure that construction related activities that pose a potential fire risk, such as welding etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working areas and avoiding working in high wind conditions when the risk of fires is greater. In this regard special care must be taken during the high risk dry, windy winter months; d. The Contractor must provide fire-fighting training to selected construction staff and take cognisance of the Veld and Forest Fire Act, Act No. 101, 1998; e. As per the conditions of the Code of Conduct, in the event of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor must compensate the fire-fighting costs borne by farmers and Local Authorities; f. Equip vehicles and site structures with fire extinguishers. Rubber beaters must be stored on site; g. No open fires are allowed anywhere on site; h. Storage of fuel or chemicals under trees is not permitted; i. Gas and liquid fuel is not to be stored in the same place; j. Smoking may only occur within a 3m radius from designated areas; k. Personnel must be adequately trained in the handling of firefighting equipment; and, l. Fuel, diesel, oil, or any other flammable substance must be stored 6m away from the smoking area.		before clearance; ECO Audit Checklist. <u>Responsible Person/Party:</u> ECO <u>Monitoring Frequency:</u> Monthly	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
7.11	Aspects: Local communities. Impact: Impact of construction workers on local communities, construction personnel and the local community. Objective: Construction workers must not alter existing social dynamics of local communities. Mitigation/Management Measures: - Where possible, the Employer must make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi and low-skilled job categories. This will reduce the potential impact that this category of worker could have on local family and social networks; - The Employer must consider the establishment of a Monitoring Forum (MF) for the construction phase. The MF must be established before the construction phase commences and must include key stakeholders, including representatives from the local community, local councillors, farmers, and the contractor. The role of the MF would be to monitor the construction phase and the implementation of the recommended mitigation measures. The MF must also be briefed on the potential risks to the local community associated with construction workers; - The Employer and the contractors must, in consultation with representatives from the MF, develop a Code of Conduct for the construction phase. The code must identify what types of behaviour and activities by construction workers are not permitted. Construction workers that breach the code of good conduct must be dismissed. All dismissals must comply with the South African labour legislation; - The Employer and the contractor must implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase; - The movement of construction workers on and off the site must be closely managed and monitored by the contractors. In this regard the contractors must be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis;	Construction Contractor	Monitoring Action: ECO Audit Checklist Responsible Person/Party: ECO Monitoring Frequency: Monthly	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	f. The contractor must make necessary arrangements to enable workers from outside the area to return home over weekends and or on a regular basis during the 12-18 month construction phase. This would reduce the risk posed by non-local construction workers to local family structures and social networks; g. The contractor must make the necessary arrangements for ensuring that all non-local construction workers are transported back to their place of residence once the construction phase is completed. This would reduce the risk posed by non-local construction workers to local family structures and social networks; and, h. No construction workers, will be permitted to stay overnight on the site. Security personnel will be housed in the vicinity of the site.			
7.12	Aspects: Soil and water contamination due to construction activities such as the use of hazardous materials on site. Impact: Pollution of soil and water contamination by hazardous waste. Objective: Provide facilities for appropriate collection and disposal of hazardous waste. Target: No record of pollution or site contamination by hazardous waste. Mitigation/Management Measures: a. Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); b. Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; c. Material Safety Data Sheets (MSDSs) must be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; d. All spillage must be cleaned up immediately after they have occurred;	Construction Contractor	Monitoring Action: Incident Register; Photographs; ECO Audit Checklist Responsible Person/Party: Contractor Monitoring Frequency: Monthly	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	e. Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site; f. Vehicles and machinery must be regularly serviced to avoid leakages; g. No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA); h. No water courses may be used to clean equipment, or for bathing. All cleaning operations must take place off site at a location where waste water can be disposed of correctly; i. The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; j. Fuel and chemical storage must be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; k. Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; l. All personnel must receive induction on how to report spillages, contain them and treat them accordingly; m. Spill kits must be available at each working station; n. Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and, o. Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file.			

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
7.13	Aspects: Water Conservation. Impact: Wasting water as a result of negligence. Objective: Promote and implement water use efficiency mechanisms.	Construction Contractor	Monitoring Action: Incident Register; Photographs; ECO Audit Checklist Responsible Person/Party: Contractor Monitoring Frequency: Monthly	
	Mitigation/Management Measures: a. Re-use water where possible; b. Implement rain catchment strategies; c. Prevent leakages at taps and hoses by means of maintenance; d. Use buckets of water to clean tools instead of running water; e. Make sure that sediment, concrete, sand and rubbish does not end up going down the stormwater drain. Cover or filter stormwater inlets and drains; and, f. Require workers to use a broom rather than a hose to clean paths and gutters. If water use is necessary, use high pressure hoses which are both water efficient and more effective cleaners.			
7.14	Aspects: Health and Safety. Impact: Dangerous working conditions for workers. Objective: To prevent any casualties on site.	Construction Contractor	Monitoring Action: Incident Register; Photographs; ECO Audit Checklist Responsible Person/Party: Contractor	
	Mitigation/Management Measures: a. Ensure that PPE is available to Personnel; b. Adhere to the Occupational Health and Safety Act; c. Keep the first aid kit stocked; d. Issue all workers with necessary health and safety items;			

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	e. Potentially hazardous areas must be demarcated with danger tape; f. Appropriate signage must be placed to caution Employees and contractors not to enter certain structures without authorisation; g. Regular safety inspections must be conducted to ensure that participants are equipped with necessary safety equipment; and, h. All construction personnel to wear hard hats and reflector jackets at all times.		<u>Monitoring Frequency:</u> Monthly	
7.15	Aspects: Heritage Resources. Impact: Damage and destruction of vertebrate fossils during excavation activities. Objective: To prevent any destruction of valuable artefacts. Mitigation/Management Measures: a. Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained Palaeontologist or Heritage Specialist must be notified to assess the finds, and this must then be reported to the applicable Heritage Authority; b. Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the Heritage Authority. A Registered Heritage Specialist must be called to the site for inspection and removal once authority to do so, has been given; c. Excavations must be limited to the footprint area and be maintained in a narrow corridor; d. All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed:	Construction Contractor	Monitoring Action: Incident Register; Photographs; ECO Audit Checklist Responsible Person/Party: Contractor Monitoring Frequency: Monthly	

CONSTRUCTION PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	a. All construction in the immediate 50 m vicinity radius of the site must cease; b. The heritage practitioner must be informed as soon as possible; c. In the event of obvious human remains SAPS must be notified; d. Mitigation measures (such as refilling, etc.) must not be attempted; e. The area in a 50 m radius of the find must be cordoned off with hazard tape; and, e. Public access must be limited and the area must be placed under guard.			

C3.6.12.2 OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

The intention of providing an EMP'r for the operational phase is to provide guidelines for management of facilities and infrastructure to safeguard the environment against negative environmental impacts.

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1. <u>ACTIVITY:</u> OPERATIONAL PHASE IMPACTS				
1.1	<u>Aspects:</u> Noise Generation. <u>Impact:</u> Noise nuisance from site operations. <u>Objective:</u> To avoid excessive noise generation from site operations. <u>Mitigation/Management Measures:</u> a. Machinery must be in sound mechanical condition and equipped with the necessary silencers; b. Workers on site must adhere to the prescribed working hours (7am – 6pm); c. Ensure that maintenance staff conduct themselves in an acceptable manner while on site, both during working hours and after hours; and, d. No loud music will be permitted on site.	Applicant	<u>Monitoring Action:</u> Applicant to adhere to business hours. <u>Responsible Person/Party:</u> Applicant	
1.2	<u>Aspects:</u> Handling of general – and hazardous waste materials on the construction site. <u>Impact:</u> The presence of personnel and construction operations will increase the likelihood of littering and dumping of solid waste. <u>Objective:</u> Management and disposal of general – and hazardous waste in an appropriate manner. <u>Mitigation/Management Measures:</u>	Maintenance Contractor	<u>Monitoring Action:</u> Maintenance Contractor Checklist <u>Responsible Person/Party:</u> ESA	

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	a. An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins; at least; must be present, one (1) for hazardous waste and one (1) for general waste at each working station. Dumping of waste on site is prohibited; b. Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately; c. Keep all work sites including storage areas, offices and workshops neat and tidy; d. Dedicate a demarcated and signposted storage area on site for the collection of construction waste; e. All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site; as mentioned in the Basic Assessment Report; f. Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised; g. The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste; h. Littering by construction workers shall not be permitted; i. Workers from the immediate area need to be encouraged to take their waste with them at the end of each day; j. General refuse/rubbish shall be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity; k. Minimise waste by sorting waste into recyclable and non-recyclable waste; l. Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office;		<u>Monitoring Frequency:</u> Weekly	

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	m. A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Control Officer (ECO); n. Hazardous waste must be sorted general waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and, o. Do not dump waste of any nature, or any foreign material in the Bath River or any drainage line.			
1.3	Aspects: Soil and water contamination due to construction activities such as the use of hazardous materials on site. Impact: Pollution of soil and water contamination by hazardous waste. Objective: Provide facilities for appropriate collection and disposal of hazardous waste. Mitigation/Management Measures: a. Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur); b. Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces; c. Material Safety Data Sheets (MSDSs) must be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage; d. All spillage must be cleaned up immediately after they have occurred; e. Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;	Maintenance Contractor	Monitoring Action: Maintenance Contractor Checklist Responsible Person/Party: ESA Monitoring Frequency: Weekly	

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	f. Vehicles and machinery must be regularly serviced to avoid leakages; g. No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA); h. No water courses may be used to clean equipment, or for bathing. All cleaning operations must take place off site at a location where waste water can be disposed of correctly; i. The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited; j. Fuel and chemical storage must be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within; k. Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur; l. All personnel must receive induction on how to report spillages, contain them and treat them accordingly; m. Spill kits must be available at each working station; n. Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and, o. Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file.			
1.4	Aspects: Fire Prevention. Impact: Uncontrollable fire. Objective: Prevent the outbreak of fires emanating from construction activity.			

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<u>Mitigation/Management Measures:</u> a. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months; b. Assume acceptable precautions to guarantee that fires are not started as a result of works on site as specified below: the Contractor will be held responsible for any damage to structures or property on or neighbouring the Site as a result of any fire caused by personnel; c. The Contractor must ensure that construction related activities that pose a potential fire risk, such as welding etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working areas and avoiding working in high wind conditions when the risk of fires is greater. In this regard special care must be taken during the high risk dry, windy winter months; d. The Contractor must provide fire-fighting training to selected construction staff and take cognisance of the Veld and Forest Fire Act, Act No. 101, 1998; e. As per the conditions of the Code of Conduct, in the event of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor must compensate the fire-fighting costs borne by farmers and local authorities; f. Equip vehicles and site structures with fire extinguishers. Rubber beaters must be stored on site; g. No open fires are allowed anywhere on site; h. Storage of fuel or chemicals under trees is not permitted; i. Gas and liquid fuel is not to be stored in the same place; j. Smoking may only occur within a 3m radius from designated areas;	Maintenance Contractor	<u>Monitoring Action:</u> Maintenance Contractor Checklist <u>Responsible Person/Party:</u> ESA <u>Monitoring Frequency:</u> Weekly	

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	k. Personnel must be adequately trained in the handling of firefighting equipment; and, l. Fuel, diesel, oil, or any other flammable substance must be stored 6m away from the smoking area.			
1.5	Aspects: Biological Aspects. Impact: Infestation of the area with Alien and Invasive Species. Objective: Monitor the occurrence of Alien and Invasive Species within the development area.			
	Clearing and Guiding Principles a. Alien control programs are long-term management projects and must include a clearing plan which includes follow up actions for rehabilitation of the cleared area; b. The lighter infested areas must be cleared first to prevent seed build-up; c. Pre-existing dense areas must be left for last, as they probably will not increase in density or pose a greater threat than they are currently; and, d. All clearing actions must be monitored and documented to keep track of which are due for follow-up clearing. Clearing Methods e. Different species require different control methods such as manual, chemical or biological methods or a combination of the two; f. Care must be taken to ensure that the clearing methods used do not encourage further invasion. As such, regardless of the methods used, soil disturbance must be kept to a minimum. The vegetative stage of the plants must be considered before clearing;	Maintenance Contractor	Monitoring Action: Maintenance Contractor Checklist Responsible Person/Party: ESA Monitoring Frequency: Weekly	

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
g. Fire is not a natural phenomenon in the area and must not be used in general for alien control or vegetation management at the site. Only <i>Cylindropuntia sp</i> must be destroyed by burning after removal, since these plants can spread vegetatively as well as with seed; and, h. The best-practice clearing method for each species identified must be used. The preferred clearing methods for most alien species can be obtained from the Department of Water and Agricultural Affairs (DWAF) Working for Water website: http://www.dwaf.gov.za/wfw/Control/. <i>Use of Herbicides for Alien Control</i> Although it is usually preferable to use manual clearing methods where possible, such methods may create additional mechanical disturbance which may stimulate alien invasion and may also be ineffective for many woody species which resprout. Where herbicides are to be used , the impact of the eradication program on the natural environment must be minimised by observing the following: i. Area contamination must be minimised by careful, accurate application with a minimum amount of herbicide to achieve good control; j. Care must be taken to prevent contamination of water bodies. This includes special care in storage, application, cleaning equipment and disposal of containers, product and spray mixtures; k. Equipment must be washed where there is no danger of contaminating water sources and washings carefully disposed of in a suitable place; l. To avoid damage to indigenous or other desirable vegetation, herbicides that would have the least effect on the indigenous vegetation must be used; m. Droplet nozzles with a coarse spray pattern must be fitted to avoid drift of herbicides onto neighbouring vegetation; and,			

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	n. The appropriate health and safety precautions must be followed regarding the storage, handling and disposal of herbicides.			
1.6	Aspects: Socio-Economic Aspects within the area. Impact: The creation of job opportunities during the operational phase. Objective: The operational phase will create a few job opportunities for individuals residing in the area of ZF Mgcawu District due to maintenance work.			
	a. Where reasonable and practical the contractors appointed by the applicant must appoint local contractors and implement a “local first” policy, especially for semi and low-skilled job categories. However; due to the low skill levels in the area, the majority of skilled posts are likely to be filled by personnel from outside the area; b. The recruitment selection process must seek to promote gender equality and the employment of women wherever possible, particularly for less labour-intensive work such as flag bearing and supervision; and, c. The ongoing presence of semi and high skilled personnel involved in the project construction phase will generate sustained clientele to a portion of the guest house industry within the vicinity of the development.	Maintenance Contractor	Monitoring Action: Maintenance Contractor Checklist Responsible Person/Party: ESA Monitoring Frequency: Weekly	
1.7	Aspects: Socio-Economic Aspects within the area. Impact: Presence of maintenance workers in the area. Objective: Reduce the negative risk of family structures and social networks by maintenance personnel.			

