

EPHRAIM MOGALE LOCAL MUNICIPALITY



CIDB CLASS GRADING 7CE or Higher

PROJECT DOCUMENT

TENDER NO: EPMLM 8/3/397

FOR

CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)

Issued by	Prepared by
Ephraim Mogale Local Municipality P.O.Box 111 MARBLEHALL 0450 Tel: 013 261 8400	T3 Consulting Engineers cc PO Box 1108 FAUNAPARK 0787 Tel: 015 291 5301 Email: eratshibvumo@gmail.com / admin@t3ce.co.za Contact Person: Mr Emmanuel Ratshibvumo

NAME OF TENDERER:

TENDER SUM:

AMOUNT IN WORDS

CRS NO:

CIDB NO:



EPHRAIM LOCAL MUNICIPALITY



PROJECT NAME: CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD.

TENDER NO: EPMLM 8/3/397

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VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:

A bid not complying with the peremptory requirements stated hereunder will be regarded as not being an "Acceptable bid", and as such will be rejected.

The municipality shall adjudicate and award Bids in accordance with the Preferential Procurement Policy Framework Act 5/2000 and revised Preferential Procurement Regulation June 2011 on 100 points functionality and on a 80/20 points system, where 90 points are for the price and 20 points for B-BBEE according to the said legislation. Bids are required to submit valid B-BBEE status level verification certificates.

1. Valid Registration with CSD
2. If any pages have been removed from the bid document, and have therefore not been submitted, or a copy of the original bid document has been submitted. Failure to complete the schedule of quantities as required, i.e. only lump sums provided.
3. Scratching out, writing over or painting out rates, without initialling next to the amended rates or information, affecting the evaluation of the bid.
4. Not initialling all the pages including the cover page and drawings.
5. The use of correction fluid (i.e. tippex) or any erasable ink, e.g. pencil.
6. Non-attendance of mandatory/compulsory:
 - Site inspections or;
 - Information/Clarification meetings
7. The Bid has not been properly signed by a party having the authority to do so, according to the example of "Authority for Signatory".
8. No authority for signatory submitted – See example, where it is stated that a duly signed and dated original or certified copy of the company's relevant resolution **(for each specific bid)** of their members or their board of directors, must be submitted.
9. Particulars required in respect of the bid the bidders BBEE status level of contribution have not been completed, the bid will not be disqualified but **no preference points will be awarded**.
10. **Very important notice** Bidders must note that only information filled in at the spaces provided therefore in the bid document will be considered for evaluation purposes unless additional space is required and then only if the location of the additional information in the attachments is properly referred to by page number and section heading. Information supplied anywhere else will be disregarded which **may** lead to the rejection of the bid. **The attachment or inclusion of information not specifically asked for is not desirable and lead to delays in the awarding of bids.**
11. **Bidders should also note that all tables and forms should be filled in even if the information is attached in the annexures. Bidder should not write refer to as it will lead to disqualifications**
12. The bidder attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract
13. The bid has been submitted either in the wrong bid box or after the relevant closing date and time.
12. Failure to provide a valid certificate from the Department of Labour, or a declaration (Specific goals – "Equity ownership") by a designated employer that it complies with the Employment Equity Act 55 of 1998.

13. Bidders will be disqualified if any municipal rates and taxes or municipal service charges owed by the bidder and any of its directors to the municipality, or to any other municipality or municipal entity or are in arrears for more than three months.
14. If any bidder who during the last five years has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.
15. The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –
 - (a) who is in the service of the state, or;
 - (b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder, is a person in the service of the state; or;
 - (c) who is an advisor or consultant contracted with the municipality in respect of contract that would cause a conflict of interest.
16. **Failure to provide: A copy of valid registration with the CIDB, in an appropriate contractor grading designation (category), as required in the bid documentation (or in the case of a joint venture, of all the partners in the joint venture).**
17. Bid offers will be rejected if the bidder or any of his directors is listed on the Register of Bid 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.
18. Bid offers will be rejected if the bidder has abused the EPMLM's Supply Chain Management System and action was taken in terms of paragraph 38 of the EPMLM SCM Policy.
19. If at any time during the project implementation phase the rates or prices are found to be abnormal, irregular and or not market related among other things, the engineer may after written approval from the municipality revise them to a practical or market related rate. The amount on the form of offer will be considered as the final cost of works.
20. Form of offer not completed and signed by the authorised signatory.
21. The tender documents must be printed in a colour coded paper
22. The letter of intent to issue guaranteed must be completed and the letter of guarantee attached
23. All the attachments should not be older than 6 months
24. No submission of financial statements or audited financial statements required, unless if the bided amount is above R 10m
25. Complete all questionnaires; spaces or Spaces, if the item is not applicable to you, mark it, not applicable. Sign all pages.

NOTE:

IN THIS DOCUMENT AND OTHER DOCUMENTS REFERRED TO BUT NOT ATTACHED, THE FOLLOWING WORDS ARE SYNONYMOUS WITH EACH OTHER.

1. CLIENT, EMPLOYER, EPHRAIM MOGALE LOCAL MUNICIPALITY (EPMLM).
2. BID, BID AND VARIATIONS THEREOFF
3. JOINT VENTURE / CONSORTIUM

SUMMARY FOR BID OPENING PURPOSES

NAME OF BIDDING ENTITY:.....
.....

PHYSICAL STREET ADDRESS:	POSTAL ADDRESS:

TELEPHONE NUMBER :

FAX NUMBER :

E-mail ADDRESS :

CONTRACT PRICE : R
(Amount brought forward from the Form of Offer and Acceptance) *

Signed by authorised representative of the Bidding Entity:

DATE:

- Should any discrepancy occur between this figure and that stated in the Form of Offer and Acceptance, the latter shall take precedence and apply.

T1.1: BID NOTICE AND INVITATION TO BID
BID NUMBER: EPMLM 8/3/397
CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD
CIDB GRADING: 7CE or Higher

EPHRAIM MOGALE LOCAL MUNICIPALITY

111 Marble Hall | 0450 | Tel: 013-261 8400 | Fax: 013-261 2985

INVITATION TO BID

These are subject to the PPPFA as amended and the Preferential Procurement Regulations 2017 and the General Conditions of Contract and, if applicable, to any special conditions of contract.

Bid No	Description	Requirements	Technical Enquiries	Bid Fee	Closing Date
EPMLM/8/3/395	Construction of Mhlabatwane Internal Street (Multi-year project)	Estimated CIDB grading of 7CE or Higher	EMD Engineers: 061 460 1517 / mazi@emd.co.za	R1 550.00	30/09/2021 at 12:00
EPMLM/8/3/396	Construction of Mabisi Internal Road (Multi-year project)	Estimated CIDB grading of 7CE or Higher	Loato Engineers: 011 050 0421 / info@loatoengineers.co.za	R1 550.00	30/09/2021 at 12:00
EPMLM/8/3/397	Construction of Morarela/Mbuzini Internal Road (Multi-year project)	Estimated CIDB grading of 7CE or Higher	T3 Consulting Engineers: 015 291 5301 / admin@t3ce.co.za	R1 550.00	01/10/2021 at 12:00
EPMLM/8/3/398	Construction of Regae Bus Route (Multi-year project)	Estimated CIDB grading of 7CE or Higher	Uranus Consulting Engineers: 015 307 6139 / info@uranusconsulting.co.za	R1 550.00	01/10/2021 at 12:00
EPMLM/8/3/399	Construction of Marble Hall Extension 6 Stormwater – Phase 5	Estimated CIDB grading of 4CE or Higher	Muleko Consulting Engineers: 015 295 7455 / mulekoconsulting@gmail.com	R1 030.00	10/09/2021 at 12:00
EPMLM/8/3/394	Appointment of a Professional Service Provider for the Compilation and Maintenance of the General Valuation Roll from July 2022 to June 2027	Registration with the SA Valuers body	Ms P Chuene: 0132618452 / pchuene@emogalem.gov.za	R1 030.00	04/10/2021 at 12:00

NB: Bid Fee is Non-Refundable Bid Document Availability: 01/09/2021. * EPMLM/8/3/394 available from 31/08/2021

Bid Documents will be available from the cashier's office on the respective dates for the non-refundable bid document fee as indicated above on weekdays during working hours (08:00 to 15:30) or for free download on www.etenders.gov.za.

Due to COVID-19 Disaster Management rules and regulations regarding social distancing among others, briefing sessions will not be held and prospective bidders are encouraged to use the details provided above and also to ephmlmsupplychain@emogalem.gov.za for any questions or enquiries they might have. All questions, enquiries or clarifications must be submitted up to five (5) days prior to the closing date as set out above. Any questions or enquiries submitted after these days will not be considered or addressed.

The projects will be subjected to functionality (quality) evaluation whereby a minimum qualifying score has to be obtained for bidders to be further evaluated for procurement points. The functionality criterion is as follows per project and further explained in the bid document:

Project No	Functionality Criterion and Weighting	Minimum Points
Points for functionality for all the above projects: (EPMLM/8/3/395, EPMLM/8/3/396, EPMLM/8/3/397, EPMLM/8/3/398 and EPMLM/8/3/399)	Company experience=40; Specific Personnel Knowledge =30; Financial status =20; Plant & equipment=10; Total =100	60 points
Project No	Functionality Criterion and Weighting	Minimum Points
EPMLM/8/3/394	Company experience=40; Human resource (key personnel) =30; IT Resources=10; Data protection and recovery=10; Valuation system=10; Total =100	60 points

The municipality will adjudicate and award bids in accordance with the BBBEE status level of contribution using the 80/20 preference point system, where 80 will be allocated to price and 20 to BBBEE level of the contributor. Bids will remain valid for 90 days after the closing date. Completed bids in sealed envelopes, clearly marked with the relevant bid number and description, should be deposited in the bid box situated at the offices of the Ephraim Mogale Local Municipality, 2 Ficus Street, Marble Hall, 0450, where bids will be opened in public. Bids not clearly marked and in sealed envelopes will not be considered.

NB: Bidders should ensure that bids are delivered on time to the correct address. Late bids will not be accepted. Ephraim Mogale Local Municipality does not bind itself to accept the lowest or any bid and reserves the right to accept any bid as a whole. Briefing Sessions are Compulsory, only one representative per company and failure to attend will lead to automatic disqualification.

Prospective Bidders interested in bidding for the respective projects are encouraged to submit their company names and contact details to ephmlmsupplychain@emogalem.gov.za on or before the cut-off date of communication in case where the municipality is to issue out a communiqué.

Administrative queries can be directed to the SCM Unit at 013 261 8450/8462/8496/8448 or by email to ephmlmsupplychain@emogalem.gov.za



MATLADI TS - MUNICIPAL MANAGER

T1.2: BID DATA

The Conditions of bid in the Standard Conditions of bid as contained in Annex F of SANS 294 – *Construction Procurement Processes, Methods and Procedures* contains references to the bid Data for details that apply specifically to this bid.

The BID Data shall be read with the Standard Conditions of bid in order to expand on the Bidder's obligations and the Employer's undertakings in administering the bid process in respect of the project under consideration.

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

Each item of bid Data given below is cross-referenced to the relevant clause in the standard Conditions of BID.

Clause Number	Tender Data
3.1	The Employer is: Ephraim Mogale Local Municipality The Employer's domiciliumcitandi et executandi (permanent physical business address) is: 13 Ficus Street MARBLEHALL 0450 The Employer's address for communication relating to this project is: P.O.Box 111 MARBLEHALL 0450
3.2	The tender documents issued by the Employer comprise: THE TENDER Part T1 Tendering procedures T1.1 Tender Notice and Invitation to Tender T1.2 Tender Data Part T2 Returnable documents T2.1 List of returnable documents T2.2 Returnable schedules THE CONTRACT Part C1 Agreements and Contract Data C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.3 Form of Guarantee C1.4 CIDB Adjudicator's appointment

Clause Number	Tender Data
	Part C2 Pricing Data C2.1 Pricing Instructions C2.2 Bill of Quantities Part C3 Scope of Work C3.1 Project Scope of Work C3.2 Tender Drawings Part C4 Site Information C4.1 Extract from Transport Infrastructure Act 2001 (Act No 8 of 2001) C4.2 Locality Plan Part C5 Annexures C5.1 Annex I – Environmental Management Plan C5.2 Annex II – Abstracts of the Mine Health and Safety Act No 29 of 1996 and Amendment Act No 72 of 1997 C5.3 Annex III – Borrow Pit Guarantee C5.4 Annex IV – Health and Safety Specification
3.4	The Employer's Agent is: Contact person: Mr. Emmanuel Ratshibvumo Name: T3 Consulting Engineers cc Address: P.O.Box 1108 FAUNAPARK 0787 Tel: 015 291 5301 Email: admin@t3ce.co.za/eratshibvumo@gmail.com
3.4	The language for communications is: English
4.1.1	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders: Only those tenderers who score the minimum score in respect of the quality criteria stated in 5.11.9 of this Tender Data shall be considered responsive and have their tenders evaluated further. a) CIDB registration The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their tenders evaluated: (i) Contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, for a (insert correct grading) class of construction work; and (ii) Contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of (a) above and who satisfy the following criteria: (1) the Employer is satisfied that such a contractor has the potential to develop and qualify to be registered in that higher grade as determined in accordance with the provisions of the

Clause Number	Tender Data
	CIDB <i>Specification for Social and Economic Deliverables in Construction Works Contracts</i> ; and
4.1.1	(2) the Employer agrees to provide the financial, management or other support that is considered appropriate to enable the Contractor to successfully execute that Contract. Joint ventures are eligible to submit Tenders provided that: (1) every member of the joint venture is registered with the CIDB; (2) the lead partner has a contractor grading designation in the (7CE) class of construction work; and (3) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 7 CE or higher class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations. b) 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 days after the closing date for tender submissions, will not be considered. c) Local content (Form C5) Only locally produced or locally manufactured products and components for construction with a minimum threshold for local content and production as stipulated in Form C5 will be considered. d) Key Personnel In order to be considered for an appointment in terms of this tender, the tenderer must have in its permanent employment key personnel who will be the single point accountability and responsibility for the management of the construction works. Individuals must be identified and their names listed in Form D3 for each of the key personnel listed below. Where the key personnel are no longer available to undertake the necessary work after the award of the tender, the contractor shall, within a period of 14 working days, replace the key personnel listed in Form D3 with personnel with equivalent competencies, subject to approval by the Employer. Such approval shall not be unreasonably withheld. Tenderers who can demonstrate that they will have in their employ during the contract period the necessary personnel satisfying the requirements of the Scope of Work for labour-intensive competencies for management and supervisory personnel. e) financial viability Tenderers who are under business rescue or liquidation.
4.1.2	It is an absolute requirement that the taxes of the successful tenderer <u>must</u> be in order, or that suitable arrangements have been made with the Receiver of Revenue to satisfy them.
4.1.2	If the Tax Clearance Certificate is found to be incorrect, Ephraim Mogale Local Municipality may, in addition to any other remedy it may have: -

Clause Number	Tender Data
	Recover from the Contractor all costs, losses or damages incurred or sustained by the State as a result of the award of the contract; and/or Cancel the contract and claim any damages which the State may suffer by having to make less favorable arrangements after such cancellation; and/or Each party to a Consortium / Joint Venture / Sub-Contractors must attach their original Tax Clearance Certificate from the Receiver of Revenue.
4.5.2	Tenderers are hereby earnestly warned that, in terms of section 23(1) of the Roads Ordinance of Transvaal (Ordinance No. 22 of 1957, as amended), it is absolutely essential that the owners of property be advised accordingly. Unless the provisions of this section are strictly adhered to, the acquisition of material may be illegal and could result in a claim by the owner, inter alia that the property be restored to its original condition by the Contractor.
4.5.3	Where reference is made to the standard specifications in the contract documents, it shall mean the COLTO Standard Specifications for Road and Bridge Works (1998).
4.6	Failure to apply instructions contained in addenda may render a tenderer's offer non-responsive in terms of Condition of Tender 5.8.
4.7	The arrangements for the compulsory briefing/clarification meeting are as follows: Location: N/A Date: N/A starting time: N/A
4.8	Request clarifications at least 7 working days before the closing time.
4.10	Tenderers are required to state the rates and currencies in Rand.
4.11.2	<u>Tenders submitted in accordance with these tender documents shall not have any qualifications.</u> 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. <u>Tenders shall not be qualified by the conditions of tender of the tenderer himself.</u> 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.
4.12	If a tenderer wishes to submit an alternative tender offer, the tenderer shall in addition to the conforming Tender submit a separate complete set of Tender Documents clearly marked as an "Alternative Tender" in order to distinguish it from the unqualified Tender. The only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent.

Clause Number	Tender Data
	Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate if the efficacy of the alternative complies with the Employer's standards and requirements and its principal elements, to take a view on the degree to which the alternative and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the Contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.
4.13.2	Parts of each tender offer communicated on paper shall be submitted as an original, plus NIL copies.

Clause Number	Tender Data
4.13.4	The tenderer is required to submit the following: The tenderer is required to submit the following with his tender (1) an original valid Tax Clearance Certificate issued by the South African Revenue Services; and (2) Proof of Contractor Registration drawn from the Construction Industry Development Board website should be attached to Returnable Schedule Form A12; (3) Evidence of registration and proof of good standing with a compensation insurer who is approved by the Department of Labour in terms of Section 80 of the Compensation for Occupational Injuries and Diseases Act (Act No 130 of 1993)(COID). The tenderer is required to disclose all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at a time during the 36 months preceding the date of this Tender; (4) Proof of Registration in respect of each partner, where a tenderer satisfied the CIDB contractor grading designation requirements through the formation of a joint venture; (5) Submit their Broad-Based Black Economic Empowerment status level certificate or certified copy thereof issued by a registered verification agency in accordance with the Preferential Procurement Policy Framework Act, 2000; Preferential Procurement Regulations, 2017. Joint ventures/consortiums will qualify for preference points, provided that the entity submits the relevant certificate/score card in terms of Preferential Procurement Regulations, 2017. Note that in the case of unincorporated entities, a verified score card must be submitted with the Tender. (6) A tender submitted jointly by two companies shall be accompanied by a copy of the document establishing the joint venture, registered and authenticated by an official who is authorized to witness sworn statements. The document shall clearly state the reason for the amalgamation, its period of validity and the persons who will represent it, how their assets will be legally obligated, and any further information that will explain the functions of the joint venture.
4.13.5	Submit only the signed "Original" Tender offer.
4.13.6	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 authorized representative's name, the tenderer's postal address and contact telephone numbers. Telephonic, facsimile or emailed tender offers will not be accepted.
4.13.7	The Ephraim Mogale Local Municipality, is not bound to accept the lowest or any tender and reserves the right to accept the whole or any part of a tender.
4.13 4.15	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: Office of the Ephraim Mogale Local Municipality Physical address: Ephraim Mogale Local Municipality 2 Ficus Street Marble Hall 0450 Identification details: Place the signed original tender offer in a package marked TENDER No. EPMLM 8/3/397 for the CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT). Tenders must be submitted during office hours (08:00 to 16:00 hrs) Monday to Friday at the Employer's address.
4.15	The closing time for submission of tender offers is 12:00 hrs on the 01st October 2021

Clause Number	Tender Data
4.16.1	The tender offer validity period is 90 days calculated from the tender closure date.
4.16.2	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 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.
4.18	Any additional information requested under this clause must be provided within 5 working days of the date of request. 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 labor-intensive portion of the Works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
4.19	No access for tests and inspections are required during the tendering period.
4.20	The tenderer must submit to the Employer the names of all management and supervisory staff that will be employed to supervise the labor-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirement
	The Employer's right to accept or reject any bid offer The Employer is not obliged to accept the lowest or any bid offer.
5.1	The Employer shall respond to clarifications received up to 7 working days before the tender closing time.
5.4	The time and location for the opening of tender offers are: Time 12:00 hrs on the 01st October 2021
	Location: Ephraim Mogale Local Municipality 2 Ficus Street Marble Hall 0450
5.5	The two-envelope system will not be followed for this Tender.
5.7	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.
5.11.7	The value of W1 is: 90 where the financial value, inclusive of VAT, of all responsive tender offers received has a value in excess of R50 000 000,00; or 80 where the financial value, inclusive of VAT, of one or more responsive tender offers has a value that equals or is less than R50 000 000,00.

Clause Number	Tender Data																														
	The value of A will be calculated utilizing the following formula: $A=(1-(P-P_m)/P_m)$ Where <i>P</i> is the comparative offer of the tender offer under consideration and <i>P_m</i> is the comparative offer of the most favorable comparative offer In the event that the calculated value is negative, the allocated score shall be 0.																														
5.11.8	Up to 100 minus <i>W</i>₁ tender evaluation points will be awarded to tenderers who submit responsive tenders and who are found to be eligible for the preference claimed. Points are based on a tenderer's scorecard measured in terms of the Broad-Based Black Economic Empowerment Act (B-BBEE, Act 53 of 2003) and the Regulations (2017) to the Preferential Procurement Policy Framework Act (PPPFA, Act 5 of 2000). Points awarded will be according to a tenderer's B-BBEE status level of contributor and summarised in the table below: <table><tr><th>B-BBEE Status Level of contributor</th><th>Number of Points for Contract value up to R50 000 000</th><th>Number of Points for Contract Value above R50 000 000</th></tr><tr><td>1</td><td>20</td><td>10</td></tr><tr><td>2</td><td>18</td><td>9</td></tr><tr><td>3</td><td>14</td><td>6</td></tr><tr><td>4</td><td>12</td><td>5</td></tr><tr><td>5</td><td>8</td><td>4</td></tr><tr><td>6</td><td>6</td><td>3</td></tr><tr><td>7</td><td>4</td><td>2</td></tr><tr><td>8</td><td>2</td><td>1</td></tr><tr><td>Non-compliant Contributor</td><td>0</td><td>0</td></tr></table> Eligibility for preference points is subject to the following conditions: - A tenderer's scorecard shall be based on the Construction Sector Codes of Practice promulgated in Government Gazette 32305 of 5 June 2009, only if such certificate has been issued before 17 February 2016, alternatively a B-BBEE Certificate issued in accordance with the revised Notice of Clarification published in Notice 444 of 2015 of Government Gazette No.38799 on 15 May 2015 by the Department of Trade and Industry; and - The scorecard shall be submitted as a certificate attached to Returnable Schedule Form C1; and - The certificate shall: - be an original or an original certified copy of the original; and - have been issued by a verification agency accredited by the South African National Accreditation System (SANAS); or - The Verification Certificate must be valid at the tender closing date; and - The date of issue of the certificate must be less than 12 (twelve) months prior to the advertised tender closing date (see Tender Data 4.15); and - Compliance with any other information requested to be attached to Form C1; and	B-BBEE Status Level of contributor	Number of Points for Contract value up to R50 000 000	Number of Points for Contract Value above R50 000 000	1	20	10	2	18	9	3	14	6	4	12	5	5	8	4	6	6	3	7	4	2	8	2	1	Non-compliant Contributor	0	0
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7	4	2																													
8	2	1																													
Non-compliant Contributor	0	0																													

Clause Number	Tender Data
	• If a tenderer claims a preference score without submitting an acceptable verification certificate, a period of 24 hours will be granted to submit an acceptable verification certificate which was valid at date of tender closure; and • Failure to submit a valid verification certificate will result in the award of 0 (zero) points for preference; and • In the event of a joint venture (JV), a consolidated B-BBEE verification certificate in the name of the JV shall be submitted.
5.11.9	EVALUATION OF TENDER OFFERS Evaluation of bid Offers Bidders will be evaluated on quality, price and preference. It is important that the relevant information is included to enable the Technical Proposal to be evaluated in accordance with the procedure outlined below. All information must be submitted in a separate file. Tampering with the original Bid document will render the Bid non-responsive. Failure to comply with the above requirements will result in the Bid being disqualified. The Bid evaluation will be conducted as follows: (a) First Bid documents that have been disassembled and copies of the Bid documents will be disqualified outright. (b) Second Bidders will be checked for compliance with Bid Conditions and administrative responsiveness. Non-compliance with any of the requirements will render the Bid non-responsive and it will not be carried forward to the next stage. (c) Third The Bidder's experience, staffing and methodology will be evaluated. Each Bid will be assessed and awarded points for Functionality. Failure to achieve 70 points out of the 100 for Functionality will render the Bid non-responsive. Only Bidders that score the specified minimum number of points for Functionality will be deemed to be acceptable and carried forward to the next stage. The rest will be disqualified. The points for functionality will not be carried forward to the remainder of the evaluation. (Refer to 2(b) below) (d) Fourth Points will be calculated for price on the relevant prices in accordance with the preference point system, 80/20. (refer to 2(c) below) (e) Fifth Points for BBBEE will be awarded in accordance with the status level of contribution. Refer to 2(d) below) (f) Final The Bid will be awarded to the short listed Bidder who has scored the highest points for price and BBBEE status, unless there are justifiable, objective reasons to award the Bid to another Bidder. However, the Employer retains the right not to accept any or the lowest Bid. Refer to (2e) below)

Clause Number	Tender Data
	(a) Compliance with Bid Conditions and other Requirements The Bid will be checked to ensure that they comply with the Bid Conditions and all other requirements of the project document. In particular, the following documentation must be completed, signed and included in the Bid: a) Form A – Certificate of attendance at site inspection, to be signed in the Bid document or Signature onsite inspection attendance register. b) Form B – Certificate of Authority for Signature. For JV's a JV Agreement shall be provided (if applicable) c) Form F – Record of addenda to Bid documents. d) Form I – Certificate of non- collusive Bid e) Form J – Compliance with Occupational Health and Safety Act f) Form L – Compulsory enterprise questionnaire. g) Form Q – Declaration of good standing regarding tax h) Form N – Financial details, statements and bank references. i) Form U– Declaration of bidder's past supply chain management practices. j) Form R – Declaration of interest k) Form W – Construction industries development board registration. l) Form C1.1 – Form of Offer and Acceptance m) Contract Data Section 2: Data provided by the contractor Failure to comply with the Bid Conditions or to supply the necessary information at Bid closure WILL result in the Bid being rejected. Non submission of any of the forms listed above will result in the Bid being rejected as non-responsive.

Clause Number	Tender Data																																																										
	(b) Second Stage in Evaluation: Quality or Functionality: Points System It is important that the Bidder provides information as requested as this information will be used for functionality in which a minimum of 70 points must be scored to move to the next stage of evaluation. <table><tr><td></td><td>TARGETED GOALS:</td><td>POINTS</td></tr><tr><td rowspan="4">Points for functionality</td><td>Company's Experience</td><td>40</td></tr><tr><td>Specific Personnel Knowledge</td><td>30</td></tr><tr><td>Financial status</td><td>20</td></tr><tr><td>Plant & equipment</td><td>10</td></tr></table> The scoring will be according to the table below <table><tr><th colspan="4">Functionality Scorecard</th><th rowspan="2">TOTAL POINT</th></tr><tr><th>Criteria</th><th colspan="3">Scoring guide</th></tr><tr><td>Company Experience: The tenderer to attach 5 largest appointment letters & completion certificates. Failure to submit the required appointment letter and Completion certificates for each project signed by all parties namely: The employer, the contractor and the Engineer, will result in the bidder getting zero points.</td><td>No.</td><td>Target Goals: List reference with details (civil engineering works)</td><td>Maximum points (40)</td><td rowspan="5">40</td></tr><tr><td></td><td>1.</td><td>Completed projects with value of R10m and above</td><td>8 points each project.</td></tr><tr><td></td><td>2.</td><td>Completed projects with value of R5m to R10m</td><td>5 points each project</td></tr><tr><td></td><td>3.</td><td>Completed projects with value of R2m to R5m</td><td>3 points each project</td></tr><tr><td></td><td>4.</td><td>Completed projects with value of >R2m</td><td>1 points each project</td></tr><tr><td colspan="5">Referees provided, to be contactable to confirm the value and the completion certificates provided.</td></tr><tr><td rowspan="3">Specific Personnel Knowledge certified Copies of Academic qualification certificates and registrations with a professional bodies needs to be attached for functionality points scoring otherwise no points will be allocated. Certified copies should not be older than Six months.</td><td>Designation</td><td colspan="2">Designation</td><td rowspan="3">30</td></tr><tr><td rowspan="2">Site Agent</td><td colspan="2">Site Agent: Points: 15 0: No formal Education 3: certificate N6 Civil Engineering 5: N. Dip: Civil Engineering with less than 5 years' exp. 8: Pr. Techni. N. Dip: Civil Engineering with more than 5 years' exp. 10: Pr. Tech: B Tech Civil with more than 10yrs exp. 15: Pr. Eng. BSc with more than 10 years' experience</td></tr><tr><td>Site Foreman</td><td colspan="2">Site Foreman: Points: 8 0: No formal qualification 3: Certificate N6 Civil Engineering 5: National Diploma Civil Engineering with more than 5 yrs. Exp.</td></tr></table>		TARGETED GOALS:	POINTS	Points for functionality	Company's Experience	40	Specific Personnel Knowledge	30	Financial status	20	Plant & equipment	10	Functionality Scorecard				TOTAL POINT	Criteria	Scoring guide			Company Experience: The tenderer to attach 5 largest appointment letters & completion certificates. Failure to submit the required appointment letter and Completion certificates for each project signed by all parties namely: The employer, the contractor and the Engineer, will result in the bidder getting zero points.	No.	Target Goals: List reference with details (civil engineering works)	Maximum points (40)	40		1.	Completed projects with value of R10m and above	8 points each project.		2.	Completed projects with value of R5m to R10m	5 points each project		3.	Completed projects with value of R2m to R5m	3 points each project		4.	Completed projects with value of >R2m	1 points each project	Referees provided, to be contactable to confirm the value and the completion certificates provided.					Specific Personnel Knowledge certified Copies of Academic qualification certificates and registrations with a professional bodies needs to be attached for functionality points scoring otherwise no points will be allocated. Certified copies should not be older than Six months.	Designation	Designation		30	Site Agent	Site Agent: Points: 15 0: No formal Education 3: certificate N6 Civil Engineering 5: N. Dip: Civil Engineering with less than 5 years' exp. 8: Pr. Techni. N. Dip: Civil Engineering with more than 5 years' exp. 10: Pr. Tech: B Tech Civil with more than 10yrs exp. 15: Pr. Eng. BSc with more than 10 years' experience		Site Foreman	Site Foreman: Points: 8 0: No formal qualification 3: Certificate N6 Civil Engineering 5: National Diploma Civil Engineering with more than 5 yrs. Exp.	
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Clause Number	Tender Data																										
				8: B Tech Civil Engineering with 5 years' experience																							
		Safety officer	<u>Safety Officer:</u> <u>Points: 5</u> 0: No formal qualification 5: Relevant qualifications with 5 years old.																								
		LIC Supervisor	<u>NQF Level 2;4;5 or 7:</u> <u>Points: 2</u> 2: Proof qualification must be attached.																								
	List of plant- Tenderer to submit proof of ownership with certification not older than Six months. 2. And in case of hiring, a letter of intent must be submitted with proof of ownership with certification not older than three months. Bidders will scores total points where the total minimum plant required has a letter of intent and also proof of ownership by a rental company				20																						
		<table><tr><th>Required Plant</th><th>Points</th></tr><tr><td>2 x TLB</td><td>2</td></tr><tr><td>1 x Water cart</td><td>2</td></tr><tr><td>2x Tipper truck</td><td>2</td></tr><tr><td>1 x Excavator</td><td>5</td></tr><tr><td>1 x Motor Grader</td><td>5</td></tr><tr><td>2 x LDV</td><td>1</td></tr><tr><td>1 x Roller Compactor</td><td>3</td></tr><tr><td>TOTAL</td><td>20</td></tr></table>		Required Plant		Points	2 x TLB	2	1 x Water cart	2	2x Tipper truck	2	1 x Excavator	5	1 x Motor Grader	5	2 x LDV	1	1 x Roller Compactor	3	TOTAL	20					
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2 x LDV	1																										
1 x Roller Compactor	3																										
TOTAL	20																										
Financial Capacity Ability of the worker to finance working capital requirement before the first claim is paid by the client. The tenderer to submit a letter from the bank indicating the bank rating The letter should not be older than six(6)months				10																							
	<table><tr><th>Bank rating</th><th>Weighting</th><th>Score</th></tr><tr><td></td><td></td><td></td></tr><tr><td>Bank rating =A and B</td><td>10</td><td></td></tr><tr><td>Bank rating =C</td><td>8</td><td></td></tr><tr><td>Bank rating =D</td><td>5</td><td></td></tr><tr><td>Bank rating =E</td><td>2</td><td></td></tr><tr><td>Bank rating =F to G</td><td>0</td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		Bank rating		Weighting	Score				Bank rating =A and B	10		Bank rating =C	8		Bank rating =D	5		Bank rating =E	2		Bank rating =F to G	0				
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Bank rating =D	5																										
Bank rating =E	2																										
Bank rating =F to G	0																										
Functionality Threshold (Minimum score)				70																							
Total Points for Functionality				100																							
Bidders must score a minimum of 70 percentage points out of the 100 percentage to qualify for further adjudication.																											

Clause Number	Tender Data																														
5.13	In addition to the requirements of the Condition of Tender, offers will only be accepted if: The tenderer has in his or her possession an original valid Tax Clearance Certificate issued by the South Fourth Stage in Evaluation: Price The following must be completed in full * The pricing schedule * The form of offer. No alterations, subtractions or additions may be made to the items in the pricing schedule. All items must be priced or calculated. A total of 90 points will be awarded to the Bid with the lowest balanced price. The other Bidders will be awarded points based on the ratio of the price under consideration to the lowest price. $P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$ where Ps = Points scored for comparative price of bid under consideration Pt = Comparative price of bid under consideration P_{min} = Comparative price of lowest acceptable bid 2(d) Fifth Stage in Evaluation: BBBEE (Ph) The Bidders will then be evaluated in terms of the Construction industry scorecard and the PPPFA regulation 34350 issued on 8 June 2011 with the values of Ph indicated as the number of points shown below. FOR BEE EVALUATION: Kindly complete and sign the MBD.6.1 and attach ORIGINAL or CERTIFIED BBBEE certificates or the sworn affidavit. <table><tr><th>B-BBEE Status Level of Contributor</th><th>Number of points (90/10 system)</th><th>Number of points (80/20 system)</th></tr><tr><td>1</td><td>10</td><td>20</td></tr><tr><td>2</td><td>9</td><td>18</td></tr><tr><td>3</td><td>8</td><td>16</td></tr><tr><td>4</td><td>5</td><td>12</td></tr><tr><td>5</td><td>4</td><td>8</td></tr><tr><td>6</td><td>3</td><td>6</td></tr><tr><td>7</td><td>2</td><td>4</td></tr><tr><td>8</td><td>1</td><td>2</td></tr><tr><td>Non-compliant contributor</td><td>0</td><td>0</td></tr></table> 2(e) Final Stage in Evaluation: Calculation of Final Total Points The final score or final total points for each Bid will be calculated by adding the scores from the; calculations. $P = P_s + P_h$	B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)	1	10	20	2	9	18	3	8	16	4	5	12	5	4	8	6	3	6	7	2	4	8	1	2	Non-compliant contributor	0	0
B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)																													
1	10	20																													
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Non-compliant contributor	0	0																													

Clause Number	Tender Data
	Acceptance of bid Offer Bid offers will only be accepted on condition that: a) The bid offer is signed by a person authorized to sign on behalf of the Bidder; b) a valid original Tax Clearance Certificate is included with his bid; c) the bidder's declaration of compliance with the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2014, is included with his bid submission; d) a bidder who submitted a bid as a Joint Venture has included an acceptable Joint Venture Agreement with his bid; e) the bidder or a competent authorized representative of the contractor who submitted the bid has attended the compulsory clarification meeting or site inspection; f) the contractor who submits the bid has been registered with the Construction Industry Development Board in accordance with the Construction Industry Development Board Act No. 38 of 2000 and the CIDB Regulations 2003 promulgated in terms of the Act, or if the contractor can submit proof or evidence that he will be able to register within 10 days of the closing date for submission of bids; g) the bidder or any of its principals is <u>not</u> listed on the register of bid 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 bidder has <u>not</u> abused the Employer's Supply Chain Management System or has failed to perform on any previous contract and has been given a written notice to this effect; i) the bidder or any of its principals, directors or managers is <u>not</u> employed in the service of the State or any municipality. In the event that such principals are involved, official approval from the Executing Authority regarding carrying out remunerative work outside of the public service must be included in the BID submission. j) the employer is satisfied that the bidder or any of his principals have <u>not influenced</u> the BID offer and acceptance by the following criteria: a. having offered, promised or given a bribe or other gift or remuneration to any person in connection with the obtaining or execution of this Contract; b. having acted in a fraudulent or corrupt manner in obtaining or executing this Contract; c. having approached an officer or employee of the Employer or the Employer's Agent with the objective of influencing the award of a Contract in the bidder's favour; d. having entered into any agreement or arrangement, whether legally binding or not, with any other person, firm or company to refrain from Bidding for this Contract or as to the amount of the BID to be submitted by either party; e. having disclosed to any other person, firm or company other than the Employer, the exact or approximate amount of his proposed bid; f. The employer may, in addition to using any other legal remedies, repudiate the bid offer and acceptance and declare the Contract invalid should it have been concluded already.

Clause Number	Tender Data
5.17	The number of paper copies of the signed contract to be provided by the Employer is 1.
5.19	All requests shall be in writing.
ADDITIONAL CONDITIONS OF TENDER CLAUSES:	
3.7	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.
5.21	Subcontracting as a condition of tender for procurement above R30 million - The minimum required for subcontracting is 30% for targeted local enterprises, as condition of tender; the tenderer must subcontract a minimum of 30% of the value of contract to: - an EME or QSE - an EME or QSE which is at least 51% owned by black people; - an EME or QSE which is at least 51% owned by black people who are youth; - an EME or QSE which is at least 51% owned by black people who are women; - an EME or QSE which is at least 51% owned by black people with disabilities; - an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships; - a cooperative which is at least 51% owned by black people; - an EME or QSE which is at least 51% owned by black people who are military veterans; more than one of the categories referred to in paragraphs (a) to (h). - The Central Supplier Database (CSD) has been upgraded to allow bidders/bidders/ contractors/ suppliers access to CSD for identification of potential sub-contractors from the pool of SMMEs or QSE's to advance designated groups. - In case of construction and built environment sectors, nothing prevents bidders/contractors/suppliers to select sub-contractors from the CIDB database who are registered on the CSD for the purpose of compliance with the minimum 30% compulsory sub-contracting provisions.

T1.3: STANDARD CONDITIONS OF BID

(As contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement)

F.1 General

F.1.1 Actions

The employer and each bidder submitting a bid offer shall comply with these conditions of bid. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly, and transparently.

F.1.2 Bid Documents

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

F.1.3 Interpretation

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

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

F.1.3.3 For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

- a) **Comparative offer** means the bidder's financial offer after the factors of non-firm prices, all unconditional discounts and any other bided parameters that will affect the value of the financial offer have been taken into consideration
- b) **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 bid process; and
- c) **Fraudulent practice** means the misrepresentation of the facts in order to influence the bid process or the award of a contract arising from a bid offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- d) **Quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

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

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

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

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

F.2 Bidder's obligations

F.2.1 Eligibility

Submit a bid offer only if the bidder complies with the criteria stated in the bid data and the bidder, or any of his principals, is not under any restriction to do business with employer.

F.2.2 Cost of bidding

Accept that the employer will not compensate the bidder for any costs incurred in the preparation and submission of a bid offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

Obtain, as necessary for submitting a bid 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 bid documents by reference.

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the bid offer

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

F2.10.2 Show VAT payable by the employer separately as an addition to the bidder's total of the Prices.

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

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

F.2.11 Alterations to documents

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

F.2.12 Alternative bid offers

F.2.12.1 Submit alternative bid offers only if a main bid offer, strictly in accordance with all the requirements of the bid documents, is also submitted. The alternative bid offer is to be submitted with the main bid offer together with a schedule that compares the requirements of the bid documents with the alternative requirements the bidder proposes.

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

F.2.13 Submitting a bid offer

F.2.13.1 Submit a bid offer to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the bid data.

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

F.2.13.3 Submit the parts of the bid offer communicated on paper as an original plus the number of copies stated in the bid data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the bid offer where required in terms of the bid data. The Employer will hold all authorized signatories liable on behalf of the bidder. Signatories for bidders 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 bid offer.

F.2.13.5 Seal the original and each copy of the bid 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 bid data, as well as the bidder's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the bid data, place and seal the returnable documents listed in the bid 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 bid data, as well as the bidder's name and contact address.