OPERATIONAL PHASE: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICTS, NORTHERN CAPE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	a. Where possible, implement a requirement for contractors to implement a local employment policy for maintenance jobs, particularly for semi and low-skilled job categories, thus reducing impact which foreign workers could have on local communities; b. A contractual requirement of potential contractors must be a preparation and implementation of a Code of Conduct for maintenance workers, identifying types of behaviour and activities which maintenance workers may not engage in. Workers who breach this code must be dismissed, on the grounds that such dismissals comply with South African labour legislation; c. The project manager responsible for contractor appointments and administration, must implement an HIV/AIDS awareness programme for all contractors and their maintenance workers prior to commencement of maintenance activities; d. Contractors must manage the transport and movement of workers on and off site on a daily basis, as well as allow for the returning home of workers intermittently over weekends to limit interaction with local communities during such periods; and, e. No personnel, with the exception of security officers, are permitted to stay overnight in the vicinity of the maintenance site and must be housed in a site camp.	Maintenance Contractor	Monitoring Action: Maintenance Contractor Checklist Responsible Person/Party: ESA Monitoring Frequency: Weekly	

C3.6.12.3 IMPACTS DURING THE DECOMMISSIONING PHASE

The Maintenance and Rehabilitation of Bridges will not be decommissioned and therefor the impacts have not been assessed.

C3.6.12.4 EMERGENCY RESPONSE PLAN

The following table is provided to assist the ECO and construction contractor with remedial work options and problem solving:

Observation or Event	Action by Inspector or Observer	Action by Construction Contractor
Spillage of diesel or hydrocarbons on soil	Report to construction contractor and continue observations. Also check: ➤ That the source causing the spillage has ceased, and that the affected area is isolated to prevent spreading of the hazardous substance, where after it must be rehabilitated.	Action will be required as soon as possible (ASAP) by following the next steps: ➤ Dig down into the soil to see how far down the pollution penetrated, ➤ If less than 300mm penetrated: a. Turn the soil over to expose it to the air. b. Apply Mono Ammonium Phosphate (MAP) at a rate of 58gr/m² to the overturned soil. c. Water enough to keep the soil moist. ➤ If penetration is greater than 300mm: a. Remove the affected soil and spread in a layer not more than 300mm thick. b. Apply MAP at a rate of 50gr/m². c. Water enough to keep the soil moist. ➤ Repeat the above steps every 6 weeks or until the soil is clean.
Erosion	Report to Construction Contractor and continue observations. Also check: ➤ That all vehicular movement is restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.	Action will be required ASAP: ➤ Implement erosion protection works at identified problem areas. ➤ Implement remedial works at affected areas in order to restore the area to its previous or better status.

C3.6.12.5 INCIDENT REGISTER

INCIDENT REGISTER: MAINTENANCE AND REHABILITATION OF BRIDGES IN THE ZF MGCAWU DISTRICT, NORTHERN CAPE PROVINCE					
NAME OF PERSON REPORTING THE INCIDENT	INCIDENT	DATE OF INCIDENT IDENTIFIED	HOW WAS INCIDENT ADDRESSED?	DATE OF RECTIFICATION	SIGNATURE

C3.6.12.6 REHABILITATION MEASURES AND CLOSURE PLAN

The rehabilitation phase follows completion of construction works and entails site clean-up and site rehabilitation following the removal of the Contractor from site. The underlying aim of rehabilitation is the process of returning land within the site boundary to some degree of its former natural state.

Key aspects within this process include the:

- Removal of structures and infrastructure;
- Handling of inert waste and rubble;
- Handling of hazardous waste and pollution control;
- Final shaping of the terrain;
- Topsoil replacement and soil amelioration;
- Ripping and scarifying of surfaces;
- Planting of indigenous occurring vegetation (if deemed necessary); and
- Maintenance.

C3.6.12.6.1 REHABILITATION MEASURES

Removal of structures and infrastructure
• On completion of a section of works, the area must be rehabilitated by suitable landscaping, levelling, topsoil dressing, land preparation, alien plant eradication and where ascribed for by the ECO, vegetation establishment; • Clear and completely remove from site all construction structures and temporary infrastructure; • All permanent infrastructure must be returned to a useable state.
Inert waste and rubble
• Remove all inert waste and rubble, such as excess rock, any structural foundations and remaining aggregates. Only once this material has been removed, the site shall be re-instated and rehabilitated. • Domestic waste must be completely removed from the site and disposed of at a landfill site.
Topsoil replacement and soil amelioration
• The reinstatement of disturbed areas must follow immediately after the removal of structures and temporary infrastructure; • Topsoil backfilling must be undertaken when the soil is dry, and not following any recent rainfall events; • The replacement of topsoil must be sought in situ with construction where possible, or as soon as construction in an area has be completed; • All stockpiled topsoil together with herbaceous vegetation must be replaced and redistributed over a disturbed area such as temporary access roads; • Topsoil must be returned to the same site from where it was stripped; • When insufficient topsoil remains, soil of a similar quality can be obtained from a nearby area within the construction area which was disturbed;

- Once topsoil has been returned to the ground, stripped vegetation must be randomly spread by hand over the area.

Maintenance

- All re-growth of invasive vegetative material will be monitored by the Developer for one year;
- All areas under rehabilitation are to be treated as no-go areas using danger tape and steel droppers/fencing and cordoned off, to prevent vehicular, pedestrian and livestock access.
- Any re-vegetation must be done using plant species in occurrence on site;
- Control invasive plant species and weeds using approved methods of manual or chemical intervention;
- The re-establishment of vegetation must be allowed several rainy seasons, given the arid nature of the climate and region.

C3.7 HEALTH AND SAFETY SPECIFICATIONS

C3.7.1 BACKGROUND

In terms of the Construction Regulation 5(1)(b), 2014 of the Occupational Health and Safety Act, No. 85 of 1993, the Client, is required to compile an Health & Safety Specification for any intended project and provide such specification to Contractor.

The Project is located in ZF Mgcawu District in the Northern Cape Province, South Africa.

C3.7.2 SCOPE

The scope is the development of a health & safety specification that addresses all aspects of occupational health and safety as affected by construction work.

C3.7.2.1 General

The Employer's objective is to rehabilitate bridges and associated works in the Northern Cape Province.

C3.7.2.2 Site location

The Contract will be executed at the following structures:

- Bridge TBC10002 at km 3.50 on Road MR00858 between Kakamas and Augrabies
- B0621 at km 25.13 on Road MR00858 between Augrabies and Augrabies National Park
- B0678 at km 1.83 on Road MR00875 connecting N14 and R359 over Kanoneiland
- B0689 at km 9.20 on Road MR00858 between Kakamas and Augrabies
- B0689A at km 14.30 on Road MR00858 between Kakamas and Augrabies
- B0689B at km 18.54 on Road MR00858 between Kakamas and Augrabies
- B0690 at km 2.48 on Road MR00858 between Kakamas and Augrabies
- B0713 at km 2.60 on Road MR00779 over the Kuikendraai stream between Groblershoop and Skerpioenpunt.
- B3293 at km 1.49 on road DR03273 over the Orange River between Augrabies town and farms
- B3296 at km 9.64 on Road DR03321 over Orange River between N14 and farm
- B3305 at km 0.67 on Road DR03266 over the Orange River near Marchand
- B6523 at km 0.24 on Road DR03269 on secondary gravel road between Keimoes and Eksteenskuil over a tributary to the Orange River
- B6529 (Old TB008) at km 32.76 on unnumbered road connecting to road MR00857. Carries the gravel road over a tributary of the Orange River
- B6546 at km 0.51 on Road DR03310 between Oranjevallei and unnamed gravel road
- B6570 at km 9.50 on Road DR03310 between Upington and Louisvale
- B6571 at km 9.20 on Road DR03310 between Upington and Louisvale
- B6572 at km 9.00 on Road DR03310 between Upington and Louisvale

Also refer to the Inception Report, Design Report, Design Drawings and Scope of work (Section 3.1) in tender document, as well as Bill of Quantities that needs to be read in conjunction with this Specifications.

C3.7.3 DEFINITIONS

Act: means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

AIA means an Inspection Authority approved by the chief inspector: Provided that an inspection authority approved by the chief inspector with respect to any particular service shall be an Approved Inspection Authority with respect to that service only.

Client: means any person for whom construction work is being performed.

Client's Health and Safety Agent: SHE Group, 5 Walter Sisulu Road, Bloemfontein, 9301

Competent person: means any person having the knowledge, training, experience and qualifications specific to the work or task being performed.

Construction manager: means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

Construction site: means a work place where construction work is being performed.

Construction work: means any work in connection with—

- the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

Contractor: means an employer, as defined in section 1 of the Occupational Health and Safety Act, who performs construction work and includes principal contractors;

Designer: means a competent person

- who prepares a design;
- checks and approves a design;
- arranges for a person at work under his or her control to prepare a design,
- including an employee of that person where he or she is the employer;
- or designs temporary work, including its components;
- an architect or engineer contributing to,
- or having overall responsibility for a design;
- a building services engineer designing details for fixed plant;
- a surveyor specifying articles or drawing up specifications;
- a contractor carrying out design work as part of a design and building project; or
- an interior designer, shop-fitter or landscape architect;

Disaster Management Act means the Disaster Management Act, 2002 (Act No. 57 of 2002);

Hazard identification: means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed;

Health and safety file: means a file or other record in permanent form, containing the information required as contemplated in these regulations;

Health and safety plan: means a documented plan, which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

Health and safety specification: means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

HCA: Hazardous Chemical Agents

Medical Certificate of Fitness: means a certificate contemplated in Construction Regulation 7(8);

SDS: Safety Data Sheet

Occupational Health Practitioner means an occupational medicine practitioner or a person who holds a qualification in occupational health recognized as such by the South African Medical and Dental Council as referred to in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), or the South African Nursing Council as referred to in the Nursing Act, 1978 (Act No. 50 of 1978);

Occupational Hygiene Survey: means a Survey or Analysis on Hazardous Environmental Exposure e.g. Noise, Lead, Asbestos, Airborne Pollutants, Thermal Stress, Hazardous Chemical Substances, etc. to Persons conducted by an Inspection Authority Approved by the Department of Employment and Labour for the Exposure identified, provided that an inspection authority approved by the chief inspector with respect to any particular service shall be an Approved Inspection Authority with respect to that service only

Occupational Hygiene: means the anticipation, recognition, evaluation and control of conditions arising in or from the workplace, which may cause illness or adverse health effects to persons;

OHSA means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

OREP: Occupational Risk Exposure Profile

PPE: Personal Protective Equipment

Principal contractor: means an employer, as defined in section 1 of the Occupational Health and Safety Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

Risk assessment: means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;

Structure: means any building, steel or reinforced concrete structure

SACPCMP means the South African Council for the Project and Construction Management Professions

Worker means any person who works in an employer's workplace including an employee of the employer or contractor, a self-employed person or volunteer;

Workplace means any premises or place where a person performs work.

Transmission or Transmitting is the passing of a pathogen causing communicable disease from an infected host individual or group to a particular individual or group, regardless of whether the other individual was previously infected.

C3.7.4 OH&S MANAGEMENT

C3.7.4.1 Construction Work Permit

The Client's Construction Health & Safety Agent shall, as the contract meets the requirements laid down in Construction Regulations 3, prior to commencement of the works, apply to the Department of Employment and Labour for a Permit to do Construction Work.

A copy shall be kept on the OH&S file and the construction work permit number shall be displayed at the entrance to the Construction Site. No Construction activities may take place before Permit has been issued by the Department of Employment and Labour.

C3.7.4.2 Structure and Organisation of OH&S Responsibilities

C3.7.4.2.1 Overall Supervision and Responsibility for OH&S

- The Client to ensure that the Principal Contractor, is appointed in terms of Construction Regulation 5(1)(k), implements and maintains the agreed and approved OH&S Plan.
- The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that his Employees (as defined in the Act) complies with the Act. Legal Compliance Audit may be used for this purpose.
- Any OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms
- The Construction Manager, Assistant Construction Manager, Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8. Should provide proof of OHS training and fully understand their duties and responsibilities outlined by the respective appointments.
- The principal contractor shall appoint as a minimum a Full-Time competent Health and Safety Officer that is registered with the SACPCMP.

C3.7.4.2.2 Further (Specific) Responsibilities for OH&S

The contractor shall note that it is a generic list only and is intended for use as a guideline.

Appointment	Legal Reference
Delegation of Duties	Section 16(2)
Construction Manager	Construction Regulation 8(1)
OH&S Officer (Part-Time)	Construction Regulation 8(5)
Construction Supervisor	Construction Regulation 8(7)
Risk Assessor	Construction Regulation 9
Fall Protection Plan Developer	Construction Regulation 10
Structures Supervisor/Inspector	Construction Regulation 11
Temporary Works Supervisor	Construction Regulation 12
Excavation Supervisor	Construction Regulation 13
Scaffold Erector & Inspector	Construction Regulation 16
Crane Inspector	Construction Regulation 22
Construction Vehicle / Mobile Plant / Machinery Supervisor	Construction Regulation 23
Drivers / Operators of Construction Vehicles / Plant	Construction Regulation 23
Electrical Installation and Appliances Inspector	Construction Regulation 24
Hazardous Chemical Agent Supervisor	HCA Regulations & CR 25
Stacking & Storage Supervisor	Construction Regulation 28
Emergency Coordinator	Construction Regulation 29
First Aider	General Safety Regulation 3
Fire Equipment Inspector	Construction Regulation 29
Incident Investigator	General Admin Regulation 9
Ladder Inspector	General Safety Reg 13A
OH&S Representatives	OHS Act Section 17
Person Responsible for Machinery	General Machinery Reg 2
Pressure Equipment Supervisor	Pressure Equipment Reg
Welding Supervisor	General Safety Regulation 9

The above appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated and agreed with the appointees.

Competencies of all Appointed Personnel to be attached to Appointment and Placed on Health and Safety File

The principal contractor shall, furthermore, provide the clients agent with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated and prominently displayed on site.

C3.7.4.3 Communication & Liaison

OH&S Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S committee or Committee established by Client for this purpose.

In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.

The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

The Principal Contractor will be responsible to continuously liaise with the Pr. CHSA on the project regarding Health & Safety issues, findings and other related matters.

In addition, the Principal Contractor must after every Audit compile a corrective Action Plan in table form which must be submitted to the Pr. CHSA.

The Corrective Action Plan must consist of the following headings: Findings, Action taken / to be taken, Date closed out, Signature (of Safety Officer). The Construction Manager must also sign off on the Corrective Action Plan before submitting.

C3.7.4.4 4OH&S File

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a health & safety file on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

The following documents must inter alia be kept in the OH&S file:

- Construction Work Permit (Construction Regulation 3)
- Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- Proof of Registration and good standing with a COID Insurer - Construction Regulation 5(1)(j)
- OH&S Plan agreed with client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5(1)(l))
- Policies
- Risk assessment conducted and reviewed during works
- Safe Work Procedures / Safe Operating Procedures
- Work Method Statement
- Ergonomic Assessments
- Health and safety specifications and Baseline Risk Assessment provided by the client.
- A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 7)
- Appointment/Designation forms as per 4.2.2 above.

- Competency Certificates
- Occupational Medical Certificates of all personnel working on site to proof Fitness to work
- AIA Certificate of Service Provider responsible for Occupational Hygiene Monitoring
- Occupational Hygiene Surveys (where applicable)
- Daily Safety Task Instruction / Visible Felt Leadership Documentation
- Statistical Data
- Registers as follow (but not limited to):
 - Risk Register
 - PPE - Personal Protective Clothing and Equipment issued
 - Daily Mobile Machinery Checklists
 - Generator and Other Fuel Driven Machinery Registers
 - Registers / Checklists for all Equipment being used on site
 - Stacking & Storage Inspection Register
 - Excavations Inspection Register – Daily
 - Temporary Works Register - Daily
 - Monthly Environmental Checklist
 - Weekly Hygiene Facility Inspection Register – Ablutions and Eating areas
 - Incident Register
 - Fire Extinguishing Equipment Register
 - Training Attendance Registers
 - First Aid Box and Equipment Checklist and Dressing Record
 - Risk Assessment Communication Registers
 - Lock-out Request Forms and Permits (Water and Electricity)
 - SHE Officer Inspection Register (Non-Conformance Register) – Monthly checklist and deviations

C3.7.4.5 OH&S Goals and Objectives and Arrangements for Monitoring and Review of OH&S Performance

The Principal Contractor is required to maintain a DIFR of less than 1 and report on this to the Client on a monthly basis.

C3.7.4.6 Identification of Hazards and Development of Risk Assessments, Standard Working Procedures (SWP) and Method Statements

The Principal Contractor is required to develop Risk Assessments, Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project (See Section 5 below “Project/Site Specific Requirements”)

C3.7.4.7 Arrangements for Monitoring and Review

C3.7.4.7.1 Monthly Audit by Client

The Client will be conducting monthly Audits to comply with Construction Regulation 5(1)(o) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

If contractor is non-compliant according to Client's Health and Safety Audit, the Client's Agent / Representative may stop the work or a specific work activity and request a re-audit that must be approved by the client and the contractor will be held liable for the cost.

The Principal Contractor must compile a Corrective Action Report with evidence of close outs, and submit to the Pr. CHSA within seven (7) days of receiving the Audit Report.

C3.7.4.7.2 Other Audits and Inspections by Client

The Client reserves the right to conduct other ad hoc audits and inspections as deemed necessary.

The Principal Contractor must conduct a Monthly Internal Health and Safety Audit on their own health and safety management system, and an Audit on all Sub-Contractors.

The Audit must be conducted by an independent person of the contractor or contractor's representative, which is not working on the site, on condition that the person is qualified to conduct an Occupational Health and Safety Audit.

A representative of the Principal Contractor must accompany the Client on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

The client's representative / Agent must approve the Principal Contractor's Health and Safety Audit Template, to be used, before work commences

C3.7.4.7.3 Reports

The Principal Contractor is required to provide the Client with a monthly report.

The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies
- becomes unconscious
- loses a limb or part of a limb
- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled
- the uncontrolled release of any substance under pressure took place
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control to the Provincial Director of the Department of Employment and Labour within seven days. (Section 24 of the Act & General Administrative Regulation 8.)

The Principal Contractor is required to provide the Client with copies of all statutory reports required in terms of the Act. The Principal Contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports.

C3.7.4.7.4 Review

The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client, other Contractors and all other concerned parties with copies of any changes, alterations or amendments.

C3.7.4.8 Site Rules and other Restrictions

C3.7.4.8.1 Site OH&S Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied, to regulate the OH&S aspects of the construction site.

C3.7.4.8.2 Security Arrangements

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period.

The Principal Contractor must appoint a competent Emergency Controller who must develop emergency contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a quarterly practice/testing program for the plans.

C3.7.4.9 Training

The contents and syllabi of all training required by the Act and Regulations to be included in the Principal Contractor's OH&S Plan.

C3.7.4.9.1 General Induction Training

All employees of the Principal and other Contractors to be in possession of proof of General Induction training.

C3.7.4.9.2 Site Specific Induction Training

All employees of the Principal and other Contractors to be in possession of Site Specific OH&S Induction training.

C3.7.4.9.3 Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of Competency Certificates & Medical Certificates of Fitness (Construction Regulation 23).

All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training.

OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- General Induction (Section 8 of the Act)
- Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- Construction Manager

- Construction Supervisor
- OH&S Representatives (Section 18 (3) of the Act)
- Operation of Cranes (Driven Machinery Regulations 18 (11))
- Operators & Drivers of Construction Vehicles & Mobile Plant (CR 23)
- Basic Fire Prevention & Protection (ERW 9 and CR 29)
- Basic First Aid (General Safety Regulations 3)
- Storekeeping Methods & Safe Stacking (Construction Regulation 28)
- Emergency, Security and Fire coordinator
- Work and Appointment Related training
- Work at Heights Training (Where Required)

C3.7.4.10 Accident and Incident Investigation

The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

The results of the investigation to be entered into the Accident/Incident Register: Annexure 1. (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

C3.7.4.11 H&S Representatives

C3.7.4.11.1 Designation of OH&S Representatives

Before commencing work, the Principal Contractor shall designate a competent Safety, Health and Environmental representative (SHE Rep) who shall be acceptable to the Agent, to represent and act for the Contractor and Sub Contractors.

It should be noted that the Principal Contractor is held responsible for the activities of the Sub Contractors. Failure of Health and Safety measures by the Sub Contractor will revert directly back to the Principal Contractor.

The Contractor shall inform the Agent in writing of the name and address of the Contractor's SHE Rep and of any subsequent changes in the name and address of the SHE Rep, together with the scope and limitations of the SHE Rep's authority to act for the Contractor.

The Contractor's SHE Rep shall make available to the Employer an all-hours telephone number at which the SHE Rep can be contacted at any time in the event of an emergency involving any of the Contractor's employees, or other persons at the Works.

OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

C3.7.4.11.2 Duties and Functions of the OH&S Representatives

The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor.

OH&S representatives must be included in accident/incident investigations.

C3.7.4.12 Occupational Medicals

Principal Contractor must ensure that all employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner as per Annexure 3 of Construction Regulation, 2014 – Construction Regulation 7(1)(g)

Principal Contractor to ensure that Ergonomic Risks are included in the Medical Surveillance Program.

C3.7.4.13 Fines & Penalties

Repeated non-conformances raised during Audits may be subjected to a Minimum Fine of R 250.00 per Finding and a Maximum Fine of R 5,000.00 per finding.

The value of the fine will be recommended by the Pr. CHSA and Finally Approved by the Client's Project Manager

C3.7.4.14 Contractor Management

Contractors shall be appointed by the Principal Contractor in terms of Construction Regulation 7(1)(c)(v).

An agreement will be drawn up between the Principal Contractor and appointed contractor in terms of Section 37(2) of the Occupational Health & Safety Act 85 of 1993.

The Agreement must include all Health and Safety aspects, requirements, etc. pertaining to the specific project. The agreement must also indicate whether the contractor will make use of the Principal Contractor's First Aid facilities, if they have less than 10 persons on site or does not have their own appointed and trained First Aider.

A list of all Contractors must be drawn up and displayed in the site office, indicating the name of the contractor, contact person / responsible person, contact number and scope of work. The list must be updated on a monthly basis and as the work progress.

No Contractor may be appointed by the Principal Contractor, unless they are in possession of a valid Letter of Good Standing with the Compensation Commissioner (COIDA).

Every Contractor must provide the Principal Contractor with a site-specific Health & Safety Plan and File. The Health & Safety Plan will be evaluated and must be approved prior to the Contractor commencing on site.

All personnel of Contractors must, prior to commencement, submit to the Principal Contractor Occupational Medicals of all their personnel who will be involve in the project.

The Principal Contractor will be responsible to monitor each Contractor on site on an ongoing basis to ensure compliance in terms of the Act and Regulations. Monthly Audits will be conducted on each contractor and reports kept on file.

To ensure Induction and Toolbox talks are done properly and kept on the same standard, all Contractors will fall under the Induction Program and weekly toolbox talks of the Principal Contractor.

C3.7.5 PROJECT/SITE SPECIFIC REQUIREMENTS

C3.7.5.1 Risk Management

The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor:

- Site Establishment
- Offices
- Secure / safe storage for materials, plant and equipment
- Ablutions
- Sheltered eating area

- Vehicle access to the site
- Traffic Accommodation / Management
- Dealing with existing structures
- Location of existing structures
- Installation and Maintenance of temporary construction electrical supply
- Adjacent land uses / surrounding property exposures
- Boundary and access control
- Public liability exposures
- Health risks arising from neighboring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning etc.
- Ergonomic Risks
- Exposure to noise
- Protection against dehydration and heat exhaustion
- Protection from wet and cold conditions
- Dealing with HIV/Aids and other diseases
- Use of portable electrical equipment
- Loading and offloading of trucks
- Manual and mechanical handling
- Lifting and lowering operations
- Working in elevated positions
- Driving & Operation of Construction Vehicles and Mobile Plant
- Use and Storage of Flammable Liquids and other Hazardous Chemical Agents
- Temporary Works e.g. Form / Support Work, Scaffolding, etc.
- Reinforced steel fixing
- Excavation Work
- Concrete works
- Earth & Layer Works
- Road Repairs
- Structure (Bridge) Repairs
- Guard Rails
- Fencing
- Signage
- Road Marking
- As discovered by the principal contractors hazard identification exercise
- As discovered from any inspections and audits conducted by the client or by the principal contractor or any other contractor on site.
- As discovered from any accident / Incident Investigation

The following are in particular requirements of works and will form a basis for compliance audits.

1. Administrative & Legal Requirements
2. Education, Training & Promotion
3. Public Safety & Emergency Preparedness
4. Personal Protective Equipment
5. Housekeeping
6. Working at Heights
7. Temporary Structures e.g. Formwork, Support work, Scaffold, etc.
8. Traffic Control & Accommodation
9. Electrical Safeguarding
10. Emergency/Fire Prevention & Protection
11. Excavations (Foundations, Trenches, etc.)
12. Ladders & Tools
13. Lifting Equipment
14. Permits
15. Transport & Materials Handling
16. Site Plant & Machinery
17. Plant & Storage Yard
18. Occupational Health & Hygiene
19. Construction Activities

C3.7.5.2 Construction Vehicles and Mobile Plant – Regulation 23

The Contractor shall ensure that drivers of motor vehicles are in possession of a driver's license, valid for the class of vehicle which they are required to drive, and shall produce the license on request.

The Contractor shall not permit any driver to be in control of a vehicle at the Works while under the influence of alcohol, drugs or other substance.

A register shall be kept of workers operating construction vehicles and mobile plant.

The register shall contain proof of training of operators to operate construction vehicles and mobile plant, certification of competency and authorization of operators to operate machinery, vehicles or plant.

Names of operators and their relevant training with date and time stamps together with name of course instructor shall be kept in the Health and Safety File on site.

Physical and Psychological fitness shall be proved by way of a medical certificate of fitness of the said operators before allowing operators to operate machinery, vehicles or plant.

The Health and Safety File shall include the written training material offered to operators for the different construction vehicles and mobile plant.

Each and every driver shall be trained on risks involved and safety procedures.

All Construction vehicles and mobile plant must be of acceptable design and construction and used according to their design. All construction vehicles and mobile plant must be maintained in good working order.

A register of all vehicles and plant shall be kept on site together with names of operators responsible for each. The register shall report all maintenance activities performed on these vehicles and plant as well as signatures certifying the condition of the vehicles as in a good working order.

All requirements on the vehicles and mobile plant with regard to safety and health shall be inspected and certified.

During use of Construction vehicles or mobile plant the following rules shall be adhered to:

- Construction vehicles or mobile plant must be prevented from falling into excavations, water or any other area lower than the working surface. These protection must consist of adequate edge protection e.g. Guard rails and/or crash barriers
- No person shall be allowed to or require to ride on any Construction Vehicle or Mobile Plant in a position otherwise than a safe place provided for on the construction vehicle or mobile plant as designed for that purpose.
- The construction site must be organized in such a way that as far as is reasonable practical, pedestrians and vehicles can move safely and without risks to health and safety.
- Traffic routes shall be of sufficient size, sufficient in number and in suitable positions to be used safely by construction vehicles, mobile plant and pedestrians.
- Each and every traffic route shall be indicated by suitable signs for reasons of safety and health.
- No tools and/or material shall be transported in the same compartment as the operators/drivers/ employees unless the said are secured against movement during transportation.
- 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 vehicles or plant
- 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.

C3.7.5.3 Barricading and Demarcation

The construction site shall be barricaded completely to prevent pedestrians and vehicles to enter the construction area.

Protection around the site must be in the form of a physical barrier and appropriate signage, to prevent public from entering the area.

It is advised to use 1.2m high DAY-GLO Mesh (barrier netting) to prevent pedestrians entering the specific construction area.

C3.7.5.4 Housekeeping and Construction Sites – Regulation 27

The Contractor shall at all time carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions, which contribute to the risk of injury to persons or damage to property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.

During the period of this Contract, the Contractor shall be responsible for the safe storage of all materials and equipment required for execution of the Contract, and for disposal of all non-usable waste material in an orderly manner.