F.2.13.7 Seal the original bid 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 bid data.

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

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

Accept that bid offers, which do not provide all the data or information requested completely and in the form

required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the bid offer at the address specified in the bid data not later than the closing time stated in the bid data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept bid offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the bid data.

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

F.2.16 Bid offer validity

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

F.2.16.2 If requested by the employer, consider extending the validity period stated in the bid data for an agreed additional period.

F.2.17 Clarification of bid offer after submission

Provide clarification of a bid offer in response to a request to do so from the employer during the evaluation of bid 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 total of the prices or substance of the bid offer is sought, offered, or permitted. The total of the prices stated by the bidder shall be binding upon the bidder.

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the bid offer, the bidder'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 bidder 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 bid offer as non-responsive.

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other bid documents

If so instructed by the employer, return all retained bid documents within 28 days after the expiry of the

validity period stated in the bid data.

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to clarification

Respond to a request for clarification received up to five working days prior to the bid closing time stated in the Bid Data and notify all bidders who drew procurement documents.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the bid documents to each bidder during the period from the date of the Bid Notice until seven days before the bid closing time stated in the Bid Data. If, as a result a bidder applies for an extension to the closing time stated in the Bid Data, the Employer may grant such extension and, will then notify it to all bidders who drew documents.

F.3.3 Return late bid offers

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

F.3.4 Opening of bid submissions

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

F.3.4.2 Announce at the opening held immediately after the opening of bid submissions, at a venue indicated in the bid data, the name of each bidder whose bid offer is opened, the total of his prices, preferences claimed and time for completion, if any, for the main bid offer only.

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

F.3.5 Two-envelope system

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

F.3.5.2 Evaluate the quality of the technical proposals offered by bidders, then advise bidders 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 bidders, who score in the quality evaluation above the minimum number of points for quality stated in the bid data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to bidders whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a bidder to influence the processing of bid offers and instantly

disqualify a bidder (and his bid offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

Determine, on opening and before detailed evaluation, whether each bid offer properly received:

- a) Meets the requirements of these Conditions of Bid,
- b) Has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the bid documents.

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

- Detrimentially affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- change the Employer's or the bidder's risks and responsibilities under the contract, or
- affect the competitive position of other bidders presenting responsive bids, if it were to be rectified.

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

F.3.9 Arithmetical errors

Check responsive bid offers for arithmetical errors, correcting them in the following manner:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- If a bill of quantities (or schedule of rates) 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 will 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 bidder's addition of prices, the total of the prices shall govern and the bidder will be asked to revise selected item prices (and their rates if a bills of quantities applies) to achieve the bided total of the prices.

Consider the rejection of a bid offer if the bidder does not correct or accept the correction of his arithmetical errors in the manner described above.

F.3.10 Clarification of a bid offer

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

F.3.11 Evaluation of bid offers

F3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive bid offer to a comparative offer and evaluate it using the bid evaluation method that is indicated in the Bid Data and described below:

Method 1: Financial offer	1) Rank bid offers from the most favorable to the least favorable comparative offer. 2) Recommend highest ranked bidder for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2: Financial offer and preferences	1) Score bid evaluation points for financial offer. 2) Confirm that bidders are eligible for the preferences claimed and if so, score bid evaluation points for preferencing. 3) Calculate total bid evaluation points. 4) Rank bid offers from the highest number of bid evaluation points to the lowest. 5) Recommend bidder with the highest number of bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 3: Financial offer and quality	1) Score quality, rejecting all bid offers that fail to score the minimum number of points for quality stated in the Bid data. 2) Score bid evaluation points for financial offer. 3) Calculate total bid evaluation points. 4) Rank bid offers from the highest number of bid evaluation points to the lowest. 5) Recommend bidder with the highest number of bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 4: Financial offer, quality and preferences	1) Score quality, rejecting all bid offers that fail to score the minimum number of points for quality stated in the Bid data. 2) Score bid evaluation points for financial offer. 3) Confirm that bidders are eligible for the preferences claimed, and if so, score bid evaluation points for Preferencing. 4) Calculate total bid evaluation points. 5) Rank bid offers from the highest number of bid evaluation points to the lowest. 6) Recommend bidder with the highest number of bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

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

F.3.11.2 Scoring Financial Offers

Score the financial offers of remaining responsive bid offers using either formulas 1 or 2 below as stated in the Bid Data:

Formula	Basis for comparison	Option 1	Option 2
1	Highest price or discount	$(1 + \frac{(P - P_m)}{P_m})$	P/P_m
2	Lowest price or percentage commission/fee	$(1 - \frac{(P - P_m)}{P_m})$	P_m/P

where:

P_m = the comparative offer of the most favorable bid offer.

P = the comparative offer of bid offer under consideration.

F.3.11.3 Scoring quality (functionality)

Score quality in each of the categories stated in the Bid Data and calculate total score for quality.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of bid offer

F.3.13.1 Accept bid offer only if the bidder satisfies the legal requirements stated in the Bid Data.

F.3.13.2 Notify the successful bidder of the employer's acceptance of his bid offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the bid data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful bidder as described in the form of offer and acceptance.

F.3.14 Notice to unsuccessful bidders

After the successful bidder has acknowledged the employer's notice of acceptance, notify other bidders that their bid offers have not been accepted.

F.3.15. Prepare contract documents

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

- a) Addenda issued during the bid period,
- b) Inclusion of some of the returnable documents,
- c) Other revisions agreed between the employer and the successful bidder, and
- d) The schedule of deviations attached to the form of offer and acceptance, if any.

F.3.16 Issue final contract

Prepare and issue the final draft of contract documents to the successful bidder for acceptance as soon as possible after the date of the employer's signing of the form of offer and acceptance (including the schedule of deviations, if any). Only those documents that the conditions of bid require the bidder to submit, after acceptance by the employer, shall be included.

F.3.17 Complete adjudicator's contract

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

F.3.18 Provide copies of the contracts

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

PART T2: RETURNABLE SCHEDULES

TABLE OF CONTENTS		Page	Colour
T2.1:	LIST OF RETURNABLE DOCUMENTS.....	T.21	White
T2.2:	RETURNABLE SCHEDULES TO BE COMPLETED BY TENDERER	T.22	Yellow

T2.1: LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

1 Returnable Schedules required only for tender evaluation purposes

- A. Certificate of attendance at site clarification meeting
- B. Certificate of authority of signatory
- C. Schedule of proposed subcontractors
- D. Schedule of plant and equipment
- E. Schedule of the tenderer's experience
- F. Record of addenda to tender documents
- G. Deviations or qualifications by the tenderer
- H. Contractor's establishment on site
- I. Certificate of non-collusive tender 1 in the case of a single construction concern: i/we certify that this is a bona fide tender.
- J. Compliance with occupational health and safety act, 1993 and construction regulations, 2014
- K. Requirements in terms of government's reconstruction and development programme
- L. Compulsory enterprise questionnaire
- M. Form of intent to provide a demand guarantee
- N. Financial information of bidder
- O. Certificate for municipal services and payments
- P. Tax clearance certificate requirements
- Q. Declaration of interest
- R. Declaration for procurement above R10 million (all applicable taxes included)
- S. Preference points claim form in terms of the preferential procurement regulations 2011
- T. Declaration of bidder's past supply chain management practices
- U. Certificate of independent bid determination
- V. B-BBEE verification certificate
- AA. Preference schedule

NB: Mandatory documents will also be used for the evaluation

2. Other documents required only for bid evaluation purposes

- Y. CSD Report
- Z. Day work schedule
- BB. Organogram and curriculum vitae of key personnel
- CC. Project programme and method statement
- DD. Schedule of estimated monthly expenditure

TENDERERS ARE INSTRUCTED TO COMPLETE ALL THE SCHEDULES ATTACHED HEREIN. FAILURE TO COMPLETE ANY OF THE SCHEDULES MAY RESULT IN AUTOMATIC DISQUALIFICATION OF THE TENDER AS THE TENDER WILL BE CONSIDERED NOT RESPONSIVE. IF THE SCHEDULE IS NOT APPLICABLE TENDERERS ARE INSTRUCTED TO INDICATE NOT APPLICABLE AND SIGN THE SCHEDULE

3 The offer portion

Part C1 Agreements and Contract Data

Part C2 Pricing Data

T2.2 RETURNABLE SCHEDULES

A. CERTIFICATE OF ATTENDANCE AT SITE CLARIFICATION MEETING

This is to certify that:

..... (Bidder)

of (Address)

.....

was represented by the person(s) named below at the compulsory meeting held for all bidders at

.....(location) on (date), starting at

We acknowledge that the purpose of the meeting was to acquaint ourselves with the Site of the Works and/or matters incidental to doing the work specified in the bid documents in order for us to take account of everything necessary when compiling our entire bid submission.

Particulars of person(s) attending the meeting:

Name Signature

Capacity.....

Name Signature

Capacity.....

Note: All particulars above this horizontal divide line to be filled in by the Bidder **prior to** signature by Employer's representative.

Attendance of the above persons at the meeting is confirmed by the representative of..... Consulting Services namely:

Name Signature

Capacity..... Date Time

Note to the tenderer: Tenderers must attend the clarification meeting. And they must ensure that suitably qualified or experienced personnel attend the meeting.

Tenderers must ensure that those who attend the meeting on their behalf complete the official attendance register. Attendees must fill in the tenderers' names and contact details and they must sign the register. If they do not, the offers of the tenderers they represent at the meeting will be considered non-responsive.

B. CERTIFICATE OF AUTHORITY OF SIGNATORY

Indicate the status of the bidder by ticking the appropriate box hereunder. The bidder must complete the certificate set out below for the relevant category and also attach confirmation on **your company letterhead**

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

A. Certificate for company (To be printed and attached on original letterhead)

I,....., chairperson of the board of directors of hereby confirm that by resolution of the board (copy attached) taken on20..., Mr/Mrs.....acting in the capacity of.....was authorised to sign all documents in connection with this bid and any contract resulting from it on behalf of the company.

As witness

1.....
Chairman
2.....
Date

B. Certificate of partnership

We, the undersigned, being the key partners in the business trading ashereby authorise Mr/Mrs....., acting in the capacity of.....to sign all documents in connection with the bid for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

C. Certificate for Joint Venture (Lead partner should be filled in first)

We, the undersigned, are submitting this bid offer in Joint Venture and hereby authorise Mr/Mrs....., authorised signatory of the company,

acting in the capacity of lead partner, to sign all documents in connection with the bid offer for Contract.....and any other contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME & CAPACITY

D. Certificate for sole proprietor

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

As Witness:

1.....
Signature: Sole owner

2.....
Date

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as.....hereby authorise Mr/Mrs.....

Acting in the capacity of....., to sign all documents in connection with the bid for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

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.

C. SCHEDULE OF PROPOSED SUBCONTRACTORS

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

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

	Name and address of proposed Subcontractor	Company Registration Number & CIDB Classification	Description of Work to be executed by Subcontractor
1.			
2.			
3.			
4.			
5.			
6			
7			
8			
9			
10			
11			
12			
13			

Signed.....

Date.....

Name.....

Position.....

Bidder.....

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

[illegible]

Bidder.....

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

Quantity	Description, size, capacity, etc.

Signed.....Date.....

Name.....Position.....

Bidder.....

E. SCHEDULE OF THE BIDDER'S EXPERIENCE

The following is a statement of similar work successfully executed by myself/ourselves in the last five years:

Employer, contact person and telephone number	Description of contract	Value of work Inclusive of VAT (Rand)	CIDB Classification	Date Completed

Signed..... Date

Name..... Position.....

Bidder.....

FORM 2.1.2 SIZE OF ENTERPRISE AND CURRENT WORKLOAD

What was your turnover in the previous financial year? R_____

What is the estimated turnover for your current financial year? R_____

Physical facilities:

Provide information on offices, factories, yards and warehouses occupied by your enterprise (attach details if the space provided is not enough)

Description	Address	Area (m ²)

List your current contracts and obligations:

Description	Value (R)	Start date	Duration	Expected date completed

Do you have the capacity to supply the goods and services described in this bid, should the contract be awarded to you?

Signed..... Date

Name..... Position.....

Bidder.....

FORM 2.1.3 STAFFING PROFILE

Provide information on the staff that you have available to execute this contract (attach a separate list if the space provided is insufficient)

Own staff: gender and race	Number of staff
Staff to be employed for the project: gender and race	Number of staff

Signed..... Date

Name..... Position.....

Bidder.....

FORM 2.1.4 PROPOSED KEY PERSONNEL

The Bidder shall list below the key personnel (including first nominee and the second choice alternate), whom he proposes to employ on the project should his Bid be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their qualifications, experience, positions held and their nationalities.

DESIGNATION	NAME OF	NATIONAL ITY:	SUMMARY OF		HDI Status Yes/No	NQF 7 Certified Yes/No
	(i) NOMINEE (ii) ALTERNATE		QUALIFICAT- IONS	EXPERIENCE AND PRESENT OCCUPATION		
<u>HEADQUARTERS</u> Partner/director						
Project manager						
<u>CONSTRUCTION MONITORING</u>						
Site Agent						
Site Foreman						
Safety Officer						
Construction supervisor (LIC)						

Signed.....

Date

Name.....

Position.....

Bidder.....

F. RECORD OF ADDENDA TO BID DOCUMENTS

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

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

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Bidder			

Note : If any addenda has been issued; the information of the addenda must filled on the table above and the signed copy of the issued addendum be attached in the document as an annexure.

G. DEVIATIONS OR QUALIFICATIONS BY THE BIDDER

Note: Bidders will be declared to be non-responsive should any proposed deviation or qualification, save for where alternative bid offers are permitted in terms of the Bid Data, in the employer's opinion:

- a) Detrimently affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) Change the employer's or the bidders risks and responsibilities under the contract, or
- c) Affect the competitive position of other bidders presenting responsive bids, if it were to be rectified.

PAGE	DESCRIPTION

Signed..... Date

Name..... Position.....

Bidder.....

H. CONTRACTOR'S ESTABLISHMENT ON SITE

Should the combined, extended total have bided for Item 13.01 The contractor's general obligations:

- (a) Fixed obligations
- (b) Value-related obligations
- (c) Time-related obligations

exceed a maximum of 15 % of the bid sum (excluding VAT), the bidder shall clearly set out his reasons for bidding in this manner in a letter attached to this page.

Total bided for Item B13.01 expressed as a percentage of the bid sum (excluding VAT):%
(insert percentage).

ESTABLISHMENT OVER AND ABOVE ITEM 13.01 (see item B13.01)		
ITEM	PORTION OF RATE OR SUM (R)	VALUE (RANDS)
TOTAL VALUE		

Note to Bidder:

If the bidder should require additional compensation for his obligations under section 1300 (over and above the total bided for item 13.01) by including such additional compensation in the bided rates and/or lump sum of items in the bill of quantities, these items and the value of such additional compensation shall also be set out in a letter attached to this form.

Signed..... Date

Name..... Position.....

Bidder.....

I. CERTIFICATE OF NON-COLLUSIVE BID 1 IN THE CASE OF A SINGLE CONSTRUCTION CONCERN:
I/We certify that this is a bona fide bid.

I/We also certify that I/We have not done and I/We undertake not to do any of the following at any time before the hour and date specified for the closure of submission of bids for this contract.

- a) Fix or adjust the amount of this bid by or under or in accordance with any agreement or arrangement with any other person;
- b) communicate to a person other than the person calling for these bids the amount or approximate amount of the proposed bid, except when the confidential disclosure of the approximate amount of the bid is necessary to obtain the insurance-premium quotations required for preparation of the bid;
- c) Cause or induce any other person to communicate to me/us the amount or approximate amount of any rival bid for this contract;
- d) enter into any agreement or arrangement with any other person to induce him to refrain from bidding for this contract, or to influence the amount of any bid or the conditions of any bid to be submitted, nor cause or induce any other person to enter into any such agreement or arrangement;
- e) offer or pay or give or agree to pay or to give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any bid or proposed bid for this contract, any action similar to those described above.

In this certificate the term "person" includes any persons, body of persons or association, whether corporate or not, and the term "agreement or arrangement" includes any agreement or arrangement, whether formal or informal and whether legally binding or not.

Signed..... Date

Name..... Position.....

Bidder.....

I: CERTIFICATE OF NON-COLLUSIVE BID (continued)

2 IN THE CASE OF A CONSORTIUM OF CONSTRUCTION CONCERNS:

We certify that this is a bona fide bid.

We also certify that we have not done and we undertake not to do any of the following at any time before the hour and date specified for the closure of submission of bids for this contract:

- a) Fix or adjust the amount of this bid by or under or in accordance with any agreement or arrangement with any person outside this consortium;
- b) communicate to a person outside this consortium other than the person calling for these bids, the amount or approximate amount of the proposed bid, except when the confidential disclosure of the approximate amount of the bid is necessary to obtain insurance premium quotations required for preparation of the bid;
- c) cause or induce any person outside this consortium to communicate to us the amount or approximate amount of any rival bid for this contract.
- d) enter into any agreement or arrangement with any person outside this consortium to induce him to refrain from bidding for this contract, or to influence the amount of any bid or the conditions of any bid to be submitted, nor cause or induce any person outside this consortium to enter into any such agreement or arrangement;
- e) offer or pay or give or agree to give any sum of money or valuable consideration directly or indirectly to any person outside this consortium for doing or having done or causing or having caused to be done in relation to any bid or proposed bid for this contract, any action similar to those described above.

In this certificate the term "person" includes any persons, body of persons or association, whether corporate or not, the term "agreement or arrangement" includes any agreement or arrangement, whether formal or informal and whether legally binding or not, and the term "person outside this consortium" means, when the consortium is a partnership, a person other than a partner or an employee of a partner or the partnership, or when the consortium is a company, a person other than a person or company holdings shares in the consortium, or any employee of such a person, company or the consortium.

Signed..... Date

Name..... Position.....

Bidder.....

J. COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2014

The bidder shall attach to this Form evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act (COID) (Act 130 of 1993).

The bidder 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 bidder at any time during the 36 months preceding the date of this bid.

Note to bidder:

Discovery that the bidder has failed to make proper disclosure may result in EPHRAIM MOGALE LOCAL MUNICIPALITY terminating a contract that flows from this bid on the ground that it has been rendered invalid by the bidder's misrepresentation.

Signed..... Date

Name..... Position.....

Bidder.....

K. REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND DEVELOPMENT PROGRAMME

K1 General

The employer requires the active participation of the contractor in this aspect of the contract. Forms RDP 1 (E) to RDP 4 (E) apply to this section and must be completed and submitted with the bid.

The bidder's submissions under this item will be taken into consideration when evaluating bids received.

K2 Definitions

K2.1 Contract Participation Goal (CPG)

The value of goods, services and works, excluding VAT, for which the contractor proposes to engage labour or ABEs .

K2.2 Affirmable Business Enterprise (ABE)

A business which adheres to statutory labour practices, is a legal entity, registered with the South African Revenue Service and a continuing and independent enterprise for profit, providing a commercially useful function and

- a) which is at least 51 % Owned by one or more Previously Disadvantaged Individuals (PDI) or in the case of a company, at least 51 % of the shares are owned by one or more Previously Disadvantaged Individuals (PDI) and
- b) whose management and daily business operations are under the control of one or more of the Previously Disadvantaged Individuals (PDI) who effectively own it provided, however, that, during the period for which the business has been operating or the previous three financial years, whichever period is the lesser, the average annual turnover of the business (excluding VAT and any turnover generated in respect of work performed by other parties in a joint venture or a consortium) does not exceed:
 - 1) R10 million in respect of contractors who mainly perform Civil Engineering Services.
 - 2) R2,5 million in respect of labour-only subcontractors
 - 3) R10 million in respect of Manufacturers
 - 4) R15 million in respect of Suppliers
 - 5) R2,5 million, exclusive of any turnover generated in respect of out-sourced activities which the enterprise does not have the in-house competence and expertise to perform, in respect of professional service providers, and
 - 6) R2, 5 million in respect of other service providers, e.g., transport; and that the sum of the average annual turnovers over the same period of all the business concerns which are under the control of Previously Disadvantaged Individuals (PDI) within the business entity and Affiliated Entities does not exceed one and a half (1,5) times the maximum allowable annual average turnover for the particular category of enterprise as set out in (b) above, seeking ABE status.

K2.3 “Historically Disadvantaged Individuals (HDI)” means all South African Citizens

1. who had no franchise in national elections prior to the introduction of the 1983 and 1993 constitutions;
2. women, or
3. disabled persons

Persons who obtained South African Citizenship after the first democratic election in April 1994, cannot qualify for preference as an HDI.

K2.4 Target values

(a) The values of the following items (excluding VAT) expressed as percentages of the Bid Sum, (excluding VAT) as proposed by the bidder in his bid. The monetary total of these values shall be the CPG. The values of the targets (including VAT) are expressed as follows:

- At Bid stage: As a percentage of the Bid Sum (i.e. excluding Contingencies, CPA and Rise and Fall, but inclusive of VAT) as proposed by the bidder in his bid
- After Award: As a percentage of the certified work done (i.e. excluding savings, but inclusive of variation orders and VAT)

In this contract the minimum target values shall be as follows:

Labour Maximisation (wages)	:	10%
SMME's	:	30%
ABE/s support	:	10%

The value of target values, ***the bid of a bidder whose proposed target values are below the minimum set by the employer may be disqualified.***

(b) The following item expressed as a percentage of the total number of supervisory staff employed on the contract, as proposed by the bidder in his bid. In this contract the minimum target value shall be:

HDI Supervisory Staff: 10%

The bid of a bidder whose proposed target values are below the minimum set by the employer may be disqualified.

The maximum target values for each category will be the highest of all values submitted in the bids short-listed for detailed evaluation.

K2.5 Labour Maximisation

It is a requirement of this contract that participation in the contract must be granted to labour in order to maximize job creation as well as to maximize expenditure towards the unemployed.

The specified target value for labour expenditure is **30%** of the contract value. This labour content shall be from the LOCAL COMMUNITY where Local Community means those in the immediate vicinity of the project. Labour is defined as hourly paid personnel including the CLO.

It is a requirement that the Contractor plan for achieving these targets and that a planned programme for achieving each of the targets is submitted at the start of the project together with the clause 12 programme of construction.

Penalties: The penalties for not reaching the required labour target values will be calculated at **30%** of the

difference between the set target values and the actual target values achieved by the contractor at completion of the works. Penalties will be applied monthly, when the actual figures are less than **30%** of the planned accumulative monthly figures. No bonuses for achieving the set target values are applicable. In the event that penalties are reversed, no interest will be claimable on the value of the penalty.

K2.6 SMME

SMME (According to the National Small Business Amendment Act, No. 29 of 2004):

Definition: A “Small [business] Enterprise” means a separate and distinct business entity, together with its branches or subsidiaries, if any, including co-operative enterprises [and non-governmental organisations], managed by one owner or more [which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or subsector of the economy, which can be classified as a micro-, a very small, a small or a medium enterprise by satisfying the criteria mentioned in columns 2, 3 and 4 of the Schedule opposite the smallest relevant size or class as mentioned in column 1 of the Schedule for the Construction category below:

Size of class	Total full time equivalent of paid employees	Total annual turnover	Total gross asset value(fixed property excluded)
Medium	200	R26m	R5m
Small	50	R6m	R1m
Very Small	20	R3m	R0,5m
Micro	5	R0,2m	R0,1m

It is a requirement of this contract that participation in the contract must be granted to local SMME companies. Local is defined as “having their head office within the Limpopo Province boundaries.” A SMME company should be a registered company, but not necessarily be registered with CIDB, although it is preferred. The minimum target for participation is thirty percent (30%) of the total contract value and this can be achieved through one or more sub-contractors. EPMLM reserves the right to terminate the contract should the contractor fail to honour the commitment as stipulated by the contractor on this page

Information in this regard needs to be provided by the contractor on Forms RDP 2 (E), RDP 2 (E1), RDP 2 (E2), etc. Commitment to these goals will be a condition of award.

It is a requirement that the Contractor plan for achieving these targets and that a planned programme for achieving each of the targets is submitted at the start of the project together with the clause 12 programme of construction.

K2.7 Broad-Based Black Economic Empowerment (B-BBEE)

As assigned in the Codes of Good Practice, B-BBEE means the economic empowerment of all Black People through diverse but integrated socio-economic strategies that include, but not limited to:

- increasing the number of Black People that manage, own and control enterprises and productive assets;
- facilitating ownership and management of enterprises and productive assets by communities, workers, co-operatives and other collective enterprises;
- human resources and skills development;
- achieving equitable representation in all occupational categories and levels in the workforce;
- preferential procurement; and
- investment in enterprises that are owned or managed by Black People.

As part of this bid, preference will be given to B-BBEE Level Contribution.

The B-BBEE Level Contributor, meaning the B-BBEE Status received by a measured entity based on its overall performance using the generic scorecard contained in the Codes of Good Practice, will be used during

bid evaluation to allocate points to the bidder. A maximum of 10 points (90/10 evaluation) or a maximum of 20 points (80/20 evaluation) may be awarded to a bidder for attaining their B-BBEE status level contemplated in the Codes of Good Practice. The Act governing the B-BBEE is the Broad-Based Black Economic Empowerment Act, No. 53 of 2003.

K3 Contract Participation Performance (CPP)

K3.1 The Contractor's Participation Performance will be measured monthly in order to monitor the extent to which he is striving to reach the Contract Participation Goal (CPG) he proposed in his bid. Failure to reach the CPG will make him liable for a penalty as prescribed in Section C3.3.1.5 of the Preferential Procurement Point System Policy.

K3.2 Monitoring of CPG

Regular returns will be required from the contractor, to be submitted with each payment certificate.

Examples of the forms to be used are illustrated under Annexure C5.1 of this document.

K4 Training

Provision is made in the PROJECT SPECIFICATIONS for structured training to be provided by the contractor to PDI'S and ABE'S.

RDP 1 (E) SCHEDULE OF LABOUR CONTENT

The Bidder must complete the table below to reflect the labour force anticipated to be employed on this contract, including labour employed by sub-contractors. The specified target value is 10%.

Note: A minimum of 5% target value should be obtained from Local Labour content

Type of Labour	Man-days	Minimum Wage Rate per Unit	Total Wage Cost (Excl VAT)
Permanent Labour			
Temporary Labour			
SMME/HDI's Labour			
		TOTAL	
		PERCENTAGE	

Notes to Bidder:

- (1) Labour is defined as hourly paid personnel or personnel paid per task.
- (2) The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.1.5.

Signed..... Date

Name..... Position.....

Bidder.....

RDP 2 (E) EMPLOYMENT OF ABE'S

Target values of work to be executed by and goods & services to be procured from ABEs shall be 10%.

Schedule Item No	Name of ABE	Item Description/ Goods & Services to be provided	Value	
			Rand (Excl VAT)	% of Bid Sum (Excl VAT)
TOTAL				

Notes to bidder:

1. Regardless whether the bidder fits the classification of an SMME/PDI, as defined in Section 3.3 of this specification, the bidder nevertheless retains the obligation to commit to the target values prescribed under Form T2.1 K, item K2.4.
2. Bidders shall insert "unknown" if an SMME/PDI has not been selected prior to bid closing date.
3. The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.1.5.

Signed..... Date

Name..... Position.....

Bidder.....

RDP 3 (E) HDI EQUITY IN PROJECT

The bidder shall complete the table below

Company Name (In Case of Joint Venture, all JV Partner Names)	Other HDI Equity Share %	Female Equity Share %	Total HDI Equity Share %

Notes to bidder:

The bidder may be required to provide audited proof of equity distribution. In the case of public listed companies the ratios of equity shareholding are to be replaced by the ratio of HDI and female representation at directorship level.

SIGNED ON BEHALF OF THE BIDDER

RDP 4 (E) HDI SUPERVISORY STAFF

The minimum value of HDI supervisory staff expressed as a percentage of the total number of staff be 50%. Refer Form T2.1 K, item 2.4(b).

It is proposed to employ the following salaried personnel on this contract as supervisory staff:
(Note: The Curriculum Vitae of each staff member proposed to be attached to Section T2.3 A)
Staff Category Number per Category HDI Status (Yes or No)

Staff Category	Number per Category	HDI Status (Yes or No)
TOTALS		

HDI's as percentage of total %

Notes to bidder:

1. If personnel are hourly paid they cannot be classified as supervisory staff, regardless the nature of their duties.
2. The bidder may be required to provide audited proof that the stated personnel are salaried members of staff or contracted on a monthly fee.
3. Examples of relevant personnel are: Site agent, assistant site agent, senior materials technician, senior surveyors and clerks.

Signed..... Date

Name..... Position.....

Bidder.....

RDP 5 (E) ABE DECLARATION AFFIDAVIT

It is understood and agreed that should this contract be awarded to me an ABE Declaration Affidavit will be completed by each and every ABE employed by me on this contract and will be submitted to the Employer immediately upon demand by the Employer.

Signed..... Date

Name..... Position.....

Bidder.....

RDP 6 (E) ENTREPRENEURIAL TRAINING

Name of Training Institution:

Name of Programme:

Trainer's Name	Qualification	Subject

Notes to bidder:

Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.

Signed..... Date

Name..... Position.....

Bidder.....

RDP 7 (E) ENGINEERING SKILLS TRAINING

Name of Training Institution:

Name of Programme:

Trainer's Name	Qualification	Subject

Notes to bidder:

Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.

Signed..... Date

Name..... Position.....

Bidder.....

L. COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record in the service of the state

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

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

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

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

*insert separate page if necessary

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

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

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

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

*insert separate page if necessary

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

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

Signed		Date	
Name		Position	
Enterprise name			

M. FORM OF INTENT TO PROVIDE A DEMAND GUARANTEE

NB: Bidder to complete this form and attach proof

If my/our bid is accepted, I/we will, when required and within the time stipulated, provide a guarantee of

(*) Insurance Company (name)

(of address)

.....

(*) Commercial Bank (Name)

(Branch)

(of address)

.....

to be approved by you, the Employer, for the amount stipulated.

(*) : delete whichever is not applicable.

I/we understand that failure to produce an acceptable Demand Guarantee within the stipulated period is a fundamental breach of Contract, entitling the Employer to:

- (i) withhold all payments which may be due to the Contractor pending compliance with the stipulated requirements to produce an acceptable Demand Guarantee.
- (ii) instruct the Contractor to cease all work pending provision of the Demand Guarantee, and
- (iii) cancel the Contract.

Signed	.....	Date	.....
Print Name	.....	Position	.....
Bidder	.....		

N. FINANCIAL INFORMATION OF BIDDER

This information sheet has to be filled in by the financier of the Bidder, duly signed and stamped on behalf of the financial institution he represents.

Bidder Details

Bid Description :

Contract Period :

Name of Bidder :

Bank Account Number :

Bank rating(s) :

Bided Amount :

Demand Guarantee will be provided by this Bank: YES ☐ NO ☐

If yes, state amount of Demand Guarantee: R

Financial Institution

Name of Commercial Bank :

Branch :

Name of Bank Manager :

Telephone Number :

I / We acting on behalf of the above Commercial Bank confirm that

..... (Bidder)

has operated an account with us for the lastyears.

Note: Bidder to include a Letter from the bank. The letter should clearly indicate the project Number; description and the bank rating(s)

ANNEXURE: B

O. DECLARATION WITH REGARDS TO MUNICIPAL SERVICES, RATES AND TAXES

I _____ the undersigned, declare on

behalf of (Name of Bidder) _____ that; the bidder and (or) any of its director(s) does not owe any municipal services, rates and taxes to the municipality or any other municipality or municipal entity any amount which could be in arrears for an period for a period more than three months.

In the event that this declaration is found to be false, the bid will be rejected and found to be nonresponsive.

Signed.....Date.....

Name.....Position.....

Tenderer.....

N.B: Tenderer to submit a COPY OF A MUNICIPAL ACCOUNT of the company and that of its directors not in arrears and not older than three (03) months; or

In the event that the bidder or director is leasing, a lease agreement along with the Municipal account of the lessor should be attached; or

A confirmation letter in the name of the bidder and director from the local municipality not older than three months confirming that services are not charged/levied and the bidder does not owe

MBD 1

**PART A
INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE EPHRAIM MOGALE LOCAL MUNICIPALITY

BID NUMBER:	8/3/397	CLOSING DATE:	01st OCTOBER 2021	CLOSING TIME:	12:00
-------------	----------------	---------------	-------------------------------------	---------------	--------------

DESCRIPTION	CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)
-------------	--

THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE
BID BOX SITUATED AT;

EPHRAIM MOGALE LOCAL MUNICIPALITY (BUDGET & TREASURY AND TECHNICAL BUILDING)

NO. 2 FICUS STREET

MARBLE HALL

0450

NOTE: THE BID BOX IS ONLY ACCESSIBLE MONDAY - FRIDAY DURING OFFICE HOURS (08:00 TO 16:30)

SUPPLIER INFORMATION

NAME OF BIDDER					
----------------	--	--	--	--	--

POSTAL ADDRESS					
----------------	--	--	--	--	--

STREET ADDRESS					
----------------	--	--	--	--	--

TELEPHONE NUMBER	CODE		NUMBER	
------------------	------	--	--------	--

CELLPHONE NUMBER				
------------------	--	--	--	--

FACSIMILE NUMBER	CODE		NUMBER	
------------------	------	--	--------	--

E-MAIL ADDRESS					
----------------	--	--	--	--	--

VAT REGISTRATION NUMBER					
-------------------------	--	--	--	--	--

TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	MAAA
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B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No	B-BBEE STATUS LEVEL SWORN AFFIDAVIT [TICK APPLICABLE BOX]	☐ Yes ☐ No
--	---	---	---

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER PART B:3]
--	--	--	---

TOTAL NUMBER OF ITEMS OFFERED		TOTAL BID PRICE	R
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SIGNATURE OF BIDDER		DATE	
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CAPACITY UNDER WHICH THIS BID IS SIGNED			
--	-------	--	--

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:	TECHNICAL INFORMATION MAY BE DIRECTED TO:
--	--

DEPARTMENT	SCM	CONTACT PERSON	E. RATSHIBVUMO
------------	-----	----------------	----------------

CONTACT PERSON	JOSEPH MADISHA	TELEPHONE NUMBER	015 291 5301
----------------	----------------	------------------	--------------

TELEPHONE NUMBER	013 261 8450/ 8462	FACSIMILE NUMBER	015 291 5351
------------------	--------------------	------------------	--------------

FACSIMILE NUMBER	013 261 2985	E-MAIL ADDRESS	admin@t3ce.co.za
------------------	--------------	----------------	------------------

E-MAIL ADDRESS	ephmlmsupplychain @emogalelm.gov.za		
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PART B TERMS AND CONDITIONS FOR BIDDING

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

1. BID SUBMISSION:																									
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION. 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED) OR ONLINE 1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.																									
2. TAX COMPLIANCE REQUIREMENTS																									
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 VIEW THE TAXPAYER'S PROFILE AND TAX STATUS. 2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA. 2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3. 2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID. 2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER. 2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.																									
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS																									
<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?</td> <td style="width: 10%; text-align: center;">☐</td> <td style="width: 10%; text-align: center;">YES</td> <td style="width: 10%; text-align: center;">☐</td> <td style="width: 10%; text-align: center;">NO</td> </tr> <tr> <td>3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">YES</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">NO</td> </tr> <tr> <td>3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">YES</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">NO</td> </tr> <tr> <td>3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">YES</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">NO</td> </tr> <tr> <td>3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">YES</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">NO</td> </tr> </table> IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.	3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐	YES	☐	NO	3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐	YES	☐	NO	3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐	YES	☐	NO	3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐	YES	☐	NO	3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐	YES	☐	NO
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐	YES	☐	NO																					
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐	YES	☐	NO																					
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐	YES	☐	NO																					
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐	YES	☐	NO																					
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?	☐	YES	☐	NO																					

SIGNATURE OF BIDDER.....

CAPACITY UNDER WHICH THIS BID IS SIGNED.....

DATE:

MBD 4

P. DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest
3. **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid. Also select the applicable answers ☒**

3.1. Full Name of bidder or his or her representative:

3.2. Identity Number:

3.3. Position occupied in the Company (director, trustee, shareholder²):

3.4. Company Registration Number:

3.5. Tax Reference Number:

3.6. VAT Registration Number:

3.7. The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8. Are you presently in the service of the state* **YES ☐ / NO ☐**

3.8.1 If yes, furnish particulars.

.....
.....

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

(a) a member of –

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

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

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

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

(e) a member of the accounting authority of any national or provincial public entity; or an employee of Parliament or a provincial legislature.

(f) 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);

²"Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the enterprise.

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

3.9.1 If yes, furnish particulars.

.....
.....

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

3.10.1If yes, furnish particulars.

.....
.....

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

3.11.1If yes, furnish particulars.

.....
.....

3.12. Are any of the company's directors, managers, principle shareholders or stakeholders in service of the state? YES ☐ / NO ☐

3.12.1If yes, furnish particulars

.....
.....

3.13. Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? YES ☐ / NO ☐

3.13.1If yes, furnish particulars

.....
.....

3.14. Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other companies or business whether or not they are bidding for this contract? YES ☐ / NO ☐

3.14.1 If yes furnish particulars:

.....
.....

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

Full Name	Identity Number	Employee Number

5. CERTIFICATION

I, THE UNDERSIGNED (NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Name of Bidder

.....
Capacity

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

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

1 Are you by law required to prepare annual financial statements for auditing?

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

*YES ☐ / NO ☐

.....
.....

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

.....
.....

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

*YES ☐ / NO ☐

3.1 If yes, provide particulars.

.....
.....

4. Will any portion of goods or services be sourced from outside Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

YES ☐ / NO ☐

the

4.1 If yes, furnish particulars

.....
.....

* Delete if not applicable

CERTIFICATION

**I, THE UNDERSIGNED (NAME)
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT. I ACCEPT
THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.**

.....
Signature

.....
Date

.....
Name of Bidder

.....
Capacity

R.

MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

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

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

1. GENERAL CONDITIONS

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

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

1.2

- a) The value of this bid is estimated to **not exceed** R50 000 000 (all applicable taxes included) and therefore the **80/20** preference point system shall be applicable; or
- b) Either the 80/20 or 90/10 preference point system will be applicable to this tender

1.3 Points for this bid shall be awarded for:

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

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

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

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

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

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“prices”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

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

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

80/20	or	90/10
$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$	or	$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$

Where

- P_s = Points scored for price of bid under consideration
- P_t = Price of bid under consideration
- $P_{\min}$ = Price of lowest acceptable bid

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

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

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

5. BID DECLARATION

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

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

- 6.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

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

(Tick applicable box)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

- 7.1.1 If yes, indicate:

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

(Tick applicable box)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

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

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

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
 - ☐ One person business/sole propriety
 - ☐ Close corporation
 - ☐ Company
 - ☐ (Pty) Limited
- [TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
 - ☐ Supplier
 - ☐ Professional service provider
 - ☐ Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

8.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:.....

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

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

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

WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

.....

R. DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Bid Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Bid Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		

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

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT. I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

Signature

.....

Date

.....

Position

.....

Name of Bidder

S. CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Procedure Document (MBD) must form part of all Bidders¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive Bidding Procedure (or Bid rigging).² Collusive Bidding Procedure is a *per se* prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the Bid of any Bidder if that Bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the Bidding Procedure process or the execution of the contract.
- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when Bidders are considered, reasonable steps are taken to prevent any form of Bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the Bid:

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

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

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION (CONTINUE)

I, the undersigned, in submitting the accompanying Bid:

(BID No.: EPMLM 8/3/397: CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT))

in response to the invitation for the Bid made by:

(EPHRAIM MOGALE LOCAL MUNICIPALITY)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

T. B-BBEE VERIFICATION CERTIFICATE

Attach the company's B-BBEE certificate in this page.

U. ORIGINAL BANK RATING LETTER

Attach to this page a company's original letter stating the Bank rating.

V. CSD REPORT

Attach to this page a CSD report of the company

W. DAY WORK SCHEDULE

This Day work Schedule shall be used for the valuation of any additional or substituted work which cannot conveniently be valued at the rates and prices submitted in the schedule of quantities.

In respect of labour and materials used in the additional or substituted work not covered in the Day work Schedule the Contractor shall be paid the actual cost plus the percentage allowance stated in the schedule of quantities.

The Bidder shall quote hereunder rates which shall apply for payment purposes if the Engineer orders additional or substituted work to be carried out on a day work basis and shall therefore be in accordance with the requirements of clause 37(2) of the General Conditions of Contract.