All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.

Any flammable material, such as paint, diesel fuel and oil, shall be stored in lockable non- combustible structures, which shall be clearly marked to indicate the hazardous nature of the materials stored within.

The flammable materials stores shall be located in safe areas away from hazardous surroundings and adequate and suitable fire-fighting equipment shall be provided within easy reach of the materials stores.

Loose material need for use shall not accumulate so as to obstruct means of access to and egress from the workplace.

Scrap and waste shall not be allowed on site and must be removed daily.

The construction sites adjacent to build up area or public way shall be effectively fenced and controlled with access points.

C3.7.5.5 Stacking and Storage on Construction Sites – Regulation 28

A Competent person shall be appointed in writing with the duty of supervising all stacking and storage of material on site.

Adequate storage areas shall be provided which includes demarcated areas. All storage areas shall be kept neat and under control. Registers and checklist on housekeeping shall be kept on site

C3.7.5.6 First Aid

C3.7.5.6.1 Safety Notice Board

The Contractor shall provide a Safety Notice Board where safety notices, site regulations concerning safe working practices and information on the location of the nearest first aid station, can be conspicuously displayed to all staff. The size of the notice board shall be at least 600 mm x 800 mm.

C3.7.5.6.2 First Aid Equipment

The Contractor shall provide for its employees a stretcher for emergencies and an approved first aid box. The first aid box shall be checked weekly by a responsible person, who shall be appointed by the Contractor, and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor.

C3.7.5.6.3 Hazard Notices

The Contractor shall display hazard notices in all areas where hazardous conditions prevail or may occur.

C3.7.5.6.4 Reporting of Incidents and/or Injuries

All incidents in respect of damage to Works, property or machinery, or injury to persons, shall be reported by the Contractor's SHE Rep by the quickest means possible.

A mandatory incident report form, containing full details of the incident, shall be completed and submitted to the Site Agent and the Department of Employment and Labour within twenty four (24) hours of the occurrence of the incident.

C3.7.5.7 Fire Precautions on Construction Sites – Regulation 29

A register shall be kept on all Acetylene and Oxygen cylinders used on the site. Condition of components, sub-components and safety components (e.g. Flame back arrestors) shall be listed in the register and signed by the construction supervisor at regular intervals as required with time and date stamp.

Acetylene, Oxygen and LP Gas cylinders shall be stored in suitable places to minimize the risk of fire.

Suitable storage to be provided for flammable liquids, e.g. petrol, diesel, paint, thinners.

Smoking shall be prohibited in the workplace and notices posted accordingly.

Suitable and sufficient firefighting equipment shall be placed in strategic positions in the work place. (On vehicles and other positions as deemed necessary).

A register shall be kept on type and number of equipment for each site in the Health and Safety File.

A competent person shall inspect all firefighting equipment. A sufficient number of employees shall be trained in the use of firefighting equipment.

A register shall be kept in the Health and Safety File on site with names of employees and type of firefighting training completed with date.

Suitable signs shall be erected in work places indicating escape routes.

Escape routes shall be kept clear. Evacuation plans shall be in Health and Safety File as part of Induction Training. Combustible materials shall not accumulated on site.

C3.7.5.8 Construction Welfare Facilities – Regulation 30

On each site where existing facilities are not present, at least one sanitary facility shall be erected for every 10 workers, one shower for every 15 workers, a changing facility for each sex and sheltered eating areas.

Mobile toilets with bucket system / Chemical Toilets shall be installed at the site. Cleaning of Toilet Facilities shall be arranged with the City Council or an Approved service provider

Eating facilities shall be made available in the form of a shaded net, table and chairs.

As the site is in a remote area, transport shall be made available for workers to and from site.

C3.7.5.9 Hazardous Chemical Agents

The Contractor shall exercise all necessary care in the handling of toxic compounds and shall be able to identify the major chemical components in the event of medical treatment being required.

C3.7.5.9.1 Hazardous Chemicals and Materials

The Contractor shall provide suitable and adequate protective equipment when working in an area where hazardous chemicals and materials are being used.

The Contractor shall ensure that its employees have familiarized themselves with the hazardous material data sheets applicable to the specific site as well as the location of firefighting equipment, safety showers / baths and other washing facilities, prior to commencement of work.

C3.7.5.10 Commissioning Safety Precautions

The Contractor shall ensure that wherever repairs, adjustments or any other work are undertaken on any plant or machinery, the power supply is switched off, disconnected or the plant / machinery disengaged until the work or repairs have been completed.

C3.7.5.11 Electrical Installations and Machinery on Construction Sites – Regulation 24

Before construction commences or any other related works and during the progress thereof adequate steps must be taken to establish the presence of and guard against any danger to the workers in respect to electrical cables or apparatus.

In areas where it cannot be established where electrical devices are, the employees must use tools of which the handles are insulated or rubber insulated gloves.

Any temporary electrical installation set up by the principal contractor or contractor must be inspected at least once a week by a competent person. The inspections shall be recorded in a register and kept in the Health and Safety File.

When working on or next to live electrical Machinery/Equipment the Principal Contractor or Contractor must provide insulated stands, trestles and mats.

When Distribution Boards are removed the incoming power supplies shall be cut by the client's authorized Electrician. The incomer electricity supply feeder shall be earthed by a suitable earth wire or spike to prevent cable of becoming live during the installation of new Distribution Boards.

No person shall continue with wiring of premises unless the supply to the premises has been rendered dead and the above effective measures has been taken to ensure that such cables remains dead. When rewiring of premises is done the feeder breakers at the other end of the supply cables shall be locked out and the cable earthed to prevent any injury to workers by Electrical Shock.

A register shall be kept on site in the Health and Safety File indicating all signatures of competent persons switching electricity supply on or off with time and date stamp.

No person shall use or permit to use a portable electric load operating at a voltage exceeding 50V to earth unless it is connected to a source of electrical energy incorporating an earth leakage protection device.

A register shall be kept on site in which all daily checks of portable electric tools are performed and signed by the responsible person. Checks shall include condition of plug top, power cord, on-off switch and insulation condition of electric tool. All tools shall be numbered and entered accordingly into the register. Condition of tools as listed in the register shall be inspected and signed by the construction supervisor at regular intervals as required by the nature of the equipment.

C3.7.5.12 Dealing with HIV / Aids and other Diseases

The Principal Contractor need to comply with Section 8 of the Occupational Health & Safety Act, taking into consideration transmittable diseases (e.g. COVID19 virus).

C3.7.5.12.1 Health & Safety Planning

The Health & Safety Management Plan must include the planning in relation to dealing with HIV / Aids and other transmittable diseases.

C3.7.5.12.2 Awareness

An awareness programme will be implemented by the Principal Contractor pertaining to HIV / Aids and other transmittable diseases. The awareness programme may include aspects such as, displaying posters, washing and personal hygiene, toolbox Talks, etc.

An Emergency Response and Prevention Plan must be compiled by the Principal Contractor including the latest applicable Regulations.

C3.7.5.12.3 Risk Assessment and Safe Operating Procedure:

A risk assessment will be compiled for transmittable diseases including the following:

- Identification of hazards pertaining to the disease
- Identifying the risks involved
- Evaluating these risks (evaluating in accordance with risk matrix)
- Control measures

When compiling documentation, the Principal Contractor must take the following into consideration:

- Section 8 of the Occupation Health & Safety Act:
 - Section 8 (1) - Duties of Employers to Employees
 - Every employer shall provide and maintain, as far as reasonably practicable, a working environment that is safe and without risk to the health of his employees.
- Other specified regulations pertaining to a specific disease (e.g. COVID-19)
- Use and supply of proper personal protective equipment and other items (e.g. condoms) in the workplace

C3.7.5.13 Working at Heights

The Contractor shall ensure that a site-specific Fall Protection Plan is developed by a competent person, appointed in writing as per Construction Regulation 10.

The Fall Protection Plan must take into consideration the following:

- A risk assessment of all work carried out from a fall risk position and the procedures and methods used to address all the risks identified per location
- The processes for the evaluation of the employees' medical fitness necessary to work at a fall risk position and the records thereof
- A programme for the training of employees working from a fall risk position and the records thereof
- The procedure addressing the inspection, testing and maintenance of all fall protection equipment
- A rescue plan detailing the necessary procedure, personnel and suitable equipment required to affect a rescue of a person in the event of a fall incident to ensure the rescue procedure is implemented immediately following the incident

Training pertaining to working at heights:

- Fall protection plan developer to be competent (US 229994)
- Install, use and perform rescues from fall arrest systems (US 229995). This competency to be obtained by at least one person who will be full-time on site (e.g. Supervisor)
- All personnel who will be conducting working at heights, will attend Working at Heights (W@H) training
- First Aid Training – first aider to be available at hand when working at heights take place

Medical Surveillance:

All personnel working at heights will be in possession of a valid occupational medical certificate and declared fit for work at heights.

Implementation and Application:

The Fall Protection Plan will be implemented by the responsible person on site (Construction Manager).

Safety Harnesses will be available for all personnel conducting work in elevated positions. Inspections of the harnesses and other fall protection equipment will be conducted on issue (daily) and record kept thereof. All defective fall protection equipment must be discarded immediately.

Scaffolding will be erected by a competent scaffold erector and inspected by a competent scaffold inspector, appointed in writing. Scaffolding will be erected in accordance with SANS 10085.

Anchor points must be installed at strategic points, where there is nothing else strong enough to hook the safety harnesses to. Retractable lifelines / lifeline(s) will be installed where and if necessary.

No equipment, material or tools will be thrown from heights. Areas underneath overhead work will be demarcated to prevent employees from entering the critical work area.

C3.7.5.14 Ergonomics – Ergonomic Regulations 2019

The Contractor shall:

Ensure a training programme is established for employees who may be potentially affected or exposed to ergonomic risks. Such training shall prior to placement of the relevant employee in the workplace. Refresher training shall also be conduct when recommended by the health and safety committee.

Ensure that all employees obey any lawful instruction given to him/her regarding the:

- The use of measures adopted to control ergonomic risks
- Cooperating with employer in determining his/her exposure to ergonomic risks

- The reporting of potential ergonomic risks to the health and safety representative
- Reporting for medical surveillance as required in ER 8
- Information, instructions and training received as contemplated in ER 3

Ensure a risk assessment is conducted by a competent person before any work commence that may exposed employees to ergonomic risks. Risk assessment shall include:

- A complete hazard identification
- The identification of all persons who may be affected by the ergonomic risks
- How employees may be affected by the ergonomic risks
- The analysis and evaluation of the ergonomic risks
- The prioritisation of the ergonomic risks

Revision of Ergonomic Risk Assessment:

- Assessment is no longer valid
- Control measures are no longer effective
- Technological or scientific advances allow for more effective control measures
- There is a change in: work method, the type of work carried out, the type of equipment used to control the exposure and an accident occurs or medical surveillance reveals an adverse health effect, where ergonomic risks are identified as a contributing factor.

Ensure all ergonomic risks are prevented or when not reasonably practicable adequately controlled to the benefit of the employee. Ensure all employees are placed under medical surveillance, which is overseen by a registered occupational medicine practitioner as required in ER 8. Ensure all records are kept as contemplated in ER 3, 6,7,8,9.

C3.7.5.15 Excavation Work - Construction Regulation 13

An excavation could be a hole or trench of any size and shape. A Risk Assessment must be done prior to making an excavation.

The following must be taken in consideration when doing the Risk Assessment:

- Depth and Length of the excavation
- Existing services
- Barricading and demarcation
- Depth of the excavation

Should an excavation be more than chest deep (1.2m), it must be adequately shored or braced.

Slopes or trenches shall be as flat as possible, 1 x vertical to 2 x horizontal must be considered maximum for dry conditions. In wet conditions either a much lower slope shall be used, or if space is a constraint, shoring and de-watering shall be applied.

A competent person shall be appointed to supervise excavation work. Stability evaluation of ground must be done and a certificate shall be issued.

A plan for prevention of persons being trapped due to collapse shall be provided by the Contractor. The design of shoring shall be documented by Contractor in the Health and Safety file as provided by the competent designer of shoring.

The maximum loading of sides of an excavation must be documented in a usable format. If adjacent structures and buildings are present and can be affected a design and construction of supporting details shall be represented.

Provision shall be made for access routes to the excavation. Routes must not be more than 6 meters away from worker.

Contractor must establish all existing services in area of excavations. Plan of existing services shall be documented in the Health and Safety file. Existing services include Telkom, Gas, Water, Electricity Supplies and other similar services.

Excavation Inspection shall be done on a

- daily basis
- prior to each shift
- after every blasting operation
- after an unexpected fall of ground
- after substantial damage to supports
- after rain

C3.7.5.16 Structures – Construction Regulation 11

The contractor shall ensure that-

- (i) all reasonable practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;

And-

- (ii) no structure or part of a structure is loaded in a manner which would render it unsafe.

The designer of a structure shall-

- a) before the contractor is put out to tender, make available to the client all relevant information about the design of the relevant structure that may affect the pricing of the construction work;
- b) inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- c) subject to the provisions of paragraph (a) and (b) ensure that the following information is included in a report and made available to the contractor-
 - a geo-science technical report where appropriate;
 - the loading of the structure is designed to withstand; and
 - the methods and sequence of construction process;
- d) not including anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which could be avoided by modifying the design or by substituting materials;
- e) Take into account the hazards relating to any subsequent maintenance of the relevant structure and should make provision in the design for that work to be performed to minimize the risk;
- f) carry out sufficient inspections at appropriate times of the construction work involving the design of the relevant structure in order to ensure compliance with the design and a record of those inspections is to be kept on site;
- g) stop any contractor from executing any construction work which is not in accordance with the relevant design;
- h) conduct a final inspection of the completed structure prior to its commissioning to render it safe for commissioning and issue a completion certificate to the contractor;

- i) Ensure that during commissioning, cognizance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.
- j) A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.
- k) Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.
- l) Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

C3.7.5.17 Completion of works and Close-out.

The Principal Contractor shall ensure that the necessary and applicable resources remain available towards the end of the project.

A consolidated Health & Safety File must be prepared by the Principal Contractor, including all Legal documentation pertaining to the project, as well as other documents as indicated by the Pr. CHSA. The format of submission must be confirmed with the client

On completion, the Principal Contractor will ensure that all required close out information is submitted to the Pr. CHSA, in order to prepare the Project Health & Safety Close Out Report.