1. LABOUR AND MATERIALS

Rates and prices entered in the schedule shall be held to allow for net cost of labour and materials delivered to site respectively with the percentage allowances stated in the schedule of quantities.

2. PLANT AND EQUIPMENT

The Bidders shall list all major items of plant and equipment to be used on the works and which may be required for use on day works. The proposed hire rates of these items shall be entered against each type of machine, such rates to include for all relevant costs of plant hire inclusive of fuels and lubricants but exclusive of labour charges for the operators, which will be paid for under sub-clause (1) above.

The rates for plant items not listed in the schedule will be the ruling plant hire rates, inclusive of fuels and lubricants but exclusive of labour charges for the operators, inclusive of a 7,5% handling charge. It is therefore in the Bidders interest to ensure that the list is complete.

Should there be insufficient space on the pages provided; the Bidder shall add further pages as required.

THE RATES FOR THE PLANT AND EQUIPMENT MENTIONED IN THE SCHEDULE SHALL BE FILLED IN FOR THE ITEMS REQUESTED. SHOULD AN ITEM BE OMITTED IT SHALL BE DEEMED TO HAVE BEEN INCLUDED IN THE OTHER DAYWORKS RATES.

A. LABOUR

DESIGNATION		RATE	
		R	C
Foreman	per hour		
Plant Operators	per hour		
Truck Drivers	per hour		
Labour - unskilled	per hour		
- semi-skilled	per hour		
- skilled	per hour		

B. MATERIALS

DESIGNATION		RATE	
		R	C
Cement	per 50 kg pocket delivered		
Concrete Sand	per m ³ delivered		
Concrete Aggregate	per m ³ delivered		

C. TRANSPORT

DESIGNATION	RATE	
	R	C
Per cubic metre kilometre		

D. PLANT AND EQUIPMENT

ITEM	DESCRIPTION	NON WORKING RATE*		OPERATING RATE		PER
		R	c	R	C	UNIT
	TLB					
	Water cart					
	LDV					
	Compactor					
	Vibrating Roller					
	Concrete mixer (litres specified)					
	Tractor & Trailer					
	Excavator					
	Front-end loaders					
	Trucks (m ³ specified)					
	Water truck (litres specified)					
	Grader					

*Only applicable on authority of the Engineer

X. PREFERENCE SCHEDULE

Acceptable Bids will be evaluated using a system that awards points on the basis of Bid price and the meeting of specific goals. **Failure on the part of a Bidder to sign this form will be interpreted to mean that point preference is not being claimed.**

The acceptable Bidder obtaining the highest number of points will be awarded the contract. For Bids with a Bid amount equal to or below R 1 000 000 a maximum of 80 points is allocated for price and a maximum of 20 points for B-BBEE. For Bids with a Bid amount above R 1 000 000 a maximum of 90 points is allocated for price and a maximum of 10 points for B-BBEE.

The points for the meeting of specific goals may only be awarded to an enterprise which is a legal entity, registered as an income tax payer with the South African Revenue Services, and which is an independent and operating enterprise which performs commercially useful functions as set out below. Points can be denied where an enterprise subcontract more than 25% of the value of the contract (excluding SMME's and emerging contractors and materials) at the time of award, exclusive of all VAT, allowances for contingencies, escalation and provisional sums, to other entities.

DEFINITIONS

"Acceptable Bid" means any Bid which, in all respects, complies with the conditions of Bid and specifications as set out in the Bid document, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and related legislation.

"Council" refers to the EPHRAIM LOCAL Municipality.

"Equity ownership" refers to the percentage ownership and control, exercised by individuals within an enterprise.

"SMME's" (small, medium and micro enterprises) refers to separate and distinct business entities, including co-operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996).

Penalties

The Ephraim Mogale Local Municipality will if upon investigation it is found that a preference in terms of the Act and these regulations has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, on discretion of the Departmental Head, one or more of the following penalties will be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Bidder.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, which was made in the Bid.
- Restrict the contractor, its shareholders and directors on obtaining any business from the Ephraim Local Municipality for a period of 5 years.

8. List all shareholders by name, identity number, citizenship, status, ownership, as relevant

Name	ID Number	Date obtained South African citizenship	HDI status				Youth Yes/No	Percentage equity ownership, or in the case of a joint venture, the percentage of the contract to be managed or executed by targeted persons (%)
			No franchise in national elections (black persons)		Women	Disabled person		
			PPG (African)	Coloured, Indian				
					Yes/No	Yes/No		

8.1.1 How long has the entity been in existence?

8.1.2 Describe principal business activities:

.....

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the bidder confirms that he / she understands the conditions under which such preferences are granted and confirms that the bidder satisfies the conditions pertaining to the granting of bid preferences.

Signature:

Name:

Duly authorised to sign on behalf of :

Telephone:

Fax:

Date:

Y. ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL

Bidder to supply an organigram for the management of the contract and include curricula vitae of key personnel. These curricula vitae shall provide evidence of relevant experience of the key staff in the organigram. The personnel included here shall be used on the project unless otherwise agreed by the engineer.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

Z. PROJECT PROGRAMME AND METHOD STATEMENT

Bidder to supply project programme, using acceptable software, in sufficient detail to cover the various facets of the work.

This programme is to be supported by a method statement indicating the bidder's proposed work plan for the construction of the works.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

AA. SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

The bidder shall state his estimated value of the work to be completed every month, based on his preliminary programme and his bided unit rates, in the table below. The amounts for contingencies and contract price adjustment shall not be included.

MONTH	VALUE (INCLUDING VAT)
1	R
2	R
3	R
4	R
5	R
6	R
7	R
8.	
9	R
10	R
11 (FINAL)	R
TOTAL: R.....	
(EXCLUDING CONTINGENCIES AND CONTRACT PRICE ADJUSTMENT)	

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

BB. RATES FOR SPECIAL MATERIALS

Bitumen products will be dealt with as a special material in terms of sub clause 46.3 of the General Conditions of Contract. All bitumen products as indicated in the contract data must be stated in the list below.

The rates and prices for the special materials shall be furnished by the contractor, which rates and prices shall exclude VAT but shall include all other obligatory taxes and levies.

Base Month: **August 2021**

SPECIAL MATERIALS	UNIT *	RATE OR PRICE FOR THE BASE MONTH

* Indicate whether the material will be delivered in bulk or in containers. Cement and steel will not be accepted as a special material

When called upon to do so, the contractor shall substantiate the above rates or prices with acceptable documentary evidence from the applicable refinery supplying the bitumen.

.....

Signature

.....

Date

.....

Position

.....

Name of Bidder

THE CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

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EPHRAIM MOGALE LOCAL MUNICIPALITY

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PROJECT NAME: CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT).

C1.1 Form of Offer and Acceptance

Offer

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

Contract No.....Project Name.....

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

By the representative of the bidder, deemed to be duly authorized, signing this part of this form of offer and acceptance, the bidder 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 bidder before the end of the period of validity stated in the bid data, whereupon the bidder becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature Block: Bidder	
Signature	Date
Name	
Capacity	
Name of organization.	
Address of organization	
.....	
Signature of witness	Date
Name of witness	

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the bidder'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 bidder's offer shall form an agreement between the employer and the bidder upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

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

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

The bidder 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) for delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

Signature Block: Employer	
Signature	Date
Name	
Capacity	
For the Employer: Municipal Manager Ephraim Mogale Local Municipality	
Signature of witness	Date
Name of witness	

Schedule of Deviations

1 Subject .....	.....
Details .....	.....
.....	
2 Subject .....	.....
Details .....	.....
.....	
3 Subject .....	.....
Details .....	.....
.....	
4 Subject .....	.....
Details .....	.....
.....	
.....	

By the duly authorized representatives signing this agreement, the employer and the bidder agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the bid data and addenda thereto as listed in the bid schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the bidder 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 bid documents and the receipt by the bidder 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 Bidder:

Signature(s)	_____	_____
Name(s)	_____	_____
Capacity	_____	_____

(Name and address of organization)

Name &
Signature of
Witness

For the Employer:

Signature(s)	_____	_____
Name(s)	_____	_____
Capacity	_____	_____

(Name and address of organization)

Name &
Signature of
Witness

Ephraim Mogale Local Municipality

C1.2 Contract Data

Section 1.01 The General Conditions of Contract for Construction Works (3rd edition 2015) published by the South African Institution of Civil Engineering, is applicable to this contract. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (Tel: 011-805 5947).

The General Conditions of Contract for Construction Works make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

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

If for some reason that "The General Conditions of Contract for Construction Works (2015)" does not address, "The COLTO General Conditions of Contract 1998 for Road and Bridge Works" will be referred to.

Ephraim Mogale Local Municipality

C1.2.1: CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

SPECIAL CONDITIONS OF CONTRACT

- 1. GENERAL**
- 2. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT**
- 3. TRANSFER OF RIGHTS**

C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works - (2nd edition 2015)", issued by the South African Institution of Civil Engineering (Short title: "**General Conditions of Contract 2015**") and can be obtained from:

SAICE

Waterfall Park
Howick Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
Gauteng Province
Tel: (011) 805-5947/8
Fax: (011) 805-5971.

It is agreed that the only variations from the General Conditions of Contract 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 shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 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 sub clause in the General Conditions of Conditions 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. ADDITIONAL SPECIAL CONDITIONS OR AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

2.1 General

The following clauses add to, vary or otherwise amend the General Conditions of Contract:

2.1.1 Cession (CL 2.5.1)

Delete the words "without the written consent of the other".

2.1.2 Contractor's Superintendence (CL 4.12)

Add the following sub-clause 4.12.4 to Clause 4.12:

"Where a form is included in the Appendix to the Contract Data for this purpose, the Bidder shall fill in the name of the person he proposes to entrust with the post of Contractor's Site Agent on this Contract in the space provided therefor. Previous experience of this person on work of a similar nature during the past five (5) years is to be entered in the list.

The Contractor's Site Agent shall be on Site at all times when work is being performed.

The person as approved of by the Engineer in writing shall not be replaced or removed from Site without the written approval of the Engineer."

2.1.3 Programme (CL 5.6)

Add the following sub-clause 5.6.6 to Clause 5.6:

“Failure on the part of the Contractor to deliver to the Engineer, the

- programme of the Works in terms of Clause 5.6.1 and
- supporting documents in terms of Clause 5.6.2

Within the period stated in the Contract Data, shall be sufficient cause for the Engineer to retain 25 per centum of the value of the Fixed Charge and Value-related items in assessment of amounts due to the Contractor, until the Contractor has submitted aforementioned first Programme of the Works and Supporting Documents”.

2.1.4 Contractor's Designs and Drawings (CL 5.9.7)

“All designs, calculations, drawings and operation and maintenance manuals shall be fully endorsed by a third party registered engineer, accomplished in such specific field of practice and the cost thereof shall be borne solely by the Contractor.

Once the alternative design has been approved, the Contractor shall indemnify and hold harmless the Engineer, the Employer, their agents and assigns, against all claims howsoever arising out of the said design, whether in contract or delict”

2.1.5 Suspension of the Works (CL 5.11)

Add the following sub-clause 5.11.4 to Clause 5.11:

“If the Contractor does not receive from the Employer the amount due under an Interim Payment Certificate within 28 days after expiry of the time stated in sub-clause 6.10.4 within which payment is to be made (except for deductions in accordance with sub-clauses 6.10.1.6 and 6.10.1.7), the Contractor may, after giving 14 days’ notice to the Employer, suspend the progress of the Works.

The Contractor’s action shall not prejudice his entitlements to a claim in terms of Clause 10.1 and to cancellation of the Contract in terms of Clause 9.3.

If the Contractor subsequently receives full payment of the amount due under such Interim Payment Certificate before giving a notice of cancellation of the Contract, the Contractor shall resume normal working as soon as is reasonably practicable.”

2.1.6 Extension of Time Arising from Abnormal Rainfall (CL 5.12)

Add the following to sub-clause 5.12.2.2 :

“The extension of time to be allowed due to abnormal rainfall shall be calculated separately for each calendar month or part thereof in accordance with the following formula :

$$V = (Nw - Nn) + \frac{Rw - Rn}{x}$$

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

Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded

Nn = Average number of days for the calendar month on which a rainfall of 10 mm or more has been recorded, as derived from existing rainfall records

Rw = Actual recorded rainfall for the calendar month

Rn = Average rainfall for the calendar month, as derived from existing rainfall records
 x = 20

The rainfall records which shall provisionally be accepted for calculation purposes are:

Years of record: 2011-2021

Month	Average rainfall for calendar month Rn	Average number of days for calendar month on which a rainfall of 10 mm or more were recorded Nn
	(mm)	(days)
January	59,6	7,6
February	34,5	4,2
March	37,2	3,8
April	36,7	3,9
May	4,9	0,8
June	0,5	0,1
July	0,6	0,2
August	2,2	0,3
September	27,1	1,4
October	47,2	5,9
November	69,2	7,6
December	103,5	8,1

The factor (Nw - Nn) shall be considered to represent a fair allowance for days during which rainfall exceeds 10 mm and the factor (Rw - Rn)/x shall be considered to represent a fair allowance for those days when rainfall does not exceed 10 mm but wet conditions prevent or disrupt work.

The total extension of time shall be the algebraic sum of all monthly totals for the contract period, but if the algebraic sum is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for a part of a month shall be calculated using pro rata values of Nn and Rn."

2.1.7 Guarantee (Security) (CL 6.1)

Delete the contents of the first paragraph of Clause 6.2 and insert:

"The Contractor shall deliver to the Employer within such time as may be stated in the Contract Data a Demand Guarantee, of Insurance Company registered in terms of the Short-term Insurance Act (Act 53 of 1998) or registered Commercial Bank, in a sum equal to the amount stated in the Contract Data. The Demand Guarantee shall be issued by an entity approved by the Employer, and shall conform in all respects to the format contained in the Appendix to the Contract Data.

Wherever a joint venture constitutes the contracting party, the Demand Guarantee shall be issued on behalf of the joint venture.

Failure to produce an acceptable Demand Guarantee within the period stated in Clause 2.2.8 of the Contract Data is a fundamental breach of Contract, entitling the Employer to cancel the Contract by due notice in terms of Clause 9.2 with specific reference to sub-clause 9.2.2.5 as amended in the Special Conditions of Contract."

2.1.8 Variations (CL 6.3)

Omit the words "Provided that" under Clause 6.3.2 and omit Clause 6.3.2.1.

2.1.9 Interim Payments (CL 6.10.1)

Add to the end of Clause 6.10.1 the following paragraph:

"The Contractor shall complete the 'Contractor's Monthly Report Schedule', which pro forma documentation is obtainable from the Engineer. Pursuant to Sub-Clause (1), these, duly signed by all concerned, together with the Contractor's statement and a VAT invoice in original format are to be submitted to the Engineer. Issue by the Engineer to the Employer and Contractor of any signed payment certificate is conditional to this information being fully endorsed, accurately and timeously submitted to the Engineer".

Add to the end of Clause 6.10.1.5 the following paragraph:

"All documentary evidence of such materials shall be unambiguous with respect to ownership having fully passed to the Contractor on or before the date of submittal of the Contractor's monthly statement.

Should the Contractor fail to supply unambiguous documentary evidence, he shall, prior to submittal of his monthly statement, deliver to the Employer a Guarantor Guarantee in the form contained in the Appendices to the Contract Data."

2.1.10 Variations Exceeding 15 Per Cent (CL 6.11)

In sub-clause 6.11.1.3 omit the words "15 per cent" and replace with "20 per cent".

2.1.11 Insurances (CL 8.6)

2.1.11.1 Contractor to produce proof of payment

Delete sub-clause 8.6.6 and substitute with:

"The Contractor shall before commencement of the Works produce to the Engineer:

8.6.6.1 The policies by which the insurances are effected,

8.6.6.2 Proof that due payment of all premiums there under, covering the full required period has been made, and

8.6.6.3 Proof of continuity of the policies for the required period.

Should, during the currency of the Contract, the required period of insurance be extended for any reason, the Contractor shall timeously extend (so as to maintain) the said insurances for the full extended duration.

The Engineer shall be empowered to withhold all payment certificates until the Contractor has complied with his obligations in terms of this Clause 8.6."

2.1.11.2 Remedy of Contractor's failure to insure

Delete sub-clause 8.6.7 and substitute with:

"Failure on the part of the Contractor to effect and keep in force any of the insurances referred to in Clause 8.6.1 and its sub-clauses, is a fundamental breach of Contract, entitling the Employer to cancel the Contract by due notice in terms of Clause 9.2 and with specific reference to sub-clause 9.2.2.5, as amended, in the Special Conditions of Contract."

2.1.12 Termination of the Contract (CL 9.1)

Alter the numbering of:

Clause 9.1.5 to 9.1.6,
Clause 9.1.6 to 9.1.7 and

insert the following new clause 9.1.5:

"The Employer shall be entitled to cancel the Contract, at any time for the Employer's convenience, by giving written notice of such cancellation to the Contractor. The termination shall take effect 28 days after the later of the dates which the Contractor receives this written notice or the Employer returns the Demand Guarantee. The Employer shall not cancel the Contract under this sub-clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor.

This restriction on the Employer shall lapse 18 months after the date of receipt by the Contractor of cancellation in terms of this sub-clause".

2.1.13 Termination by Employer (CL 9.2)

Delete the contents of Clause 9.2 and substitute with:

"9.2.1 The Employer may terminate the Contract by written notice to the Contractor if:

9.2.1.1 Sequestration of the Contractor's estate is ordered by a Court with due jurisdiction, or

9.2.1.2 The Contractor publishes a notice of surrender or presents a petition for the surrender of his estate as insolvent, or makes a compromise with his creditors, or assigns in favour of his creditors, or agrees to carry out the Contract under the supervision of a committee representing his creditors, or (being a company) goes into liquidation, whether provisionally or finally (other than a voluntary liquidation for the purpose of amalgamation or reconstruction), or if the Contractor assigns the Contract without having first obtained the Employer's consent in writing, or if execution is levied on his goods, or

9.2.1.3 The Contractor, or anyone on his behalf, or in his employ, offers to any person in the employ of the Employer or the Engineer, a gratuity or reward or commission, or

9.2.1.4 The Contractor furnished materially inaccurate information in his Bid, which had a bearing on the award of the Contract, or

9.2.1.5 The Contractor has abandoned the Contract

9.2.2 If the Contractor:

9.2.2.1 Has failed to commence the Works in terms of Clause 5.3 hereof, or has suspended the progress of the Works for fourteen (14) days after receiving from the Engineer written notice to proceed, or

9.2.2.2 Has failed to provide the Guarantee in terms of Clause 6.2 within the time stipulated in the Contract Data, or

9.2.2.3 Has failed to proceed with the Works with due diligence, or

9.2.2.4 Has failed to remove materials from the Site or to pull down and replace work within fourteen (14) days after receiving from the Engineer written notice that the said materials or work have been condemned and rejected by the Engineer in terms of these conditions, or

- 9.2.2.5 Is not executing the Works in accordance with the Contract, or is neglecting to carry out his obligations under the Contract, or
- 9.2.2.6 Has, to the detriment of good workmanship or in defiance of the Engineer's instructions to the contrary, sublet any part of the Contract, or
- 9.2.2.7 Has assigned the Contract or any part thereof without the Employer's consent in writing, then the Employer may give the Contractor 14 days' notice to rectify the default, and if the Contractor fails to rectify the default in said 14 days, then, without further notice, notify the Contractor in writing of the termination of the Contract and expel the Contractor and order the Contractor to vacate the site within 24 hours of issue of the Notice of Termination and to hand the Site over to the Employer, and the Employer may then enter upon the Site and the Works without affecting the rights and powers conferred on the Employer or the Engineer by the Contract and the Employer may himself complete the Works or may employ another contractor to complete the Works, and the Employer or such other contractor may use for such completion so much of the Construction Equipment, Temporary Works and materials brought onto the Site by the Contractor as the Employer may think proper, and the Employer may at any time sell any of the said Construction Equipment, Temporary Works and unused materials and apply the proceeds of sale towards payment of any sums that may be due or become due to the Employer by the Contractor under the Contract. In such circumstances the Contractor shall forthwith vacate the Site and shall not be entitled to remain on the Site on the grounds that he is entitled to do so on a right of retention until amounts due to him have been paid, neither will the Contractor be entitled to any further payments in terms of this Contract.
- 9.2.3 If the Contractor, having been given notice to rectify a default in terms of 55.2 above, rectifies said default, but later repeats the same or substantially the same default, then the Employer may notify the Contractor of the immediate termination of the Contract, and proceed as stated in the paragraph following the word "writing" in Clause 55.2.7 above.
- 9.2.4 Should the amounts the Employer must pay to complete the Works exceed the sum that would have been payable to the Contractor on due completion by him, then the Contractor shall upon demand pay to the Employer the difference, and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly. Provided that should the Contractor on demand not pay the amount of such excess to the Employer, such sum may be determined and deducted by the Employer from any sum due to or that may become due to the Contractor under this or any previous or subsequent contract between the Contractor and the Employer."

2.1.14 Termination by the Contractor (CL 9.3)

Add the following paragraph as Clause 9.3.5:

"In addition to, or as an alternative to the rights to termination contained in this Clause 9.3, the Contractor may notify the default to the Employer, with a copy to the Engineer, and if the default is not rectified within 10 days the Contractor may suspend progress of the works until a date 7 days after the default is rectified. The Contractor shall be entitled to extension of time to the extent of delay caused by or resulting from such suspension, and to payment of additional costs caused by or resulting from the suspension. Such extension of time and additional costs shall be promptly ascertained by the Engineer, who shall then grant the extension of time and include the additional costs in all future payment certificates. Such suspension, extension of time and/or payment of additional costs, shall not prejudice the Contractor's rights to cancel the contract."

3. PRIORITY OF DOCUMENTS

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purpose of interpretation, the priority of the documents shall be in accordance with the following sequence:

- a) the Form of Offer and Acceptance.
- b) amplifications of the General Conditions of Contract within the Contract Data.
- c) additional special conditions or amendments to the General Conditions of Contract within the Contract Data.
- d) the General Conditions of Contract.
- e) the Specifications, Drawings, Schedules and other documents forming part of the Contract (in that order) contained in the Scope of Work and the Site Information.

If any ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.

4. TRANSFER OF RIGHTS

TRANSFER OF RIGHTS AND INDEMNITY (To be completed during construction by successful Bidder only)

Claim for materials on site, Payment Certificate No. Date:

Contract No: for (contract title)

I, the undersigned (name of signatory) in my capacity as

..... of (name of Contractor)

duly authorized hereto on behalf of the Contractor hereby transfer, cede and assign all the Contractor's rights, title and interest in and to the materials and goods, for which evidence of bona fide ownership is attached hereto, unto and in favor of (name of Employer) insofar as the Contractor retains actual control of the materials and goods, the right of ownership thereof passes to the Employer by *constitutum possessorium*.

I herewith indemnify the Employer against any claim to and in respect of said materials by reason of the Contractor's sequestration or liquidation or of any defect in the Contractor's title to the materials and agree that no payment for materials on site will be made by the Employer until such time as I have submitted documentary proof of bona fide ownership of the said materials and goods.

This transfer shall become effective upon conclusion of the Contractor receiving payment from the Employer or from any other person on behalf of the Employer for the materials and goods as Materials on Site, payment of retention money thereon excluded.

I further confirm that I am fully responsible for all materials and goods listed under this Transfer of Rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

This certificate of Transfer of Rights applies only to the materials and goods as listed in the following table:

Description of Item	Unit	Quantity	Rate	Amount	Supplier
Total Value of Materials and goods					

Signed by: Date:
for and on behalf of the Contractor.

Witnessed by: Date:

NOTE: This form, together with the documentary proof of ownership or proof of payment by the Contractor to the supplier, shall accompany the Contractor's claim for payment for materials on site in terms of **Clause 6.10.1.5 of the General Conditions of Contract 2015**.

C1.2.2 PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

The following contract specific data are applicable to this contract.

REFERENCE CONTRACT SPECIFIC DATA BY THE EMPLOYER

Clause 1.1.15: **Name of Employer: Ephraim Mogale Local Municipality represented by Head of Department: Department of Infrastructure Services**

Clause 1.2.1: **Address of Employer:**

Physical:

Postal:

The Employer's address for receipt of communications is

2 Ficus street	P.O.Box 111
Marble Hall	Marble Hall
0450	0450

Telephone No: 013 261 8400 Fax No: 013 261 2985

Clause 1.1.16: **Name of Engineer: T3 Consulting Engineers cc**

'Engineer' means any Director, Associate or Professional Engineer appointed by a Director of Dolmen Engineers cc to fulfil the functions of the Engineer in terms of the Contract Data.

Clause 1.2.1: **Address of Engineer:**

Physical:

Postal:

The Engineer's address for receipt of communications is:

184 marshal street	P.O.Box 1108
Polokwane	Faunapark
0699	0787

Telephone No: 015 291 5301 Fax No: 015 291 5351

Clause 3.13: The Engineer is required to obtain the specific approval of the Employer for the following:

- a) Nominating the Engineer's Representative in terms of CI 3.2.1.
- b) Delegation of Engineer's authority in terms of CI 3.2.4.
- c) The issuing of instructions for dealing with fossils and the like in terms of CI 4.7.1
- d) The issuing of an instruction to accelerate progress in terms of CI 5.7.3.
- e) Granting permission to work during non-working times in terms of CI 5.8.1.
- f) The issuing of further drawings or instructions in terms of CI 5.9.1.
- g) Suspend the progress of the works in terms of CI 5.11.1.
- h) The reduction of a penalty for delay in terms of CI 5.13.2.
- i) The issuing of a variation order in terms of CI 6.3.2.
- j) Issuing of instructions to carry out work on a daywork basis in terms of CI 6.4.1.4.
- k) The determination of additional or reduced costs arising from changes in legislation in terms of CI 6.8.4.
- l) The agreeing of the adjustment of the sums for general items in terms of CI 6.11.
- m) Authorizing the Contractor to repair and make good excepted risks in terms of CI 8.2.2.
- n) The giving of a ruling on a contractor's claim in terms of CI 10.1.5.
- o) The agreeing of an extension to the 28 period in terms of CI 10.1.5.1.

p) The inclusion of credits in the next payment certificate in terms of CI 10.1.5.2.

Clause 6.2: The Guarantee shall be delivered within 14 days after receipt of the Acceptance document from the Employer.

Clause 6.2: The Liability of the Guarantee shall be for 2.5% of the Accepted Bid Sum.

Clause 5.3: The contractor shall commence executing the work within 14 days of the Commencement date.

Clause 5.6.1 & 5.6.2: The Contractor shall deliver to the Engineer, within 14 days calculated from the Commencement Date, a realistic programme in terms of Clause 5.6.1 and supporting documents in terms of Clause 5.6.2.

Clause 8.6.1.1.3: The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is **NIL**

Clause 8.6.1.2: Special risk insurance issued by SASRIA is required.

Clause 8.6.1.3: The limit of indemnity for liability insurance required should not be less than the contract amount.

Clause 5.13.1: The penalty for failing to complete the works is **R5 000.00** of the Total Bid Sum per Calendar Day

Clause 6.8.2: The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

Contract Price Adjustment Factor = $(1 - x) \left[\frac{aL_t}{L_o} + \frac{bP_t}{P_o} + \frac{cM_t}{M_o} + \frac{dF_t}{F_o} - 1 \right]$ rounded off to the fourth decimal place.

Coefficients for calculating Contract price Adjustment Factor shall be:
Value of x is 0.10

a = 0.15 b = 0.20 c = 0.55 d = 0.10

L is the "Labour Index" and shall be the "Consumer Price Index – for Polokwane Area" In Release P 0141.1 Table 21

The base month is: "the month prior to the closing of the Bid"
No Contract price Adjustment will be done if contract period is less than 7 months.

Clause 6.83: Price adjustments for variations in the costs of special materials are not allowed.

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

Clause 6.10.3: The percentage retention on the amounts due to the Contractor is 5 %, excluding contract price adjustment, contingencies and VAT, and limited to 10% of the contract amount, excluding contract price adjustment, contingencies and VAT.

Clause 6.10.5: A Retention money guarantee will be not permitted.

Clause 7.8.1: The Defects Liability Period is 12 months measured from the date of the Certificate of Completion.

Clause 10.7.1: Dispute resolution shall be by Adjudication.

Clause 10.7.1: Dispute Resolution shall be by Adjudication.

C1.2.2: PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR

The following contract specific data are applicable to this contract:

REFERENCE CONTRACT SPECIFIC DATA BY THE CONTRACTOR

Clause 1.1.9: **Name of Contractor:**

Clause 1.2.1: **Address of the Contractor:**

The Contractor's address for receipt of communication is:

Physical:

Postal:

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

E-Mail:

Telephone No: Fax No:

Clause 5.5 The works shall be completed withinmonths (including special non-working days and the yearend break).

Clause 6.8.3: The variation in cost of all special materials is to be provided in the table SM 1 for special materials.
The rates and prices for the special materials shall be furnished by the Bidder, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies. The quoted price is the ruling price on the Month prior to close of bid.

TABLE: SM1

Special Materials*	Unit	Rate or Price for the base month
Bitumen (specify type)		
.....		
.....		
.....		
.....		
.....		

*Contractor to indicate the type, unit and rate of special material to be listed. The Contractor shall substantiate the above rates or prices with acceptable documentary evidence. Contractor to provide any other Special Materials if deemed necessary.

N.B. Diesel, reinforcing steel, and cement will not be accepted as special material.

C1.3 Form of Guarantee - Pro Forma

Contract No

WHEREAS **The Ephraim Mogale Local Municipality** (hereinafter referred to as the Employer”) entered into, a Contract with:

.....
(Hereinafter called “the Contactor”) on the day of 20.....

for
in the **Ephraim Mogale Local Municipality** of the Limpopo Province.

AND WHEREAS it is provided by such Contract that the Contractor shall provide the Employer with security by way of a guarantee for the due and faithful fulfillment of such Contract by the Contractor;

AND WHEREAS has / have at the request of the Contractor, agreed to give such guarantee;

NOW THEREFORE WE do hereby guarantee and bind ourselves jointly and severally as Guarantor and Co-principal Debtors to the Employer under renunciation of the benefits of division and execution for the due and faithful performance by the Contractor of all the terms and conditions of the said Contract, subject to the following conditions:

1. The Employer shall, without reference and / or notice to us, have complete liberty of action to act in any manner authorized and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the completion date of the works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the completion date which the Employer may make, give, concede or agree to under the said Contract.
2. This guarantee shall be limited to the payment of a sum of money.
3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.
4. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.
5. Our total liability hereunder shall not exceed the Guaranteed Sum of:
.....
.....Rand (in words);
R. (in figures)
6. The Guarantor reserves the right to withdraw from this guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon our liability hereunder shall cease.
7. We hereby choose our address for the serving of all notices for all purposes arising here from as
.....
.....

IN WITNESS WHEREOF this guarantee has been executed by us at
on this day of 20

Signature

Duly authorized to sign on behalf of

Address
.....
.....

As witnesses:

1

2

C1.4: Agreement with Adjudicator

This agreement is made on the.....day of 20.....between: the Employer
(*name of company / organisation*).....
of (*address*).....
.....and the Contractor
(*name of company / organisation*)
of (*address*).....
..... (hereinafter called **the Parties**)

and
(*name*).....
of (*address*)
..... (hereinafter called **the Adjudicator**)

Disputes or differences may arise/have arisen* between the Parties under a Contract dated.....
and known as Contract No.....
(*Contract title*).....

and these disputes or differences shall be/have been* referred to adjudication in accordance with the CIDB Adjudication Procedure, (hereinafter called "**the Procedure**") and the Adjudicator may be or has been requested to act.

(* *Delete as necessary*)

IT IS NOW AGREED as follows:

1. The rights and obligations of the Adjudicator and the Parties shall be as set out in the Procedure.
2. The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the Procedure.
3. The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses in accordance with the Procedure as set out in the Contract Data.
4. The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.
5. The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

SIGNED by:

(Signature): (Signature): (Signature):

Name: **Name:** **Name:**

who warrants that he/ she is
duly authorised to sign for and
on behalf of the **First Party** in
the presence of

who warrants that he/ she is
duly authorised to sign for
and on behalf of the **Second
Party** in the presence of

the **Adjudicator** in the
presence of

Witness: **Witness:** **Witness:**
(Signature)..... (Signature)..... (Signature).....

Name: **Name:** **Name:**

Address: Address: Address:

.....

.....

Date: Date: Date:

C1.5: Agreement In Terms Of Section 37(2) Of The Occupational Health And Safety Act No 85 Of 1993

THIS AGREEMENT is made between The EPHRAIM MOGALE Local Municipality represented by Head of Department: Technical Services.

(hereinafter called the EMPLOYER of the one part, herein represented by:

.....
in his capacity as:

AND:

(hereinafter called the CONTRACTOR) of the other part, herein represented by

.....
in his capacity as:

duly authorized to sign on behalf of the Contractor.

WHEREAS the CONTRACTOR is the Mandatory of the EMPLOYER in consequence of an agreement between the CONTRACTOR and the EMPLOYER in respect of

CONTRACT:
in the Ephraim Mogale Local Municipality of the Limpopo Province

AND WHEREAS the EMPLOYER and the CONTRACTOR have agreed to enter into an agreement in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993, as amended by OHSA Amendment Act No 181/1993 (hereinafter referred to as the ACT);

NOW THEREFORE the parties agree as follows:

1. The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
2. The CONTRACTOR undertakes to fully comply with all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations: Provided that should the EMPLOYER have prescribed certain arrangements and procedures that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
3. The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures, if any, imposed by the ACT and Regulations, and the CONTRACTOR expressly absolves the EMPLOYER and the Employer's CONSULTING ENGINEERS from being obliged to comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedures in respect of the work included in the contract.
4. The CONTRACTOR agrees that any duly authorized officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with his undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.
5. The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

Thus signed at for and on behalf of the **CONTRACTOR**

on this the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

Thus signed at for and on behalf of the **EMPLOYER** on this

the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

C2.1: PRICING INSTRUCTIONS

1. GENERAL

The pricing instructions describe the criteria and assumptions which will be assumed in the Contract that the Bidder has taken into account when developing his prices. The Bills of Quantities record the Contractor's rates for providing supplies, services, engineering and construction works in accordance with the Scope of Work.

The terms of payment and the provisions for price adjustment, if applicable, are established in the Contract Data. These items are not described in the Pricing Data.

The Bidder's obligations in pricing the Bid offer and the Employer's undertakings in the checking and correction of arithmetical errors are dealt with in the Standard Conditions of Bid contained in Annexure F of SANS 294, as amended in and read in conjunction with the Bid Data.

2. DOCUMENTS MUTUALLY EXPLANATORY

The documents forming the Contract are to be taken as mutually explanatory of one another. The Bill of Quantities forms an integral part of the Contract Documents and shall be read in conjunction with the Bid Data, Contract Data, Scope of Work, Site Information General and Special Conditions of Contract, the Specifications and the Drawings.

3. DEFINITIONS

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

Unit	:	The unit of measurement for each item of work as defined in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of measurement at which the Bidder Bids to do the work.
Amount	:	The product of the quantity and the rate Bided for an item
Sum	:	An amount Bided for an item, the extent of which is described in the Schedule of Quantities, the specifications or elsewhere but the quantity of work of which is not measured in any units.
Prime Cost (or PC item)	:	A sum fixed by the Engineer and entered in the Schedule of Quantities as the net sum provided to cover the cost of specific goods or materials to be supplied under the contract, or the net sum to be paid by the Contractor to merchants or others for such articles or materials. ¹
Provisional Sum	:	A sum of money fixed by the Engineer and entered in the Schedule of Quantities to provide for work not defined at the Bid stage and includes any allowance specifically made for unforeseen contingencies. ¹
Extra Over (or EO)	:	Qualifies an operation (or combination of operations) which is common in a varying degree to a number of other operations and which is scheduled once as "extra over" those other operations in order to avoid a multiplicity of items each reflecting the degree to which the common operations applies. The term "extra over" invariably denoted double measurement, no deduction being made from one on account of the other. ¹

4. **DESCRIPTIONS**

Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Bill, the requirements of the Standardised Specification or Scope of Work, as applicable, shall prevail.

5. **REFERENCES**

The general conditions of contract, the special conditions of contract (if any), the specifications (including the project specification) and the drawings are to be read in conjunction with the schedule of quantities.

Descriptions in the schedule of quantities are abbreviated and the schedule has been drawn up generally in accordance with the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition) as amended in the Scope of Works. Should any requirement of the measurement and payment clause of the applicable standardised specification², or the project specification², or the particular specification(s)² conflict with the terms of the schedule or, when relevant, COLTO¹, the requirement of the standardised, project or particular specification, as applicable, shall prevail.

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

The prices and rates to be inserted in the schedule of quantities are to be the full inclusive prices to the Employer for the work described under the several items, value added tax excluded. Such prices shall cover all costs and expenses that may be required in and for the construction of the work described, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the quotation is based.

A price or rate is to be entered against each item in the schedule of quantities, whether the quantities are stated or not. An item against which no price is entered will be considered to be covered by the other prices or rates in the schedule

6. **UNITS OF MEASUREMENT**

The units of measurement indicated in the Bill of Quantities are metric units.

The following abbreviations are used in the Bill of Quantities:

%	=	per cent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
km-pass	=	kilometre-pass
kW	=	kilowatt
l	=	litre
m	=	metre
mm	=	millimetre
MN	=	meganewton
MN-m	=	meganewton-metre

MPa	=	megapascal
kPa	=	kilopascal
m ²	=	square metre
m ³	=	cubic metre
m ³ -km	=	cubic metre-kilometre
m ² -pass	=	square metre-pass
no	=	number
PC sum	=	Prime Cost sum
Prov Sum	=	Provisional Sum
sum	=	lump sum
t	=	ton (1 000 kg)
R/only	=	Rate only
W/day	=	Work day

7. **NET MEASUREMENTS**

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

8. **QUANTITIES**

The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.

The Contract Amount to be determined in accordance with the conditions of contract identified in the Contract Data shall be computed from the actual quantities of authorized work done, value at rates determined in terms of the Contract Data, against the respective items in the Bill of Quantities.

The item numbers appearing in the Bills of Quantities refer to the corresponding item numbers in the COLTO Standard Specification for Road and Bridge Works for State Road Authorities (1998 edition).

9. **CURRENCY**

All rates and sums of money quoted in the Bill of Quantities shall be in Rand and whole cents. Fractions of a cent shall be discounted.

10. **VALUE ADDED TAX**

Value Added Tax shall be excluded from the rates and sums contracted for the various items of work included in the Bill of Quantities. VAT will be added as a single entry to the summary.

11. **RATES AND PRICES**

11.1 **General**

- a) The Contractor must price each item in the Bill of Quantities in BLACK INK. Reproduced computer printouts of the Bills of Quantities will not be acceptable.
- b) The rates and prices to be inserted in the Bill of Quantities shall cover all the services and incidentals for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the

Bid is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

- c) Where the Contractor is required to furnish detailed drawings and designs or other information in terms of the Contract Data, all costs thereof shall be deemed to have been provided for and included in the unit rates and sum amounts contracted for the items scheduled in the Bill of Quantities. Separate additional payments will not be made.
- d) A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill. The Contractor will not be paid for items against which no rate or lump sum has been entered in the Bill of Quantities.
- e) Should the Contractor group a number of items and contract one lump sum for such group of items, this single lump sum shall apply to that group of items and not to each individual item.
- f) Should the Contractor indicate against any item that compensation for such item is included in another item; the rate for the item included in another item shall be deemed nil.
- g) A submission may be regarded as non-responsive if any rates or lump sums in the Bill of Quantities are, in the opinion of the Employer, unreasonable or out of proportion.

11.2 "Rate only" items

The Contractor shall fill in a rate (in the rate column) against all items where the words "rate only" appear in the Amount column, which rate will constitute payment for work which may be done in terms of this item. Such "rate-only" items are used where it is estimated that little or no work will be required under the item or where the item is to be considered as an alternative to another item for which a quantity is given.

11.3 Arithmetic

Excepting where Sum Amounts are required or where Provisional Sums have been indicated, the Contractor shall enter an applicable rate in the Rate Column of the Bill of Quantities for each scheduled item. He shall also enter an appropriate sum in the Amount column for each scheduled item, by determining in the applicable line item the product of the Quantity and the Unit Rate.

If there is an error in the line item resulting from the product of the unit rate and the quantity, the rate shall be binding and the error of extension as entered in the Bid offer will be corrected by the Employer in determining the Contract Price.

Where there is an error in addition, either as a result of other corrections required by this checking process or in the Bidder's addition of prices, such error will be corrected by the Employer in determining the Contract Price.

12. VARIATION IN TEXT

No alteration, erasure or addition is to be made in the text of the Bill of Quantities. Should any alteration, erasure or addition be made, it will not be recognized; the original wording of the Bill of Quantities will be adhered to.

BID No. EPMLM 8/3/397

C2.2 Bill of Quantities

SECTION 1200

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1200		GENERAL REQUIREMENTS AND PROVISIONS				
B12.04	LI	Existing Services to be relocated and or/ protected;				
		(a) Utility services				
		(i) Relocation or protection of services and payments to service owners	PC Sum	1	R 800 000,00	R 800 000,00
		(b) Handling costs and profit in respect of Sub-Item B12.04 (a)(i) above	%	800 000,0		
B12.05	LI	Hand excavation to determine the positions of existing services	m³	1 000,00		
B12.06		CETA accredited Training Course.				
		(a) Technical skills	PC Sum	1,0	R 100 000,00	R 100 000,00
		(b) Generic and Management Skills	PC Sum	1,0	R 100 000,00	R 100 000,00
		(c) Training venue	Lump Sum	1,0		
		(d) Remuneration of workers undergoing technical skills training	PC Sum	1,0	R 25 000,00	R 25 000,00
		(e) Contractor's handling costs, profit and all other charges in respect of Subitems B12.06(a), (b) and (d):				
		(i) Technical skills	%	100 000,0		
		(ii) Generic and Management skills	%	100 000,0		
		(iii) Remuneration of workers undergoing technical skills training	%	25 000,0		
B12.07		Remuneration of the Project Liaison Officer and members of the Project Liaison Committee:				
		(a) Project Liaison Officer	PC Sum	1,0	R 50 000,00	R 50 000,00
		(b) Project Co-ordinating Committee	PC Sum	1,0	R 12 000,00	R 12 000,00
		(c) Contractor's handling costs, profit and all other charges in respect of Subitems B12.07(a) and (b):				
		(i) Project Liaison Officer	%	50 000,0		
		(ii) Project Liaison Committee	%	12 000,0		
B12.08	LI	Supply, transport and erect contract sign board as per drawing No	No	1,0		
B12.10		Compensation to land owners				
		a) Cost of compensation to land owners	PC Sum	1,0	30 000,0	R 30 000,00
		b) Handling cost and profit in respect of subitem 12.10(a)	%	30 000,0		
B12.11		Remuneration for Student Training				
		a) Graduate Internship programme for 1(one) student.	PC Sum	1,0	72 000,0	R 72 000,00
		b) Handling cost and profit in respect of subitem 12.11(a)	%	72 000,0		
B12.12		Contractor's Health And Safety Obligations in respect of the OH&S Act and Construction Regulations.	Lump Sum	1,0		
1200		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 1300

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1300		<u>CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS</u>				
13.01		The Contractor's general obligations:				
		(a) Fixed obligations	Lump Sum	1,00		
		(b) Value-related obligations	Lump Sum	1,00		
		(c) Time-related obligations	months	10,00		
		NB The combined total tendered for subitems (a), (b) and (c) shall not exceed 15% of the Tender Sum (excl VAT)				
B13.01		Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	months	10,00		
B13.01		Contractors' initial obligations in respect of the Environmental Management Plan.	months	10,00		
B13.02		Submission of the Health and Safety File	Lump Sum	1,00		
1300		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 1400

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1400		<u>HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL</u>				
B14.01		Provision of offices, and laboratory accommodation:				
		(a) Office accommodation for Resident Engineers staff including all furniture, services and carpents. Minimum area of 80m2 in 3 offices, including furniture for 5 people and boardroom facilities.	Lump. Sum	1,00		
		(d) Ablution units, including kitchen area and utensils.	Lump. Sum	1,00		
B14.03		Office and laboratory fittings, installations and equipment:				
		(b) Prime-cost items and items paid for in a lump sum:				
		(i) The provision of telephone service, cellular service contracts including cell phones for all supervisory staff.	Prov. Sum	1,00		30 000,00
		(ii) The provision of 3G data service, mobile contracts, including 3G Modems.	Prov. Sum	1,00		10 000,00
		(iii) The provision of computer hardware and software facilities for the supervisory staff.	Prov. Sum	1,00		30 000,00
		(vi) The provision of printing, copying, scanning facilities, survey equipments and Digital camera for the supervisory staff.	Prov. Sum	1,00		20 000,00
		(v) Handling costs and profit in respect of subsubitem 14.03(b)(v) above connections, etc	%	90 000,00		
B14.07		Rented, hotel and other accommodation:				
		(a) Provisional Sum for providing rented housing, hotel or other accommodation as described in Subsubclause 1403(c)(ii)	Prov. Sum	1,00		200 000,00
		(b) Handling costs and profit in respect of subitem 14.07(a)	%	200 000,00		
14.08		Services:				
		(a) Services at offices and laboratories:				
		(i) Fixed costs	Lump. Sum	1,00		
		(ii) Running costs	month	10,00		
		(c) Services for rented houses	month	10,00		
B14.11	LIC	Provision and erection of security fencing (including gate)	m	400,00		
1400		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 1600

ITEM NO	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1600		<u>ACCOMMODATION OF TRAFFIC</u>				
16,01		Accommodating traffic and maintaining temporary deviations				
		a) Temporary gravel deviations	km	2,00		
16,02		Earthworks for temporary deviations:				
		(a) Shaping of temporary deviations	km	2,00		
		(b) Cut and borrow to fill	m³	500,00		
		(c) Cut to spoil	m³	100,00		
16,03		Temporary traffic-control facilities:				
	LIC	(a) Flagmen	man-day	440,00		
		(b) Portable STOP and GO-AY signs	number	-		
		d) Amber LED lights	number	2,00		
		(e) Road signs, R- and TR-series, (900mm dia)	number	10,00		
		(f) Road signs, TW-series, (1200mm sides)	number	10,00		
		g) Road signs, STW-, DTG-, TGG- and TG-series (Excluding delineators and barricades).	m²	10,00		
		(h) Delineators (DTG50J) (900mm):				
		(i) Single	number	20,00		
		(ii) Mounted back to back	number	20,00		
		(i) Movable barricade/road sign combination(DTG106 2400x400mm/TR17-1200 Dia Combination)	number	2,00		
		k) Movable barriers (yellow plastic NJ Type: double	m	100,00		
		(n) Provision of high visibility safety jackets and hat	number	2,00		
16,06		Gravelling and repair of temporary deviations and existing gravel shoulders used as temporary deviations:				
		(a) Temporary deviations	m³	200,00		
16,08		Watering of temporary deviations	kl	200,00		
16,07		Blading by road grader of:				
		a) Temporary deviation	km.pass	40,00		
		b) Existing roads used as temporary deviation	km.pass	40,00		
16/18,02		Overhaul on material hauled in excess of 1.0km (ordinary overhaul).	m³.km	600,00		
1600		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 1700

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1700		<u>CLEARING AND GRUBBING</u>				
B17,01		Clearing and grubbing a) Normal areas:	ha	1,00		
		i) Within the road reserve				
		ii) Within the borrow areas	ha	1,00		
17,02		Removal and grubbing of large trees and tree stumps:				
		(a) Girth exceeding 1 m up to and including 2 m	number	5		
		(b) Girth exceeding 2 m up to and including 3 m	number	1		
1700		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION**SECTION 1800**

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1800		<u>DAYWORKS</u>				
B18.01		Labourers				
		(I) Unskilled	hour	1,00		
		(II) Semi-skilled	hour	1,00		
		(III) Skilled	hour	1,00		
B18.02		Foremen	hour	1,00		
B18.03		<u>Trucks</u>				
		(I) 5m3	hour	1,00		
		(II) 10m3	hour	1,00		
		(III) 5 ton flat truck	hour	1,00		
B18.04		TLB	hour	1,00		
B18.05		Loader (0,6m3 bucket)	hour	1,00		
B18.06		Grader (CAT 140G or similar)	hour	1,00		
B18.07		Vibratory roller	hour	1,00		
B18.08		Grid roller	hour	1,00		
B18.09		Pedestrian roller (Bomag BW80)	hour	1,00		
B18.10		Water truck (5000l)	hour	1,00		
B18.11		Chainsaw	hour	1,00		
B18.12		Mechanical broom	hour	1,00		
B18.13		Light delivery vehicle (1 ton capacity)	hour	1,00		
B18.14		<u>Excavator</u>				
		(I) 20ton	hour	1,00		
		(II) 23ton	hour	1,00		
		(III) 30ton	hour	1,00		
1800	TOTAL CARRIED TO SUMMARY					

§ SCHEDULE A : ROAD CONSTRUCTION

§ SECTION 2100

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2100		<u>DRAINS</u>				
B21,01		Excavation for open drains				
		(a) Excavating soft material situated within the following depth ranges below the surface level:				
		(i) 0 m up to 1,5 m	m³	7 270,00		
		(b) Extra over subitem 21.01(a) for excavation in hard material, irrespective of depth below surface level:	m³	1,00		
21,02		Clearing and shaping existing open drains	m³	1,00		
2100		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 2200

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2200		<u>PREFABRICATED CULVERTS</u>				
22.01		Excavation: (a) Excavating soft material situated within the following depth ranges below the surface level: (i) 0 m up to 1,5 m (ii) Exceeding 1,5 m and up to 3,0 m (b) Extra over subitem 22.01(a) for excavation in hard material, irrespective of depth	m³ m³ m³	3 810,00 1,00 1,00		
22.02	LI	Backfilling: (a) Using the excavated material (b) Using Imported selected material (c) Extra over subitems 22.02(a) and (b) for soil cement backfilling containing 5% OPC.	m³ m³ m³	1 905,00 381,00 100,00		
22.03	LI	Concrete pipe culverts: (b) On class B bedding: (i) 600 mm Diameter, class 1000.	m	2 540,00		
22.07	LI	Cast in situ concrete and formwork: (c) In inlet and outlet structures, skewed ends, catchpits, manholes, thrust and anchor blocks, excluding formwork, but including class U2 surface finish: (i) Class 30/19 concrete (d) Formwork of concrete under subitem 22.07(c) above (type of finish indicated): (i) Class F1 surface finish	m³ m²	30,00 5,00		
22.10	LI	Steel reinforcement: (c) Welded steel fabric ref 195	kg	390,00		
22.17	LI	Manholes, catchpits, precast inlet and outlet (a) Manhole complete as per drawing number. (b) Catchpits complete as per drawing number.	No. No.	2,00 12,00		
22.18	LI	Brickwork using Engineering Bricks. (b) 290mm thick	m²	30,00		
22.23	LI	Service ducts: (b) Ordinary pipes 150 mm diameter uPVC	m	300,00		
22.25		Overhaul on excavated material carted to spoil, backfill material (but excluding Portland cement in the case of soil cement), existing structures demolished and removed to spoil, and removing and relaying, and removing and stacking existing prefabricated culverts, for haul in excess of the free-haul distance	m³-km	30,00		
22.28	LI	Hand excavation to determine the positions of existing services	m³	500,00		
2200	TOTAL CARRIED TO SUMMARY					

ILE A: ROAD WORKS

SECTION 2300

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2300		<u>CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE AND CONCRETE LININGS FOR OPEN DRAINS</u>				
23.01	LI	Concrete kerbing cast in-situ (Class 30/18 concrete.				
		(a) Type C (Fig 2 barrier kerbs)	m	5		
		(a) Type C (Fig 3 barrier kerbs)	m	50		
		(a) Type C at intersections (Fig 8b kerbs)	m	6 540		
B23.02	LI	Concrete kerbing- channelling combination	m²	20		
23.07	LI	Trimming of excavations for concrete-lined open drains:				
		(a) In soft material	m²	3 810		
23.08	LI	Concrete lining for open drains:				
		(a) Cast in-situ concrete lining Class 30/19				
		(i) Trapezoidal drains	m²	508		
		(b) Class U2 surface finish to cast in situ concrete;				
		(i) Type 3 drains/Concrete drift	m²	2 540		
23.09	LI	Formwork for cast in-situ concrete lining for open drains/concrete drift:				
		(c) To end of slabs	m²	1 127		
23.12	LI	Steel reinforcement.				
		(c) Steel mesh no Ref 195	m²	2 540		
23/18.02		Overhaul on material hauled in excess of 1,0km (ordinary haul)	m²-km	5 448		
2300		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 3100

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3100		<u>BORROW MATERIALS</u>				
31,01		Excess overburden in borrow pits for obtaining material for pavement layers;	m³	12 000,00		
31,03		Finishing-off borrow areas in:				
		(c) Soft material	ha	1,00		
31,04	LI	Protecting borrow pits:				
		a) Stock proof fencing as per detailed dwg PWRT99/13-014 all inclusive	km	1,00		
		b) Corner post as per detailed dwg all inclusive.	No.	4,00		
		c) Gates all inclusive.	No.	1,00		
3100	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 3300

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3300		MASS EARTHWORKS				
B33.01		Cut and borrow/stockpile to fill, including free-haul up to 1 km:				
		(a) Material in compacted layer thicknesses of 200 mm and less:				
		(ii) Compacted to 93% of modified AASHTO density	m ³	1 050,00		
B33.04		Cut to spoil, including free-haul up to 1 km. Material obtained from:				
		(a) Soft excavation	m ³	32 840,00		
		(b) Intermediate excavation	m ³	1,00		
		(c) Hard excavation	m ³	10,00		
33.08		Material bladed to windrow	m ³	10,00		
33.10		Roadbed preparation and the compaction of material:				
		(a) Compaction to 90% of modified AASHTO density		4 479,00		
33.13		Finishing-off cut and fill slopes, medians and interchange areas:				
		(a) Cut slopes	m ²	500,00		
		(b) Fill slopes	m ²	500,00		
33/16.02		Overhaul on material hauled in excess of 1,0 km (ordinary overhaul)	m ³ -km	213 460,00		
3300		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 3400

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3400		<u>PAVEMENT LAYER3 OF GRAVEL MATERIAL</u>				
B34.01		Pavement layers constructed from gravel taken from out/borrow/stockpiles including free-haul up to 1,0 km:				
		(a) Gravel selected layer compacted to:				
		(i) 93% of modified AASHTO density for a compacted layer thickness of 150 mm	m³	5 770,00		
		(d) Gravel Sub-base (chemically stabilized gravel material) compacted to:				
		(i) 95% of modified AASHTO density (150mm).	m³	5 770,00		
		(f) Gravel base (chemically stabilized gravel material) compacted to:				
		(ii) 97% of modified AASHTO density for a compacted layer thickness of 150 mm	m³	5 770,00		
3418.02		Overhaul on material hauled in excess of 1,0 km (ordinary overhaul)	m³-km	113 515,00		
3400	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 3600

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3600		<u>STABILIZATION</u>				
36,01		Chemical stabilization extra over unstabilized compacted layers:				
		(c) Gravel base, 150mm thick	m³	6 270,00		
36,02		Chemical stabilizing agent:				
		(a) CEM-II B-L Grade 32,5	t	533,00		
36,04		Provision and application of water for curing	kilolitre	2 000,00		
3600		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 4100

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4100		<u>PRIME COAT</u>				
41.01		Prime coat:				
		(c) MC-30 cut-back bitumen @0.88/m ²	litre	100,00		
		(f) Enviro Prime or similar @0.80/m ²	litre	23 318,00		
41.02		Aggregate for blinding	m ²	-		
41.03	LI	Extra over item 41.01 for applying the prime coat in areas accessible only to hand held equipment	litre	2 000,00		
4100	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION**SECTION 4200**

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4200		ASPHALT BASE AND SURFACING				
42,02		Asphalt surfacing				
		(a) Continuously medium graded (30mm thick)	m ²	32 900		
42,04		Tack coat of 30% stable-graded emulsion.	ℓ	16 450		
42,08	LI	100mm cores in asphalt paving	No.	21		
4200		TOTAL CARRIED TO SUMMARY				

SCHEDULE A : ROAD CONSTRUCTION

SECTION 5100

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5100		<u>PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION</u>				
51,01	LI	Stone pitching:				
		(b) Grouted stone pitching	m ²	4 500,00		
51,05	LI	Concrete edge beams, 200 x 300mm Class 30/18 concrete	m ³	10,00		
51,07	LI	Foundation trenches	m ³	7,50		
5100	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 6600

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
6600		FENCING				
66,05	LI	Dismantling existing fences, store gate and re-erect to position identified by Engineer:				
		(a) Fences:				
		(i) Stock-proof fences	km	0,50		
6600	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 5600

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5600		<u>ROAD SIGNS</u>				
B56.01		Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in diamond grade retro-reflective material, where the sign board is constructed from:				
		(c) Prepainted galvanized steel plate (chromadek or approved equivalent):				
		(i) Area not exceeding 2 m ²	m ²	10,00		
		(ii) Area exceeding 2 m ² but not 10 m ²	m ²	10,00		
56.02		Extra over item 56.01 for using:				
		(a) Background of retro-reflective material:				
		(i) Class I	m ²	20,00		
56.03	LI	Road sign supports (overhead road sign structures excluded):				
		(a) Steel tubing (D Profile)				
		(i) 76mm dia, 2mm thick	t	0,50		
		(ii) 100mm dia, 4mm thick	t	0,50		
56.05L	LI	Excavation and backfilling for road sign supports (not applicable to kilometre posts)	m ³	12,00		
56.06L	LI	Extra over item 56.05 for cement-treated soil backfill	m ³	12,00		
56.07L		Extra over item 56.05 for rock excavation	m ³	-		
B56.10	LI	Statutory road signs 1,60 mm thick Chromadec				
		complete on 4m long steel 'D Profile' posts 76mm dia, 2mm thick, including excavation and 1:12 soil-cement backfill				
		(a) R series - 900 mm diameter	No	6,00		
		(b) W series - 900 mm diameter	No	6,00		
		(c) Hazzard plates (800 mm x 150 mm)	No	20,00		
5600	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 5700

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5700		<u>ROAD MARKINGS</u>				
57,02		Retro-reflective road-marking paint:				
		(a) White lines (broken or unbroken):				
		(i) 100 mm wide	km	4,50		
		(b) Yellow lines (broken or unbroken):				
		(i) 100 mm wide	km	0,20		
	LI	(d) White lettering and symbols	m ²	300,00		
	LI	c) Traffic Islands Hatching (White and Yellow)	m ²	5,00		
LIC 57,06	LI	Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)	km	4,50		
57,07		Re-establishment of the pain unit at the end of maintainance period.	Lump.Su m	1,00		
5700	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 5900

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5900		<u>FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS</u>				
59,01	LI	Finishing the road and road reserve:				
		(b) Single carriageway road.	km	4,70		
59,02		Treatment of old roads and temporary deviations	km	1,00		
5900	TOTAL CARRIED TO SUMMARY					

SCHEDULE A : ROAD CONSTRUCTION

SECTION 8100

ITEM NO	LI	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
8100		<u>TESTING MATERIALS AND WORKMANSHIP</u>				
81,02		Other special tests requested by the Engineer:				
		(a) Cost of testing	PC Sum	1,00		300 000,00
		(b) Charge on Prime Cost Sum	%	300 000,00		
8100		TOTAL CARRIED TO SUMMARY				

SUMMARY OF SCHEDULE OF QUANTITIES**SCHEDULE A : ROAD CONSTRUCTION**

1200	GENERAL OBLIGATIONS	R	
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND	R	
	GENERAL OBLIGATIONS		
1400	HOUSING, OFFICES AND LABORATORIES FOR THE	R	
	ENGINEER'S SITE PERSONNEL		
1500	ACCOMMODATION OF TRAFFIC	R	
1700	CLEARING AND GRUBBING	R	
1800	DAYWORK	R	
2100	DRAINS	R	
2200	PREFABRICATED CULVERTS	R	
2300	CONCRETE KERBING, CHANNELLING, CHUTES AND DOWNPIPES, CONCRETE LININGS FOR OPEN DRAINS	R	
3100	BORROW MATERIALS	R	
3300	MASS EARTHWORKS	R	
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL	R	
3500	STABILIZATION	R	
4100	PRIME COAT	R	
4200	ASPHALT BASE AND SURFACING	R	
5100	PITCHING, STONEMASONRY AND PROTECTION AGAINST EROSION	R	
5500	FENCING	R	
5600	ROAD SIGNS	R	
5700	ROAD MARKINGS	R	
5900	FINISHING THE ROAD AND ROAD RESERVE AND	R	
	TREATING OLD ROADS		
8100	TESTING MATERIAL AND WORKMANSHIP	R	
TOTAL SCHEDULE A : ROAD CONSTRUCTION		R	
<u>CALCULATION OF TENDER SUM</u>			
TOTAL OF SCHEDULE OF QUANTITIES		R	
CONTINGENCIES			
The sum provided here is under the sole control of the Engineer and may be deducted in whole or in part. (The Tenderer must add 10% of the total of schedule of quantities)		R	
SUBTOTAL (1)		R	
CONTRACT PRICE ADJUSTMENT			
Sum provided in terms of the provisions of the General Conditions of Contract		R	400 000,00
SUBTOTAL (2)		R	
VALUE-ADDED TAX (VAT)			
The tenderer shall add 15% of subtotal (2) for VAT		R	
TENDER SUM CARRIED TO FORM OF OFFER		R	

C3: SCOPE OF WORK

Table of Contents:

C3.1 STANDARD SPECIFICATIONS

C3.2 TENDER DRAWINGS

PART A: GENERAL

A1 MISCELLANEOUS

The Standard Specifications that form part of this Contract have been written to cover all phases of work normally required for road contracts, and may therefore cover items of work not applicable to this particular Contract.

The Project Specifications form an integral part of the Contract Documents, supplement the Standard Specifications, and take precedence in the event of discrepancies with the Standard Specifications, the Bill of Quantities or the Drawings.

A2 DESCRIPTION OF THE WORKS

(1) THE SITE

(i) Employer's Objectives

The main objective of the employer is to upgrade all the internal streets in Morarela and Mbuzini Villages from a gravel to surface streets. Objectives during construction are to provide black empowered economic enterprise contractors with a portion of the work, work opportunities to the local communities, provide training to local and other labourers and to execute and complete the work with a high degree of safety, sensitivity to the environment and quality within a period of 10 (Ten) months.

(ii) General Description of the Project.

The project consists of the construction of Morarela Mbuzini Internal Road, consist of an approximately 4200m of gravel streets.

(iii) Traffic

The streets in Morarela and Mbuzini under this upgrade falls within the road category UC, Ref UTG3 Structural design for urban roads. The streets are generally local access roads mainly used for residential access collectors with a very low traffic, this is mainly used by the light vehicles, public transport and once in a while they experience heavy vehicles just for delivery purpose only.

It is not possible for traffic count to be conducted due to the nature of traffic flow and the project, but traffic analysis will be done based on the situation on the area and the previous experience.

In terms of traffic the streets will be classified as Road Class 5(a) and 5 (b). The total traffic over structural design period will be adopted as $<0.2 \times 10^6$ E80s/lane.

The traffic class for the residential area will be adopted as ER/E2 with the Cumulative equivalent traffic, E80s/lane of $<0.05 \times 10^6$).

The area of Morarela and Mbuzini in general will not have any traffic growth due to this type of development/upgrades of internal streets. If any growth occurs it will not be of any effect in the pavement design that will be done under this project.

(iii) Extent of the works

The main items of work to be undertaken in terms of the contract involve the following:

Section/ street	Kilometer	
	from	To
1	0+000	1+115
2	0+000	1+160
3	0+000	1+057
4	0+000	0+600
13 Bell-mouth		270m
Total Length		4200m

- Site Establishment,
- Relocation of existing services from the road reserve (Fences),
- Earthworks, cut to spoil of the sub-grade material,
- Rip and Compact 150mm sub-grade for road bed preparation and compacted to 90% MOD AASHTO,
- Import G6 borrow-pit material for 150mm fill layer where necessary,
- Import G6 borrow-pit material for construction of 150mm upper selected layer compacted to 93% MOD AASHTO Density,
- Import G6 borrow-pit material for construction of 150mm sub-base layer compacted to 95% MOD AASHTO Density,
- Import G6 borrow-pit material for construction of 150mm base layer stabilized with 2% CEM II compacted to 97% MOD AASHTO Density,
- Installation of 600mm – 900mm Φ underground concrete pipes on the section of road 1 and 2, and building of brickwork wing and head walls.
- Installation of precast concrete kerbs of figure 8b on the side of cross-fall of the road,
- Construction of 25Mpa of concrete trapezoidal drain and edge beams,
- Apply quick prime or similar on the surface of base layer with the application of 0.8l/m²,
- Laying of 30mm of continuously graded asphalt as surfacing for 6m width of the entire road,
- Construction of stone-pitching at the bridge at the stormwater channel at the upper side of the village,
- Installation of permanent Road signs, Road markings, speed humps and
- Finishing off of the road reserve.

(2) DETAILED DESCRIPTION OF ROADWORKS

The project consists of the construction of Morarela/Mbuzini Internal Road, consist of an approximately 4200m of gravel streets.

(a) Typical Cross-Section of Road

Dimensions of Carriageways for the streets	
Description	Width
Surfaced Road Width	6.0m
Lane Widths	3.0m
Gravel Shoulders	1,5m
Median Width (Fence to Fence) road reserve	15m – 20m

(b) Pavement layers

MATERIAL REQUIREMENTS								
Layer #	Layer Thickness	Layer Description	Section of Colto Spec	Compaction (% of MOD AASHTO)	P.I. (Max)	G.M. (Min)	CBR at % MOD AASHTO	UCS (kPa) at % MOD AASHTO
1	150mm	Stabilized Gravel base	3400	97%	6	1.2	45	-
1	150mm	Gravel Sub base	3400	95%	6	1.2	45	-
2	150mm	Selected Layer: In-situ or imported	3400	93%	3GM + 10	0.75	15	-
3	150mm	Roadbed	3300	90% or "n" pass roller compaction	-	-	7	-
4	150mm	Fill	3300	90%	-	-	3	-
5	150mm	Gravel Shoulder	3400	95%	3GM + 10 max 6 min	1.2	15	-

(c) Structures

There will be underground concrete pipes for stormwater control.

(d) Sources of pavement material

One possible borrow pit for road construction material was identified just around the village, the borrow-pit is about 5km from the village.

Layer	Source
Surfacing	Commercial
Base	Borrow pit
Subbase	Borrow pit
Selected layers	Borrow pit
Fill/Roadbed	Borrow pit

(e) Accommodation of traffic

Vehicles will be required to be accommodated throughout the project to ensure access to the houses. The traffic will be using the existing streets so the contractor need to pay a particular attention to accesses and intersecting other streets.

(f) Existing services

The following existing services may be encountered within the road reserve:

- Water pipelines;
- Overhead power lines;
- Electrical cables;

Any overhead services crossing the roads, must clear the final road level by at least 6,5m.

Telkom and Eskom overhead lines affected by the construction are to be relocated by the service owners.

(g) Maintenance works

The Contractor shall be responsible for maintaining the entire length of streets, from the date of handing over of the site until the date of issue of the certificate of completion of the Works.

Once the certificate of completion of the Works has been issued the responsibility for normal maintenance of the road (e.g. collection of litter, clearing of drains, repair of road signs damaged by the public, etc) shall revert back to the Municipality. The Contractor shall, however, still be responsible for the contractual maintenance during the Defects Liability Period.

A3 DRAWINGS

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 set of A1 paper prints of each of the Drawings.

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 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.

A4 POWER SUPPLY AND OTHER SERVICES

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.

A5 CONSTRUCTION IN CONFINED 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 Section 6100 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 Construction Plant. However, the Contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the 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.

A6 CONTRACTOR'S SITE OFFICE AND CAMP SITE

The location of the Contractor's site office and camp site will be subject to the approval of the Engineer.

A7 SECURITY

The Contractor shall be responsible for the security of his personnel and Construction Plant on and around the Site of the Works and for the security of his camp, and no claims in this regard will be considered by the Employer.

A8 WATER FOR CONSTRUCTION PURPOSES

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.

A9 ADDITIONAL REQUIREMENTS FOR CONSTRUCTION ACTIVITIES

- (a) The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.
- (b) Failure to maintain road signs, warning flashing lights, etc, in a good condition shall constitute ample reason for the Engineer to bring the works to a stop until the road signs, etc, have been repaired to his satisfaction.
- (c) The Contractor may not commence construction activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual (SARTSM – Vol 2, Chapter 13).
- (d) The Contractor may not proceed with permanent works before the required offices and laboratories of the Engineer's site personnel have been erected by him. This includes the provision of electricity, sanitary arrangements, potable water and telephone, e-mail and fax facilities. In the event where the Contractor cannot obtain telephone lines timeously from Telkom, a wireless system shall be provided for telephone, e-mail and fax facilities.

A10 TEMPORARY LATRINES

The Contractor shall provide sufficient latrine facilities for the use of his employees. He 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 and the Employer. Latrines shall be positioned within walking distance from wherever employees or labourers are employed on the Works.

Where required, latrines shall be provided at the rate of one for ten persons and where applicable, the Contractor shall make his own arrangements and pay all charges for the removal of sewage.

A11 MOVING EXISTING SERVICES

Services belonging to any public or private authority, which require moving, shall be dealt with in the manner specified in clause B1204.

The Contractor shall locate and mark the positions of hidden services in advance of construction and take all reasonable steps to protect existing works against damage, which may arise as a result of his operations on the site.

The Contractor will be held responsible for direct or consequential damage to any existing works including any claims which may arise as a result thereof and the cost of repair of any such damage shall be borne by the Contractor. The owners and the Engineer shall be notified immediately of any damage done to existing works.

If so directed by the Engineer the positions of existing works shall be changed by the Contractor to meet the requirements of the proposed work. The cost of such work shall be paid for at the applicable rates set out in the Bill of Quantities or, in the absence of such rates, at rates mutually agreed between the Engineer and the Contractor.

All communication by the Contractor with the relevant authorities in connection with services must be directed through the Engineer.

A12 TRAINING

Technical skills, generic and management skills training shall be provided with the aim of providing locally employed labour with the technical skills required to undertake the work involved in the Contract, and of furthering small contractor development. Part D of the Project Specifications deals specifically with matters regarding training, and a payment item for that is included in Clause B1232 of Part B of the Project Specifications.

A13 USE OF LOCAL RESOURCES

A major objective of this Contract is the optimum practical use of local resources. One of the methods to be adopted to achieve this objective is through the implementation of labour-optimising construction methods. Labour-optimising construction is defined in Clause B1157 of Part B of the Project Specifications.

A14 LABOUR-OPTIMISING CONSTRUCTION ACTIVITIES

(a) General

The portions of the Works listed in Subclause (b) below shall, unless otherwise instructed by the Engineer, be constructed under this Contract using labour-optimising construction methods.

In respect of those portions of the Works which are not listed in Subclause (b), the construction methods adopted and Plant used shall be at the discretion of the Contractor, provided always that the construction methods adopted and Plant used by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

(b) Operations to be executed using labour-optimising construction methods

The following portions of the Works shall be executed using labour-optimising construction methods:

- (i) Constructing culvert inlet and outlet structures as well as cast in situ slabs, including all masonry work and minor precast work. All concrete shall be mixed by hand-driven mixing machines;
- (ii) Backfilling and compacting all excavations;
- (iii) Removing oversize material;
- (iv) Stone pitching and erosion protection;
- (v) Finishing off cut and fill slopes;
- (vi) Finishing the road and road reserve.

A15 RESTRICTIONS ON THE USE OF PERSONNEL IN THE PERMANENT EMPLOY OF THE CONTRACTOR

- (a) The Contractor shall limit the use on the Contract Works of his permanently employed personnel to that of key personnel only (as defined in Part C of the Project Specifications) and shall, subject to the further provisions of the following parts of the Project Specifications
- (i) Part C-Provision of the temporary workforce;
 - (ii) Part D-Provision of structured training;
- execute and complete the Works using a temporary workforce employed directly by the Contractor and/or by Subcontractors.
- (b) The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor and where he deems the circumstances to warrant, authorise in writing that the Contractor may use in the execution of the Works, workers not being his key personnel but who are in his permanent employ. Without limiting the generality of application of this sub clause, circumstances which may be considered by the Engineer to warrant the authorization of the use of the Contractor's permanent employees not being key personnel, include:
- (i) The unavailability of sufficient numbers of temporary workers and/or Subcontractors to execute the Works, provided always that the Contractor has proven that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient numbers of temporary workers and Subcontractors and has exhausted all reasonable recruitment options
 - (ii) The unavailability within the temporary worker pool and/or subcontractor sources available to the Contractor in terms of the Contract, of sufficient of the required knowledge and skills necessary for the execution of the Works or specific portions thereof, in cases where the time for completion allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of training as contemplated in this Contract
 - (iii) Any other circumstances which the Engineer may deem as constituting a warrant.

A16 COMMUNITY LIAISON AND COMMUNITY RELATIONS

In all dealings with the various communities and workers employed from within the communities, the Contractor shall take due cognisance of the character, culture and circumstances of the communities involved and shall at all times use his best endeavours to avoid the development of disputes and to foster a spirit of co-operation and harmony towards the Contract.

The Contractor shall at all times keep the Engineer fully informed on all matters affecting the Contract and the communities, and shall attend all meetings of the Project Co-ordinating Committee as may be reasonably required by the Engineer. All matters concerning the communities shall be discussed and where possible, resolved at such meetings.

Where any resolution of the Project Co-ordinating Committee shall be contrary to the terms and provisions of the Contract, the Contractor shall not give effect to them without a prior written instruction from the Engineer. Where the Contractor is of the opinion that any instruction of the Engineer issued in terms of this clause will result in him incurring additional costs which were not provided for in his tendered rates and prices, and/or that a delay in the progress of the Works will result, he will be entitled to submit a claim in terms of Clause 10.1 of the Conditions of Contract, provided always that the period of twenty-eight (28) days referred to in Clause 10.1 shall be reduced to three (3) normal working days in respect of all claims submitted in terms of this clause.

A17 PROGRAMME REQUIREMENTS FOR CONSTRUCTION ACTIVITIES

The Contractor shall programme his activities to allow for the following:

- (a) The construction activities must be programmed to be suitable in terms of his resources to complete the contract inside the stipulated time period.
- (b) Priming of the completed base course must be programmed to be completed as soon as possible and no more than 5 km of un-primed base would be allowed.
- (c) Surfacing of the primed base must be programmed to be completed as soon as possible and no more than 10 km of un-surfaced base would be allowed

A18 EXTENDED PUBLIC WORKS PROGRAMME SPECIFICATIONS (EPWP)

18.1 Labour-Intensive Competencies of Supervisory and Management Staff

Established contractors shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2005, are registered for training towards, the skills programme outlined in Table 1.

Emerging contractors shall have personally completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	Any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques	This unit standard must be completed, and
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	Any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour Intensive Construction Processes	Skills Programme against this single unit standard
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail: gerard@ceta.co.za , tel: 011-265 5900)			

In addition to their normal supervisory and management functions, the aforementioned supervisory and management staff shall also be responsible for setting the workers' daily tasks in accordance with labour intensive construction principles, and for ensuring that the EPWP job creation reporting data is accurately recorded on a daily basis and compiled and submitted to the Employer each month in accordance with clause 18.7.1.5 of this section.

18.2 *Employment of Unskilled and Semi-Skilled Workers In Labour-Intensive Works*

1.1.1 The work to be undertaken on this contract by unskilled or semi-skilled workers under the Expanded Public Works Programme (EPWP) shall be implemented in accordance with:

- the Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes (EPWP), issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. 129 of 18 February 2011 (Government Gazette No. 34032 of 18 February 2011); and
- Ministerial Determination 4: Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R347 of 4 May 2012.

The aforementioned Government Notice No. R347 contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do not apply to persons employed in the supervision and management of an Expanded Public Works Programme (EPWP).

The above documents can be downloaded from the EPWP website of the Department of Public Works (<http://www.epwp.gov.za/>).

18.3 Contract of employment with persons employed under the Expanded Public Works Programme (EPWP)

The Contractor shall enter into a formal contract of employment with each person employed under the Expanded Public Works Programme (EPWP), using the pro forma contract of employment attached at the end of this section: Particular Specifications.

18.4 *Employment of targeted labour under the Expanded Public Works Programme (EPWP)*

The Contractor shall be contractually obliged to:

- (a) brief EPWP workers on the conditions of employment;
- (b) enter into a formal contract of employment with each EPWP worker, which contract will form part of the Employment Agreement;
- (c) keep personnel files for all EPWP workers and make copies available to the Employer if and when requested; and
- (d) ensure that payments to EPWP workers are made in accordance with Government Notice No. R347.

The rate of pay for persons employed under the Expanded Public Works Programme (EPWP) shall be: as per SAFSEC rate

18.5 JOB CREATION REPORTING FOR EPWP

In order to assist the Employer in complying with the goal of creating EPWP job opportunities, the Contractor must provide the information specified in clause 3.1 below for reporting purposes.

In addition, the Contractor's payment certificates shall be accompanied by the information specified in clause 18.5.1.5 below.

18.5.1 Type of project data required per project

Every EPWP project shall collect and keep specific project data for the purpose of EPWP progress reporting on a monthly basis, using the EPWP Data Collection Tool template (this will be made available to the Contractor in Microsoft Excel format).

18.5.1.1. Participant (local labour) data

A participant list of the local labour employed must be maintained for every EPWP project. The data required in this participant list is indicated below. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting. The participant list shall contain the following data and shall be kept and maintained on site for audit purposes:

- (a) Participant identity – name, surname, initials, date of birth and identity number (or other unique identifier) plus certified copy of ID book.
- (b) Participant profiles – nationality, gender, age, education level and disability status.
- (c) Work data for participants – daily wage to be received, number of calendar days training attended and number of calendar days worked.
- (d) Records of training – as required in terms of the EPWP Data Collection Tool template.

In addition, the signed contracts of employment between the Contractor and each EPWP participant shall be kept and maintained on site for audit purposes.

18.5.1.2 Project Work Data

The project work data generally seeks to confirm the number of people at work daily on the project. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting. The data shall be maintained on site by the Contractor, in order that it can be provided by the Employer to the National Department of Public Works upon request when the latter is undertaking sample auditing. The data shall include:

- (a) Daily attendance register – register for each day showing all the workers that were registered as being at work on that day. Attendance registers shall be completed on site on a daily basis and signed off by the Contractor on a weekly basis.
- (b) Summary of monthly attendance.

18.5.1.3 Project Payment Data

The project payment data generally seeks to confirm what was paid, for how much work and to whom. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting.

It is required that the Contractor adopt one of the following methods as standard procedure for recording and maintaining this information:

- (a) Payment register – this is a list of the workers showing the wages paid to each worker, and signed off by each worker as proof of receipt and acceptance of payment. Information on this register must include the name of the worker, either an identity number or other unique identifier, the number of calendar days that the pay period covers, the wage rate and the total wages paid; or
- (b) Bank records showing the transfers to each worker account, signed off by the Contractor as proof of payment – these bank records must specifically show the name of the worker, either an identity number or other unique identifier, the period which the pay covers and the total wages paid.

The project payment data, as recorded and maintained by the Contractor in terms of either (a) or (b) above, must be available and applicable for the entire period for which the Employer claims an incentive reward for person-days of work created in terms of the project.

18.5.1.4 Employment Output Data

The Contractor shall submit to the Employer at each monthly site meeting a progress report detailing production output compared to the programme of works, together with the data necessary to enable the Employer to calculate the following employment output data in accordance with the EPWP Data Collection Tool template:

- (a) Number of work opportunities created (where one work opportunity = paid work created for one individual on an EPWP project, for any period of time).
- (b) Number of person-days of work created (where one person-day = one day of work carried out by one individual). The total number of person-days of work created on a particular EPWP project shall be obtained by summing the total number of person-days worked by each individual employed during the course of that EPWP project.
- (c) Number of Full Time Equivalents (FTE) created (= total number of person-days of work created on the EPWP project divided by 230 working days). In terms of EPWP policy, one year of work created for one individual is assumed to comprise a total of 230 days of paid work carried out by that individual.
- (d) Average duration of work opportunities created (= total number of person-days of work created on the EPWP project divided by the number of work opportunities created on that EPWP project).
- (e) Average daily wage rates paid (= accumulated total of the wages paid to all individuals employed on an EPWP project divided by the total number of person-days of work created on that EPWP project).
- (f) Training information

18.5.1.5 Project data to be submitted with the Contractor's payment certificates

The Contractor's payment certificates shall be accompanied by labour returns providing the labour information for the corresponding period in a format specified by the Employer.