C3.7.6 BASELINE RISK ASSESSMENT

C3.7.6.1 Objective

The objective of this baseline risk assessment was to identify and categorise the low to high hazards associated with performing tasks during different work categories.

The evaluation of results will assist management to eliminate, minimise or control risks to workers associated with the tasks performed or exposure to the working environment.

This risk assessment was also conducted to assist management in identifying training needs in order to concentrate efforts where it is mostly needed.

According to the Occupational Health and Safety Act 85 of 1993, all companies must assess where they stand in terms of risk, identifying the major risks which they are exposed to thereby establishing their priorities and a system for future risk control. A baseline risk assessment must be comprehensive and may well lead to further, separate and more in-depth risk assessment studies.

The baseline risk assessment should be reviewed periodically, about every year, after every accident/incident, change of work force or change of plant/equipment to ensure that it is still relevant and accurate. Any other studies will need to be incorporated to achieve a 'complete picture'.

C3.7.6.2 Scope of Work

The description of the works shall inter alia contain the following particulars regarding the work to be constructed and maintained under the contract.

C3.7.6.2.1 General

The Employer's objective is to rehabilitate bridges and associated works in the Northern Cape Province.

C3.7.6.2.2 Site location

The Contract will be executed at the following structures:

- Bridge TBC10002 at km 3.50 on Road MR00858 between Kakamas and Augrabies
- B0621 at km 25.13 on Road MR00858 between Augrabies and Augrabies National Park
- B0678 at km 1.83 on Road MR00875 connecting N14 and R359 over Kanoneiland
- B0689 at km 9.20 on Road MR00858 between Kakamas and Augrabies
- B0689A at km 14.30 on Road MR00858 between Kakamas and Augrabies
- B0689B at km 18.54 on Road MR00858 between Kakamas and Augrabies
- B0690 at km 2.48 on Road MR00858 between Kakamas and Augrabies
- B0713 at km 2.60 on Road MR00779 over the Kuikendraai stream between Groblershoop and Skerpioenpunt.
- B3293 at km 1.49 on road DR03273 over the Orange River between Augrabies town and farms
- B3296 at km 9.64 on Road DR03321 over Orange River between N14 and farm
- B3305 at km 0.67 on Road DR03266 over the Orange River near Marchand
- B6523 at km 0.24 on Road DR03269 on secondary gravel road between Keimoes and Eksteenskuil over a tributary to the Orange River
- B6529 (Old TB008) at km 32.76 on unnumbered road connecting to road MR00857. Carries the gravel road MR00857 over a tributary of the Orange River
- B6546 at km 0.51 on Road DR03310 between Oranjevallei and unnamed gravel road
- B6570 at km 9.50 on Road DR03310 between Upington and Louisvale
- B6571 at km 9.20 on Road DR03310 between Upington and Louisvale
- B6572 at km 9.00 on Road DR03310 between Upington and Louisvale

Also refer to the Inception Report, Design Report, Design Drawings and Scope of work (Section 3.1) in tender document, as well as Bill of Quantities that needs to be read in conjunction with this Specifications.

C3.7.6.3 Risk Analysis Method

The risk analysis considered all the tasks as described in the safe work procedures developed for this specific operation.

The risk analysis included:

- Description of the task/system under analysis.
- Evaluation of each risk by determining the probability of recurrence and severity of each event.
- Evaluation of current and planned controls, barriers, and safeguards.

A selected team of personnel were involved to conduct this on-the-job task analysis to determine baseline risk assessment.

C3.7.6.4 Determination of Levels of Risk

Risks associated with each step in the operational process were considered.

The following factors were considered and rated in accordance with the effect it would have on the items described below, should the event occur:

- Threat to the health and safety of a worker
- Severity of the event
- Likelihood of the event happening
- Event consequence

A risk level was attributed to each event in the following manner:

Low risk	=	1-6
Medium risk	=	7-15
High Risk	=	16-25

C3.7.6.5 Risk Ranking & Calculation of risk

C3.7.6.5.1 Risk Ranking:

Consequence:

Fatality or permanent disability	- 5
Major Injury	- 4
Average lost time injury	- 3
Minor Injury	- 2
Medical treatment only or less	- 1

Probability:

Common Occurrence	- 5
Has Happen	- 4
Could Occur	- 3
Not Likely to Occur	- 2
Very Unlikely	- 1

C3.7.6.5.2 Calculation of Risk:

Consequence: Probability = Risk Ranking (see table in risk assessment)

C3.7.6.6 Evaluation of Results

Activities listed in the high-risk categories must be seen as tasks requiring immediate attention. Training will, in most instances, solve the problem satisfactorily.

An implementation plan may then be devised to address the outstanding issues. This action plan must take cognisance of the hazards that should be eliminated concurrently.

C3.7.6.7 Definitions

ALARP	As low as reasonably practicable. The concept of weighting the risk against the sacrifice needed to implement the measures necessary to avoid the risk. In health and safety, it is assumed that the measures should be implemented unless it can be shown that the sacrifice is grossly disproportionate to the benefit.
Consequence	The outcome of an event or situation expressed qualitatively or quantitatively, whether a loss, injury, health or environment impact, or disadvantage, or a benefit, gain or advantage.
Control or Barrier	Control or barrier is defined as "anything used to control, prevent or impede energy flows or the loss of control of a hazard". Types of barriers include physical, equipment design, warning devices, procedures, work processes, knowledge and skills, and supervision. Controls impact on the risk of the event, whether it is an opportunity or threat. It is essential to consider controls or barriers in terms of their order of greatest effectiveness. This order is known as the 'Hierarchy of Control'.
Critical Controls	Those controls that significantly influence the likelihood and/or consequence of an event (if removed, they will significantly impact the risk rating).
Event	An incident or situation, which occurs in a particular place during a particular interval of time. Events involve releases or manifestations of, or exposures to the hazard. Events can be wanted (opportunity) or unwanted (threat).
Hazard	A source of potential harm to people, facilities, the environment or the community that, should it involve potential damage, will be an 'energy' such as electricity, pressure, chemical, etc. The environmental term, "aspect", is synonymous with hazard. A hazard must be recognised and understood in order to manage the related risk. Understanding a hazard includes the nature, magnitude, and potential consequences as well as relevant "target" or impact characteristics, potential timeframes, pathways or mechanisms of its manifestation and residual harm. Also, understanding sources of harm to the community may require recognition of incentives.
Likelihood	The probability or chance that an event will occur.
Risk	A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of the impact (e.g., injury, illness, environmental impact) that may be caused by the event or exposure.
Risk Analysis	A systematic process to understand the nature of and deduce the level of risk.

C3.7.6.8 Abbreviations used in Risk Assessment

DSTI	Daily Safety Task Instruction
HIRA	Hazard Identification and Risk Assessment
HCA	Hazardous Chemical Agents
PTO	Planned Task Observation
PPE	Personal Protective Equipment
SOP	Safe Operating Procedure
SWP	Safe Work Procedure
DoEL	Department of Employment and Labour
SDS	Safety Data Sheet
MSDS	Material Safety Data Sheet
WCG	Western Cape Government
DRPW	Department of Roads and Public Works

C3.7.6.9 Assessment Team

The following people were involved in establishing the relevant task groups and analysis.

- F du Toit - Pr. CHSA
- J Farao - Risk Assessor
- Phillip Bettencourt - Designer

C3.7.6.10 Task Specific-Risk Assessment

Should the baseline assessment indicate tasks in High risk a specific task risk assessment must be conducted. This assessment will then target the specific tasks and the hazards attached to it.

C3.7.6.11 Conclusion

The baseline risk assessment for the Project reflects the critical occupational health and safety risk scenarios and hazards associated with the scope of activities for the Project.

The project team is confident that effective controls were identified to manage OHS risks.

The effective controls identified must be incorporated into various management systems and processes to ensure that the controls are implemented in the field during execution.

Immediate future actions include;

- Communicate the Baseline Risk Assessment to all construction partners. (Principal Contractors, Sub consultants, vendors etc.)
- All contractors are to further develop effective controls through thorough issue based risk assessments for each of the high and critical risk scenarios identified.

REQUIRED AND EXISTING CONTROL MEASURES	Available		Adequate		REMARKS
	Yes	No	Yes	No	
Scope of Work (logical steps on how task will be performed)	X		X		
Procedures: (WI / SOP / Vendor Spec)	X		X		
Training, Induction, Competency Certificates, Specific Training / Other Instructions	X		X		Induction Training to be given before any work may commence
Special permits required (specify)		X		X	Construction work Permit issued by Department of Employment and Labour
Equipment / Tool Registers / Others (specify)	X		X		

PROBABILITY LEGEND				CONSEQUENCE / INJURY / LOSS			RANKING						
5	Has happened			5	Fatality or permanent disability or > R 5,000,000				5	4	3	2	1
4	Quite possible to happen (Happen during last year)			4	Major Injury or > R 1,000,000 < R 5,000,000			5	25	20	15	10	5
3	Could Happen (No record of recent occurrence)			3	Average Lost time Injury or > R 500,000 < R 1,000,000			4	20	16	12	8	4
2	Not likely to happen			2	Minor Injury or < R 500,000			3	15	12	9	6	3
1	Very Unlikely			1	Medical Treatment only or Less or No Financial loss			2	10	8	6	4	2
HIGH RISK = 15-25		MEDIUM RISK = 7-14		LOW RISK = 1-6		PROB: Probability	CON: Consequence	1	5	4	3	2	1

ADDITIONAL REFERENCES TO TASK	☑ METHOD STATEMENT	☑ MSDS	☑ PLANNED TASK OBSERVATION	☑ SAFE WORK PROCEDURE
	☑ WORK INSTRUCTION	☑ TRANSMITTABLE DISEASE CONTROLS	-	-

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
1.1	SITE ESTABLISHMENT	- ID Camp Site - Obtain Necessary permission. - Application for services - Determine safe access	No permission obtained	- Project Interruption - Legal liability claims - Financial Loss	3	4	12	- Permission obtained before site is establishment. - Liaising with community - The application for services must be submitted to the local municipality counsel
1.2		Transporting of Machinery and Tools to site	- Driver under the influence of illegal substances - Accidents - Hijacking	- Fatalities 3rd Party claims - Financial Loss - Property damage	3	5	15	- Induction Training - Driver must be authorised, competent and medically fit. - Driver to ensure that all equipment is properly fastened/secured. - Driver must adhere to the speed limits on site. - Planned Task Observations - Task Specific Training - Installation of tracking devices
1.3		Project Mobilization of Personnel	Incompetent personnel appointed	Project interruption	3	4	12	- Ensure all responsible person on site submit CV's. - Legal appointment letters to be signed prior to commencement of work. - Competencies to be verified. Occupational medicals to be in place prior to commencement of work
				Legal liability claims	3	5	15	
				Financial loss	3	3	9	
			Workers not informed of hazards and risks associated with tasks	Serious injuries or Fatalities	3	5	15	Site specific Induction training to be conducted on all personnel prior to commencing work.
	Workers exposed to unknown / unidentified hazards	Serious injuries or Fatalities due to unknown hazards	3	5	15	- Appointed Risk Assessor to be in possession of a HIRA certificate (Hazard Identification and Risk Assessment). - Task specific risk assessments to be carried out. - Employees to be trained in the content of the risk assessments. - Attendance registers to be in place		

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
1.4	SITE ESTABLISHMENT	Project Mobilization of Personnel	Workers exposed to Health Hazards namely Diseases / Bacteria / Viruses	Serious illnesses due to Health hazards	3	5	15	- Appointed Risk Assessor to be in possession of a HIRA certificate (Hazard Identification and Risk Assessment). - Task specific risk assessments to be carried out. - Employees to be trained in the content of the risk assessments. - Attendance registers to be in place. - Emergency Response and Prevention Plan to be developed and implemented
1.5		Offloading Machines, Equipment, Containers and Tools	- Overcrowding, - Poor offloading practices, - Uneven surfaces - Tripping and falling over equipment and articles laying around. - Getting hit by moving plant	- Multiple injuries - Back injuries - Sprains & strains - Theft of materials - Financial loss - Equipment Damage	3	4	12	- Task Specific training - Supervision - Wearing of correct PPE - Laydown area identified and demarcated before offloading commences. - Moving plant controlled
1.6		- Determine site layout. - Entrance and exit to campsite. - Determine positions for office, stores, and material	- Flammable store too close to offices - Wrong layout can cause confusion during emergency evacuations	- Equipment damage - Financial Loss	3	3	9	- Wearing required PPE - Hazardous/Flammable Agents stored away from offices. - Hazardous/Flammable Agents stored correctly. - Site lay out done to plans. Position of services taken into consideration - Supervision
1.7		Excavation of post holes	- Hand tools not safe for use - Employees stepping on edge of hole. - Loose material on edge of hole - Overcrowding - Members of public/stray animals getting injured when stepping into/falling over hole	- Lost time injuries - Back injuries - Multiple injuries - Financial loss - Legal liability claims 3rd Party claims	3	3	9	- Task specific training - Registers and checklists completed. - Identification of underground services - Supervision - Appropriate PPE - Delineators indicating open holes. - Cover plates placed on holes

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
1.8	SITE ESTABLISHMENT	Installing fence components	- Faulty tools and equipment - Manual handling Heavy components - Sharp - Theft	- Minor Injuries/cuts - Back injuries – sprains - Damaged components - Damaged tools and equipment - Stolen tools/equipment and components	3	3	9	- Task Specific training - Supervision - Correct PPE to be worn. - Components stored out of sight. - Accredited training (If required).
1.9		Installation of Diesel Tank and services	- Faulty installation - Lifting equipment failure - Swinging loads - Tripping and falling over equipment/obstacles	- Sprains & Strains - Multiple injuries - Back injuries - Financial loss - Equipment Damage - Project interruption	3	4	12	- Diesel tank to be placed on concrete floor. - Do electrical connection for the tank. - Task Specific training - Bunding area for diesel storage. - Spill kits available - All electrical cables to be buried 500mm deep. - Water connection to be established, pipes to be buried. - Wearing required PPE - Supervision - No trenches left open. - Storage of flammable substances certificate to be obtained from Fire Department
1.10		Erecting of signage and demarcation of storage areas	- Areas wrongfully marked off. - Signage not displayed	- Injury caused by misuse of equipment. - Hand injuries - Injuries due to faulty equipment - Financial loss	3	3	9	- Wearing required PPE - Supervision - All signage necessary, according to site layout plan to be erected. - Storage area to be demarcated. - Workers using HCA must undergo HCA training. - A qualified first aider must be available on site. - Workers to wear gloves when erecting signs.
2.1	LOCATION OF EXISTING SERVICES	Locating of existing services	Electrical cables	- Electrocution - Damage to electrical cables - Legal liability claims - Time loss	3	5	15	- Layout plans obtained from client. - Service provider notified. - Supervision - Safe Operating Procedure - Planned Task Observations - Task Specific Training - Daily Safety Task Instructions