Should the Contractor choose to delay submitting payment certificates, the labour returns shall nevertheless still be submitted as per the frequency and timeframes stipulated by the Employer. The Contractor's payment certificates shall not be paid by the Employer until all pending labour information has been submitted.

The following information shall be maintained on site and submitted with each payment certificate in the format specified by the Employer:

- Copies of the signed contracts between the Contractor and any new EPWP participants (the Contractor shall note that all such formal contracts of employment entered into with persons employed under the Expanded Public Works Programme (EPWP) shall expire on 31 March each year, and the Contractor shall therefore be required to enter into new contracts with such persons as of 01 April each year, and shall be required to submit copies of all such new contracts with the first payment certificate thereafter);
- Certified ID copies of all local labour employed as EPWP participants;
- Attendance registers for the EPWP participants;
- Proof of payment of EPWP participants; and
- Information as required in terms of the EPWP Data Collection Tool template.

**PART B: PROJECT SPECIFICATION MATTERS RELATING TO THE
STANDARD SPECIFICATIONS (please only use B items as specified in
the B.O.Q)**

**B1 PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS
AND ADDITIONAL SPECIFICATIONS**

The Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials (COLTO), as amended, shall apply to this Contract. The amendments are those issued by COLTO and reproduced below, together with additional amendments as set out herein.

1 STANDARD AMENDMENTS TO THE STANDARD SPECIFICATIONS ISSUED BY COLTO

No amendments have been issued.

**2 PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS AND
ADDITIONAL SPECIFICATIONS**

In certain clauses the Standard Specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this Contract are contained in this part of the Project Specifications. It also contains some additional specifications required for this particular Contract.

The number of each clause and each payment item in this part of the Project Specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the Standard Specifications. The number of a new clause or a new payment item which does not form part of a clause or a payment item in the Standard Specifications and which is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the Standard Specifications.

B2 SECTION 1100: DEFINITIONS AND TERMS

B1115 GENERAL CONDITIONS OF CONTRACT

REPLACE CLAUSE 1115 WITH THE FOLLOWING:

The General Conditions applicable to this Contract shall be the General Conditions of Contract for Construction Works, third edition, 2nd print (2015).

All references to the COLTO General Conditions of Contract 1998 in COLTO Standard Specification for Road and Bridge Works, 1998 are to be deleted and replaced where applicable by references to the Conditions of Contract stated in this clause as detailed in the table hereunder. The context of the reference to the GCC is also noted.

The Contractor shall note that whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the Conditions of Contract specified in this clause and amended in the Contract Document shall apply and the Contractor shall be responsible for interpretation of the equivalent clause.

**CHANGES TO REFERENCES BY THE COLTO STANDARD SPECIFICATIONS TO THE COLTO
GENERAL CONDITIONS OF CONTRACT AND SAICE GCC 2015**

COLTO Standard Specification		COLTO General Conditions of Contract 1998 (GCC)		GCC 2015	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
1115	1100-2		Definition of GCC		
1204	1200-2	15	Construction programme	5.6	Programme
1204	1200-2		General reference to GCC		
1206	1200-3	14	Setting out of works		
1209(a)	1200-4		General references to GCC		
1209(e)	1200-5	52(2)	Valuation of material brought onto site	6.9	Vesting of Plant and materials
1210	1200-5	54(1)	Certificate of practical completion	5.14.4	Certificate of completion
1212(1)	1200-7	49(2)	CPA on alternative designs	6.8	CPA on alternative designs
1215	1200-9	45(2)	Extension of time for completion due to abnormal rainfall.	5.12	Extension of time for practical completion
1217	1200-10	35	Care of the works	8.2	Care of the works
1303(ii)	1300-1		General reference to GCC		
1303(iii)	1300-1	49	Price adjustment Item 13.01(a)	6.8	Price adjustment Item 13.01(a)
1303(iii)	1300-2	49	Price adjustment Item 13.01(b)	6.8	Price adjustment Item 13.01(b)
1303(iii)	1300-1	53	Variations exceeding 20%		
1303(iii)	1300-2	53	Variations exceeding 20%		
1303	1300-2	12	Payment Item 13.01(c)	5.3	Payment Item 13.01(c)
1303	1300-2	45	Payment Item 13.01(c)	5.12	Payment Item 13.01(c)
1403(c)(ii)	1400-4	40(1)	Variation for rented accommodation	6.3	Variations
1505	1500-3	40(1)	Variation for temporary drainage	6.3	Variations
Item 15.08	1500-8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.09	1500/8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.11	1500-8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Note (2)	3100-4	40	Payment for prospecting for materials	6.6	Provisional sums and prime cost sums
3204(b)(iii)	3200-2	40	Payment for oversize material	6.3	Variations
3303(b)	3300-2	2	Engineer's decisions, with reference to materials classification	3	Employer's Agent
Item 44.06	4400-3		General reference to GCC, PC Sums	6.6	Provisional sums and prime cost sums
Item 45.06	4500-3		General reference to GCC, PC Sums	6.6	Provisional sums and prime cost sums
5803(c)	5800-3	40	Variation, for landscaping	6.3	Variations
5805(d)	5800-4	40	Variation, for grassing	6.3	Variations
Item 58.10	5800-10	48	Payment for Extra Work	6.6	Provisional sums and prime cost sums
8103(c)	8100-1	40	Variation, for testing material	6.3	Variations
Item 81.02	8100-26		General reference to GCC, Provisional Sums		
Item 81.03	8100-26	22	Clearance of site on completion, with reference to core drilling	5.15.1	Clearance of site on completion, with reference to core drilling

B1155 WORK IN RESTRICTED AREAS

REPLACE THE CONTENTS OF THIS CLAUSE WITH THE FOLLOWING:

"No additional or extra over payment will be made for work in restricted areas except for work near structures as defined in section 6100."

ADD THE FOLLOWING CLAUSES:

"B1156 OTHER DEFINITIONS

The COLTO Standard Specifications for Roads and Bridge Works for State Road Authorities (1998 edition) has been written for all contractors, employers and engineers. Similarly, the works and the site are not defined and the general nature of the entities and elements that collectively constitute construction under a contract are characterized by the use of lower case letters throughout.

These project specifications continue to use lowercase spellings in order to avoid the appearance of the capitalised and non-capitalised words to describe or prescribe the same elements of work required on this project. However, for the purposes of this contract the following definitions shall apply:

Employer's Agent

Employer's Agent (Clause 1.1.1.16 of Conditions of Contract) shall have the same meaning and be synonymous with Engineer/engineer throughout the Contract document.

General Items

General Items (Clause 1.1.1.21 of Conditions of Contract) shall have the same meaning and be synonymous with Preliminary and General items.

Contractor

The Contractor and the contractor is the same persona defined under clause 1.1.1.9 of the General Conditions of Contract, but who will only be formally identified by the completed Form of Acceptance C1.1.2 in this document and which will be bound into the final contract document.

Employer

The Employer and employer is the same persona and is defined in clause 1.1.1.15 in the General Conditions of Contract.

Site

The site is defined in clause 1.1.1.29 of the General Conditions of Contract. 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 zone areas where accommodation of traffic is placed.
- All borrow pits defined in the applications approved by the relevant Department of Minerals and Energy.
- All haul roads constructed by the Contractor for purposes of access.
- Any non-adjacent sites specified in the contract documentation.
- The Contractors and his subcontractors camp sites

Works

The works is described in Part C3 of this document and is as defined in clause 1.1.1.33 of the General Conditions of Contract and prescribed in Part A section A2 of this document.

B1157

LABOUR-OPTIMISING CONSTRUCTION

The cost-effective employment of as great a portion of labour as is practically and technically feasible to produce the standard of construction required by the Specifications: Therefore, the economic substitution of plant and mechanical equipment in favour of available labour using hand tools, on condition that this method is not more expensive than the conventional construction practices.

B1158

SABS SPECIFICATIONS

Where reference is made in this specification or the standard specifications to SABS specifications, the latest published national standard shall be applicable. Use:

https://www.sabs.co.za/Standard-Sales/docs/SABS_Catalogue_of_December_2018_abridged.pdf

for the most up-to-date versions of the various standards.

B1159

AGGREGATE SIZE

Where reference is made in this specification or the standard specifications to aggregate size, nominal aggregate size or maximum aggregate size, the aggregate size as listed shall be replaced with the new corresponding aggregate size as indicated in the following table:

Aggregate size	New aggregate size
26,5	28
19	20
13,2	14
9,5	10
6,7	7
4,75	5
2,36	2
1,18	1

B1160 **PROCESS CONTROL**

Process control means all testing required to be carried out in order to ensure that the completed permanent works comply with the specifications and drawings. All such testing will be subject to inspection and approval by the Engineer.

B1161 **ACCEPTANCE CONTROL**

Acceptance control means whatever testing the Engineer carries out over and above the process control testing already carried out in order to decide on the acceptability of any work submitted by the Contractor. Such testing will be carried out at the cost of the Employer.

Both the process and acceptance control testing will be carried out by an on-site laboratory for the Engineer.

B1162 **MONTHLY PAYMENTS**

The number of months that has been indicated for items in the Bill of Quantities that are to be billed monthly is the duration of the Construction Period only, unless it is clearly indicated that the number of months includes the duration of the Mobilisation Period."

B3 **SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS****B1202** **SERVICES**

ADD THE FOLLOWING:

"The Contractor must be aware of existing services in the area of the Works that will affect his programme of work. It is therefore of the utmost importance for the Contractor to work in close conjunction with the owners or authorities controlling these services to ensure that the services are not disrupted in any way as a result of the Works.

Before work commences, the Contractor shall contact all private owners or public authorities controlling services to allow them to protect, move or relocate a service as required, or to confirm that all such work has been completed.

No payment will be made for inconvenience to the Contractor due to services crossing the Site or any authority working on such services, nor will delays caused by such works be accepted as a basis for claiming an extension of time for completing the Works."

Any cost of repairs, replacement and/or installation of the stations and equipment resulting from the contractor's negligence or unauthorised action shall be to the contractor's account."

B1204 **PROGRAMME OF WORK**

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"A network-based programme in accordance with the precedence method shall be provided, showing the various activities in such detail as the Engineer may require. The programme shall be updated monthly in accordance with the progress made by the Contractor.

Failure to comply with these requirements entitles the Engineer to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the works, or for additional compensation."

ADD PARAGRAPH (c):

"(c) Programming requirements

The Contractor's initial and all subsequent adjusted programmes to be submitted in terms of Clause 5.6.1 of the Conditions of Contract, shall show and when relevant describe in detail the entire extent of the work to be carried out, as described in or can reasonably be inferred from Part C3: Scope of Works of this document.

In addition to the requirements detailed in Clause 5.6.2 of the Conditions of Contract and with specific reference to Clause 5.6.2.5 thereof the following additional programming information shall be incorporated into the Contractor's initial and all subsequently adjusted programmes as specified in B1204(c)(i) and(ii).

(i) Format

The initial and adjusted programmes shall:

- (a) Be in the form of a network programme in accordance with the critical path method; and
- (b) Show all linkages between activities that clearly identify sequence, floats and critical path
- (c) Indicate the start and end dates and duration of all construction activities and identify the critical path
- (d) Production rates; and
- (e) Take full cognizance of all the Contractor's risks and obligations in terms of the Contract.

The Programme and all adjustments thereto shall also be provided to the Engineers in electronic digital format using the MS PROJECT (latest version) software, unless otherwise agreed in writing with the Engineer.

(ii) Additional information

The following programming information shall be incorporated into the Contractor's initial programme and all subsequently adjusted programmes:

- (a) Time related items, in respect of the following:
 - (i) Mobilisation Period which includes the time to submit documentation before commencing to carry out the Works – refer to Clauses 1.1.35 and 5.3.1 of C1.2 - Contract Data
 - (ii) Construction Period - refer to Clause 1.1.1.36 of C1.2 - Contract Data
 - (iii) Due Completion date - refer to Clause 1.1.1.14 of C1.2 - Contract Data
- (b) All special non-working days defined in the Contract Data.
- (c) The expected delays defined in B1215: Extension of time resulting from inclement weather.

- (d) The following restricted working condition:
 - (i) During the Contractor's annual shutdown period between December and January, the Contractor shall maintain two-way traffic within the contract limits.
- (e) Meeting the requirements of the environmental management plan
- (f) The time needed for preparation and approval of the various mix designs specified in the relevant construction sections of the Scope of Works.

B1205 WORKMANSHIP AND QUALITY CONTROL

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"The Contractor shall implement a quality assurance system in accordance with ISO 9002 and appoint a quality manager who shall ensure that members of the Contractor's staff comply with the requirements of the quality system. The quality system and the methods used to implement it shall be described in a quality plan produced by the Contractor.

The quality manager shall be resident on site full time. No construction activities shall take place on site before the Engineer approves the quality plan."

DELETE THE SECOND, THIRD, FOURTH AND FIFTH PARAGRAPHS AND REPLACE WITH THE FOLLOWING:

"The Contractor shall submit the quality assurance system he proposes using to the Engineer, for his approval, within two weeks of the site handover. Once accepted by the Engineer the Contractor shall not deviate from it unless written notification of proposed changes have similarly been submitted and approved. The system shall record the lines and levels of responsibility and indicate the method by which testing procedures will be conducted."

B1206 THE SETTING-OUT OF WORK AND PROTECTION OF BEACONS

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall comply with all legal provisions in regard to surveying and setting out work.

The Engineer has established survey beacons on site from which the Contractor can set out the Works. The position and co-ordinates of the permanent survey beacons have been shown on the Drawings. The Contractor shall be responsible for the protection of all these survey beacons and reference points from handing over of the beacons to the Contractor until completion of the Works.

Detail setting out of the Works from the established beacons shall be the responsibility of the Contractor. Such setting out shall be executed by a registered surveyor. No separate payment shall be made in respect of such setting out, such work being deemed as included in the rates tendered for construction of the Works."

B1207 NOTICES, SIGNS AND ADVERTISEMENTS

DELETE THE FINAL PARAGRAPH AND REPLACE WITH THE FOLLOWING:

"All sign boards erected in accordance with the Drawings or approved advertisements for the Contractor's establishment shall be removed at the same time as the Contractor's disestablishment. Payment under subitem 13.01 for the final instalment of 15% of the tendered lump sum shall not be made unless all the advertisements, notices and temporary signs have been removed."

B1209 PAYMENT

(b) Rates to be inclusive

IN THE THIRD LINE OF THE FIRST PARAGRAPH, INSERT "together with the payment of VAT as a separate item, "AFTER THE WORD "quantities,".

ADD THE FOLLOWING SUBCLAUSES:

"(g) Payment certificates

With reference to Clause 6.10.1 of the General Conditions of Contract, the Engineer's Certificate will only be issued after he has received a draft certificate prepared by the Contractor at his own expense in the form prescribed by the Engineer. The cost of duplicating and delivering copies of the certificate to the Contractor, the Engineer and the Employer shall be borne by the Contractor. The Engineer and the Employer require a total of five sets of A4-sized paper copies.

(h) Trade names

Where materials are specified under trade names, tenders must be based on those specified materials. Alternative materials may be submitted as alternative tenders and the Engineer may, after receipt of tenders, approve the use of equivalent materials.

(i) Work in confined areas

Except where provided for in the specifications and the Bill of Quantities, no extra payment shall be made nor shall any claim for additional payment be considered for construction in restricted or confined areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the tendered rates."

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

ADD THE FOLLOWING PARAGRAPH:

"In addition to the listed specified items of work and regardless of the degree of beneficial occupation by the Employer, no sections of the Works, individually or collectively, shall be considered for practical completion unless the following criteria have been met also:

- (i) In the case of partial completion, the estimated cost to complete the outstanding work is less than 2% of the estimated cost to construct the whole section or sections.
- (ii) In the case of the whole Works, the estimated cost to complete the 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.
- (iii) The written list of outstanding items of work can be completed within 28 days of the list having been accepted in writing by the Contractor."

B1214 CONTRACTOR'S ACTIVITIES IN RESPECT OF PROPERTY OUTSIDE THE ROAD RESERVE AND OF SERVICES MOVED, DAMAGED OR ALTERED

ADD THE FOLLOWING TO THE LAST PARAGRAPH OF SUBCLAUSE (d):

"These written statements shall be handed to the Engineer before the final certificate will be issued. Failing to obtain these written statements from all landowners and authorities concerned, the period of maintenance will be extended including all conditions related to such an extension, until such time that all these statements are obtained.

The obtaining of any such written statements will not relieve the Contractor of the execution of any of his obligations to the satisfaction of the landowner or authority concerned, and to the approval of the Engineer."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

ADD THE FOLLOWING:

"Extension of time for completion in terms of Clause 5.12 of the General Conditions of Contract in respect of abnormal rainfall shall be determined in terms of Method (ii) (The Critical Path Method) as described under Clause 1215 of the Standard Specifications. This formula does not take account of flood damage that could cause further or concurrent delays.

The Critical Path Method

The critical path method is specified in the project specifications for determining extension of time resulting from abnormal rainfall and it shall be applied as follows:

A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Engineer all progress on the item/s of work on the critical path of the working programme of the Contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of "n" working days caused by normal rainy weather, for which he will not receive any extension of time. **The value of "n" shall be given in the project specifications by the Engineer.**

Extension of time during working days will be granted to the degree to which actual delays as defined above exceed the number of "n" working days as mentioned in the project specifications.

The Value of "n" for this is indicated in the Table Below (derived from the average number of days when rainfall of 10 mm or more falls during normal rainy season using records from Rainfall Station **Marble Hall weather station (0591538 3)** for the period **2011 to 2021** are reproduced in the table hereunder.

2011	2021		
0591538 3	MARBLE HALL	Lat:-24.9670	Lon:29.3000
MON	AVE	N DAY	MAX RAIN
MON		RAIN	DATE
JAN	59,6	7,6	2021/01/24
FEB	34,5	4,2	2012/02/17
MAR	37,2	3,8	2014/03/05
APR	36,7	3,9	2018/04/19
MAY	4,9	0,8	2017/05/14
JUN	0,5	0,1	2011/06/07
JUL	0,6	0,2	2016/07/25
AUG	2,2	0,3	2011/08/14
SEP	27,1	1,4	2020/09/01
OCT	47,2	5,9	2020/10/01
NOV	69,2	7,6	2016/11/16
DEC	103,5	8,1	2013/12/28
YR	423.2	44	

* The figures shown in brackets are the 'n' days of rain expected in December/January but reduced to take account of the standard construction break over the Christmas/New Year period.

B1222 USE OF EXPLOSIVES

REPLACE PARAGRAPH (g) WITH THE FOLLOWING:

"(g) The Contractor shall, seven (7) days before each blasting operation is carried out, advise the Engineer thereof in writing. Any such blasting operation shall be confirmed with the Engineer twenty-four (24) hours prior to execution. The Contractor shall make all the necessary arrangements to keep the public and the provincial traffic authorities fully informed with regard to the closures of the road for blasting purposes."

ADD THE FOLLOWING PARAGRAPH:

"(h) Where blasting needs to be carried out within the road reserve of the existing road, it shall only be allowed between 10:00 and 14:00. The road may not be closed for a period longer than thirty (30) minutes during which time all blasting shall be carried out, debris removed from the road surface and the road made safe and passable for traffic."

B1224 THE HANDING OVER OF THE ROAD RESERVE

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall carry out any maintenance work within the road reserve that the Engineer may require during the time for completion of this Contract. Such maintenance shall typically comprise the routine clearing of litter, the clearing and repair of drainage, repair of guardrails and any structural damage caused by traffic during the contract period."

B1228 LEGAL PROVISIONS

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993:Construction Regulations, 2014 (the regulations) as promulgated in Government Gazette No 25207 and Regulation Gazette No 37305 of 7 February 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Project Specifications, Bill of Quantities and Drawings, as well as in the Employers' health and safety specifications (regulation 5(1)) of the Construction Regulations 2014, which are bound in the Contract document).

The Contractor shall in terms of regulation 7(1) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

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

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

B1229 SABS CEMENT SPECIFICATIONS

ADD THE FOLLOWING TO THIS SUBCLAUSE:

"Where reference is made in this Specification or the Standard Specifications to the cement specifications, e.g. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

SANS 50197-1 Cement composition, specifications and conformity criteria Part 1: Common cements."

ADD THE FOLLOWING CLAUSES:

"B1230 REPORTING OF ACCIDENTS

The Contractor shall report every accident which occurs on the road, within the extent of the Works, to the Engineer, within twenty-four (24) hours of such accident occurring, irrespective of whether such accident has a bearing on damage to the Works or to persons, property or things. The report must be in writing and must contain full particulars of the accident. Photographs of each accident shall also be included in the report. The Engineer has the right to conduct any or all enquiries, either on the Site or elsewhere, as to the causes and consequences of any such accident. The Contractor shall also keep a comprehensive record of all accidents which occur on the road and shall make such records available to the Engineer on demand.

B1231 TRAINING

Structured training shall be provided to temporary personnel involved in the Contract in accordance with the provisions set out in Part D. The Contractor's selection of the candidates shall be approved by the Project Liaison Committee and the Engineer, subject to the required entrance levels. All training courses must be offered through approved accredited training organisations.

The Contractor shall provide the following for the training:

- (a) A venue with sufficient lighting, electric power points and furniture;
- (b) All necessary stationery, consumables and study material;
- (c) Transport to and from the training venue if the training is not delivered on Site;
- (d) Wages for candidates attending Engineering (technical) skills training during working hours;
- (e) Payment to approved training organisations for the provision of training.

NB: Only technical skills and entrepreneurial training may take place during normal working hours. Generic training may only take place after hours. All training courses shall commence within one month of handing over the Site and be complete before the end of the Contract Period."

B1232 MEASUREMENT AND PAYMENT

Item	Unit
B12.04 Protection, removal, realignment and replacement of services:	
(a) Utility services:	
(i) Relocation of services and payments to service owners	Provisional Sum
(ii) Handling cost and profit in respect of subitem B12.04(a)(i)	percentage (%)

The provisional sum item shall be paid in accordance with the provisions of the General Conditions of Contract subclause 6.6.1 as amended by the variations to the General Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Item	Unit
B12.05 Excavation by hand to determine the position existing services: cubic metre (m3)	
The unit of measurement shall be the cubic metre of material removed by hand to expose the existing services.	

The tendered rate shall include full compensation for all labour and tools required for removing the material.

Item	Unit
-------------	-------------

B12.06 CETA Accredited Training

- | | |
|---|----------------|
| (a) Technical Skills..... | Prov Sum |
| (b) Generic and Management Skills..... | Prov Sum |
| (c) Training Venue..... | Lump Sum |
| (d) Remuneration of workers undergoing technical skills training - Wages and Salaries of Local labour employed by the contractor and subcontractor in respect of training periods for on-site training by contractor during which no productive work is executed... Provisional sum | (P) |
| (e) Contractors charge to allow handling and profit in respect of subitem 12.06((a), (b) and (d)) | percentage (%) |

The prime cost item shall be paid in accordance with the provisions of the General Conditions of Contract sub-clause 6.6.2 as amended by Particular Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Payment of 50% of the amount quoted shall be kept in retention until such time as training certificates have been duly issued by the service provider.

Item	Unit
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B12.07 Remuneration of Community Liaison Officer and PLC

- | | |
|--|---------------------|
| (a) Community Liaison Officer | provisional (P) sum |
| (b) Project Co-ordinating Committee | provisional(P) sum |
| (c) Handling cost and profit in respect of subitem B12.07(a and b) | percentage (%) |

The prime cost item shall be paid in accordance with the provisions of the General Conditions of Contract sub-clause 6.6.2 as amended by Particular Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Item	Unit
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B12.10 Compensation to land owners.....Prov Sum

- | | |
|---|----------|
| (a) Cost of compensation to land owners | Prov Sum |
| (b) Handling costs and profit in respect off sub-clause B12.10 a) | % |

Expenditure of the above item shall be made in accordance with the general condition of contract.

The tendered % is a % of the actual amount spent under sub-items B12.10 a), which shall include full compensation for the handling costs and profit of the contractor.

Item	Unit
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B12.11 Remuneration of student training

(a) Student training provisional sum

(b) Handling costs and profit in respect of sub-item B12.11 (a) percentage (%)

Expenditure of the above item shall be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under the sub-item B12.09 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with providing student training."

Item	Unit
B12.12 Contractor's initial obligations in respect of the Occupational Health And Safety act (OHS), Covid-19 Regulations and Construction regulations 2014	Lump Sum

The full amount will be paid in one instalment only once: -

- (a) The contractor has notified the Provincial Director of the Department of Labour in writing of the project and to obtain construction permit.
- (b) The contractor has made the required initial appointments of employees and sub-contractors.
- (c) The client has approved the contractor's Health and Safety Plan.
- (d) Compliance with the Covid-19 Regulations
- (e) The contractor has set up his Health and Safety File.

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations, 2014) at all times for the full duration of the Contract, as described in clause B1228 of the project specifications. The successful Tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

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

B12.13 Submission of the Health and Safety File.....Lump Sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements with regard to the Health and Safety File and Approval.

B12.14 Contractor's initial obligations in respect of the EMP.....Lump Sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the EMP

**B4 SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND
GENERAL OBLIGATIONS**

B1301 GENERAL REQUIREMENTS

(c) Legal and contractual requirements and responsibility to the public

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall comply with all statutory and contractual requirements of the Environmental Management Programme, as included in the Project Document.

Separate items will be scheduled under payment item B13.01 (The contractor's general obligations) to cover the following components of the Contractor's preliminary and general costs, Contractor's General items (Clause 1.1.1.21 of the Conditions of Contract):

- (i) fixed,
- (ii) value-related and
- (iii) time-related in respect of the

1. Mobilisation Period:

Shall be the number of days as specified in Clause 1.1.1.35 in the Contract Data.

The Contractor shall note that on this Contract all costs associated with this period shall be deemed to be included in other rates.

2. Construction Period:

Shall be the number of days within which the Contractor has to complete the construction of the Works as specified in Clause 1.1.1.36 in the Contract Data, and as adjusted by such extensions of time or acceleration as may be allowed in terms of the Contract."

ADD THE FOLLOWING NEW SUBCLAUSE:

"(d) Contractor's ablution facilities

The Contractor shall, at each construction section, provide sufficient portable chemical latrine units. Furthermore, the Contractor shall also provide a portable chemical latrine unit at each temporary traffic control facility. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Engineer. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor's time-related obligations."

B1301 PAYMENT

Item

B13.01 The Contractor's general obligations:

DELETE SUBITEM(c) AND REPLACE WITH THE FOLLOWING:

- "(c) Time related obligations:
- (i) Mobilisation Period days
 - (ii) Construction Period month"

INSERT THE FOLLOWING PARAGRAPH AFTER THE FOURTH PARAGRAPH:

"Should the combined total tendered for subitems (a), (b), and (c) exceed 15% of the Tender Sum (excluding CPA, contingencies and VAT), the tenderer shall state his reasons in writing for tendering in this manner. The tenderer's attention is drawn to Form B1: Contractor's establishment on Site (bound in this Volume) to be completed by the tenderer."

After the paragraph starting with "Should the combined" Insert the following:

"In the 11th paragraph, the following amendments apply:

Delete "from the date on which the contractor has received the letter of acceptance in terms of clause 12 of the general conditions of contract" *and replace with* "for subitem 13.01(c)(i) Mobilisation Period from the Commencement Date in terms of Clause 1.1.1.5 of the General Conditions of Contract, until the end of the Mobilisation Period and for subitem 13.01(c)(ii) Construction Period from the end of the Mobilisation Period.

Payment for the Mobilisation Period shall only be made if such item B13.01(c)(i) is included in the Bill of Quantities".

DELETE THE SEVENTEENTH PARAGRAPH COMMENCING WITH"The tendered rate per month for subitem B13.01(c) ..." *AND REPLACE WITH:*

"The tendered rate per month for subitem B13.01(c) represents full compensation for that part of the Contractor's general obligations which is mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date until the end of the period for completion of the Works, plus any extension thereof as provided in Clause 5.12 of the General Conditions of Contract, provided that –

- (a) Should the works be certified as having been completed before the Due Completion Date, the Contractor will then be entitled to payments in regard to the unexpired period up to the approved Due Completion Date."

ADD THE FOLLOWING AT THE END OF THIS PAY ITEM:

"The amount payable to the Contractor for time-related costs arising from extensions of time granted by the Employer, where the Contractor is fairly entitled to such compensation in terms of Clause 5.12.3 of the General Conditions of Contract, shall be calculated by taking account of only payment items for which the unit of measurement is 'month'. All pay items for which the unit of measurement is 'month' shall be deemed to be based upon an average of 30 days per month."

B13.01 Contractor's time related obligation in respect of the month Occupational Health and Safety Act and Construction Regulations.

Payment of the rate per month shall include full compensation for all the contractor's obligation relevant to the Occupational Health and Safety Act No. 85 and Amendment Act No.181 of 1993, and OHSA 1993 Construction Regulations 2003 issued on the 18 July 2003 by the Department of Labour.

The rate must also include a full-time Traffic Safety Officer who will be full-time on site for the duration of the contract.

B13.01 Contractor's time related obligation in respect of the month Environmental Management Plan.

Payment of the rate per month shall include full compensation for all the contractor's obligations relevant to EMP.

The rate must also include a full-time Environmental Officer who will be full-time on site for the duration of the contract.

B5 SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL

B1402 OFFICES AND LABORATORIES

(a) General

ADD THE FOLLOWING AT THE END OF THE FIRST PARAGRAPH:

"Burglar-proofing shall comply with the requirements of CKS 338."

(b) Offices

ADD THE FOLLOWING SUBSUBCLAUSES:

"(xvi) The electric refrigerator shall have a capacity of at least 200 litres.

(xviii) Steel plan cabinets shall be able to accommodate one hundred and fifty A0-size drawings hanging vertically from approved holders

(xix) The electric refrigerator shall have a capacity of at least 200 litres.

(xx) Cell phones shall be supplied to the Engineer's site staff for the duration of the Contract. The Prime Cost Sum shall also include for the cost of all telephone calls in connection with contract administration."

(c) Laboratories

IN THE SECOND LINE OF THE SECOND PARAGRAPH, REPLACE "drawings" WITH "figure included in the project document or on the Drawings".

ADD THE FOLLOWING TO SUBSUBCLAUSE (xiv):

"The lengths of the baths are governed by the heating and water-circulation apparatus and the number of cubes to be stored, and must be approved by the Engineer before the baths are constructed."

ADD THE FOLLOWING TO SUBSUBCLAUSE (xv):

"The freezer compartment of the refrigerator shall have a capacity of approximately 50% of the volume of the refrigerator."

ADD THE FOLLOWING SUBCLAUSE:

"(i) Computers and printers

When instructed by the Engineer, the Contractor shall provide approved new computer equipment, including software and printers for use by the Engineer's site personnel. The type of equipment and software shall be as instructed by the Engineer and payment for equipment and maintenance shall be made through item B14.03.

All equipment provided shall be kept fully serviceable at all times by the Contractor. The Contractor shall repair/replace any defective equipment within 48 hours after notification by the Engineer's staff. The Contractor shall also be responsible to provide all paper and ink cartridges required by the Engineer.

At the end of the Contract, the equipment and software shall revert back to the Contractor."

B1403 **HOUSING**

(c) Rented accommodation

REPLACE THE FULL STOP AT THE END OF THE FIRST SENTENCE OF SUBSUBCLAUSE (c)(ii) WITH A COMMA AND ADD "and for all services connected with such accommodation."

B1408 **SERVICES**

(b) Water, electricity and gas

ADD THE FOLLOWING:

"The power supply shall be regulated by a suitable voltage regulator in order to maintain a constant current and voltage level at all times to prevent damage to the office and laboratory equipment and related machinery during power surges. Payment for the voltage regulator shall be deemed to be included in the rates tendered for the supply of power. In the event of damage to the office and laboratory equipment and related machinery because of a faulty voltage regulator, the Contractor shall be liable for payment of all repair or replacement costs of such damaged items."

(c) Maintenance

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall supply all labour, equipment and materials required for keeping the offices, laboratories, ablution units, car-ports at the offices and laboratories, and the housing for labourers in a neat and clean condition, and shall immediately undertake repairs requested by the Engineer to the offices, laboratories, ablution units, car-ports, rented houses and the housing for labourers. The Contractor is not responsible for keeping rented houses in a clean and neat condition, nor for tending to or caring for the gardens."

B1406 **MEASUREMENT AND PAYMENT**

Item	Unit
The variation items in the BOQ are self-explanatory.	
Measurement and payment in respect of the provisional and prime sums items shall be made in accordance with the provision of the general conditions of contract.	
The tendered percentages are percentages of the amount actual spent, which shall include full compensation for handling costs of the contractor and profit in connection with the payment of the cost of services relating to the use by the engineer's site staff of the services.	
Add the following item:	

Item	Unit
B14.01 Provision of offices, accommodation and laboratory	
a) Office accommodation for the Resident Engineer staff, including all furniture, services and carports.	Lump-Sum
(b) 80m ² laboratory including all furniture and fittings, installation for soils and asphalt testing and services, excluding apparatus.	Lump-Sum

- c) Open concrete working floors, 100mm thick including roof over. m²
- (e) ablution units and kitchen area (20 m²), including fittings, services and utensils. m²

The tendered lump sum shall be in full compensation for supplying and erecting the accommodation, fittings and furniture as specifications and shown on the drawings, and for the proper maintenance and the subsequent removal thereof from the site on the completion of works.

<i>Item</i>	<i>Unit</i>
B14.03 Office and laboratory fittings, installations and equipment	
b) Prov Sum items	Prov.Sum
Add the following sub-items:	
(i) The provision of telephone services, cellular services contracts including cell phones for all supervisory staff.	Prov.Sum
(ii) The provision of 3G data services, mobile contracts including 3G modems	Prov.Sum
(iii) The provision of computer hardware and software facilities for the supervisory staff.	Prov.Sum.
(iv) The provision of printing, copying, scanning and digital cameras facilities for the supervisory staff.	Prov.Sum
(v) Handling cost and profit in respect of subitem 14.03(b).....	Percentage (%)

The tendered percentage is a percentage of the amount actually spent under sub-item B14.03 (b).

Expenditure under this item shall be made in accordance with the General Conditions of Contract.

The tendered percentage is a percentage of the amount actually spent under subitem B14.03(b), which shall include full compensation for the handling costs of the Contractor, and the profit in connection with providing the specified equipment."

B14.07 Rented hotel and other accommodation, including offices

a): Provisional sum for providing rented housing, hotel or other accommodation, fully furnished and including services. **Prov Sum.**

b) Handling costs and profit in respect of sub-item B14.07(a) **Percentage (%)**

Expenditure under this item shall be made in accordance with the general condition of contract.

The tendered percentage is a percentage of the actually spent under sub-item 14.07(a), which shall include full compensation for the handling costs of the contractor and the profit in connection with providing the rented accommodations.

Item	Unit
B14.11 Provision and erection of security fencing (including gate) (m)	

The unit of measurement shall be in metre of security fence supplied and erected as indicated in the drawings and/or ordered by the engineer (B14.02) above. The tendered rate shall include full compensation for procuring and furnishing of all material, including two vehicle gate, labour and

equipment required to erect the specified security fence, maintain it for the duration of the contract and eventually removal at the completion of the contract.

General: Method of payment

Add the following:

"The tendered rates under this section of BOQ shall also include full compensation for dismantling and removal from site of all offices, laboratories and other facilities provided for the engineers supervisory staff at the completion of contract."

B6 SECTION 1500: ACCOMMODATION OF TRAFFIC

B1501 SCOPE

ADD THE FOLLOWING:

"This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public."

B1502 GENERAL REQUIREMENTS

(a) Safety

ADD THE FOLLOWING:

"Should the Contractor park any of his vehicles within the road reserve at night, it shall be done in such a way that the vehicle is more than 6 m away from the shoulder of the road and it shall be properly illuminated and signposted to ensure safe passing by motorists."

(b) Providing temporary deviations

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall keep the provincial traffic police and the Engineer fully informed of changes in the normal traffic flow and obtain their approval for these changes."

(f) Approval of temporary deviations

ADD THE FOLLOWING:

"If, after any temporary deviation has been constructed, any changes are considered necessary or desirable, the proposal shall be submitted to the Engineer for his approval."

(i) Traffic Safety Officer

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"The Contractor shall submit a Curriculum Vitae of the candidate to the Engineer for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall make himself available to discuss road safety and traffic accommodation matters whenever required by the Engineer."

REPLACE SUBSUBCLAUSES (ii) AND (iii) WITH THE FOLLOWING:

- "(ii) Record on neat and dimensioned sketches and submit to the Engineer the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each shall be adequately referenced to identifiable permanent features located along the site of the Works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the Traffic Safety Officer and shall be signed by the Traffic Safety Officer before being submitted to the Engineer.

The records shall be amended whenever changes are made in the field and the revised detailed sketches shall be submitted to the Engineer. This shall include the recording of the position of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used.

- (iii) Personally inspect the position and condition of each traffic accommodation feature on the whole site of the Works twice each day, 9:30 and 16:30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Engineer such record sheets by 10:00 and by 17:00 each day. The Traffic Safety Officer shall keep a duplicate book for this specific purpose.

The Traffic Safety Officer shall also submit to the Engineer by 10:00 each morning, a record of all matters pertinent to site safety and traffic accommodation throughout the site of the Works the previous day. He shall also record the daily labour returns of flagmen, stop/go and traffic signal control men employed.

The Traffic Safety Officer shall be equipped with a cellular telephone and shall have a vehicle and three labourers at his disposal 24 hours a day and he shall be directly answerable to the Contractor's Site Agent. The traffic safety vehicle shall be a truck with a capacity of 5 tons and shall be equipped with a high visibility rear panel in accordance with the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual. The Traffic Safety Officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within the limits of the Contract. The provision of the road safety vehicle, driver, three labourers and the cost of the cellular telephone shall be deemed to be included in the rates tendered for the Contractor's establishment on Site."

ADD THE FOLLOWING SUBSUBCLAUSES:

- "(ix) Ensure that all obstructions related to the Contractor's activities be removed before nightfall where applicable and instructed by the Engineer and that the roads are safe for night traffic.
- (x) The Traffic Safety Officer shall also be responsible for arranging the removal of broken down vehicles off the roadway and implementing actions requested by the traffic authorities with regard to the work to be carried out and for the erection and maintenance of all traffic signs necessary for the accommodation of traffic."

ADD THE FOLLOWING SUBCLAUSES:

"(j) Failure to comply with provisions

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public traffic, accommodation of traffic, plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Engineer, shall be sufficient cause for the Engineer to deduct penalties as follows:

- A fixed penalty of **R5 000,00** per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of Section 1500 of the Standard Specifications and/or the Project Specifications.
- In addition, a time-related penalty of **R500,00** per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Engineer. The Engineer's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

(k) Public traffic

The travelling public shall have right of way on public roads. The Contractor shall arrange his activities so as to bring about the least possible disruption to the traffic on the roads on which he works.

The closure of one lane of the road shall only be done:

- on written instruction of the Engineer,
- after approval of a specific accommodation of traffic detail,
- subject to all the road signs and markings being implemented and
- subject to such other conditions as the Engineer would reasonably require to ensure the safety of the travelling public.

The closure of more than one lane of traffic will only be considered in exceptional cases. The Engineer shall determine the maximum period for which such a closure may be allowed. It is also an express provision that such an eventuality will be controlled by the traffic authority concerned. Should the traffic authority not be available for such control, the Contractor shall control such an event, provided that he has proven that he has exercised his best endeavours and taken all actions timeously to involve the traffic authority to control the traffic. No additional payment will be made for such control by the Contractor and the rates tendered for Section 1500 will be deemed to include full compensation for all costs pertaining to such control.

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public in accordance with these specifications or as required by the Engineer or the traffic authorities shall be sufficient cause for the closing down of all work under this Contract until all provisions prescribed have been complied with to the satisfaction of the Engineer.

(l) Handing over the Site

The road reserves of all the roads to be constructed under this Contract will be handed over to the Contractor at commencement of the Contract. The Contractor will be permitted to work on any structure or service provided that a free and safe flow of traffic is maintained at all times and that the requirements of the Specifications are complied with.

The Contractor's programme for the accommodation of traffic and any proposed deviation from the approved programme shall be subject to the Engineer's approval."

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"All temporary road signs, devices, sequences, layouts and spacings shall comply with the requirements set out in the National Road Traffic Act, 1996 (Act No 93 of 1996), the National Road

Traffic Regulations, 2000 of the relevant authorities and on the Drawings or as instructed by the Engineer.

The Contractor shall indemnify the Employer against all proceedings, claims, actions, damages and costs which may arise from or be related to the absence or improper functioning or placement of road traffic signs, barricades, traffic-control facilities, channelization devices and warning devices.

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"The type of construction, spacing and placement of traffic-control devices shall be in accordance with Volume 2 of The South African Road Traffic Signs Manual (in particular Part 13), these special provisions and the Drawings. The recommended arrangements of the traffic-control devices illustrated in Part 13 of the above Manual and/or Drawings shall not be departed from without prior approval of the Engineer. The arrangements expected to be most commonly used on the Contract are given on the tender drawings.

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

(a) Traffic-control devices

REPLACE THE SECOND SENTENCE OF THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Two-way communication systems in good working condition shall be available at both ends of those sections of the works where the road is barricaded and only one-way traffic is accommodated. A standby communication system set in good working order shall also be made available."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"The Contractor shall provide portable shelters to protect his personnel who regulate the STOP and GO-RY signs against the elements. The personnel regulating the traffic shall at all times wear reflective safety jackets."

(b) Road signs and barricades

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

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

All temporary road signs shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted ballasting of the sign supports shall be by using durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included for in the tendered rates for the various types of temporary road signs.

The traffic-control devices, temporary signs and devices required in the Contract are those designated in Part 13 of Volume 2 of the South African Road Traffic Signs Manual.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regards to signposting are met and written approval of the Engineer is obtained. The Contractor shall keep sufficient surplus signs, delineators and barricades on the site to allow for the immediate replacement of damaged or missing items, in any case, within three hours of instructions having been given by the

Engineer. Delineators shall be of the flexible plastic reversible variety and not of the rigid metal variety.

Should the Contractor fail to respond to an instruction to re-erect a road sign within three hours or fail to comply to the requirements, the work on that section will be suspended without any compensation to the Contractor."

(c) Channelization devices and barricades

ADD THE FOLLOWING PARAGRAPHS:

"Drums shall not be used as channelization devices.

TW 401 and TW 402 delineators shall comply with the following requirements:

- (i) They shall be manufactured from a flexible material and shall comply with SANS 1555:2011. The blade portion of the delineator shall be positively affixed to a base unit which in turn shall be stable on its own or be stabilized by means of sandbags when used on the road.
- (ii) The blade shall be retro-reflectorised, with Class I yellow sheeting on the side facing oncoming traffic.
- (iii) It shall be nominally 1 000 mm high x 250 mm wide and the bottom edge of the delineator shall not be more than 200 mm above the road surface.
- (iv) The delineators shall be subject to the approval of the Engineer.
- (v) The maximum spacing between centres of delineators shall be as shown on the Drawings or as directed by the Engineer.

(d) Barriers

ADD THE FOLLOWING:

"Guardrails mounted on steel drums shall not be used as barriers."

(e) Warning devices

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

"The flashing lights shall have a minimum intensity of 55 W."

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"The warning boards shall be at least 1,5 m above ground level."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"All construction vehicles and Plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. Clearance permits for all vehicles and Plant shall be obtained from the Engineer before being allowed onto the Site.

Rotating lights shall have an amber lens with a minimum height of 200 mm and shall be mounted in order to be clearly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, and as the vehicles accelerate to the general speed when entering the road from a construction

area. Lights on Plant shall operate continuously while the Plant is working alongside sections of road open to public traffic.

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

The Contractor shall provide the Engineer with four (4) rotating amber-coloured flashing lights. These lights shall be at least 200 mm high, shall have magnetic bases and must be equipped with fittings to draw power from a cigarette lighter point in a vehicle. No separate payment will be made for the supply and maintenance of these flashing lights and full compensation therefor shall be included in the rates tendered for in Section 1500.

Rotating lights and the 'Construction Vehicle' signs on the Contractor's vehicles and Plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles.

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

ADD THE FOLLOWING SUBCLAUSES:

"(g) Safety jackets

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way. Any person found not wearing a reflective jacket under these circumstances shall be removed from the Site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Engineer, ineffective shall be replaced immediately by the Contractor.

The Engineer, his personnel and visitors shall wear safety jackets at all times when they move about the Site. The Contractor shall provide the Engineer with safety jackets. The safety jackets shall be orange in colour and shall be submitted for the Engineer's approval before they are purchased. Payment for the safety jackets will be made under item B15.14(b).

(h) Other signs or facilities

The Engineer may instruct the Contractor to provide any other road sign, reflective tape, etc not measured in standard pay items. The road signs shall conform to the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual, or specification provided by the Engineer.

The Contractor shall inform the general public of the intended road works, construction period and accommodation of traffic proposal through press releases in local and provincial newspapers."

B1504 WIDTH AND LENGTH OF TEMPORARY DIVERSIONS

REPLACE "10 m" IN THE FIRST SENTENCE OF THE FIRST PARAGRAPH WITH "8 m."

B1505 TEMPORARY DRAINAGE WORKS

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"The construction of temporary culverts shall be in accordance with Section 2200. Temporary culverts no longer required shall be removed as directed by the Engineer. Excavations shall be backfilled with suitable granular material and compacted to the densities specified by the Engineer."

B1507 GRAVELLING OF TEMPORARY DEVIATIONS OR OF EXISTING ROADS USED AS TEMPORARY DEVIATIONS

ADD THE FOLLOWING TO THE SECOND PARAGRAPH:

"The gravel material laid on existing roads used as diversions shall comply with the following:

Maximum size	: 37,5 mm
Oversize index (Io)	: 0 (% retained on 37,5 mm sieve)
Shrinkage products (Sp)	: 100 - 240 (linear shrinkage x % passing 0,425 mm sieve)
Grading coefficient (Gc)	: 16 - 34 [(% passing 26,5 mm - % passing 2,0 mm) x % passing 4,75 mm/100]
CBR	: ≥ 15 at 93% of modified AASHTO density."

ADD THE FOLLOWING CLAUSES:

"B1518 RETRO-REFLECTIVE MATERIAL

Retro-reflective material for temporary signs shall comply with the requirements of SANS 1519-2:2000. Tests shall be carried out with a field retro-reflectometer and the testing procedure and classification are described in clause B8118.

B1517 MEASUREMENT AND PAYMENT

Item

B15.01 Accommodating traffic and maintaining temporary deviations

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"The accommodation of traffic and the maintenance of deviations shall be measured once only along the centre line of the road, irrespective of the type of work to be executed or the number of times necessary to accommodate traffic over any particular part of the road.

The limits for any particular section of road over which traffic has to be accommodated and deviations have to be maintained shall be the distance measured between the limits of construction of the particular section of road under consideration. Only the net distance of the road shall be measured and overlapping distance during staged rehabilitation shall not be measured.

The tendered rate shall also include the watering of the temporary deviations twice a day. Any additional watering of the temporary deviations, as instructed by the Engineer shall be paid under payment item 15.06.

The tendered rate shall also include the blading of temporary deviations once a week. Any additional balding of the temporary deviations, as instructed by the Engineer shall be paid under payment item 15.07(a)."

B7 SECTION B1600: OVERHAUL

B1602 DEFINITIONS

(b) Overhaul

DELETE THE SUBCLAUSE AND REPLACE WITH:

"Payment shall only be made for material hauled in excess of 1,0 km. Overhaul shall be measured as the product of the volume of material hauled and the overhaul distance."

(d) Free-haul distance

REPLACE THE LAST SENTENCE WITH:

"This distance shall be 1,0 km in the case of all overhaul materials and this specification shall be deemed to have replaced the 'free-haul' distance in all other sections of the standard specifications."

B1603 MEASUREMENT AND PAYMENT

AMEND THE DESCRIPTION OF PAYMENT ITEM 16.02 AS FOLLOWS:

"Item	Unit
B16.02 Overhaul on material hauled in excess of 1,0 km	cubic metre-kilometre (m³-km)"

DELETE THE FIRST PARAGRAPH OF THE FIRST SET OF NOTES AND REPLACE IT WITH THE FOLLOWING:

"Only ordinary overhaul for haul in excess of 1,0 km will apply to all type of fill and layerwork materials. No restricted overhaul will be applicable on this Contract."

B8 SECTION B1700: CLEARING AND GRUBBING

B1702 DESCRIPTION OF WORK

(a) Clearing

ADD "of the roadway and for temporary deviations/roads" AFTER "Clearing" IN THE FIRST PARAGRAPH.

(b) Grubbing

ADD "and along temporary deviations/roads," AFTER "In the roadway" IN THE FIRST PARAGRAPH.

B1703 EXECUTION OF WORK

(a) Areas to be cleared and grubbed

REPLACE THE FIRST SENTENCE OF THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The portions of the road reserve falling within the limits of the road prism, along temporary deviations/roads and certain borrow areas, shall be cleared and grubbed using conventional methods."

DELETE "normally" IN THE SECOND LINE OF THE SECOND PARAGRAPH.

(c) Disposal of material

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall dispose of all trees, tree stumps, rubble, undesirable material removed from hydraulic structures, refuse, and all non-combustible rubbish at approved dumping sites provided by the Contractor. The material disposed of shall be covered up with soil or gravel. No extra-over or additional payment will be made for disposing of and covering up material and full compensation for this work will be deemed to be included in the rate tendered for item B17.01."

(e) Cleaning out of hydraulic structures

ADD THE FOLLOWING:

"The cleaning of hydraulic structures shall involve the removal of all undesirable materials such as earth, sand, gravel, stones and mud until the structures are completely clean, and the debris is disposed of at approved dumping sites provided by the Contractor."

B1704 MEASUREMENT AND PAYMENT

Item	Unit
B17.01 Clearing and grubbing	hectare (ha)

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"The tendered rates shall include full compensation for all work necessary for the clearing and grubbing of the surface, the demolishing and disposal of structures, shelters, dwellings and out-buildings, the removal of all vegetation, shrubs, trees and tree stumps (except large trees and stumps as defined in item 17.02), cutting of branches, backfilling of cavities, the removal, transporting (including all haul) and disposal of material at approved dumping sites provided by the Contractor, and all additional costs incurred to clear and grub the surfaces to the Engineer's satisfaction.

Clearing and grubbing of borrow areas will only be measured and paid for in the cases specified in Clause 3104(b)."

ADD THE FOLLOWING TO THE MEASUREMENT AND PAYMENT PARAGRAPHS:

"Clearing and grubbing for the construction of camp sites shall not be measured separately. Payment shall be regarded as included in the rates tendered for the applicable items under item B13.01."

Item	Unit
B17.07 Removal of topsoil and unsuitable material and temporary Stock-piling thereof in:	
(a) Topsoil in windrows alongside the work area	cubic metre (m ³)
(b) Topsoil in windrows on the edges of borrow-pits or spoil areas	cubic metre (m ³)

The unit of measurement for items (a) to (b) shall be the cubic metre of topsoil removed to windrow or temporary stockpile. The volume of topsoil removed shall be measured in cut, calculated from the difference in cross-sections of the natural ground level before the commencement of clearing to cross-sections taken after the removal of the topsoil.

The unit of measurement for item (b) shall be the cubic metre of material placed in stockpile at the borrow pit.

The contractor shall constantly liaise and agree with the engineer as to the depth of topsoil to be removed. Where, in the opinion of the engineer, material that would not normally be classed as topsoil to be removed. Where, in the opinion of the engineer, material that would normally be classed as topsoil has also been excavated, the excavation shall be backfilled and compacted with selected material at the contractor's expense. Should material that is deemed by the engineer not to be topsoil, be removed and stockpiled together with material classed as topsoil, the contractor shall be responsible for the removal of this unsuitable soil from the stockpile and the replacement of the quantity of topsoil contaminated by the unsuitable material at his cost. The quantity of topsoil to be replaced shall be determined by the engineer.

The rates tendered shall include for the excavation of the topsoil and where required, the loading and hauling thereof to temporary stockpile as well as the maintenance of the stockpile until re-use of the material. The rates tendered shall also include for all supervision required to ensure that only topsoil is removed."

B9 SECTION B1800: DAYWORKS

B1801 SCOPE

This section covers the listing of daywork items in accordance with the General Conditions of Contract, Clause 6.5, determining payment for work which cannot be quantified in specific units in the Bill of Quantities, or for work ordered by the Engineer during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities.

B1802 ORDERING OF DAYWORK

No daywork shall be undertaken unless written authorisation has been obtained from the Engineer.

B1803 MEASUREMENT AND PAYMENT

Item	Unit
B18.01 Labourers	
(i) Unskilled Labourers:	hour (h)
(i) Semi-Skilled Labourers:	hour (h)
(ii) Skilled Labourers:	hour (h)
B18.02 Foreman:	hour (h)
B18.03 Trucks:	hour (h)
(i) 6m3.....	hour (h)
(ii) 10m3.....	hour (h)
B18.04 TLB:	hour (h)
B18.05 Loader (up to 2m3 bucket):	hour (h)
B18.06 Grader (140G or Similar:	hour (h)
B18.07 Vibratory Roller:	hour (h)
B18.08 Grid Roller:	hour (h)
B18.09 Pedestrian Roller:	hour (h)
B18.10 Water Tanker (18kl):	hour (h)
B18.11 Chainsaw:	hour (h)
B18.12 Mechanical Broom:	hour (h)
B18.13 LDV:	hour (h)
B18.14 Recycler /Milling Machine:	hour (h)
B18.15 Excavator:	hour (h)
(i) 20ton.....	hour (h)
(ii) 23ton.....	hour (h)
(iii) 30ton.....	hour (h)

The unit of measurement for items B18.01, B18.02, B18.03, B18.04, B18.05, B18.06, B18.07, B18.08, B18.09, B18.10, B18.11, B18.12, B18.13 B18.14 and B18.15 shall be the hour for the item of equipment or personnel. Non-working hours for transport breakdown, lack of operator of any other reason shall not be measured. The time shall be taken from the time that the personnel and/or equipment depart until return.

Measurement shall only be for work instructed and directed by the engineer, where the engineer considers no other appropriate rate is applicable in the Pricing Schedule. Prior to the commencement of any work by the personnel described under item B18.01 and B18.02 the contractor must obtain written consent from the engineer regarding their classification in terms of "unskilled", semi-skilled" and "skilled" personnel.

The tendered rates under B18.01 and B18.02 shall include full compensation to cover overhead charges and profit, leave pay, bonuses, subsistence, allowances, Employer's contributions, additional payment for overtime where applicable, insurances, housing, site supervision, use of small hand tools and appliances, non -mechanical plant and equipment and consumable stores, for all administrative, supervisory, operative and contingent costs, relating to the supply of personnel.

The tendered rates for plant for item B18.03, B18.04, B18.05, B18.06, B18.07, B18.08, B18.09, B18.10, B18.11, B18.12, B18.13 and B18.14 shall be an all-inclusive hire charge for the use of the vehicle and driver or plant/equipment and operator and shall apply only to vehicles plant and equipment nominated in writing by the engineer, for all administrative, supervisory, operative and contingent cost, and profit relating to the running of the plant.

The tendered rate for item B18.13 shall include full compensation for the cost of the vehicle including fuel, maintenance depreciation and running costs.

The above-mentioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid.

B10 SECTION 2100: DRAINS

B2107 MEASUREMENT AND PAYMENT

Item

B21.01 Excavation for open drains

ADD THE FOLLOWING TO THE THIRD PARAGRAPH:

"The tendered rate shall also include full compensation for trimming the open drains."

ADD THE FOLLOWING ITEMS:

Item

Unit

B21.01 Excavation for open drains

- (a)** Excavating soft and intermediate material, irrespective of depth, **cubic metre (m³)**
- (b)** Extra over subitem B21.01 (a) for excavation in hard material, irrespective of depth.....**cubic metre (m³)**

The unit of measurement is the cubic metre of material excavated from the open drains as instructed by the Engineer. Quantities shall be calculated as being the product of the length of open drain excavated times the average width and depth, in accordance with cross-sections taken at 20 m intervals.

The tendered rates shall include full compensation for excavating, shaping, cleaning and trimming the open drains and for disposal of the resulting material at approved dumping sites provided by the Contractor, including all haul.

Payment shall distinguish between soft, medium and hard material as defined in Clause B1231 (c) of the project specifications.

B11 SECTION 2200: PREFABRICATED CULVERTS

B2204 CONSTRUCTION METHODS

ADD THE FOLLOWING:

"Culverts shall be installed by the 'trench method'.

When instructed by the Engineer, measures shall be taken to reduce the effect of unsuitable material at the positions of prefabricated culverts. This will entail the additional excavation of a minimum of 1,0 m of in-situ material to a minimum width of 4,0 m, the even chamfering of the sides of the excavation to a grade of 1:4 and backfilling the excavation with imported fill material with at least G9 quality compacted to 90% of modified AASHTO density. Additional excavation as described above will be paid for under item 33.07. Backfilling of the excavation will be measured and paid for under item 33.01."

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD

(a) Depth of excavation

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"The maximum overall depth of the trench shall, however, not exceed 2,0 m."

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS

(a) Concrete pipe culverts

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"When instructed by the Engineer or when measures are required to reduce the effect of unsuitable material below culverts, the pipe joints shall be sealed with a 500 mm wide strip of waterproofing material glued symmetrically around the joint. A 150 mm wide strip of adhesive shall be applied to the edges of the material. An overlap of 150 mm shall be provided and the two (2) layers of the material at the overlap shall be glued together over the full area of 150 mm x 500 mm."

(b) Portal and rectangular culverts

(iii) Placing the portal portions of culverts

ADD THE FOLLOWING:

"When instructed by the Engineer or when measures are required to reduce the effect of unsuitable material below culverts, the joints shall be sealed with a 500 mm wide strip of waterproofing material glued symmetrically around the joint. A 150 mm wide strip of adhesive shall be applied to the edges of the material. An overlap of 150 mm shall be provided and the two (2) layers of the material at the overlap shall be glued together over the full area of 150 mm x 500 mm."

B2212INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES

(i) Prefabricated energy dissipaters in outlet structures

REPLACE THE PARAGRAPH WITH THE FOLLOWING:

"When shown on the Drawings or instructed by the Engineer, the Contractor shall supply and install prefabricated reinforced-concrete blocks in outlet structures. The blocks shall be Class 20/19 concrete manufactured to the dimensions shown on the Drawings or listed in the Bill of Quantities. All concrete work shall comply with the requirements of Series 6000."

B2215 SERVICE DUCTS

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"The end of each duct shall be marked with a 300 mm x 300 mm x 100 mm Class 20/19 concrete marker block. A 200 mm x 100 mm galvanized steel or aluminium plate with the size, number and depth of pipes stamped on the surface shall be affixed to the top of the marker block. Each duct marker shall be at least 50 mm proud of the finished surface level."

B2218 MEASUREMENT AND PAYMENT

Item	Unit
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B22.02 Backfilling:

REPLACE THE DESCRIPTION OF SUBITEM 22.02(c) WITH THE FOLLOWING:

"(c) Extra over subitems B22.02(a) and (b) for soil cement (soilcrete) backfilling (percentage of cement indicated)"

Item

B22.03 Concrete pipe culverts

ADD THE FOLLOWING TO THE FOURTH PARAGRAPH:

"The standard length of a concrete pipe is 2,44 m."

REPLACE PAYMENT ITEM 22.14 WITH THE FOLLOWING:

Item	Unit
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B22.14 Removing and stacking existing prefabricated culverts (all sizes).....	metre (m)
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The unit of measurement is the metre of existing culvert removed and stacked as instructed by the Engineer.

The tendered rate shall include full compensation for lifting, loading, transporting to stack, off-loading and stacking the culverts. The free-haul distance is 5,0 km.

Payment for the excavation and backfilling (including all layerworks) required to remove and stack existing prefabricated culverts will be made separately under payment items B22.01 and B22.02."

REPLACE ITEM 22.26 WITH THE FOLLOWING:

"Item	Unit
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B22.26 Hand excavation:

(a) To determine the positions of existing services:

(i) In all other areas cubic metre (m³)

The unit of measurement is the cubic metre of material excavated within the lengths and widths authorised by the Engineer and the depth required to expose the service. Excavation in excess of the authorised dimensions will not be measured for payment.

The tendered rates shall include full compensation for all excavation, backfilling, compacting to 90% of modified AASHTO density, disposing of surplus excavated material, demarcating excavations with approved safety tape, keeping the excavations safe, dealing with surface or subsurface water, taking special care to ensure that services are not damaged in any way, and all other operations required to complete the work. The tendered rates shall also include for transporting surplus excavated material for a free-haul distance of 1,0 km.

No distinction will be made between hard and soft materials, nor will distinctions be made between the various types of service to be exposed or the depths to which excavations are taken.

When instructed by the Engineer, the reinstatement of the pavement layers, surfacing and kerbing will be measured for payment under item 22.27.

NB The Contractor shall supply adequate supervision of labourers excavating to expose services. Damage to a service caused by the Contractor shall be repaired at his expense, to the satisfaction of the owner of the service and the Engineer."

REPLACE PAYMENT ITEM 22.28 WITH THE FOLLOWING:

ADD THE FOLLOWING ITEM:

"Item	Unit
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B22.29 Waterproofing of prefabricated culvert joints with a 500 mm wide strip of Bituthene 3000 or an approved equivalent material metre (m)

The unit of measurement is the metre of 500 mm wide strips of Bituthene 3000 or an approved equivalent material glued over the joints. The specified 150 mm overlap will also be measured for payment.

The tendered rate shall include full compensation for procuring, furnishing, installing and glueing the Bituthene strip, including the adhesive, as specified."

B12 SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS

B2302 MATERIALS

(b) Kerbing and channelling

ADD THE FOLLOWING:

"Irrespective of the minimum transverse strength specified in SANS 927, all concrete shall be class 30/19."

B2304 CONSTRUCTION

(e) Cast in situ kerbs and channels

ADD THE FOLLOWING:

"Cast in situ kerbs, channels and edge beams shall be provided with a contraction joint every 2,0 m and an expansion joint every 20 m. The contact area of the contraction joint shall be painted with two coats of bitumen. Alternatively, joints may be cut and finished to a depth of 50 mm. The expansion joint shall consist of 12 mm thick Flexcell or an approved equivalent placed between adjoining concrete sections. The top part of the joint shall be sealed with a 12 mm x 12 mm silicone sealant. All joints shall be provided for the full depth of the concrete."

(k) Cutting existing bituminous surfacing and pavement layers

REPLACE THE PARAGRAPH WITH THE FOLLOWING:

"Where the Engineer instructs kerbing, edge beams, channelling or concrete-lined drains to be constructed against existing bituminous surfacing and pavement layers, the full depth of the bituminous surfacing and pavement layers shall be accurately cut with a mechanical saw to the required line and level before the kerbing, edge beams, channelling or concrete-lined drain is constructed. The cut edge shall be vertical for kerbing, edge beams, concrete-lined drains and channelling. The concrete shall be placed directly against the cut edge without formwork. All material outside the cut edge shall be removed to the required depth before the concrete is placed, and the debris shall be disposed of at approved dumping sites provided by the Contractor. The bituminous surfacing shall be protected and kept clean to the Engineer's satisfaction."

B2307 MEASUREMENT AND PAYMENT

REPLACE THE DESCRIPTION OF PAYMENT ITEM 23.01 WITH THE FOLLOWING:

"Item	Unit
B23.01 Concrete kerbing, including joints <i>(class of concrete indicated for in situ concrete)</i>	metre (m)"

ADD THE FOLLOWING TO THE PAYMENT PARAGRAPH:

"The tendered rates shall also include full compensation for the construction of expansion and contraction joints as specified."

Item

B23.07 Trimming of excavations for concrete-lined opendrain

*IN THE SECOND PARAGRAPH, COMMENCING WITH "The tendered rates shall",
DELETE IN THE FIFTH, SIXTH AND SEVENTH LINES THE FOLLOWING WORDS
"including removing unsuitable ground and backfilling with suitable material."*

REPLACE THE DESCRIPTION OF PAYMENT ITEM 23.14 AS FOLLOWS:

"Item

Unit

**B23.14 Cutting bituminous surfacing and pavement layers
for concrete kerbing, edge beams, channelling or
concrete-lined drains"**

B13 SECTION 3100: BORROW MATERIALS

B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES

ADD THE FOLLOWING AFTER SUBCLAUSE (a):

"Before the Contractor enters private property to open borrow pits, construct access roads, temporarily occupy certain land or inspect the relevant areas, he shall negotiate with the owners concerned and advise them of his intentions, in accordance with the relevant ordinances.

The Employer will negotiate with landowners only with regard to compensation for gravel material obtained from borrow pits, but not for rock which shall be the responsibility of the Contractor, and who will subsequently pay such compensation to the owners.

The Contractor shall adhere to the Environmental Management Plan for borrow pits as prepared in accordance with the requirements of the Department of Mineral Resources, for the North West Province: Department of Public Works and Roads for any of the stated borrow pits he intends to develop. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction material spoiled within these sites shall be buried to a depth of no less than 300 mm below the surface soil. No construction material of any nature shall be left visible after topsoiling. The Engineer shall confirm this before grassing commences. The area shall be kept free of all undesirable plant material.

Should the Contractor intend to utilize any new borrow pits, an environmental management plan (EMP) should be drawn up to the requirements of and for the approval of the Department of Mineral Resources before opening such borrow pits.

The Contractor is also responsible for rehabilitating the borrow pits after completion of the project in accordance with the approved EMP."

ADD THE FOLLOWING NEW PARAGRAPHS TO THE END OF THIS SUBCLAUSE:

"The Engineer shall instruct the Contractor as to the applicable usage of borrow pits always employing the best economic alternative (lowest cost in terms of tendered rates) taking cognizance of the following:

- Quality of material;
- Haulage distance;

- Hardness of material;
- Overburden.

Under no circumstances shall the Contractor be entitled to any additional compensation in respect of any instruction by the Engineer as to the usage of borrow pit material."

B3103 OBTAINING BORROW MATERIALS

Add the following paragraph:

"The contractor shall adhere to the requirements within the environmental management plan for the preparation of the area to be utilised as a borrow pit. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction material spoiled within these sites shall be buried to a depth of no less than 300mm below the surface soil. No construction material of any nature shall be left visible after top soiling. The engineer shall confirm this before grassing commences. The area shall be kept free of all undesirable plant material refer (5807(e))."

Careful selection of materials will be required in the borrow pits. The contractor shall refer to section 3200 of standard specifications with regard to his liabilities in respect of the contamination of good quality materials.

B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS

(a) Removing topsoil

ADD THE FOLLOWING:

"The topsoil shall not be stockpiled for longer than 6 months, nor shall the stockpile be higher than 2,5 m."

(c) Excess overburden

ADD THE FOLLOWING:

"In the case of the quarries and borrow pits, suitable overburden shall be used as fill and the Contractor must plan his operations accordingly and no payment will be made for stockpiling."

(d) Excavating borrow material

ADD THE FOLLOWING:

"The Contractor shall at all times ensure that the removal of the material is carried out in such a manner that the stability of the exposed faces is not prejudiced and safe working conditions are maintained."

B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS

(a) Borrow areas

ADD THE FOLLOWING AFTER THE FOURTH PARAGRAPH:

"The finishing-off of the borrow areas shall also be in accordance with the approved EMP."

B3108 MEASUREMENT AND PAYMENT

Item **Unit**

B31.03 Finishing-off borrow areas in:

ADD THE FOLLOWING:

"Finishing-off of borrow areas using conventional construction equipment shall be in accordance with clause B3105."

Item **Unit**

B3104 Protecting Borrow pits

- a) Stock proof fencing as per detail, all-inclusivekm.
- b) Corner post as per detail, all-inclusive.....no.
- c) Gates, all-inclusive.....no.

The unit of measurement shall be the km of fence supplied and erected as indicated on the drawings and/or ordered by the engineer. Separate payment will be made per corner post and/or gate supplied of all material, labour and equipment required to erect the specified security fence, maintaining for the duration of the contract and removal at the end of the contract.

B14 SECTION 3200: SELECTION, STOCKPILING AND BREAKING DOWN THE MATERIAL FROM BORROW PITS AND CUTTINGS, AND PLACING AND COMPACTING THE GRAVEL LAYERS

B3201 SCOPE

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"For safety reasons, all material for the construction of layerworks dumped in heaps next to the road surface where traffic is accommodated, shall be flattened on the same day. Payment for this activity shall be deemed to be included in the relevant tendered rates under Sections 3300, 3400 and 3600."

B3203 STOCKPILING THE MATERIAL

IN THE THIRD PARAGRAPH, REPLACE THE SECOND AND THIRD SENTENCES WITH:

"Before any stockpiling may be done the area shall be cleared of topsoil to a sufficient depth that will subsequently allow for the complete rehabilitation of the site with a cover of topsoil that does not exceed 100 mm in depth and is not less than 75 mm in depth. If there is insufficient topsoil; the Contractor shall acquire whatever balance is needed to rehabilitate the area at his own cost. No make-up topsoil shall be taken from the road reserve. The topsoil shall be stored in an area that shall not be affected by construction activities nor impede the natural flow of water. The topsoil so windrowed or stockpiled and its surrounds shall be kept free of all undesirable vegetation. The Contractor shall not commence his stockpiling activities without prior written approval from the Engineer that the site has been adequately prepared.

Stockpile sites shall be graded smooth with an adequate slope to ensure proper drainage. The surface shall be watered and compacted to a depth of at least 150 mm and to a density of 90% of modified AASHTO density. The compacted surface shall be firm. Upon completion, the surface shall be swept clean.

Stockpile sites shall be large enough to allow the different types of material to be stockpiled without overlapping or exceeding the limits of the prepared site. Enlargement of the stockpile sites after the stockpiles have been placed will not be permitted without the Engineer's approval.

After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition by ripping of the affected areas, re-landscaping if necessary, re-instatement of the topsoil and re-vegetation."

ADD THE FOLLOWING PARAGRAPH:

"Material intended for the construction of the gravel base shall be stockpiled beforehand to allow adequate time for the Engineer to conduct the necessary material tests to confirm the suitability of the stockpiled material."

B3204 BREAKING-DOWN THE MATERIAL

B3206 CONTROLLING THE MOISTURE CONTENT OF MATERIALS

ADD THE FOLLOWING:

"With respect to the last paragraph, the onus is placed on the Contractor to show that he has taken all reasonable precautions to keep the material dry and to dry it out and this includes the scheduling of the work in the correct season."

B3208 PLACING AND COMPACTING THE MATERIAL IN LAYER THICKNESSES OF 200 mm AND LESS AFTER COMPACTION

(a) Spraying and mixing

(i) General requirements

ADD TO SECOND PARAGRAPH:

"When pavement material is to be stabilized, the moisture content of this material to be compacted shall be at 1% below the optimum moisture content, unless otherwise approved by the Engineer."

B3212 MEASUREMENT AND PAYMENT

IN THE INTRODUCTORY PARAGRAPH, REPLACE THE COMMA AFTER "below" IN THE PENULTIMATE LINE WITH A FULL STOP AND DELETE THE REMAINDER OF THE PARAGRAPH.

ADD THE FOLLOWING AS A SECOND PARAGRAPH:

"Separate payment for work applicable to these payment items shall be made under the relevant sections in these specifications pertaining to the construction material required. For example, material procured from borrow that is crushed and screened for use in selected and subbase layers shall be measured for payment under Section 3400: Pavement Layers of Gravel Material as:

Subitems 34/32.01(d) and 34/32.03(d) etc., whichever is the relevant pairing of payment items under Sections 3200/3400."

B15 SECTION 3300: MASS EARTHWORKS

B3301 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES IN EXCESS OF 200mm AFTER COMPACTION

Add the following new subclause:

(e) Pioneer layer

"The maximum size rock used in pioneer layers shall be 500mm and the layer thickness before compaction shall not be more than one-and-a-half times the maximum actual size of the rock. Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve. Pioneer layer processing and compaction shall be as specified in sub-clause 3307(c) of the standard specifications".

Add the following to the table in the second paragraph of this sub-clause:

"Pioneer layers – 350- 500mm dimension in some areas.

Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve."

B3302 MATERIALS

(b) Fill

ADD THE FOLLOWING TO SUBITEM (iv):

"The maximum swell at 100% modified AASHTO compaction shall not be more than 2%."

B3303 CLASSIFICATION OF CUT AND BORROW EXCAVATION

CLASSIFICATION OF CUT AND BORROW EXCAVATION SHALL BE REVISED AS FOLLOWS:

"(a) Classes of excavation

(ii) Intermediate excavation

No distinction shall be made between soft and intermediate excavation, and all intermediate excavation shall be classified and measured as soft excavation."

B3305 TREATING THE ROADBED

(a) Removing unsuitable material:

REPLACE THE THIRD AND FOURTH PARAGRAPH WITH THE FOLLOWING:

"The removal of unsuitable material shall be paid for under payment item B33.07. For payment using conventional construction methods a distinction shall first be made in respect of the depth of the material removed and secondly in respect of the stability of the material and the construction plant to be used. For removing any stable material payment will be made under payment item B33.07. Furthermore, the thickness of the layer to be removed must be less than 200 mm. If the layer to be removed is more than 200 mm

payment will be made under payment item B33.04 as for the ordinary excavated cut to spoil material.

For the purposes of this clause and of payment item B33.07, stable material shall be defined as material which can be removed effectively by means of normal road construction equipment such as bulldozers, road graders, scrapers, mechanical shovels, back hoes or excavators."

B3306 **CUT AND BORROW**

(e) The temporary stockpiling of materials

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall plan his activities in such a manner so that materials excavated from borrow areas and cuttings can be directly transported to and placed at the designated points.

The temporary stockpiling of material will not be paid for separately unless instructed by the Engineer, and full compensation will be deemed to have been included in the rates tendered for the various payment items for work for which the stockpiled material is to be used."

(g) General

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"The final cut surface in hard excavation shall not be more than 0,5 m below the specified slope face, measured at right angles to the strike and dip directions of the slope face."

B3307 **FILLS**

(d) Benching

REPLACE THE FIRST SENTENCE OF THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be subject to the Engineer's approval."

(i) Widening of fills

REPLACE THE FIRST SENTENCE OF THE EIGHTH PARAGRAPH WITH THE FOLLOWING:

"No additional payment will be made for widening of existing fills along the road. The widening of fills shall be measured and paid for under item 33.01."

B3310 **CONSTRUCTION TOLERANCES**

ADD THE FOLLOWING SUBCLAUSE:

"(c) Layer thicknesses

The thickness tolerances referred to in clauses 8205 and 8305 for the 150 mm natural gravel fill layer compacted to 93% of modified AASHTO density, shall be as follows:

	D ₉₀	D _{max}	D _{average}
Fill layer	30 mm	40 mm	10 mm"

B3312 MEASUREMENT AND PAYMENT

General directions

- (3) Work in restricted areas

DELETE THE CONTENTS OF THIS SUBCLAUSE AND REPLACE IT WITH THE FOLLOWING:

"No additional or extra over payment will be made for work in restricted or confined areas."

AMEND THE DESCRIPTION OF PAYMENT ITEM 33.01 AS FOLLOWS:

"Item	Unit
--------------	-------------

B33.01 Cut and borrow to fill, including free-haul up to 1,0 km:"

IN THE FIFTH PARAGRAPH REPLACE "free-haul distance of 0,5 km" WITH " free-haul distance of 1,0 km".

REPLACE THE FIFTH MEASUREMENT AND PAYMENT PARAGRAPH WITH THE FOLLOWING:

"The tendered rates shall include full compensation for procuring furnishing and placing the material, including excavating as if in soft excavation, the cutting of benches, the transporting of material over the haul distance, for preparing, processing, shaping, watering, mixing and compacting the materials to the densities or in the manner specified herein and for removing and disposing of up to 5% oversize material from the road after processing, including all haul."

Item	Unit
-------------	-------------

33.04 Cut to spoil, including free-haul up to 0,5 km. Material obtained from:

CHANGE THE DESCRIPTION OF PAYMENT ITEM 33.04 TO THE FOLLOWING:

"Item	Unit
--------------	-------------

**B33.04 Cut to spoil, including free-haul up to 1,0 km.
Material obtained from:**

REPLACE THE FOURTH MEASUREMENT AND PAYMENT PARAGRAPH WITH THE FOLLOWING:

"The tendered rates for cut to spoil shall include full compensation for excavating from the road prism and roadbed in the various classes of excavation for loading, transporting the material over the haul distance, off-loading and disposing of the material as specified, including shaping and levelling off any piles of spoil material.

It shall also, where applicable, allow for spoiling at sites where borrowing is taking place at the same time. No additional payment for temporary stockpiling or double handling will be made."

IN THE FOURTH PARAGRAPH REPLACE "free-haul distance of 0,5 km" WITH " free-haul distance of 1,0 km".

B16 SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3402 MATERIALS

(a) General

ADD THE FOLLOWING TO THE SECOND PARAGRAPH:

"Natural gravel shoulder material shall comply with the requirements of a Type 1 material according to Table 3402/4."

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"Distinction shall be made between crushed and natural G4, G5 and G6 materials. Where the crushing and/or screening of these materials has been specified, the combined grading shall conform to the grading limits specified for G4 class material in Table B3402/1.

The same shall apply for all materials obtained from commercial sources."

REPLACE THE GRADING SECTION IN TABLE 3402/1 WITH:

"TABLE B3402/1: REQUIREMENTS FOR TYPES OF G4 TO G6 MATERIALS

GRADING	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			The percentage by mass passing the 2,00 mm sieve shall not be less than 20% nor more than 70%
		Crushed material Nominal maximum size		Uncrushed material (mm)	
		37,5 mm	28 mm		
	53			100	
	50			95 – 100	
	37,5	100		85 – 100	
	28	86 – 95			
	20	73 – 86	87 – 96	61 – 91	
	14	61 – 76	73 – 86		
	5	37 – 54	43 – 61	31 – 66	
	2	23 – 40	27 – 45	20 – 50	
	0,425	11 – 24	13 – 27	10 – 30	
0,075	4 – 12	5 – 12	5 – 15		

Note:

Refer to standard COLTO table for COLTO grading if required."

(b) Compaction requirements

AMEND THE COMPACTION REQUIREMENTS AS FOLLOWS:

The compaction requirements for the layers to be constructed under this contract are:

INTERNAL STREETS	
Layer	Description
Base	97% Modified AASHTO density (C3).
Upper Subbase	95% Modified AASHTO density (C3).
Upper Selected	93% Modified AASHTO density (G5-6).
Lower Selected	93% Modified AASHTO density (G5-6).
Roadbed preparation	90% of modified AASHTO density.

“(d) Excavations

Excavations in the pavement shall be kept dry. In the event of water penetrating the underlying layers, construction of the consecutive layers shall be postponed until the underlying layers are dry enough to accommodate the construction plant without any deformation or distress.”

B3403 CONSTRUCTION

ADD THE FOLLOWING SUBCLAUSE:

“(f) Temporary stockpiling of material

The Contractor shall plan his activities so that materials excavated from borrow areas and cuttings or imported from commercial sources can be directly transported to and placed at the designated points.

The temporary stockpiling of material will not be paid for separately unless instructed by the Engineer, and full compensation will be deemed to have been included in the rates tendered for the various payment items for work for which the material is to be used.”

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

“Test results and measurements will be assessed in accordance with the provisions of Section 8200.”

B3407 MEASUREMENT AND PAYMENT

DELETE THE FIRST PARAGRAPH AND REPLACE IT WITH THE FOLLOWING:

“No additional or extra over payment will be made for work in restricted or confined areas.”

On this contract, no extra over payment will be made due to the nature of the site or the size of the work available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the BOQ.

B17 SECTION 3500: STABILIZATION

B3502 MATERIALS

(a) Chemical stabilising agents

Delete sub clauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:

"Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32, 5 shall not be permitted."

On this contract CEMII 32.5 (B-L) shall be used for stabilisation purpose."

(h) Curing the Stabilised work

Add the following to paragraph (i):

"Method (iii) and (iv) shall not be applicable."

(iii) Fillers

ADD THE FOLLOWING:

"The filler to be used shall be CEM II B – L 32.5 N cement or road lime as directed by the Engineer. The nominal rate of application for tender purposes shall be 1,5% of compacted material.

The Engineer may instruct the Contractor to amend the rate of application and type of filler after tests on the Site during construction."

(h) **Curing the Stabilised work**

Add the following to paragraph (i):

"Method (iii) and (iv) shall not be applicable."

B3503 CHEMICAL STABILIZATION

(i) **Construction limitations**

Add the following:

"No Stabilisation shall be done with falling air temperatures when the air temperature falls to below 7 °C or during rising air temperatures, when the air temperature is below 3 °C.