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2.2	LOCATION OF EXISTING SERVICES	Locating of existing services	Underground services	- Damage to water pipes, telephone lines, network cables, etc. - Electrocution - Legal liability claims - Production time loss	3	5	15	- Layout plans obtained from client. - Service provider notified. - Supervision - Safe operating procedure to be implemented. - Planned Task Observations - Task Specific Training - Daily Safety Task Instructions
3.1	WORKING NEAR SERVICES	Plant operating near power lines	- Exposure to live and static electricity - Overhead power lines knocked over. - Overhead power lines snapped	- Electrocution - Property damage - Production time loss - Legal liability claims - Financial loss	2	5	10	- Prestart checklist - Operator authorised, competent and medically fit. - Machinery may not exceed height of overhead power lines. - Supervision - Banksman/Spotter checking plant height. - Wearing required PPE - Service provider representative to be present
3.2		Excavations/earthworks near overhead power lines	- Ground stability compromised. - Striking overhead powerline structures	- Electrocution - Property damage - Production time loss - Legal liability claims - Financial loss	2	5	10	- Prestart checklist - Operator authorised, competent and medically fit. - Machinery may not exceed height of overhead power lines. - Supervision - Ground stability checked. - Wearing required PPE - Service provider representative to be present

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4.1	SECURE/SAFE STORAGE FOR MATERIALS, PLANT AND EQUIPMENT	Stacking & Storage – materials	• Unauthorised access • Unstable stacking • Unsafe stacking practice • Collapsing / change in position of materials • Incorrect placement • Falling material • Manual handling • Hand & foot injury • Trip and fall	• Cuts to hands • Section 24 Incidents • Property Damage • Financial Loss • Time Loss due to injuries • Production time loss • Back injuries • Sprains and strains	3	4	12	• A competent & appointed person to supervise stacking & storage of all materials. • Toolbox talk to be conducted to ensure correct stacking & storage practices. • Allocated storage area to be demarcated with danger tape with poles not exceeding distance/length gaps of 3m or alternatively with snow netting. • All materials will be stacked at ground level on a firm & level base capable of withstanding the load & stacked in a manner as to avoid collapsing or change in position. • Ensure vehicles, machinery or persons moving past them do not endanger the stability of stacks. • All stacking should conform to the minimum requirements: 3 times the minimum base dimension is deemed to be the height to which articles may be stacked
4.2		Stacking & Storage – plant and equipment	• Moving plant • Parking area not level • Insufficient storage areas • Incorrect lifting practices • Uneven surfaces	• Accidents • Damage to plant and equipment • Major injuries • Fatalities • Financial loss • Project interruption	2	5	10	• Operators authorised, competent and medically fit. • Wearing of required PPE. • Stand Clear Policy enforced. • Stop blocks. • Sufficient storage areas • Storage areas demarcated. • Banksman • Supervision • Task Specific training (Parking of plant)

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5.1	TRAFFIC ACCOMMODATION	Positioning of Flagmen and signs	• Trips and falls. • Sprains and strain • Sharp edges of signs • Dropping of signs • Not visible to other road users/plant	• Ergonomic related injuries • Multiple injuries • Financial loss • Damage to signs • Project interruption • Struck by other road users. • Fatalities	3	5	15	• Wearing required PPE • Supervision • Traffic awareness training • Task specific training • Planned Task Observations • Accredited training
5.2		Preparation & maintenance of temporary traffic signs, Cleaning with water and rags	• Workers being exposed to extreme temperatures. • Workers being exposed to incoming traffic	• Dehydration/ Hypothermia • Accident/Incidents • Financial loss • Project interruption • Fatalities	3	5	15	• Wearing required PPE • Task Specific training. • Supervision • Correct placement of signs • Accredited training
5.3		Loading and offloading of temporary traffic signs	• Overcrowding • Workers exposed to traffic	• Financial loss • Project interruption • Accident/Incident • Fatalities	3	5	15	• Wearing required PPE • Supervision • Task specific training • Safe operating procedures • Planned Task Observations • Accredited training
5.4		Working in closure	• Incoming traffic • Workers being hit by traffic	• Accident/Incidents • Multiple fatalities • Financial loss • Project interruption	3	5	15	• Wearing required PPE • Task Specific training. • Supervision • Accredited training
5.5		Company vehicles and public vehicles driving through construction site	• Poor communication between Stop & Go • Incoming traffic • Vehicles striking plant, equipment and workers. • Incorrect placement of signs	• Accident/incident • Legal liability claims • Financial loss • Property damages • Project interruption • Fatalities • Production time loss	3	5	15	• Wearing required PPE • Flag men in position • Supervision • Closure set up to client spec or SARTSM. • Task specific training • Safe operating procedures • Accredited training
6.1	FIRE RISK PREVENTION	Stacking and storing of materials	• Materials caching fire	• Property damages • Production time loss • Injury • Major financial loss • Project time delay	3	3	9	• Fire extinguishers. • Fire Fighting Training. • Annual services of fire equipment. • Emergency procedure and drills. • No flammables stored with combustibles.
6.2		Fires from outside the property.	• Fire damaging plant, causing plant not to operate correctly, and contamination of stockpiles.	• Property damage • Financial loss • Production time loss	3	4	12	• Emergency plan to be put in place in case an emergency occurs.

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6.3	FIRE RISK PREVENTION	Fire risk	Insurance can deny pay-out if fire extinguishers are ineffective and not registered at SANS, legal liability claims can have negative effect on company	- Financial loss - Possible closing of the company - All workers can lose their jobs.	3	4	12	- Regular inspection and maintenance to be done on fire extinguishers. - Suppliers to be SANS Accredited
6.4		Smoke	Inhaling smoke if fire occurs	Occupational illness and disease (permanent lung damage)	3	3	9	- Fire extinguishers. - Fire Fighting Training - Annual services of fire equipment. - Emergency procedure and drills.
6.5		Fire occurring	- Employees not knowing where all escape routes are. - Employees know knowing what to do encase a fire occurs	- Possibility of a fatality - Serious injuries (3rd degree burns) - Legal liability claims - Financial loss	3	4	12	- Supervisors, managers, and safety officer to ensure regular fire drills are done and that there is enough fire fighters to ensure all personnel evacuate the building accordingly - First aiders to be trained and available in case of an emergency
7.1	EXPOSURE TO NOISE, DUST, VIBRATION AND HAZARDOUS AGENTS	Noise	- Working close to plant, equipment, and machinery - Working in high noise areas	Noise Induced Hearing Loss	3	4	12	- Noise survey done. - Noise zones indicated. - PPE requirements indicated. - Wearing required PPE - Medicals surveillance - Supervision - Contain high noise levels through engineering, elimination or substituting control
7.2		Dust	Excessive dust	- Respiratory and eye irritation - Poor visibility - Accidents - Injuries 3rd Party Claims - Financial loss - Project interruption	3	3	9	- Dust suppression - Wearing of required PPE. - Induction & task specific training - Supervision - Work in dusty areas kept to a minimum

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7.3		Vibration	- Vibrating equipment - Poorly maintained equipment - Absence of medical surveillance	- Hand & Arm Vibration Syndrome - Whole Body Vibration - Occupational Vibration Syndrome - Damage to tools, plant and equipment - Financial loss - Production time loss	2	4	8	- Registers/Checklists - Anti-vibration PPE - Task specific training - Medical surveillance - Supervision - Maintenance - Vibration survey to replace/substitute vibrating tools, equipment, and plant
7.4	EXPOSURE TO NOISE, DUST, VIBRATION AND HAZARDOUS AGENTS	Hazardous Agents	Exposure to hazardous Agents	- Eye, skin, and respiratory irritation - Chemical burns - Production time loss - Fire hazard - Property damage - Financial loss - Occupational illness and disease	3	4	12	- Registers/checklists - Hazchem training - Task Specific training - MSDS's available - Wearing required PPE - Stored/Used to manufacturer's instruction. - Signage displayed. - Medical surveillance - Supervision - Accredited HCA training
8.1	DRIVING / OPERATING CONSTRUCTION VEHICLES AND MOBILE PLANT	Inspecting Mobile Machinery	- Injury to body/misuse of equipment - Hitting other plant - Hitting workers	- Fatalities - Major injury - Financial loss - Legal liability claims - Production time loss	3	3	9	- Training. - Wearing of correct PPE. - Prestart checklist - Operators authorised, competent and medically fit. - Supervision
8.2		Climb into Vehicle/Machinery	Injury to body	- Injury - Production time loss	3	2	6	- Operators authorised, competent and medically fit. - Task specific training
8.3		Driving/Operating vehicles and plant	- Being hit by other road users - Hitting flagmen/pedestrians - Hitting other plant or road users - Excessive dust - Hitting surrounding properties and services - Material/Equipment falling off	- Poor visibility - Accidents - Fatalities - Major injuries - Damage to plant, property, services, and other vehicles 3rd Party claims - Financial loss - Project interruption	3	5	15	- Drivers/Operators authorised, competent and medically fit. - Prestart checklist - Dust suppression - Vehicles and plant conforming to safety standards/legislation. - Supervision - Traffic accommodation - Speeds reduction (Rumble strips)

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9.1	MATERIAL DELIVERY	Inspecting Mobile Machinery	- Injury to body/misuse of equipment - Hitting other plant - Hitting workers	- Fatalities - Major injury - Financial loss - Legal liability claims - Production time loss	3	3	9	- Training. - Wearing of correct PPE. - Pre-start checklist - Operators authorised, competent and medically fit. - Supervision
9.2		Climb into Vehicle/Machinery	Injury to body	- Injury - Production time loss	3	2	6	Operators authorised, competent and medically fit
9.3		Transporting of Material to site	- Warning devices on vehicles not working. - Overhead services - Running over co-workers - Accidents - Hitting other plant	- Project interruption - Financial loss - Equipment Damage - Fatalities - Legal liability claims	3	5	15	- Operator/driver authorised, competent and medically fit. - Supervision - Driver must adhere to the speed limits on site. - Only authorised drivers to operate vehicle. - Adherence to speeds limits tracked
10.1	LOADING AND OFFLOADING	Loading and offloading using lifting equipment	- Unauthorised persons operating/using lifting equipment. - Faulty lifting equipment - Lifting equipment not load tested. - Misuse of equipment - Workers standing underneath suspended load. - Being hit by other road users/plant	- Accident/incident - Injury to body - Fatalities - Financial loss - Project interruption	3	5	15	- Task Specific Training - Operator authorised, competent and medically fit. - Wearing of correct PPE - Load tests for lifting equipment. - Supervision
10.2		Loading and offloading by hand	- Jumping off vehicles - Incorrect lifting practices - Material falling off vehicles. - Equipment/Material not stable	- Equipment falling - Major injury - Financial loss - Equipment/Material damage - Project interruption	3	4	12	- Task Specific Training - Operator authorised, competent and medically fit. - Wearing of correct PPE - Supervision

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11.1	SURVEY AND SETTING OUT	Setting out according to plans	Poor/incorrect surveying	- Financial losses - Project Interruption	3	3	9	- Traffic Control - Supervision - Wearing required PPE - Surveying to be done by a competent surveyor. - Surveying to be done according to layout plans. - Record to be kept. - Checks to be done by engineering staff
12.1	CLEANING OF EXISTING STRUCTURES	Cleaning of Culverts / Pipes by hand	- Faulty equipment - Damaged hand tools - Obstacles / uneven surfaces - Dust - Rocks, gravel shooting up into the eyes	- Trips and fall. - Misuse of equipment or hand tools - Injury due to damaged hand tools or faulty equipment	3	3	9	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing of Correct PPE - Task Specific Training. - Supervision
13.1	CLEARING AND GRUBBING	Clearing and Grubbing	- Not visible to other site users - Being hit by other traffic - Material not cleared and grubbed thoroughly. - Hitting flagmen - Hitting other plant or road users - Dust - Hitting surrounding properties	- Accident/incidents - Major injury - Fatalities - Financial loss - Legal liability claims - Financial loss - Project Interruption - Surrounding property damages	3	4	12	- Supervision - Wearing required PPE - Prestart checklist - Operator authorised, competent and medically fit. - Workers to stand clear when Grader is levelling area. - Traffic Accommodation - Awareness training for locals
14.1	LAYER WORKS (MASS EARTHWORKS)	Loading Material with Excavator onto Tipper Trucks	- Incorrect loading - Warning devices on truck not working. - Overhead services - Excavator hitting tippers	- Project interruption - Financial loss - Injury - Damage to plant	3	4	12	- Prestart checklists - Plant conforms to safety standards. - Operators authorised, competent and medically fit - Operators checking loading area (surface, level, etc.) - PTO's. - Task Specific Training - Supervision

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14.2		Transporting of Material to construction area	- Warning devices on tipper truck not working. - Material may fall of truck. - Hitting pedestrians, flag personnel and other road users	- Road Accidents - Fatalities - Financial Loss - Property damage - Legal liability claims - Damage to other plant, road users and property	3	5	15	- Prestart checklists - Plant conforms to safety standards. - Induction Training - Operators authorised, competent and medically fit. - Supervision - No speeding - Traffic to be controlled
14.3		Tipping of Material	- Tipper Truck fall over because of uneven surface - Warning devices on truck not working. - Overhead services (Power line at tipping area) - Incorrect tipping - Hitting running over workers - Dust	- Eye and respiratory irritation - Major injury - Fatalities - Project interruption - Financial loss - Injury - Legal liability claims	3	5	15	- Prestart checklists - Plant conforms to safety standards. - Induction training. - Operators authorised, competent and medically fit. - Inform operators of overhead lines - Telly man to indicate to Tipper Truck driver if it is safe to tip
14.4	LAYER WORKS (MASS EARTHWORKS)	Levelling material with grader	- Hitting other road users - Hitting workers - Hitting survey pegs' - Dust	- Eye and respiratory irritation - Major injury - Fatalities - Project interruption - Financial loss - Injury - Legal liability claims	3	5	15	- Prestart checklists - Plant conforms to safety standards. - Induction training - Operators authorised, competent and medically fit. - Supervision - Traffic Accommodation
14.5		Compact material with Roller	- Hitting others road users - Hitting other plant - Hitting workers	- Major injury - Fatalities - Project interruption - Financial loss - Injury - Legal liability claims	3	5	15	- Prestart checklists - Plant conforms to safety standards. - Induction training - Operators authorised, competent and medically fit. - Supervision Traffic controlled
15.1	MILLING OF EXISTING ROAD SERVICE	Setup Milling Machine and start Milling existing road surface as per design	- Warning devices on vehicles not working. - Overhead services - Hitting workers - Accidents - Hitting other road users/plant	- Project interruption - Financial loss - Equipment Damage - Fatalities - Legal liability claims	3	5	15	- Traffic Accommodation as per Approved Traffic Management Plan - Operator/driver authorised, competent and medically fit. - Supervision