Moisture content tests shall not be undertaken more than one day in advance of in-situ Stabilisation operations. Care shall be taken to ensure that samples are representative of the in-situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section."

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The contractor shall be responsible for taking all measures necessary in this regard and shall especially refrain from stabilizing when such night temperature are probable.

All stabilized layers which have been damaged by frost or by the formation of ice in the layer shall be removed and replaced by the contractor at his expense unless agreed otherwise by the Engineer. The contractor shall make due allowance for these requirements in his construction programme and no claims in this regard will be considered.

B3506 TOLERANCES

(b) **Uniformity of mix** (chemical stabilization)

ADD THE FOLLOWING:

"The coefficient of variation shall not exceed 0,3 (30%) for mixing in place and 0,2 (20%) for plant-mixed material, calculated as follows:

$$\frac{S_n}{X_n} \times 100$$

where:

X_n is the average, and
S_n is the standard deviation of stabilizer."

B3507 CONSTRUCTION OF TRIAL SECTION

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"The fact that the Engineer has approved the mixing process shall not relieve the Contractor of his obligations in respect of the mixing specified elsewhere in the Specifications. It will serve only as a guideline to ensure that the specified mixing requirements can actually be met."

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

ADD THE FOLLOWING TO THE FOURTH PARAGRAPH:

"The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared according to SANS 3001-GR54 (Replacing TMH1 Method A16T); i.e. discard material coarser than a 37,5 mm test sieve, and compacted according to SANS 3001-GR31 (Replacing TMH1 Method A7)."

ADD THE FOLLOWING PARAGRAPHS:

"The Engineer shall be notified at least 48 hours in advance of any planned stabilization to enable him to conduct tests himself.

Stabilization strength shall be determined by incorporating the Rapid Cure Method as described in SANS 3001-GR53 (Replacing TMH1 Method A13T).

Where the stabilizing agent is to be spread by hand, pockets of the stabilizing agent shall be placed on the layer at regular intervals. However, spreading shall only commence when the Engineer is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread."

B3510 MEASUREMENT AND PAYMENT

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"No additional or extra over payment shall be made for stabilization work in restricted or confined areas."

Item

B35.01 Chemical stabilization extra over unstabilized compacted layers

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The unit of measurement shall be the cubic metre of stabilized material, the quantity of which shall be determined in accordance with the final in-situ authorised dimensions of the layers treated as instructed by the Engineer. Additional material reshaped to allow for finishing by cutting only will not be included in the measurement."

ADD THE FOLLOWING TO THE PAYMENT PARAGRAPH:

"The tendered rate shall also include full compensation for working in restricted areas on top of and alongside culverts where necessary."

Item

B35.02 Chemical stabilizing agent

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"Subject to the provisions of clause 1220, the quantity of stabilizer will be determined in accordance with the authorised rate of application and layer dimensions. Extra stabilizer added for wastage and higher preshaping levels will not be included in the quantity."

B18 SECTION 4100 : PRIME COAT

B4102 MATERIALS

(a) Priming material

ADD THE FOLLOWING:

"The prime coat shall be MC-30 cut-back bitumen/ Enviro Prime or Similar." CHECK THE BOQ.

(b) Aggregate for blinding

ADD THE FOLLOWING:

"Blinding of the primed surface with aggregate shall only be permitted to facilitate vehicular access to adjoining properties."

B4103 EQUIPMENT

ADD THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"Before any storage, dilution or spraying operations commence the Contractor has to provide a safety and security and environmental protection method statement for approval of the Engineer. All personnel involved, including brooming, prime distributor, storage and production yard operators and labour shall wear the necessary protective clothing. Appropriate fire extinguishers and medical aid devices must be provided in working order. The Engineer reserves the right to stop the Contractor's operation or order any person from the Site who does not adhere to the above."

B4104 WEATHER AND OTHER LIMITATIONS

REPLACE SUBCLAUSE (g) WITH THE FOLLOWING:

"(g) when the moisture content of the upper 50 mm of the crushed-stone base or a granular base layer, determined according to SANS 3001-GR31 (Replacing TMH1 Method A7), is more than 50% of the optimum moisture content."

B4106 APPLICATION OF THE PRIME COAT

ADD THE FOLLOWING TO SUBCLAUSE (c):

"The nominal application rate of the prime shall be 0,8 litre/m². Unless directed otherwise by the Engineer or indicated on the Drawings, the width of the primed surface shall be 150 mm wider than the edges of the surfacing on each side."

B4108 **TOLERANCES**

ADD THE FOLLOWING TO THIS CLAUSE

"Any unauthorised increase outside these limits shall not be paid for. However, the Engineer shall have the right to instruct the Contractor to make up any deficiency, or blind any over-application, of prime without additional payment. If under-spraying occurs, and it is accepted by the Engineer, only the actual quantities applied shall be paid for."

B4109 **TESTING**

ADD THE FOLLOWING

"No payment shall be made if this condition is not adhered to. The Contractor shall provide, at his cost, representative samples of every batch of prime delivered onto site."

B4110 **MEASUREMENT AND PAYMENT**

ADD THE FOLLOWING BEFORE THE PAYMENT ITEMS:

"No additional or extra over payment will be made for work in restricted or confined areas."

B21 **SECTION 5500: FENCING**

B5502 **MATERIALS**

(a) Straining posts, stays, standards and droppers

REPLACE THE HEADING OF THIS SUBCLAUSE WITH THE FOLLOWING:

"(a) Straining posts, corner posts, stays, standards and droppers"

ADD"corner posts,"AFTER"Straining posts,"IN THE FIRST LINE OF THE FIRST PARAGRAPH.

ADD", corner posts"AFTER"straining posts"IN THE FIRST LINE OF THE FOURTH PARAGRAPH.

ADD THE FOLLOWING:

"Straining posts, corner posts, stays, standards and droppers shall be timber of the type and size specified on the Drawings. Timber shall comply with the requirements of SANS 457 and shall be treated with creosote which complies with SANS 616. Where the cutting of posts is unavoidable after having been treated, the Engineer may permit the required length to be cut off from the bottom of a post, provided that the exposed area is subsequently thoroughly treated with creosote."

(g) Gates

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"Gates shall be fully galvanized according to the requirements of SANS 121."

5505 CLEARING THE FENCE LINE

ADD "in accordance with clause B1705" AFTER "cleared" IN THE FIRST LINE OF THE FIRST PARAGRAPH.

REPLACE "Section 1700" IN THE EIGHTH AND NINTH LINES OF THE FIRST PARAGRAPH WITH "subclause B1705(b)."

5506 ERECTING STRAINING POSTS AND STANDARDS

REPLACE THE HEADING OF THIS SUBCLAUSE WITH THE FOLLOWING:

"B5506 ERECTING STRAINING POSTS, CORNER POSTS AND STANDARDS"

ADD "and/or corner posts" AFTER "Straining posts" IN THE FIRST LINE OF THE FIRST PARAGRAPH.

ADD "and corner posts" AFTER "Straining posts" IN THE FIRST LINE OF THE SECOND PARAGRAPH.

ADD "and corner posts" AFTER "straining posts" IN THE FIRST LINE OF THE FOURTH PARAGRAPH.

ADD ", corner posts" AFTER "straining posts" IN THE FIRST AND FIFTH LINES OF THE SIXTH PARAGRAPH.

B5514 MEASUREMENT AND PAYMENT

Item **Unit**

B55.02 Supply and erect new fencing material for new fences and for supplementing material in existing fences which are being repaired or removed:

REPLACE THE DESCRIPTION OF SUBITEM (i) WITH THE FOLLOWING:

"(i) Straining posts, corner posts, stays and anchors:"

REPLACE SUBITEM 55.02(i)(i)(1) WITH THE FOLLOWING:

"(i) Vertical

(1) Steel straining posts and corner posts
(type, size and length, and whether
galvanized or painted indicated) number"

REPLACE THE SUBHEADING "Straining posts (Subitem (i))" WITH "Straining and corner posts (Subitem (i))".

ADD "and corner" AFTER "straining" IN THE FIRST LINE OF THE SECOND LAST PARAGRAPH.

ADD "gravel drainage layer below post footings" AFTER "concrete" IN THE SIXTH LINE OF THE SECOND LAST PARAGRAPH.

DELETE "or drilling" IN THE SEVENTH LINE OF THE SECOND LAST PARAGRAPH.

B22 SECTION 5600: ROAD SIGNS

B5601 SCOPE

REPLACE "South African Road Traffic Signs Manual" IN THE SECOND PARAGRAPH WITH "SADC Road Traffic Signs Manual"

B5602 MATERIALS

(a) Structural steel

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"All structural steel, including tubes, shall be galvanized in accordance with the requirements of SANS 121, thickness > 6 mm, as applicable."

REPLACE THE SECOND SENTENCE OF THE FIRST PARAGRAPH WITH THE FOLLOWING:

"Channels, square tubes, angle irons and other steel members on the reverse side of the sign boards and steel tubes for sign supports shall be painted in accordance with the following specifications: SANS 926 for a two-pack zinc-rich epoxy primer, SANS 681 for the undercoat and SABS 1413 for a chloro-rubber finishing coat."

(g) Retro-reflective material

IN THE FIRST SENTENCE REPLACE SABS 1519" WITH SANS 1519-1" AND DELETE "and the adhesion requirements of CRS 191".

REPLACE THE THIRD LAST PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall provide proof that Classes I and III of the retro-reflective commercial products to be used have been generally and successfully used in South Africa during the last three years.

Classes I and III retro-reflective materials shall be warranted against any abnormalities as described in SANS 1519-1 for 7 and 10 years respectively."

ADD THE FOLLOWING AFTER THE SECOND LAST PARAGRAPH:

"Should a contractor manufacture signs without the necessary approval it shall be deemed that the Contractor unconditionally guarantees the sign for the full period of seven years. Should failure of the sign due to suspected incompatibility of materials (in the opinion of the Engineer) occur within seven years, the Contractor shall remanufacture the sign and re-erect the sign at no cost to the Employer."

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"Reflective sheeting shall be applied to sign faces strictly in accordance with the retro-reflective material manufacturer's specifications. Legend and background materials shall be supplied by the same manufacturer. Every batch of material used for signs on the Contract shall be identified by a batch number. A certificate of all materials' compliance with SANS 1519-1 shall be submitted to the Engineer within 3 months of the material being used. An outdoor weathering test will not be required."

ADD THE FOLLOWING:

"Retro-reflective materials shall comply with the requirements of SANS 1519-1 but the requirements of Clauses 3 and 4 of CKS 191 shall take precedence.

When measured in accordance with SANS 1519, the coefficient of retro-reflection of a retro-reflective material shall not be less than the appropriate value given in Table 1 of SANS 1519-1 (duplicated as Table B8118/1 in these Specifications).

The colour of the retro-reflective material shall match the specified colour and shall not be faded to such an extent that its effectiveness is unacceptably impaired in the opinion of the Engineer. The surface of the material shall be undamaged and free from scratches, stains or other marks.

When, in the opinion of the Engineer, the retro-reflective material does not comply with the above requirements, the Contractor shall replace the defective material at his own cost, to the satisfaction of the Engineer."

(k) Back vinyl

IN THE SECOND SENTENCE REPLACE "SABS 1519" WITH "SANS 1519-1" AND DELETE THE REST OF THE SENTENCE.

ADD THE FOLLOWING SUBCLAUSES:

"(l) Temporary covers for road signs

When required, existing road signs shall be fully or partially covered with burlap or 0,5 mm thick black plastic or other approved material to obscure destinations that are temporarily inapplicable or irrelevant.

The covers shall be neatly applied and firmly fixed in position so that they will be able to withstand strong gusts of wind or eddies caused by passing traffic."

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS

(a) Road sign boards

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

"The Contractor shall submit a schedule detailing the suppliers and trade names for the main constituent components in the manufacturing process.

The Contractor shall also submit documentation from the manufacturer or the South African agents or distributors of the retro-reflective sheeting that will be used in the manufacturing of the road sign boards, attesting to the fact that the road signs manufacturer conforms with the storage, handling and application procedure recommended by the reflective sheeting material manufacturer."

INSERT THE FOLLOWING AFTER THE THIRD PARAGRAPH:

"The colour of the retro-reflective material shall match the specified colour and shall not be faded to such an extent that its effectiveness is unacceptably impaired in the opinion of the Engineer. The surface of the material shall be undamaged and free from scratches, stains or other marks.

When, in the opinion of the Engineer, the retro-reflective material does not comply with the above requirements, the Contractor shall replace the defective material at his own cost, to the satisfaction of the Engineer.

The Contractor shall make every effort to ensure that sign boards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Engineer with a 100 mm x 150 mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

B5604 ROAD SIGN FACES AND PAINTING

ADD THE FOLLOWING NEW SUBCLAUSE:

"(e) Application of retro-reflective material

All sign faces shall be faced with retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified for aluminium sections in Clause 5603(d) of the Standard Specification, and of Clause B5603(a)(ii) of this Project Specification."

B5605 STORAGE AND HANDLING

ADD THE FOLLOWING:

"The following shall not be allowed on the sign face:

- Drilling of holes, except for the fastening of overlays
- Application of any form of adhesive
- Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material
- Covering the sign face with an impermeable material that does not allow free circulation of air."

B5606 ERECTING ROAD SIGNS

(b) Excavation and backfilling

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"A 300 mm thick gravel drainage layer shall be placed at the bottom of the excavations and shall be compacted before the excavations are backfilled.

The dimensions of the excavation for the drainage layers shall be over and above that for the footings as shown on the Drawings."

(c) Erection

ADD THE FOLLOWING PARAGRAPHS:

"After erection the sign board shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material's manufacturer.

On completion of signs on the road section, the Contractor shall clear an area immediately around the sign. The area shall be 10 m wide at the side closest to the road and 5 m wide at the side farthest from the road. The area so cleared shall be treated with an approved chemical growth-retarder in accordance with the supplier's application instructions.

No separate payment shall be made for the clearance, or the procurement and application of the growth retarder."

ADD THE FOLLOWING CLAUSES:

"B5610 DISMANTLING AND REMOVING ROAD SIGNS AND THEIR SUPPORTS

Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs

shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

When instructed by the Engineer, concrete footings of existing signs shall be demolished and removed to a depth of 200 mm below the adjacent ground level.

Dismantling shall include sign panels and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Pay items are provided in the Bill of Quantities. Payment will differentiate between different types of sign panels.

B5609 MEASUREMENT AND PAYMENT

ADD THE FOLLOWING ITEMS:

"Item	Unit
B56.10 Statutory road signs	number

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings or as directed by the Engineer.

The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings or as directed by the Engineer.

Item	Unit
B56.11 Dismantling and disposal of road signs:	

- | | |
|---|--------|
| (a) Hazard marker signs | number |
| (b) Single post signs (other R and W signs) | number |
| (c) Multiple post ground-mounted signs | number |

The unit of measurement is the number of signs removed.

The tendered rate shall include full compensation for dismantling the sign boards, removing the supports and foundations of ground-mounted signs, disposing of the material and clearing the removal site. It shall also include for all labour, plant, supervision and all other incidentals.

B23 SECTION 5700: ROAD MARKINGS

B5701 SCOPE

REPLACE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL IN THE SECOND PARAGRAPH WITH "SADC Road Traffic Signs Manual".

B5702 MATERIALS

INSERT THE FOLLOWING BEFORE SUBCLAUSE (a) PAINT:

"The selection of the appropriate road marking paint and materials for permanent road markings to ensure conformance with the requirements of this specification rests with the Contractor. Such paint and material shall have technical characteristics (brightness, luminance, skid resistance, durability) equal to or greater than road marking paint and materials specified in subclauses 5702(a), (b) and B5702(c).

Where plastic road-marking material (hot-melt plastic (also known as thermoplastic) and two-component (also known as cold plastic)) is used, the Contractor shall obtain an approved guarantee from the manufacturer that the paint complies with the specification. This shall be submitted to the Engineer on request."

REPLACE SUBSUBCLAUSE B5702(a)(i) WITH THE FOLLOWING:

"(i) Road marking paint

Road marking paint shall be Type 1 as specified in SANS 731-1. Only paint, manufactured in a SANS approved and accredited facility shall be accepted. The no-pick-up time of road-marking paint shall comply with the Class 1 requirement in accordance with SANS 731-1 and SANS 731-2.

The paint shall be delivered at the site in sealed containers marked in accordance with SANS 731-1.

The viscosity of the paint shall be such that it can be applied without being thinned down."

ADD THE FOLLOWING SUBITEM:

"(c) **Retro-reflective beads**

Retro-reflective glass beads shall be applied to the wet paint, thermoplastic and cold plastic.

The beads shall comply with Class A beads in accordance with EN 1424: 1998, with the following requirements or as approved by the Engineer:

- colour : crystal clear
- roundness : > 80%
- size range of : 14 – 200 US Mesh (75 – 1400 Microns)
- refractive index : > 1.5
- specific gravity : ± 2.5
- granulometry :

CUMULATIVE RETAINED MASS		
SIEVE	MINIMUM	MAXIMUM
1 700	0	2
1 400	0	10
1 180	5	30
850	40	80
600	70	100
425	80	100
355	90	100
212	95	100
Pan	100	100

The beads shall be delivered to the site in sealed bags, marked with the name of the manufacturer, the batch number and an inspection seal of SABS, confirming that the beads form part of a lot tested by SABS and comply with the requirements of EN 1424: 1998. Alternatively, the Contractor shall at all times have a SABS certificate on the site, identifying the batches to which the inspection seals apply and certifying that they have been tested by SABS, and comply with the requirement of EN 1424: 1998."

B5704 MECHANICAL EQUIPMENT FOR PAINTING

ADD THE FOLLOWING SENTENCE AT THE END OF THE FIRST PARAGRAPH:

"The road-marking machine shall be fitted with a device to guide the operator to the centre of the line to be painted. This device shall be used at all times of operation."

B5705 SURFACE PREPARATION

ADD THE FOLLOWING AT THE END OF THE SECOND PARAGRAPH:

"The onus is on the Contractor to ensure that the surface on which the road markings are to be applied is sufficiently clean and dry to ensure that the quality of the road markings will not be adversely affected. The Contractor is also responsible for protecting road studs from being painted over, and the subsequent cleaning thereof if such over-painting did occur."

B5707 APPLYING THE PAINT

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"The Contractor's establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be on site or is required to move within the site.

Provision is also made under item B57.07 for de-establishment and re-establishment in the contract or defects liability period if such action is required by delays not attributable to the Contractor and/or ordered by the Engineer."

REPLACE THE SIXTH PARAGRAPH WITH THE FOLLOWING:

"Solvent borne road marking paint shall be applied at a nominal rate of 0,42 l/m² or as directed by the Engineer. Thermoplastic road marking shall be applied at a nominal rate of 2,5 kg/m² to achieve a minimum thickness of 1,25 mm to 1,5 mm or as directed by the Engineer. The two-component road marking material shall be applied by hand by means of a trowel. The desired symbol or line shall be marked with a tape or a template on the road surface. Thereafter apply the required volume of material and spread uniformly over the entire area. When dry/set, remove the tape or template. A spreading rate of 4,5 kg/m² is estimated to achieve a 2,0 mm material thickness.

In order to ensure proper coverage on all types of surfaces the Engineer may order an increase in the above nominal application rates. Payment for these variations in application rates shall be made under item 57.04.

A daily log-sheet, provided by the Employer, shall be completed and signed by the Contractor and the Engineer's representative, recording the quantities of paint and glass beads used on that day and shall be available for inspection at all times. The completed and signed log-sheet for the period covered by a payment certificate shall be attached to the payment certificate."

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"Solvent-based road marking as specified by the Engineer shall be carried out within 14 days of opening the road full width to traffic after the completion of the surfacing.

If in the in the opinion of the Engineer, conditions are unsafe, the centre-line shall be painted immediately after 2,0 km of continuous road has received a new asphalt layer, or 4,0 km of continuous road has received a new seal surfacing."

B5708 **APPLYING THE RETRO-REFLECTIVE BEADS**

IN THE FIRST PARAGRAPH, REPLACE THE NOMINAL APPLICATION RATE OF "0,8 kg/litre" WITH "400 gm/m²".

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The thermoplastic road marking material and two-component road marking material shall contain insitu glass beads of minimum content of 25% in order to obtain night visibility (reflectivity). The Contractor shall immediately apply additional glass beads at 400 g/m² to obtain immediate reflectivity. The beads shall be sprayed onto the road marking layer by means of a pressure sprayer. Where letter, symbol, traverse line and island road marking is undertaken by hand, the glass beads may be applied by hand if approved by the Engineer. Prior to any hand application work, the Contractor shall first request approval from the Engineer."

ADD THE FOLLOWING:

"Beads shall be applied in accordance with EN 1424."

B5710 **TOLERANCES**

ADD THE FOLLOWING PARAGRAPHS TO SUBCLAUSE (c) ALIGNMENT OF MARKINGS:

"When an unbroken line and a broken line are painted alongside each other, the beginning and the end of the unbroken line shall coincide with the beginning of one broken line and the end of another broken line. When existing lines are repainted, the new markings shall not deviate more than 100 mm in the longitudinal direction nor 10 mm in the transverse direction from the existing marking.

The alignment of the road studs shall not deviate from the true alignment by more than 10 mm and shall be positioned so that the reflective faces are within 5° of a right angle to the centre line of the road."

ADD THE FOLLOWING SUBCLAUSE:

"(e) Testing

(1) Plant

Before painting any permanent road markings, the Contractor shall satisfy himself and the Engineer, by painting test lines on a section of pavement other than the section required to be marked:

- (i) that the painting machine is in good working order and properly adjusted;
- (ii) that the operator is fully experienced; and
- (iii) that the machine sprays at the specified rate of paint application.

The Contractor shall bear the cost of all materials and workmanship required for the above plant tests.

In addition, the Contractor shall conduct random paint thickness tests and dip/spread tests as required by the Engineer."

B5711 GENERAL

INSERT THE FOLLOWING INTO THE LAST SENTENCE OF THE LAST PARAGRAPH BETWEEN "black paint" AND "or chemical paint remover":

" , bituminous emulsion, slurry"

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"Where black paint is used, it shall be matt."

ADD THE FOLLOWING CLAUSE:

"The Contractor shall provide temporary traffic control facilities in accordance with Section 1500 of the COLTO's standard specifications for road and bridge works to ensure traffic safety where work is being executed.

Property and/or road signs damaged by the Contractor, his personnel, his agents or sub-contractors shall be repaired or restored to their condition prior to the damage at his own cost."

B5712 FAULTY WORKMANSHIP OR MATERIALS

ADD THE FOLLOWING PARAGRAPH:

"Should less than 95% of the road markings comply with the specified coefficient of retro-reflected luminance when measured in accordance with SANS 6261 at a 5% sample level, the Contractor shall repaint the works at his own cost."

B5714 MEASUREMENT AND PAYMENT

Item		Unit
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B57.05 Roadstuds

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period or the maintenance period."

Item		Unit
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B57.06 Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)

ADD THE FOLLOWING:

"Referencing of existing road markings prior to milling and other operations, shall be included in the tendered rate for setting out and pre-marking."

Item		Unit
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B57.07 Re-establishing the painting unit at the end of the maintenance period

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"The tendered lump sum shall also include for the erection and removal, on a daily basis as the work progresses, the minimum accommodation of traffic facilities specified in clause 5713."

B25 SECTION 5900: FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS

B5901 SCOPE

ADD THE FOLLOWING:

"Where reference is made in this section to 'the road and road reserve', this shall also be deemed a reference to 'the Site of the Works'."

B5904 MEASUREMENT AND PAYMENT

Item	Unit
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B59.01 Finishing the road and road reserve:

REPLACE SUBITEM (b) WITH THE FOLLOWING:

"(b) Single-carriageway road:

(i) Roads with bituminous surfacingkilometre (km)

Item	Unit
------	------

B59.02 Treatment of old roads and temporary deviations:

ADD THE FOLLOWING SUBITEM:

(a) Gravel roads (including service and access roads) kilometre (km)

B31 SECTION 8100: TESTING MATERIAL AND WORKMANSHIP

B8102 TESTING METHODS

INSERT THE FOLLOWING AS A NEW FIRST PARAGRAPH:

"Where reference is made to TMH test methods in this specification or the standard specifications, it shall be replaced with the relevant current published SANS test method."

B8103 THE COSTS OF TESTING

(a) Process Control

RENAME THE HEADING AS "Materials Quality Control"AND REPLACE THE CONTENTS WITH THE FOLLOWING:

"Testing shall be undertaken by a combined laboratory facility for process control (where the process control testing can be utilised as acceptance control), acceptance control and correlation testing subject to the following requirements laid down by the Employer:

- (i) The Contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault. The Contractor shall apply in writing, quoting this clause, as to which

specific tests are in doubt, providing test reference numbers and details as to the reasons why the test result is in doubt.

- (ii) The Contractor accepts that the Engineer will be in charge of the combined laboratory.
- (iii) The Contractor will be allowed to place a permanent representative in the combined laboratory to observe the laboratory operations. The cost of such representation cannot be claimed as a payment contribution towards payment item B81.04, but will be for the account of the Contractor. The Contractor shall indicate in writing within 14 days of the commencement date if such representation will be required or declined.

The total cost of the combined laboratory for the 18-month contract period has been estimated at R5 550 000.00.

The Contractor will be liable to contribute 70% of this cost as a monthly deduction against each interim payment certificate.

The estimated cost per month to establish and operate the combined laboratory for the contract period as listed above, allows for the following items:

- (i) Establishment of laboratory buildings
- (ii) Salaries and labour for all laboratory staff members
- (iii) Housing for all laboratory staff members
- (iv) Transport requirements (based on distance) for staff and material testing
- (v) Provision of laboratory equipment (as required for the contract)

A pay item for the monthly contribution from the Contractor's interim payment certificates has been provided under payment item B81.04."

B8105 TESTING THE AGGREGATES

ADD THE FOLLOWING SUBCLAUSES:

"(g) Ethylene Glycol Weathering Test for durability of aggregates used in seals

- (i) Select 100 number single sized chippings from a representative sample retained on the 14 mm sieve but passing the 20 mm sieve. The selected aggregate chippings shall be oven dried for 12 hours and the mass of the chippings shall then be determined to the nearest 0,001 kg. The chippings shall then be immersed in ethylene glycol contained in a glass container for 28 days. After 28 days the chippings shall be removed from the ethylene glycol and oven dried for 12 hours. All friable and loose pieces shall then forcibly be removed by fingers from the chippings. The mass of the chippings shall then be determined and the percentage weathering loss shall be calculated from the results.

- (ii) Acceptance Criteria

Only aggregate that shows a breakdown after 26 days in ethylene glycol of less than 2% shall be used in seals or in asphalt.

(h) Ethylene Glycol Weathering Test for durability of aggregates used in concrete

- (i) A 2 kg sample of single sized (20 mm) stone is washed, air dried and then soaked in ethylene glycol for six days.
- (ii) On the sixth day the sample is removed from the ethylene glycol, washed thoroughly with tap water and oven dried overnight.

- (iii) A conventional dry sieve analysis is carried out on day 7. The sample is re-submerged in ethylene glycol and the above 7-day cycle is repeated.
- (iv) On day 14, following the dry sieve analysis, the sample is again submerged in ethylene glycol and allowed to stand for a further thirteen days.
- (v) After thirteen days the sample is removed from the ethylene glycol, washed and oven dried overnight.
- (vi) On day 28 the final sieve analysis is carried out.

Photographs of the rock samples are to be taken after each of the above cycles.

Acceptance Criteria

Only aggregate that shows a breakdown of the initial sizes of less than 20% by weight after the 28 days testing in ethylene glycol shall be used as coarse aggregate in concrete."

B8109 TESTING TAR, BITUMEN AND ASPHALT

(a) Tests described in the standard specifications for tars, bitumen's and bituminous emulsions

ADD THE FOLLOWING:

"The Contractor shall submit all relevant test results of the tests stated above to the Engineer for approval, prior to any bituminous surfacing being applied to any section of road.

The Contractor shall supply a delivery sheet, as well as a bitumen sample (this sample of one litre minimum must be contained in a galvanised tin and properly cross-referenced) for every single batch of tar or bituminous product that is delivered to the site and shall issue the same to the Engineer.

The delivery sheet must state the product delivered to site, the name and address of the manufacturer as well as the compliance of the product to all relevant SANS specifications.

Only after the Engineer has received the relevant information and approved it may the Contractor commence with the bituminous surfacing."

ADD THE FOLLOWING CLAUSES:

"B8118 TESTS ON RETRO-REFLECTIVE MATERIAL FOR USE ON ROAD SIGNS

On site testing of the retro-reflective properties of road signs shall be done with a field retro-reflectometer measuring at an entrance angle of 5,0° and an observation angle of 0,33°. The coefficient of retro-reflection so determined shall not be less than the relevant values given in Table B8118/1 below. The coefficients of retro-reflection are expressed in candelas per lux per square metre (cd/(lux/m²)).

TABLE B8118/1: COEFFICIENTS OF RETRO-REFLECTION

1	2	3	4	5	6	7	8	9	10	11
Class	Observation angle (degrees)	Entrance angle (degrees)	Coefficient of retro-reflection for different colours of material when measured with Standard Illuminant A* (cd/(lux/m ²)) minimum							
			Red	Orange	Yellow	Green	Blue	Purple	White	Brown
I	0,33	5	10	20	35	7	3	2	50	3
II	0,33	5	20	40	70	14	6	4	100	6
III	0,33	5	30	60	105	21	9	6	150	9

*See CIE Publication 15(E-1.3.1)

B8119 TEST PROCEDURE TO DETERMINE THE WET-DRY DURABILITY TEST FOR CEMENT-TREATED MATERIALS USING THE HAND BRUSHING METHOD

(a) Scope

This method covers the procedure for determining the soil-cement losses obtained by repeated wetting, drying and hand brushing of hardened soil-cement specimens (see note B8119(e)(iii)).

(b) Apparatus

- A moisture curing room capable of maintaining a relative humidity of 95% to 100% and a temperature of 22 °C to 25 °C, or suitable plastic bags capable of holding specimens and carriers in an airtight condition in a water bath as described in B8119(b)(ii) below.
- A suitable water bath with thermostatic control capable of maintaining a temperature of 22 °C to 25 °C.
- A balance to weigh up to 10 kg, accurate to 0,5 g.
- A drying oven capable of maintaining temperatures of 71 ± 3 °C and 110 ± 5 °C.
- A wire scratch brush made of 50 mm by 1,6 mm flat 26 gauge wire bristles assembled in 50 groups of 10 bristles and mounted to form five longitudinal rows and 10 transverse rows on a 200 by 65 mm wooden block.

(c) Method

- Preparation of specimens

Prepare specimens in accordance with the procedure described in the Appendix to method A 19 in the TMH1 with the following exceptions:

Use the material passing the 37,5 mm sieve and discard the material remaining on the sieve.

Use the apparatus and compaction method as described in SANS 3001-GR30 (Replacing TMH1 Method A7) (Modified AASHTO).

- Curing of specimens

Cure the specimens for seven days at a relative humidity of 95% to 100% and a temperature of 22 °C to 25 °C in a suitable curing room or in plastic bags and a suitable water bath. Alternatively, the specimens may be rapid cured (see note B8119(e)(v)).

(iii) Wetting, drying and brushing

After curing, remove the specimens from the curing room or plastic bags, allow to cool if necessary, and submerge them in water at room temperature for a period of five hours.

Remove the specimens from the water and place them in an oven at 71 °C for 42 hours.

Remove the specimens from the oven. Give each specimen two firm strokes on all areas with the wire scratch brush. The brush must be held parallel to the long axis of the specimen or parallel to the ends as required to cover all areas of the specimen. Apply these strokes to the full height and width of each specimen with a firm stroke corresponding to approximately 13,5 kN force (see note B8119(e)(iv)).

The procedure described so far constitutes one cycle (48 hours) of the wet-dry durability test. After brushing the specimens are again submerged in water the procedure repeated for a total of 12 cycles (see note B8119(e)(ii)).

(iv) Determination of soil-cement losses

After 12 cycles, dry the specimens to constant mass at 110 °C and determine the oven-dry mass of the specimens. The data collected will permit the calculation of the soil-cement losses of the specimens after the prescribed 12-cycle test.

(d) Calculations

- (i) Calculate the soil-cement loss of the specimens as a percentage of the original oven-dry mass of the specimens as follows:

$$L = \frac{W - M}{W} \times 100$$

Where:

L = soil-cement loss (%)

W = original calculated oven-dry mass (g) (calculated according to paragraph 3.5 in the Appendix to Method A19 in the TMH 1)

N = final oven-dry mass (g).

- (ii) The percentage loss shall be calculated and reported to the nearest 0,1 per cent. These results are normally required for designing a mix and are reported graphically against relevant cement content.

(e) Notes

- (i) Mass determination of the specimens before and after brushing are usually made at the end of each cycle during research or special investigations.
- (ii) If it is not possible to run the cycle continuously because of Sundays or holidays or for any other reason, the specimens should be held in the oven during the lay-over period.

(iii) The test was originally developed to determine the wet-dry durability of cement-treated material. It can, however, be used with equal success on material tested with other chemical stabilisers, for example lime, or mixes of lime and milled blastfurnace slag, or cement and milled blastfurnace slag.

(iv) The pressure is measured as follows:

Clamp a specimen in a vertical position on the edge of a platform scale and zero the scale. Apply vertical brushing strokes to the specimen and note the force necessary to register approximately 1,36 kg.

(v) Rapid curing:

Seal each specimen airtight in a suitable container or plastic bag. Carefully place the briquettes on suitable holders or in pans and place in the oven at the relevant temperature and period given below:

Stabilizing	Temp	Time
Agent	(°C)	(hours)
Cement	70 - 75	24 ± 0,5
PBFC	70 - 75	24 ± 0,5
Lime	60 ± 2	45 ± 1
Lime/FA	60 ± 2	45 ± 1
Lime/MBFS	60 ± 2	45 ± 1"

B8117 MEASUREMENT AND PAYMENT

REPLACE ITEM 81.02 WITH THE FOLLOWING:

"Item **Unit**

B81.02 Other special tests requested by the Engineer:

- (a) Cost of testing Provisional Sum (Prov Sum)
- (b) Handling costs and profit in respect
of subitem B81.02(a) above percentage (%)

The provisional sum provided to cover the cost of special tests as requested by the Engineer in terms of Clause 8115 shall be expended in accordance with the provisions of the General Conditions of Contract. Payment will not be made for any special test should the test indicate that the specifications have not been complied with.

The percentage tendered is a percentage of the amount actually spent under subitem B81.02(a), which shall include full compensation for the handling costs of the Contractor and the profit in connection with the tests requested by the Engineer.

The Contractor shall appoint a reputable company to perform the applicable tests with a field retro-reflectometer. This company is subject to the Engineer's approval and his approval must be obtained before any test results will be accepted."

PART C: PROVISION OF THE TEMPORARY WORKFORCE

CONTENTS

C 01 SCOPE

This Specification covers the provisions and requirements relating to the provision of the temporary workforce.

C 02 INTERPRETATIONS

C 02.01 Supporting documents

The Tender Rules, Conditions of Contract, Standard and Project Specifications, Drawings and statutory minimum requirements relating to the employment and remuneration of labour shall *inter alia* be read in conjunction with this Specification.

C 02.02 Definitions and abbreviations

For the purposes of this specification, the definitions given in the Conditions of Contract, the Standard Specifications and the Project Specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

- (a) **"Key Personnel"** means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, artisans and the like, and all other personnel in the permanent employ of the Contractor or Subcontractor who possess special skills and/or who play key roles in the Contractor's or Subcontractor's operation
- (b) **"Project Committee"** means a committee consisting of the Employer, the Engineer, the Contractor, (or their nominated representatives) as well as representatives of the temporary workforce, which is convened from time to time at the discretion of the Engineer, for the purposes of acting as an avenue for effective communication and liaison between all the parties referred to, in all matters pertaining to the Contract
- (c) **"Subcontractor"** means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the Works are sublet or subcontracted by the Contractor in accordance with the provisions of the Contract
- (d) **"Worker"** for the purposes of this Specification means any person, not being one of the Contractor's key personnel, nor any key personnel of any Subcontractor, who is engaged by the Contractor, a Subcontractor or the Employer to participate in the execution of any part of the Contract Works and shall include unskilled labour, semi-skilled and skilled labour, clerical workers and the like
- (e) **"Workforce"** means the aggregate body comprising all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all Subcontractors
- (f) **"Liaison Officer"** means a representative from the temporary workforce, duly elected by them, to act on their behalf and through whom all matters pertaining to the temporary workforce can be channelised.

C 02.03 Status

Where any provisions or requirements of this Specification are in conflict with anything elsewhere set out in the Contract, the provisions and requirements of this Specification shall take precedence and prevail.

C 03 PERMITTED SOURCES OF TEMPORARY WORKERS

The Contractor shall as far as possible make optimum use of the human resources outside his own workforce and the workforces of all subcontractors. The temporary workforce that is to be used in the execution of the Works in terms of Part A may consist of the workers of various communities, and shall not be bound to one particular community.

C 04 EMPLOYMENT RECORDS TO BE PROVIDED

- (a) The Contractor shall maintain accurate and comprehensive records of all workers engaged on the Contract and shall provide the Engineer at monthly intervals from the commencement of the Contract, with interim records substantiating the actual numbers of employment opportunities that shall have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a format approved by the Engineer.
- (b) The Contractor shall, on completion of the Contract, and as a pre-requisite event to the release of any retention money in terms of the Conditions of Contract, provide the Engineer with copies of the Terms of Employment as well as independently audited documentary evidence of the total number of temporary and permanent employment opportunities actually generated during the Contract.

C 05 VARIATIONS IN WORKER PRODUCTION RATES

Notwithstanding anything to the contrary as may be stated in or inferred from any other provision of this Contract, the Contractor shall not be entitled to any additional payment or compensation whatever, in respect of any differences as may result between the production rates actually achieved by workers in the course of the execution of the Contract Works and those production rates on which he has based his tender.

C 06 TRAINING OF THE TEMPORARY WORKFORCE

- (a) Selected members of the workforce are to be provided with structured training in accordance with the provisions of Part D.
- (b) The Contractor shall make all necessary allowances in his programme of work to accommodate and facilitate the delivery of such structured training and shall comply fully with the requirements of Part D.
- (c) The provision of structured training as described in Part D shall not relieve the Contractor of any of his obligations in terms of the Conditions of Contract and the Contractor shall remain fully liable for the provision, at his own cost, of all training of the workforce, additional to that as provided for in Part D, as may be necessary to achieve the execution and completion of the works strictly in accordance with the provisions of the Contract.

C 07 RECRUITMENT AND SELECTION PROCEDURES

- C 07.01** The Contractor shall be fully responsible for the recruitment and selection of workers to constitute the temporary workforce.
- C 07.02** The Contractor shall advise the Engineer in writing of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognisance of the provisions of the Contract relating to training).
- C 07.03** The Contractor shall, at his own cost, take all necessary actions to advertise within the communities comprising the personnel resources, the fact that temporary employment opportunities exist and the time and place where recruiting will occur.

C 07.04 The Contractor shall record in writing, the details of all persons applying for employment, including *inter alia*:

- (a) Name, address, age and sex
- (b) Marital status and number of dependants
- (c) Qualifications and previous work experience (whether substantiated or not)
- (d) Period since last economically active
- (e) Preference for type of work or task.

C 07.05 The Contractor shall make his selection of workers from amongst the applicants, taking due cognisance of his requirements for the workforce and the provisions of the contract in regard to the provision of training to the workforce and in accordance with the following principles:

- (a) No potential temporary worker shall be precluded from being employed by the Contractor on the execution of the Works, by virtue of his lack of skill in any suitable operation forming part of the Works, unless-
 - (i) all available vacancies have been or can be filled by temporary workers who already possess suitable skills, or
 - (ii) the Time for Completion allowed in the Contract, or the remaining portion of the Contract Period (as the case may be) is insufficient to facilitate the creation of the necessary skills.
- (b) Preference shall be given to the unemployed and single heads of households.
- (c) The Contractor shall, in so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected.
- (d) The selection process shall not be prejudicial to youth (over the age of fifteen years) and women.

C 07.06 After making his selection, the Contractor shall advise the Engineer thereof, in writing and the Engineer shall, without undue delay, ratify the Contractor's selection.

C 07.07 The provisions of this clause shall apply *mutatis mutandis* in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the Contract.