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15.2			Noise	Noise Induced Hearing Loss	3	4	12	- All workers in Noise Zone area to wear Hearing protection as indicated in Noise Survey - All workers working at Milling operation to undergo Audio Test and be declared medical fit by OMP / OHP
16.1.1	SURFACING & SEALING OF ROADS	PATCHING Marking out areas to be patched	- Being struck by passing traffic - Struck by debris from passers by	- Major injuries - Fatalities - Damage to plant and equipment - Financial loss - Project interruption	3	5	15	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing required PPE - Training on MSDS's - Supervision
16.1.2		Cutting of bituminous surface with asphalt/concrete saw	- Faulty equipment - Unauthorised operators operating cutter - Cutting incorrect marks	- Major injuries - Damage to plant and equipment - Financial loss - Project interruption	3	3	9	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing required PPE - Task Specific Training - Supervision
16.1.3		Removing bituminous material	- Faulty equipment - Misusing equipment - Removing too much material	- Minor injuries - Damage to tools/equipment - Financial loss - Project interruption	3	3	9	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing required PPE - Task Specific Training - Supervision
16.1.4		Priming patch area	- Faulty equipment - Misusing equipment - Spraying outside patch area, onto plant and other road users - Emulsion spray/fumes	- Eye and respiratory irritation - Minor injuries - Damage to tools/equipment - Financial loss - Project interruption	3	3	9	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing required PPE - Task Specific Training - Supervision
16.1.5		Filling & compacting with whacker/ride on roller	- Faulty equipment - Running over equipment - Hitting workers - Excessive noise	- Major injuries - Equipment/Plant damage - Project interruption - Financial loss - NIHL - Eye and respiratory irritation	3	4	12	- Task Specific Training - Traffic Management as per Approved Traffic Management Plan - Supervision - Operators authorised, competent and medically fit - Registers/Checklists - Wearing required PPE - Dust suppression

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16.2.1		CRACK SEALING Marking out cracks to be sealed	- Being struck by passing traffic - Struck by debris from passers by	- Major injuries - Fatalities - Damage to plant and equipment - Financial loss - Project interruption	3	5	15	- Traffic Accommodation as per Approved Traffic Management Plan - Wearing required PPE - Training on MSDS's - Supervision
16.2.2	SURFACING & SEALING OF ROADS	Spraying of binder on road between cracks	- Being hit by other road users - Operator not seeing other personnel or equipment - Hitting other road users - Hot emulsion - Emulsion fumes - LP gas (heating emulsion)	- Major injury - Burns - Fatalities - Explosions - Project interruption - Financial loss 3rd Party claims	3	5	15	- Induction - Wearing required PPE - Training on MSDS's - Supervision - Traffic Accommodation - Flagmen in position
16.3.1		Asphalt Surfacing Transporting asphalt mix on tipper trucks to site	- Warning devices on vehicles not working. - Overhead services - Hitting workers - Accidents - Hitting other road users/plant	- Project interruption - Financial loss - Equipment Damage - Fatalities - Legal liability claims	3	5	15	- Traffic Accommodation as per Approved Traffic Management Plan - Operator/driver authorised, competent and medically fit. - Supervision - Driver must adhere to the speed limits on site.
16.3.2		Dumping the asphalt into paver	- Being hit by other road users - Hitting paver/tipper too hard - Workers exposed to hot temperatures	- Accident - Burns - Fatalities - Injuries - Project interruption - Liability claims - Financial loss	3	5	15	- Operators authorised, competent and medically fit. - Prestart checklists - Supervision - Banksman in position - Wearing of required PPE. - Flagmen in position
16.3.3		Paving	- Respiratory irritation - Burns - Being hit by other road users	- Accidents - Burns - Major injuries - Fatalities - Project interruption - Liability claims - Financial loss	3	5	15	- Operators authorised, competent and medically fit. - Prestart checklists - Supervision - Banksman in position - Wearing of required PPE. - Flagmen in position

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16.3.4		Compacting asphalt mix	- Warning devices on vehicles not working. - Hitting workers - Accidents - Hitting other road users/plant	- Accident - Burns - Fatalities - Injuries - Project interruption - Liability claims - Financial loss	3	5	15	- Operators authorised, competent and medically fit. - Prestart checklists - Supervision - Wearing of required PPE. - Flagmen in position
16.4.1	SURFACING & SEALING OF ROADS	CHIP AND SPRAY Prime coat	- Being hit by other road users - Hitting flagmen/pedestrians - Hitting other plant or road users - Hitting surrounding properties and services	- Poor visibility - Accidents - Fatalities - Major injuries - Damage to plant, property, services, and other vehicles 3rd Party claims - Financial loss - Project interruption	3	5	15	- Drivers/Operators authorised, competent and medically fit. - Prestart checklist - Vehicles and plant conforming to safety standards/legislation. - Supervision - Traffic accommodation - Speeds reduction (Rumble strips)
16.4.2		Spreading of stone with chip spreader	- Being hit by other road users - Hitting flagmen/pedestrians - Hitting other plant or road users - Excessive dust - Hitting surrounding properties and services - Material/Equipment falling off	- Poor visibility - Accidents - Fatalities - Major injuries - Damage to plant, property, services, and other vehicles 3rd Party claims - Financial loss - Project interruption	3	5	15	- Drivers/Operators authorised, competent and medically fit. - Prestart checklist - Dust suppression - Vehicles and plant conforming to safety standards/legislation. - Supervision - Traffic accommodation - Speeds reduction (Rumble strips)
16.4.3		Rolling stone with Roller and sweeping with Mechanical broom	- Hitting others road users - Hitting other plant - Hitting workers	- Major injury - Fatalities - Project interruption - Financial loss 3rd Party claims	3	5	15	- Prestart checklists - Operators authorised, competent and medically fit. - Supervision - Traffic Accommodation as per approved Traffic Management Plan
16.5.1		SLURRY WORK Mixing of slurry with small mixer	- Turning/Rotating parts not covered - Excessive dust - Working with bituminous products - Faulty equipment - Misuse of equipment	- Major injuries - Equipment/Plant damage - Project interruption - Financial loss - Eye and respiratory irritation	3	4	12	- Task Specific Training - Supervision - Operators authorised, competent and medically fit. - Registers/Checklists - Wearing required PPE - Dust suppression

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16.5.2		Slurry transported by wheelbarrow. Slurry spread with squeegees	- Slurry coming into contact with skin. - Workers falling over obstacles not visible causing injury.	- Injury to body - Injury due to misuse of equipment - Injury due to faulty equipment	3	3	9	- Wearing of correct PPE - First aid to be at hand.
17.1	KERBS, EDGE BEAMS AND OTHER CONCRETE WORKS	Setting out of edge beam, V-Drain and concrete works area Insert level pegs according to plan	- Misuse of equipment - Faulty equipment - Tripping over pegs	- Injury - Accident/Incident - Legal liability claims - Financial loss	3	3	9	- Supervision - Task specific training - Wearing required PPE - Registers/Checklists
17.2		Excavation of edge beam, V-Drain, and concrete works area by hand	- Faulty equipment - Obstacles/uneven surfaces - Dust - Rocks, gravel shooting up into the eyes	- Trips and fall. - misuse of equipment - Injury due to faulty equipment	3	3	9	- Supervision - Task specific training - Wearing required PPE - Registers/Checklists
17.3		Compacting of floor using pedestrian roller or compactor	- High noise levels - Excessive dust - Faulty equipment - Running over equipment and tools	- Injuries - Damage to plant and equipment - Noise Induced Hearing Loss - Financial loss	3	3	9	- Supervision - Task specific training - Wearing required PPE - Registers/Checklists
17.4		Mixing concrete using Concrete Mixer	- Cement dust inhalation - Splashing cement	- Injuries - Eye irritation - Production interruption - Financial loss	3	3	9	- Supervision - Task specific training - Wearing required PPE - Registers/Checklists
17.5		Pouring concrete for edge beam, wing wall or apron slabs	- Splashing onto workers - Faulty equipment - Mixer truck being hit by other road users.	- Injuries - Eye irritation - Production interruption - Financial loss	3	3	9	- Task specific training - Wearing required PPE - Registers/Checklists - Traffic accommodation - Flagmen in position - Supervision - TSO to check on activities regularly

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18.1	HEADWALLS	Bricklaying	- Working at heights - Uneven surfaces - Faulty equipment, tools and materials - Scaffold/Structure collapse - Excessive dust (Brick dust and cement) - Noise (Equipment) - Vibration (Grinder/Brick cutter) - Splashing cement - Manual handling	- Minor injuries - Major Injuries - Fatalities (If falling from height) - Eye, skin and respiratory irritation - Occupational Illnesses and Diseases - Sprains and strains	3	4	12	- Task Specific Training - Wearing required PPE - Supervision - Registers/Checklists
18.2		Plastering	- Working at heights - Uneven surfaces - Faulty equipment, tools and materials - Scaffold/Structure collapse - Splashing cement - Manual handling - Excessive cement dust	- Minor injuries - Major Injuries - Fatalities (If falling from height) - Eye, skin and respiratory irritation - Occupational Illnesses and Diseases - Sprains and strains	3	4	12	- Task Specific Training - Wearing required PPE - Supervision - Registers/Checklists
19.1	EXPOSURE TO ENVIRONMENTAL CONDITIONS	Working in hot conditions	- Heat radiating from plant and equipment. - Ultra-Violet rays - High temperatures	- Dehydration - Heat Exhaustion - Heat Stroke - Heat cramps - Heat rash - Sunburns - Fatigue	3	4	12	- Subscription to weather notification service - Employee rotation policy - Longer rest periods. - Water available - Shaded area - Awareness training - Fitness Certificates - Supervision
19.2		Working in Cold conditions	- Cold equipment - Extreme low temperatures - Snow, sleet, rain, and winds	- Hypothermia - Chilblains - Immersion/Trench foot - Colds & Flu	3	4	12	- Subscription to weather notification service - Employee rotation policy - Sheltered area. - Heat retaining PPE (Freezer jackets) - Hot drinks

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
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19.3	EXPOSURE TO ENVIRONMENTAL CONDITIONS	Working in inclement weather	Lightning	- Fatalities - Severe burns - Damage to plant and equipment - Power failures	2	5	10	- Subscription to weather notification service - Work stopped in inclement weather
19.4		Threats from animals e.g., dogs, snakes, spiders, bees, etc.	- Dog Bites - Snake Bites - Spider Bites - Bee Stings	- Rabies - Poisoning - Allergic Reactions - Shock - Fatalities	2	5	10	- Emergency preparedness - Emergency numbers/poison information centre number available - First Aider - Training on snake handling/ awareness
19.5		Threats from local communities	- Burglaries - Muggings - Vandalism - Theft - Protests	- Stabbing - Multiple injuries - Fatalities - Financial loss - Damage to property, plant and equipment - Project interruption	3	4	12	- Liaison with community - Site security - Emergency preparedness - Additional security - Frequent communication with community
20.1	PORTABLE ELECTRICAL EQUIPMENT	Inspection of Portable Electrical Equipment	- Failure to inspect. - Inspection not done properly	- Serious injury - Damage to equipment - Production Interruption	3	3	9	- Daily inspection - Inspector appointed. - Lockout - Repair findings
20.2		Working with Grinders, Drills etc.	- Misuse of equipment - Faulty equipment - Not using the right disk/drill bit - Failure to follow lockout procedure. - Shooting/Fractured parts - Guards not used/absent. - Operating near flammables - Workers not wearing PPE. - Earth not connected	- Amputations - Serious injury - Blindness - Electrical shock - Financial loss - Production interruption	3	3	9	- Wearing of correct PPE - Supervision - Registers/Checklists - All equipment being used to be guarded properly. - Workers to ensure that all surfaces are clean and free from flammable articles before starting grinding operations

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
21.1	HAND TOOLS	Working with hand tools	- Misuse of equipment - Faulty equipment	- Injuries (cuts, bruises, etc.) - Equipment damage - Production Interruption	3	3	9	- Registers/Checklists - Wearing of required PPE. - Supervision - Task Specific Training
22.1	GUARD RAILS	Digging holes and plant Guardrail poles	- Overcrowding, - Unstable foot conditions - Using of unsafe tools - Tripping and falling over equipment and articles laying around	- Handling errors - Multiple injuries - Back injuries - Sprains & strains - Theft of materials - Financial loss - Equipment Damage	3	3	9	- Registers/Checklists - Wearing of required PPE. - Supervision - Task Specific Training
22.2		Installing Guard Rails			3	3	9	- Registers/Checklists - Wearing of required PPE. - Supervision - Task Specific Training
23.1	FENCING	Repairing of Existing Fences	- Overcrowding, - Poor offloading practices, - Unstable foot conditions - Using of unsafe tools - Tripping and falling over equipment and articles laying around	- Injury to workers when fencing is done because: - Handling errors - Multiple injuries - Back injuries - Sprains & strains - Theft of materials - Financial loss - Equipment Damage	3	3	9	- Registers/Checklists - Wearing of required PPE. - Supervision - Task Specific Training
24.1	ROAD SIGNS	Surveyor to set out sign positions (Also refer to survey and setting out)	- Workers being hit by other road users. - Faulty equipment/tools	- Accidents - Major injuries - Fatalities - Project interruption	3	3	9	- Supervision - Traffic awareness training - Wearing of correct PPE. - Stop/Go controls. - Flagmen
24.2		Excavate post holes by hand with pick and spade	- Workers being hit by other road users. - Faulty equipment/tools	- Accidents - Major injuries - Fatalities - Project interruption	3	3	9	- Supervision - Traffic awareness training - Wearing of correct PPE. - Stop/Go controls. - Flagmen
24.3		Erecting/Handling signs	- Fixing/Moving signs - Faulty equipment - Workers being hit by other road users	- Major injuries - Fatalities - Cuts - Damage to signs - Financial loss	3	4	12	- Supervision - Traffic awareness training - Wearing of correct PPE. - Stop/Go controls. - Flagmen

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
25.1	ROAD MARKING	Pre marking/Painting with traffic	- Worker hit by other road users. - Spray truck hit by other road users. - Spray truck hitting workers	- Fatalities - Major accidents - Liability claims - Financial loss - Project interruption	3	5	15	- Traffic accommodation - Flagmen in position - Traffic awareness training - Supervision - Wearing required PPE - PTO's - Task Specific Training
25.2		Placing road studs	- Worker hit by other road users. - Spray truck hit by other road users. - Spray truck hitting workers	- Fatalities - Major accidents - Liability claims - Financial loss - Project interruption	3	5	15	- Traffic accommodation - Flagmen in position - Supervision - Wearing required PPE - PTO's - Task Specific Training
26.1	TRANSMITTABLE DISEASES (E.G. COVID-19)	Coming into contact with other workers. Normal working activities on site	Workers exposed to Health Hazards namely Diseases / Bacteria / Viruses (e.g., COVID-19)	Serious illnesses due to Health hazards - Contracting disease.	3	5	15	- Health and Safety Management Plan to include planning around transmittable diseases and the relevant regulations. - Compile and implement a Risk Assessment and Safe Operating Procedure pertaining to the transmittable disease.
27.1	SITE DESTABLISHMENT (DEMOBILIZATION)	Loading Mobile Machinery, EQUIPMENT, and tools onto LDV 's and Trucks	- Overcrowding, - Poor offloading practices, - Uneven surfaces - Using of unsafe offloading practices - Tripping and falling over equipment and articles laying around. - Hit by moving plant	- Multiple injuries - Back injuries - Sprains & strains - Theft of materials - Financial loss - Equipment Damage	3	4	12	- Task specific training - Wearing required PEE 25kg per person weight ratio to be adhered to. - Heavy & odd shaped objects to be handled by two or more workers. - Correct stacking practices - Supervision - Lifting equipment load tested - Operators authorised, competent and medically fit. - Prestart checklists
27.2		Transporting of Machinery and Tools from site	- Warning devices on vehicles not working. - Overhead services - Running over co-workers (Supervisor etc.) - Accidents - Hitting other plant	- Project interruption - Financial loss - Equipment Damage - Fatalities - Legal liability claims	3	5	15	- Operator/driver authorised, competent and medically fit. - Supervision - Driver must adhere to the speed limits on site

Step No	Activity	Task	Potential Hazards	Risks	Current Risk			Suggested Control Measures
	List activity steps	List task steps	Potential dangers that could cause harm. List the potential hazards	Potential Risks due to Hazard	PROB	CON	Ranking	It the risk is not tolerable, establish further controls to mitigate/prevent
27.3		Offloading Machine, Equipment, Containers, Offices and Tools	• Overcrowding, • Poor offloading practices, • Uneven surfaces • Using of unsafe offloading practices • Tripping and falling over equipment and articles laying around. • Hit by moving plant	• Multiple injuries • Back injuries • Sprains & strains • Theft of materials • Financial loss • Equipment Damage	3	4	12	• Task specific training • Wearing required PEE • 25kg per person weight ratio to be adhered to. • Heavy & odd shaped objects to be handled by two or more workers. • Correct stacking practices • Supervision

NORTHERN CAPE PROVINCE

DEPARTMENT OF ROADS AND PUBLIC WORKS

TENDER NO. DRPW009/2024

CONTRACT NO. NC254A

THE MAINTENANCE OF BRIDGES IN ZF MGCAWU DISTRICT IN THE NORTHERN CAPE

PART C4: SITE INFORMATION

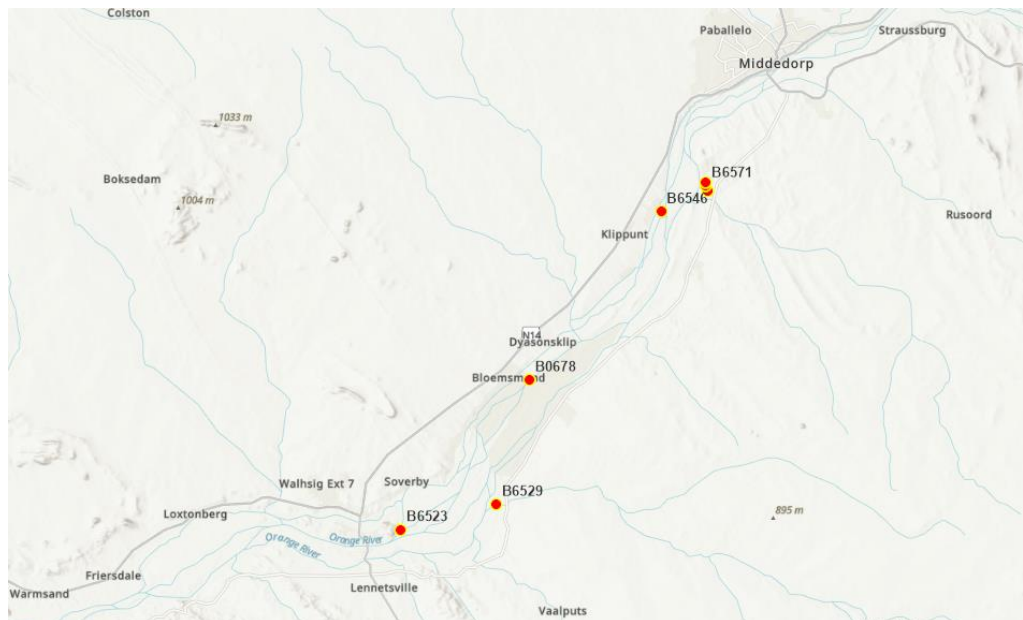
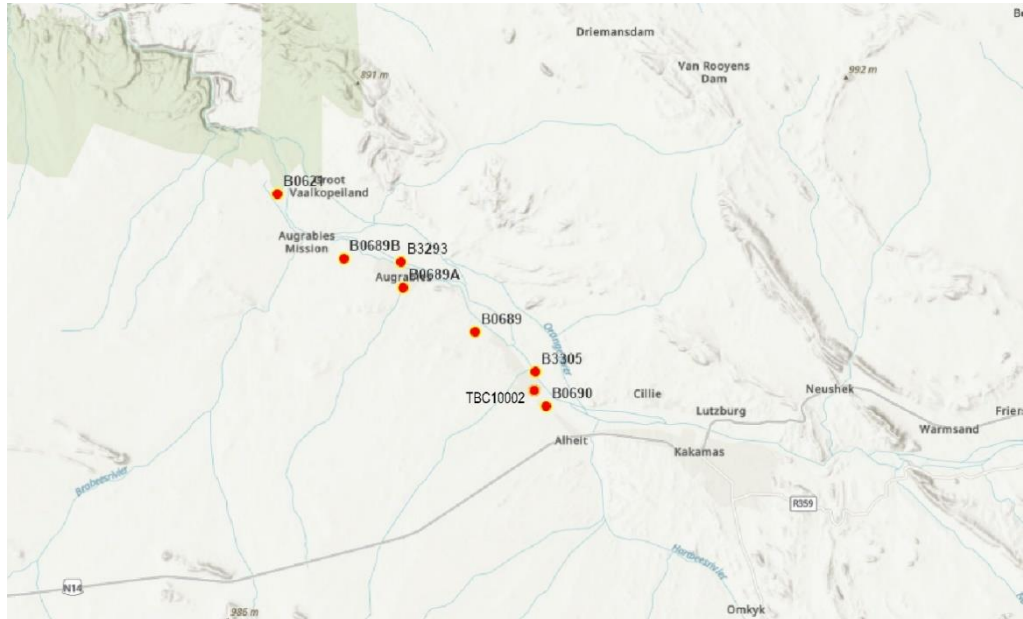
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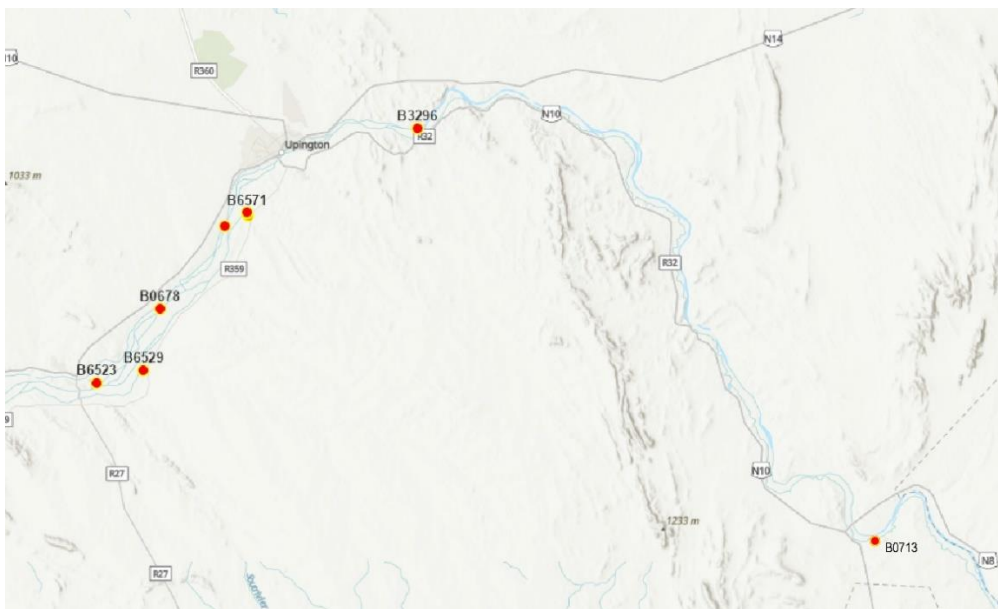
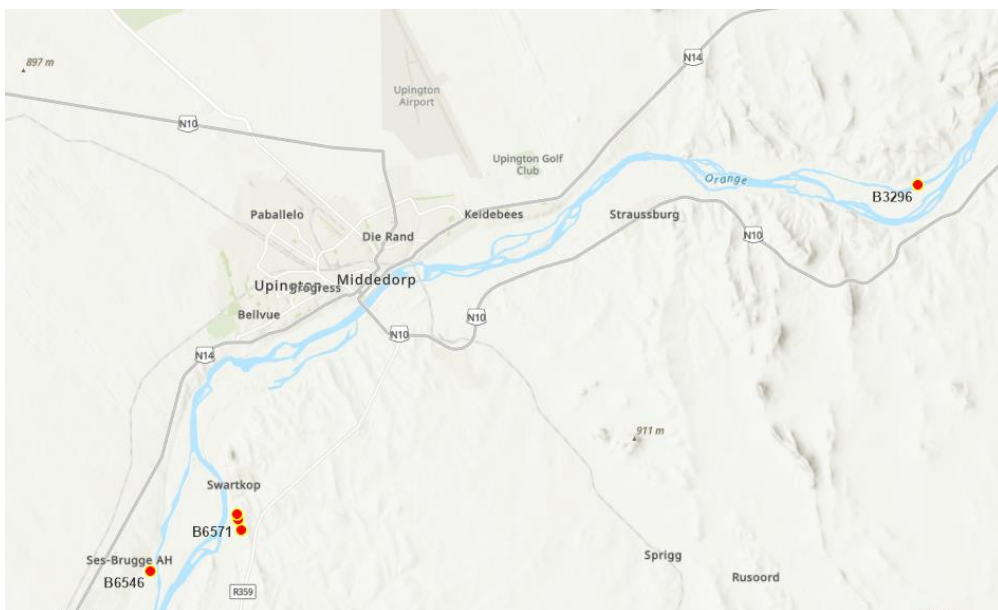
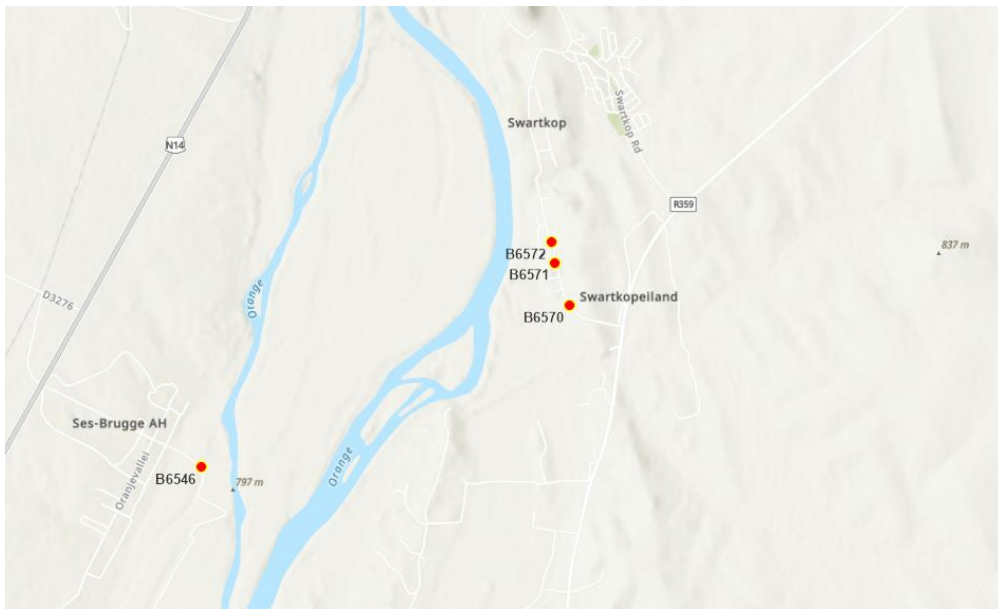
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C4.1 LOCATION OF THE PROJECT

This project is located in the Northern Cape Province, within the ZF Mgcawu district.

Refer to the schematics below for the locations of all 17 structures. Coordinates for each structure are summarised in Section C3.1.3.





C4.2 AVAILABLE INFORMATION

No additional site information is provided for this Contract.

C4.3 DRAWINGS

The drawings are bound in a separate volume.