C 07.08 The Contractor shall, after selecting his temporary workforce, arrange at his own cost for the appointment of the Liaison Officer as representative of the workforce to act on their behalf with regards to all matters pertaining to the workforce."

C 08 TERMS AND CONDITIONS PERTAINING TO THE EMPLOYMENT OF THE TEMPORARY WORKFORCE

C 08.01 All temporary workers engaged in accordance with the provisions of Part A of the Project Specifications, shall be employed on the terms and conditions of employment as are consistent with those as set out in this Contract. The Contractor shall implement and adhere strictly to such terms and conditions relating to the employment of the temporary workforce, and subject only to the provisions of this Contract, shall not employ any temporary worker on terms and conditions which are less favourable to the worker or inconsistent with the standards and norms generally applicable to temporary workers in the Civil Engineering Industry and applicable to the particular area.

C 08.02 The Contractor shall pay to all temporary workers engaged in terms of Part A of the Project Specifications, not less than the minimum rate of remuneration as specified in Part A – General Clause A17.2.

C 09 LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES

- C 09.01** The Contractor, as the Employer of the workforce, shall be fully responsible for the establishment and maintenance at his own cost, of satisfactory labour relations on site and the resolution of all grievances of temporary workers as may occur.
- C 09.02** The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the Civil Engineering Construction Industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the Contract.
- C 09.03** In the event of any temporary worker engaged by the Contractor in terms of the Contract, being aggrieved with regard to his Terms of Employment, working conditions and training, he shall have the right, at his discretion, to be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor in terms of Subclause C 09.02 above, by one member of the temporary workforce and one member of the Project Committee, which persons shall be nominated by the worker.
- C 09.04** In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures in accordance with Subclauses C 09.02 and C 09.03, then either the Contractor or the worker concerned may require that the matter be referred to the Project Committee for further consideration, with a view to facilitate the resolution thereof.

C 10 THE SUBCONTRACTORS' WORKFORCES

- C 10.01** The provisions of this Part C shall apply *mutatis mutandis* to the workforces employed by all subcontractors engaged by the Contractor and the Contractor shall be fully responsible for ensuring, at his own cost, that the terms of every subcontract agreement entered into are such as to facilitate the application of these provisions in respect of the workforces of all subcontractors.
- C 10.02** The Contractor shall at his own cost and to the extent necessary, assist and monitor all subcontractors in the application of the provisions of this Specification, and shall, in terms of the Conditions of Contract, remain fully liable in respect of the acts, omissions and neglects of all subcontractors, in respect of the application of the provisions of this Specification.

C 11 PROJECT LIAISON OFFICER (PLO)

The Contractor or his appointed agent will appoint a Project Liaison Officer (PLO) after consultation with the local communities, the Engineer and the Employer. The Contractor shall direct all his liaison efforts with the local communities through the appointed officer. The Contractor shall, however, accept the appointed as part of his management personnel.

C 11.01 Duties of the Project Liaison Officer

The Community Liaison Officer's duties will be:

- (i) To be available on site daily between the hours of 07:00 and 18:00 and at other times as the need arises. His normal working day will extend from 07:00 in the morning until 18:00 in the afternoon.
- (ii) To determine, in consultation with the Contractor, the needs of the temporary labour for relevant skills training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.
- (iii) To communicate daily with the Contractor and the Engineer to determine the labour requirements with regard to numbers and skill, to facilitate in labour disputes and to assist in their resolution.

- (iv) To assist in and facilitate in the recruitment of suitable temporary labour and the establishment of a "labour desk".
- (v) To attend all meetings in which the community and/or labour are present or are required to be represented.
- (vi) To assist in the identification, and screening of labourers from the community in accordance with the Contractor's requirements.
- (vii) To inform temporary labour of their conditions of temporary employment and to inform temporary labourers as early as possible when their period of employment will be terminated.
- (viii) To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- (ix) To keep a daily written record of his interviews and community liaison.
- (x) To attend monthly site meetings to report on labour and RDP matters.
- (xi) All such other duties as agreed upon between all parties concerned.
- (xii) To submit monthly returns regarding community liaison in a format prescribed by the Engineer.

C 11.02 Payment for the project liaison officer

A special pay item is incorporated in section 1200 of the Bill of Quantities relating to payment of the liaison officer on a prime cost sum basis. This payment shall only be made for the period for which the duties of the liaison officer are required and not necessarily for the full duration of the contract. The remuneration of the PLO shall be determined jointly by the Contractor, Engineer and Employer.

C 11.03 Period of employment of the project liaison officer

The period of employment of the community liaison officer shall be as decided upon jointly by the Contractor, Engineer and Employer.

PART D: PROVISION OF STRUCTURED TRAINING

CONTENTS

D 01 SCOPE

This specification covers the requirements for the provision of the following training:

- (a) Specified structured training to selected members of the workforce and small, medium and micro enterprises (SMME's) by an approved Training Service Provider as accepted by the Employer.
- (b) Additional training deemed necessary by the Contractor, to members of the workforce and small, medium and micro enterprises (SMME's).

D 02 INTERPRETATIONS

D 02.01 Supporting documents

The tender rules, conditions of contract, standard, supplementary and specific specifications and project specifications and drawings shall *inter alia* be read in conjunction with this specification.

D 02.02 Application

The provisions of this specification shall apply in respect of all workers and small, medium and micro enterprises other than the Contractor's key personnel, who are engaged on the execution of the works.

D 03 ENGINEERING SKILLS TRAINING

D 03.01 The Contractor shall, from the commencement of the contract, implement a structured training programme comprising of the training delivered by the selected subcontractor and any additional training as provided for by the Contractor, in which the various skills required for the execution and completion of the works are imparted to the workers, and where applicable, small, medium and micro enterprises engaged thereon, in a programmed and progressive manner. Selected workers shall be trained progressively throughout the duration of the contract in the various stages of a particular type of work.

D 03.02 The skills training programme to be implemented by the selected subcontractor shall comply with the following minimum standards:

(a) Be accredited by the Civil Engineering Training Authority (CETA) or other institutions recognised by the Department of Labour, as being appropriate for application on this project. Accredited training refers to both the trainers as well as to the training materials.

(b) Be delivered by suitably qualified and experienced trainers accredited to do so.

D 03.03 The Contractor shall provide with his tender, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:

- (a) The name of the accredited training institution and programme
- (b) The various aspects of each type of training comprised in the programme
- (c) The manner in which the training is to be delivered

- (d) The numbers and details of the trainers to be utilised.

D 03.04 The Contractor shall be responsible for the provision of the necessary items for the delivery of the specified and additional skills training programme, including the following:

- (a) Sufficient skilled, competent and accredited trainers to deliver the additional training programme to workers in accordance with the training programme
- (b) A suitably furnished venue
- (c) Transport of the workers as required
- (d) Tools, equipment, and teaching aids
- (e) Stationery and all other necessary materials.

D 03.05 Selection of candidates

- (a) Members of the workforce will be selected by the Engineer, assisted by the Contractor and the Liaison Officer, to receive specific training as approved by the Engineer.
- (b) The following will be taken into account in the selection of the workers to receive the specified training:
 - i. Previous experience (if any)
 - ii. Previous courses completed (if any)
 - iii. Module specific requirements.

D 03.06 Duration of training

- (a) The Contractor shall allow in his programme for the selected members of the workforce to be engaged in the specified training modules.
- (b) Provision must also be made by the Contractor for members of the workforce to receive any additional training as provided for by the Contractor.

D 03.07 All specified skills-related training shall take place only during normal working hours and the Contractor shall ensure that the selected workers are available at the appropriate times to undergo such training.

D 03.08 Both the selected subcontractor's and the Contractor's additional training programme shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content to suit changing conditions on site and all changes in the Contractor's programme of work.

D 03.09 The Contractor shall keep comprehensive records of the training given to each worker involved in training as well as the nature and number of each task executed by the worker and whenever required shall provide copies of such records to the Engineer.

D 03.10 Workers shall be remunerated in respect of all time spent undergoing the specified training in terms of Clause D03.02, at the minimum specified wage as per BCCEI.

D 03.11 Use of workers

The Contractor shall, in so far as it is reasonably feasible take due cognisance of the nature of the works to be executed at any given time, and use trained workers on those aspects of the works for which they have been trained.

D 04 GENERIC TRAINING

- D 04.01 The Contractor shall, from the commencement of the contract, implement a structured progressive training programme comprising of the training delivered by the selected subcontractor and any additional training as provided for by the Contractor. Selected workers shall be trained progressively throughout the duration of the contract.
- D 04.02 The generic training programme is to be implemented by a training subcontractor to be nominated by the Engineer, upon the instruction of the Employer's Capex Programme Manager.
- D 04.03 The Contractor shall provide with his tender, full details of any additional recognised and in-house training viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:
- (a) The name of the training institution and programme
 - (b) The various aspects of each type of training comprised in the programme
 - (c) The manner in which the training is to be delivered
 - (d) The numbers and details of the trainers to be utilized.
- D 04.04 The Contractor shall be responsible for the provision of the necessary items for the delivery of the specified and additional generic training programme, including the following:
- (a) A suitably furnished venue
 - (b) Transport of the workers as required
 - (c) Tools, equipment, and teaching aids
 - (d) Stationery and all other necessary materials.
- D 04.05 All generic training shall take place outside of normal working hours.
- D 04.06 The Contractor's training programme, if any, shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content.
- D 04.07 The Contractor shall keep comprehensive records of the training given to each worker involved in training and whenever required shall provide copies of such records to the Engineer. At the successful completion of each course provided by the Contractor each student shall be issued with a certificate indicating the course contents as proof of attendance and completion.
- D 04.08 No remuneration in respect of time spent undergoing training in terms of this Clause will be made to any of the workers.

D 05 ENTREPRENEURIAL SKILLS TRAINING

- D 05.01 Training needs assessments of the Contractor and his sub-contractors will be undertaken during the course of the Contract by a sub-contractor to be nominated by the Engineer, on the instruction of the Employer's Capex Programme Manager. The training needs assessments shall have as their focus contractor development, and shall identify needs for business development, business management and technical construction management skills. Such training needs may be identified in personnel both in the permanent employ of the Contractor and/or his sub-contractors, as well as temporary employees thereof.

- D 05.02 Once the needs assessments have been completed, training to meet the needs identified in the assessment phase will be provided, again by a sub-contractor to be nominated by the Engineer, upon the instruction of the Employer's Capex Programme Manager.
- D 05.03 The Contractor shall assist in facilitating in the delivery of the training, by instructing and motivating personnel and subcontractors regarding attendance and participation therein.
- D 05.04 The Contractor shall further make all reasonable efforts to co-ordinate the programming of the subcontractor's work with that of the delivery of the structured training.
- D 05.05 Following completion of the structured training, members of small, medium and micro contractors/subcontractors that have demonstrated understanding of and competence in the training material are to be appropriately certified by the accrediting body.
- D 05.06 The Contractor shall provide with his tender, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:
- (a) The name of the training institution and programme
 - (b) The various aspects of each type of training comprised in the programme
 - (c) The manner in which the training is to be delivered
 - (d) The numbers and details of the trainers to be utilized.
- D 05.07 The Contractor shall be responsible for the provision of the necessary items for the delivery of the entrepreneurial training programme, including the following:
- (a) A suitably furnished venue
 - (b) Transport of the subcontractors as required
 - (c) Tools, equipment, and teaching aids
 - (d) Stationery and all other necessary materials.
- D 05.08 All specified entrepreneurial training shall take place within normal working hours.
- D 05.09 The Contractor's training programme, if any, shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content.
- D 05.10 The Contractor shall keep comprehensive records of all training given to personnel and subcontractors involved in training and whenever required shall provide copies of such records to the Engineer. At the successful completion of each course each subcontractor shall be issued with a certificate indicating the course contents as proof of attendance and completion.
- D 05.11 No remuneration in respect of time spent undergoing specified training in terms of this Clause will be made to any of the subcontractors.

D 06 MEASUREMENT AND PAYMENT

D 06.01 Basic principles

(a) General

Measurement and payment for all work executed in terms of this contract shall be measured and paid for in accordance with the principles set out in Clause D 06.02 of the project

specifications, irrespective of whether the work is executed as an integral part of the provision of training in terms of this specification.

(b) Training

The Contractor shall only be reimbursed for the amounts actually paid by the Contractor to the selected subcontractors appointed as directed by the Employer, in execution of the Engineer's written instruction, plus a percentage as tendered to cover all his charges and profits.

D 06.02 Scheduled items

Payment items are included in the Bill of Quantities under Section 1200 for the provision of the specified training by selected subcontractors only. Any additional training as viewed by the Contractor to be necessary shall be viewed to be included under Section 1300 and shall not be paid for separately.

Item	Unit
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D 06.03 Training:

- | | |
|---|-----------------|
| (a) Engineering (technical) skills | Provisional Sum |
| (b) Generic skills | Provisional Sum |
| (c) Training venue | Provisional sum |
| (d) Contractor's handling costs, profit and all other charges in respect of subitems D 06.03(a),(b) and (c): | |
| (i) Technical skills..... | percentage (%) |
| (ii) Generic skills | percentage (%) |
| (iii) Training venue | percentage (%) |
| (e) Training allowance paid to targeted labour i.r.o. formal training(equal to pay for 1 day of task) | person days |
| (f) Extra over (e) for the administration of payment of training allowances to targeted labour | person days |
| (g) Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity of the site. | Provisional Sum |
| (h) Contractor's handling costs, profit and all other charges in respect of subitem (g) | percentage (%) |

Payment under subitems D 06.03(a) and (b) shall be the amounts actually paid to the training institutions and shall be made in accordance with the provisions of the General Conditions of Contract.

The provisional sum for subitem D 06.03 (c) shall include full compensation for the provision of a suitable training venue, for all necessary lighting, furniture, stationery, consumables and study material, and for transportation of the workers to and from the training venue. Payment of the provisional sum shall be made in accordance with the provisions of the General Conditions of Contract:

The percentages tendered for subitem D 06.03 (d) shall be the percentages of the amounts actually reimbursed to the Contractor under subitems D 06.03 (a), (b) and (c) and shall be in full and final

compensation in respect of the Contractor's handling costs, profit, mentoring, record keeping, reporting and all other charges in connection with providing the services.

Payment under subitem D 06.03 (e) shall be the actual sum paid to workers undergoing training. The Contractor will be reimbursed directly for his administrative costs under subitem D 06.03 (f).

Payment under subitems D 06.03(g) shall be the amount actually paid for transporting the labourers to the training venue and shall be made in accordance with the provisions of the General Conditions of Contract.

The percentages tendered for subitem D 06.03 (h) shall be the percentage of the amount actually reimbursed to the Contractor under subitem D 06.03 (g) and shall be in full and final compensation in respect of the Contractor's handling costs, profit and all other charges in connection with providing the transport.

PART E: HIV/AIDS SPECIFICATION

CONTENTS

E 01 SCOPE

- E 01.01 This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:
- E 01.02 Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections, and the closest health service providers.
- E 01.03 Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- E 01.04 Providing Workers with access to condoms and other awareness material that will enable construction Workers to make informed decisions about sexual practices.

E 02 DEFINITIONS AND ABBREVIATIONS

E 02.01 Definitions

Service Provider:	The natural or juristic person recognised and approved by the Department of Public Works and Roads as a specialist in conducting HIV/AIDS awareness programmes.
Service Provider Workshop Plan:	A plan outlining the content, process and schedule of the training and education workshops presented by a Service Provider, which has been approved by the Representative/Agent.
Worker:	Persons in the employ of the Contractor or under the direction or supervision of the Contractor or any of his sub-contractors, who are on site for a minimum period of 30 days in all.

E 02.02 Abbreviations

HIV	: Human Immunodeficiency Virus.
AIDS	: Acquired Immune Deficiency Syndrome.
STI	: Sexually Transmitted Infection.

E 03 BASIC METHOD REQUIREMENT

- E 03.01 The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.
- E 03.02 The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regards to HIV/AIDS awareness. The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Department's Tender Committee, the Contractor shall make available an appropriate venue that will be conducive to education and training.

E 03.03 The Service Provider Workshop Plan shall address, but will not be limited to the following:

- (a) The nature of the disease;
- (b) How it is transmitted;
- (c) Safe sexual behaviour;
- (d) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- (e) Attitudes towards other people with HIV/AIDS;
- (f) Rights of the Worker in the workplace;
- (g) How the awareness champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively;
- (h) How the Service Provider will support the awareness champion;
- (i) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- (j) How the workshops will be presented, including frequency and duration;
- (k) How the workshops will fit in with the construction programme;
- (l) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- (m) How the video will be used;
- (n) How the Service Provider will elicit maximum participation from the Workers;
- (o) A questions and answers slot (interactive session).

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated

E 04 HIV/AIDS AWARENESS EDUCATION AND TRAINING

E 04.01 Workshops

The Contractor shall ensure that all the Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

E 04.02 Recommended practice

Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.

Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a next session.

An attendance register should be kept by the Service Provider at every workshop and should be handed to the Department's Project Manager on a monthly basis together with Process Indicator Forms.

Service Providers

A data base of recommended Service Providers is available from the Department of Public Works, Private Bag X65, Pretoria, 0001, located at the Central Government Offices, corner of Bosman and Vermeulen Streets, Pretoria and at all Public Works Regional Offices.

HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met:

(a) UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

1. Define and describe HIV and AIDS
2. List and describe the progression of HIV/AIDS

(b) UNIT 2: Transmission of the HI virus

After studying and understanding this unit the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

1. Record in what bodily fluids you will find the HI virus.
2. Describe how HIV/AIDS can be transmitted.
3. Demonstrate your ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

(c) UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus to enter the blood stream.

Assessment Criteria:

1. Report on how you could minimise your risk of HIV/AIDS infection.
2. Report on precautions that can be taken to prevent HIV/AIDS infection.
3. Explain or demonstrate how to use a male and female condom.
4. List of factors that could jeopardize the safety condoms provide against HIV/AIDS transmission.

(d) UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling.

Assessment Criteria:

1. Describe kinds of testing for HIV/AIDS infection.
2. Report on why voluntary testing is important.
3. Report on why pre- and post-test counselling is important.

(e) UNIT 5: Living with HIV/AIDS

After studying and understanding this unit the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria:

1. List and describe ways to manage HIV/AIDS.
2. Describe nutritional needs of people living with HIV/AIDS.
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS.
4. Explain the need of counselling and support to people living with HIV/AIDS.

(f) UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:

1. Discuss anti-retroviral therapy
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child.
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS.
4. Describe post exposure prophylactics.

(g) UNIT 7: The rights and responsibilities of Workers in the workplace with regards to HIV/AIDS

After studying and understanding this unit the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way.

Assessment Criteria:

1. Discuss the rights of a person living with HIV/AIDS in the workplace.
2. Discuss the responsibilities of a person living with HIV/AIDS in the workplace.
3. Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

E04.03 Displaying of plastic laminated posters and distribution of information booklets

- (a) The Contractor shall obtain a set of four posters conveying different key messages, and information booklets from the Construction Industry Development Programme Unit (CIDP), Room A520 located in the Central Government Offices, corner of Bosman and Vermeulen Streets, Pretoria or at all Regional Offices of the Department of Public Works. The postal address is the Department of Public Works, Private Bag X65, Pretoria, 0001.
- (b) The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.
- (c) Posters or display stands shall be displayed on site as soon as possible but not later than 14 days after the date of site hand over.
- (d) Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.
- (e) The posters on display should always be intact, clear and readable.
- (f) Information booklets must be distributed to all Workers as soon as possible but not later than 14 days after site hand over, or as soon as the Worker joins the site.

E05 PROVIDING WORKERS WITH ACCESS TO CONDOMS

- E05.01 The Contractor shall provide and maintain condom dispensers and make both male and female condoms complying with the requirements of SANS 4074:2003 available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the local clinic or the Department of Health.
- E05.02 At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary to ensure that condoms are available within 14 days of site hand over.
- E05.03 Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

E06 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

- E06.01 The Contractor shall provide the Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics should be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

E07 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

- E07.01 Within 14 days of site hand over the Contractor shall appoint an Awareness Champion, from, amongst the Workers, who speaks and understands all the languages spoken by the Workers and he/she shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive way.

The Awareness Champion shall be responsible for:

- (a) Liaising with the Service Provider on organising awareness workshops;
- (b) Filling condom dispensers and monitoring condom distribution;
- (c) Handing out information booklets;
- (d) Placing and maintaining posters

E08 MONITORING

- E08.01 The Contractor shall grant to the Representative/Agent reasonable access to the construction site in order to conduct unannounced site visits in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.
- E08.02 The Representative/Agent shall conduct the site visits with the least possible disruption to the Contractor's daily routine.
- E 08.03 Contractors must report problems that they experience in implementing the HIV/AIDS requirements to the Representative/Agent.
- E 08.04 A SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent.
- E08.05 A SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager through the Representative/Agent.

E08.06 The Contractor shall, at the end of the contract, complete and submit a close out programme report CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C).

E09 MEASUREMENT AND PAYMENTS

E09.01 It is required of tenderers to thoroughly study the HIV/AIDS Specifications of the Department that must be read together with and is deemed to be incorporated in the Bill of Quantities. Provision for pricing of HIV/AIDS awareness must be made under Item E10.01 hereafter and it is explicitly pointed out that all requirements of the aforementioned specifications are deemed to be priced hereunder as the said item represents the only method of measurement and no additional items or extras to the contract in this regard shall be entertained.

E09.02 Contractor should take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the Representative /Agent, notwithstanding the provisions of any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the Contractor provides satisfactory proof of compliance. The Contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment

Item	Unit
E10.01 HIV AIDS Awareness obligations	Lump Sum

The tendered lump sum shall be in full compensation for the Contractor providing an approved selected service provider to comply with the requirements and conditions of the Department's HIV/AIDS Specifications, including the workshop education and training within an HIV/AIDS Awareness programme and the Contractor's handling costs, profit, record keeping, reporting and all other charges in connection with providing the HIV/AIDS Awareness programme.

Payment under item E10.01 will be made as follows:

80% of the amount will be paid once the service provider has complied with the requirements and conditions of the Department's HIV AIDS Specifications, including the workshop education and training within an HIV/AIDS Awareness programme.

The outstanding 20% will be paid on completion of the contract, subject to the Contractor's compliance in all respects with the requirements and conditions of the Department's HIV/AIDS Specifications.

PART F: GENERIC LABOUR-INTENSIVE SPECIFICATION

CONTENTS

F 01 SCOPE

This specification establishes general requirements for activities, which are to be, executed by hand involving the following:

- (a) trenches having a depth of less than 1.5 metres
- (b) storm water drainage
- (c) low-volume roads and sidewalks

F 02 PRECEDENCE

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

F 03 HAND EXCAVATEABLE MATERIAL

Hand excavatable material is material:

(a) Granular materials:

- (i) Whose consistency when profiled may in terms of Table 1 be classified as very loose, loose, medium dense, or dense; or
- (ii) Where the material is gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

(b) Cohesive materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- (ii) where the material is gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

Note: (1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.

(2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg, which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumbnail; slight indentation produced by pushing geological picks point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumbnail with difficulty; slight indentation produced by blow of a geological pick point.

F 04 LABOUR INTENSIVE WORKS

Trench excavation

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

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

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

- (a) To 90% Proctor density;
- (b) Such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders; or
- (c) Such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All hand excavatable material including topsoil classified, as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material, which presents the possibility of danger or injury to workers, shall not be excavated by hand.

Clearing and grubbing

Grass and small bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand, regardless of the method of haulage.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Grout shall be mixed and placed by hand.

Manufactured Elements

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

C3.3 PARTICULAR SPECIFICATIONS

In addition to the Standardized and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

SECTION EMP	ENVIRONMENTAL MANAGEMENT SPECIFICATION
SECTION DWK	DAY WORKS
SECTION OHS	OHSA 1993 SAFETY SPECIFICATION

Annex I ENVIRONMENTAL MANAGEMENT PLAN

CONTENTS

G 01 SCOPE

This environmental management programme (EMP) sets out the methods by which proper environmental controls are to be implemented by the Contractor. 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 the General Conditions of Contract, and the project specifications, as the defects liability period.

The provisions of this EMP 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. In the event that any conflict occurs between the terms of the EMP and the project specifications or Record of Decision, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the Employer in writing for approval.

The EMP identifies the following:

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. Actions that shall be taken in the event of non-compliance.

G 02 DEFINITIONS

Alien Vegetation: alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be 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: a construction activity is any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7, 1998)

Environment: environment means the surroundings within which humans exist and that could be made up of:

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

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

Environmental Impact: an impact or environmental impact is the 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.

Record of Decision: a record of decision is a written statement from the National Department of Environmental Affairs and Tourism, (NDEAT), that records its approval of a planned undertaking to improve, upgrade or rehabilitate a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

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

Road Width: for the purposes of the EMP, the road width is defined as the area within the road reserve i.e. fence line to fence line, but also includes all areas beyond the road reserve that are affected by the continuous presence of the road, e.g. a reach of a water course.

Listed in the table below are some of the references in the COLTO Standard Specifications to environmental related issues.

Description	Reference
Establishment of site offices	1302(a), 1402(e).
Vegetation	5801(b), 5802(b), (c), (d), and (e), 5804, 5805, 5806 and 5807.
Rehabilitation	1302(a) and Sections 5800 and 5900 of the Standard and Project Specifications
Sewage treatment	1402(g) and 1404(a) and Part B of the Project Specifications, clause B1302(a).
Litter	1302(b).
Removal of solid waste	1404(a).
Soil management	3104(a), 5802(a), (g), 5804(a), (b), and (c).
Borrow/Quarry material	3100. (The cost of complying with the requirements shall be deemed to be included in existing rates in the Bill of Quantities.)
Discovery of archaeological sites, artefacts or graves	Clause 4.7 of the GCC 2015 General Conditions of Contract.
Graves	
Stockpiled material	3202 and 4306.
Pollution prevention	Sub clause 8.1.2 of the GCC 2015 General Conditions of Contract.

G 03 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

The Contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- waste generation
- stormwater discharge
- emission of pollutants into the atmosphere
- chemical use operations
- energy use operations
- water use operations
- use of natural resources
- noise generation

Thereafter 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. If prevention is not practicable, or in the event of mishap or misapplication, the Contractor shall provide plans and measures for the Engineer's approval, which will limit and contain

the magnitude, duration and intensity of the impact. The Contractor shall demonstrate that he/she is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce an approved construction programme according to sub clause 5.6 of the general conditions of contract and clause B1204 of these project specifications.

Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:

- Pollution of atmosphere, soil or water
- Destruction or removal of fauna and flora and effect on biological diversity
- Deformation of the landscapes oil erosion
- Destruction of historical/heritage sites
- Effect on the built environment
- Effect on agricultural land and wetlands

General good construction practice will play an important role in avoiding the occurrence of an Impact. The Contractor's attention is drawn, in this regard, to G 08. Environmental Management of Construction Activities.

G 04 LEGAL REQUIREMENTS

G04.01 General

Construction will 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 environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

G04.02 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.

G 05 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

G 05.01 Appointment of a Designated Environmental Officer (DEO)

For the purposes of implementing the conditions contained herein, the Contractor shall submit to the Engineer for approval the appointment of a nominated representative of the Contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the Engineer to make a decision. The Engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the Contractor has been approved he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The Engineer will be responsible for issuing instructions to the Contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the Engineer, but not less frequently than once a month.

The Engineer shall have the authority to instruct the Contractor to replace the DEO if, in the Engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons

why a replacement is required. There shall be an approved DEO on the site at all times.

G 05.02 Administration

Before the Contractor begins each construction activity the DEO shall give to the Engineer a written statement setting out the following:

- The type of construction activity.
- Locality where the activity will take place.
- Identification of the environmental aspects and impacts that might result from the activity.
- Methodology for impact prevention for each activity or aspect.
- Methodology for impact containment for each activity or aspect.
- Emergency/disaster incident and reaction procedures.
- Treatment and continued maintenance of impacted environment.
- The Contractor may 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.

G 05.03 Good Housekeeping

The Contractor shall undertake "good housekeeping" practices during construction as stated in clause 1217 of the COLTO Standard Specifications for Roads and Bridges. 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.

G 06 TRAINING

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must 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. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.
- 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/she intends concluding his environmental training obligations.

G 07 ACTIVITIES/ASPECTS CAUSING IMPACTS

A list of possible causes of environmental impacts that occur during construction activities is given in Table 1: Aspects or Activities that Cause Environmental Impacts during Construction Activities, which is to be found at the end of this part. This list is not exhaustive, and shall be used for guideline purposes only.

G 08 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

G 08.01 Site Establishment

G 08.01.01 Site Plan

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 construction can begin, the Contractor shall submit 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 treatment 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 as possible. Regardless of the chosen site, the Contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the Engineer for consultation during rehabilitation of the site. Read with COLTO Specification 1302(a), 1402(e).

G 08.01.02 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.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. (Read in conjunction with COLTO Specification 5801(b), 5802(b), (c), (d) and (e), 5804, 5805, 5806 and 5807). Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

G 08.01.03 Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

G 08.01.04 Water for human consumption

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 drain.

G 08.01.05 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.

G 08.02 **Sewage treatment (impose penalties on solid waste non-conformance)**

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 project management, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-away, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment 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. Read with COLTO Specifications 1402(g) and 1404(a).

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. Monthly proof of safe disposal must be filed on site by the contractor.

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.

G 08.03 **Waste Management**

The Contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

Monthly proof of safe disposal for all waste must be filed on site.

Waste disposal

- Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste.
- All used oils, grease or hydraulic fluids shall be placed therein and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.
- All spills should be cleaned up immediately to the satisfaction of the ECO by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.

G 08.03.01 Solid Waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the Engineer. Disposal of solid waste shall be at a DWS licensed landfill site or at a site approved by DWS in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, nor anywhere else on the site, including the approved solid waste disposal site. Read with COLTO Specification 1404(a).

G 08.03.02 Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.

Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter collection facilities for later safe disposal at approved sites. (Read with COLTO Specification 1302(b)).

G 08.03.03 Hazardous waste

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a DWS approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

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

G 08.04 **Control at the workshop**

The Contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop)

G 08.04.01 Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the Contractor to, and used or worn by, the staff whose duty it is to manage and maintain the Contractor's and his subcontractor's and supplier's plant, machinery and equipment.

G 08.04.02 Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g. tar or bitumen binders shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of 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 against 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.

G 08.04.03 Fuel and Gas Storage

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. An adequate bund walls, 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.

G 08.04.04 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 the specialist oil recycling company.

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.

G 08.05 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. Contractor to communicate with an appointed ECO before clearing any area on site.

The plan 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 subsequent inspections.

The Contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, road construction has to be stored temporarily or otherwise within the road reserve, or at designated or instructed areas outside the road reserve. This responsibility shall extend until expiry of the defects liability period.

G 08.06 Soil Management

G 08.06.01 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 considered to be 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 the 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 Department of Water and Sanitation waste disposal site. (Read with COLTO Specifications 3104(a), 5802(a), (g), 5804(a), (b) and (c)). 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. Stockpiles of topsoil shall not exceed a height of 2m, and if they are to be left for longer than 6 months, shall be analysed, and if necessary, upgraded before replacement. Stockpiles shall be protected against infestation by weeds.

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.

G 08.06.02 Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Engineer, and stored separately from the topsoil if not used for road building. This soil shall be replaced in the excavation in the original order it was removed for rehabilitation purposes.

G 08.07 Drainage

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 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 or tar 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.

G 08.08 Earthworks and Layer works

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 sections G 08.05 and G 08.07. In addition, the Contractor shall take cognisance of the requirements set out below.

G 08.08.01 Quarries and borrow pits

The Contractor's attention is drawn to the requirement of the Department of Minerals and Energy, that before entry into any quarry or borrow pit, an EMP for the establishment, operation and closure of the quarry or borrow pit shall have been approved by the Department. It is the responsibility of the Contractor to ensure that he is in possession of the approved EMP or a copy thereof, prior to entry into the quarry or borrow pit. The conditions imposed by the relevant EMP 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 EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in

existing rates in the Bill of Quantities. (Read with COLTO Specification 3100 and 3200). An approval from DMR with all the conditions which need to be adhered to by the contractor will be given to the appointed contractor.

Demarcating the Borrow pit/Quarrying Area

- The mining/Quarrying area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.
- Permanent beacons as indicated on the layout plan or as prescribed must be firmly erected and maintained in their correct position throughout the life of the operation.
- Mining/ Quarrying and resultant operations shall only take place within this demarcated area.

RESTRICTIONS ON MINING/Quarrying Area

- On assessment of the application, the Regional Manager may prohibit the conducting of mining or Quarrying operations in vegetated areas or over portions of these areas
- In the case of areas that are excluded from mining, no operations shall be conducted within 5 m of these areas.

RESPONSIBILITY

- The environment affected by the mining operations shall be rehabilitated by the holder, as far as is practicable, to its natural state or to a predetermined and agreed to standard or land use which conforms with the concept of sustainable development. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.
- It is the responsibility of the holder of the mining permit to ensure that the manager on the site and the employees are capable of complying with all the statutory requirements which must be met in order to mine, which includes the implementation of this EMP.

Maintenance of access roads

- In the case of dual or multiple use of access roads by other users, arrangements for multiple responsibility must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the mining permit/ prospecting right.
- Newly constructed access roads shall be adequately maintained so as to minimise dust, erosion or undue surface damage.

Dust control on the access and haul roads

- The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions; excessive dust or excessive deterioration of the road being used.

Rehabilitation of access roads

- Whenever a mining permit is suspended, cancelled or abandoned or if it lapses and the holder does not wish to renew the permit or right, any access road or portions thereof, constructed by the holder and which will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.
- Any gate or fence erected by the holder which is not required by the landowner/tenant, shall be removed and the situation restored to the pre-mining/ prospecting situation.

- Roads shall be ripped or ploughed, and if necessary, appropriately fertilised (based on a soil analysis) to ensure the regrowth of vegetation. Imported road construction materials which may hamper regrowth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation.

Toilet facilities, waste water and refuse disposal

- As a minimum requirement, the holder of a mining permit shall, at least, provide pit latrines for employees and proper hygiene measures shall be established.
- Chemical toilet facilities or other approved toilet facilities such as a septic drain shall preferably be used and sited on the camp site in such a way that they do not cause water or other pollution.
- The use of existing facilities must take place in consultation with the landowner/tenant.
- In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.

LIMITATIONS ON BORROW PITS AND QUARRYING AREA

- The mining of shall take place only within the approved demarcated mining or prospecting area.
- Mining may be limited to the areas indicated on assessment.
- The holder of the mining permit/ shall ensure that operations take place only in the demarcated areas.

G 08.08.02 Excavation, hauling and placement

The Contractor shall provide the Engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil, 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 from rainfall overnight or over periods when there is no construction activity. (Read with COLTO Standard Specification clauses 1217 and 3309)

G 08.08.03 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 liability 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 Engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the Engineer. No spoil site shall be located within 500m 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 hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The Engineer will assist the Contractor in obtaining the necessary approval if requested by the Contractor.

Spoil sites will be shaped to fit the natural topography. These sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate grassing measures to minimise soil erosion shall be undertaken

by the Contractor. This will 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 liability period upon receipt from the Contractor of a landowner's clearance notice and an engineer's certificate certifying slope stability (Read with COLTO standard Specifications clause 1214). The Contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the tendered rates for spoiling.

G 08.08.04 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, together with the Contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.

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 relevant Authority 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 detritus of material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract drawing or under instruction from the Engineer. In all cases, the Engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their clause only when they have been satisfactorily rehabilitated. (Read with COLTO Specification 3203 and 4306).

G 08.08.05 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. In addition, the Contractor shall, prior to any drilling of holes in preparation for blasting, supply the Engineer with a locality plan of the blast site on which shall be shown the zones of influence of the ground and air shock-waves and expected limits of fly-rock. The plan shall show each dwelling, structure and service within the zones of influence and record all details of the dwellings/structures/services including existing positions, lengths and widths of cracks, as well as the condition of doors, windows, roofing, wells, boreholes etc. The Contractor, alone, shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields. The submission of such a plan shall not in any way absolve the Contractor from his responsibilities in this regard. The Contractor shall also indicate to the Engineer the manner in which he intends to advertise to the adjacent communities and/or road users the times and delays to be expected for each individual blast.

G 08.09 Batching sites

Asphalt plants are considered scheduled processes listed in the second schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965). Should the use of an asphalt plant be considered on site, the Contractor shall be responsible to obtain the necessary permit from the Department of Environmental Affairs and Tourism, regardless of where they are sited.

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 Department of Minerals and Energy legislation as well as the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative 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 G 08.08.03, 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 national authority, as shall approval of closure. The Engineer will assist the Contractor in his submissions to the relevant authority.

Effluent from concrete batch plants and crusher plants shall be 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.

The Contractor shall invite the relevant department to inspect the site within 2 months after any plant is commissioned and at regular intervals thereafter, not exceeding 12 months apart

G 08.10 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 tar or 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 treatment lies with the Contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the Engineer. The Designated Environmental Officer 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.

G 08.11 Areas of Specific Importance

Any area, as determined and identified within the project document as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or 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 shall 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 require ad hoc treatment.

G 08.11.01 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 National Monuments Council is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. (Read with Sub clause 4.7.1 of the General Conditions of Contract).

G 08.11.02 Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the Engineer informed of the discovery. The National Monuments Council 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 the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred. (Read with Sub clause 4.7.1 of the General Conditions of Contract).

G 08.12 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 daylight hours. Compliance with the appropriate legislation with respect to noise, shall be mandatory.

Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

G 08.13 Dust Control

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

G 08.14 Alien Vegetation

The Contractor shall be held responsible for the removal of alien vegetation within the road reserve disturbed during road construction. 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 or otherwise within the road reserve. This responsibility shall extend for the duration of the defects liability period.

G 09 RECORD KEEPING

The Engineer and the DEO will continuously monitor the Contractor's adherence to the approved impact prevention procedures and the Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO should 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 any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the Employer or relevant environmental departments.

G 10 COMPLIANCE AND PENALTIES

The Contractor shall act immediately when such 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 a verbal report given at the monthly site meetings.

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

The following penalties shall apply for environmental violations:

G10.01 Unnecessary removal or damage to trees:

- 2600mm girth or less: R5 000 per tree
- Greater than 2600mm, but less than 6180mm girth: R10 000 per tree
- Greater than 6180mm girth: R30 000 per tree

G 10.02 Serious violations:

- Hazardous chemical/oil spill and/or dumping in non-approved sites: R10 000 per incident
- General damage to sensitive environments: R5 000 per incident
- Damage to cultural and historical sites: R5 000 per incident
- Uncontrolled/unmanaged erosion (plus rehabilitation at the Contractor's cost): R1 000 to R5 000 per incident
- Unauthorised blasting activities: R5 000 per incident
- Pollution of water sources: R10 000 per incident

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

G 10.03 Less serious violations:

• Littering on site:	R1 000 per incident
• Lighting of illegal fires on site:	R1 000 per incident
• Persistent or un-repaired fuel and oil leaks:	R1 000 per incident
• Excess dust or excess noise emanating from site:	R1 000 per incident
• Dumping of milled material in side drains or on grassed areas:	R1 000 per incident
• Possession or use of intoxicating substances on site:	R500 per incident
• Any vehicles being driven in excess of designated speed limits:	R500 per incident
• Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife:	R2 000 per incident
• Illegal hunting:	R2 000 per incident
• Urination and defecation anywhere except in designated areas:	R500 per incident

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

G 11 MEASUREMENT AND PAYMENT

Item	Unit
------	------

G 11.01 Penalty for unnecessary removal or damage to trees for the following diameter sizes:

- | | |
|---|-------------|
| (a) 2600mm girth or less | number (No) |
| (b) Greater than 2600mm, but less than 6180mm girth | number (No) |
| (c) Greater than 6180mm girth | number (No) |

The unit of measurement shall be the number of trees by diameter size removed unnecessary or damaged. The penalty rates applied shall be those stated in clause G 10.01.

Item	Unit
------	------

G 11.02 Penalty for serious violations:

- | | |
|--|-------------|
| (a) Hazardous chemical/oil spill and/or dumping in non-approved sites | number (No) |
| (b) General damage to sensitive environments | number (No) |
| (c) Damage to cultural and historical sites | number (No) |
| (d) Pollution of water sources | number (No) |
| (e) Unauthorised blasting activities | number (No) |
| (f) Uncontrolled/unmanaged erosion per incident, depending on environment impacts, plus rehabilitation at the Contractor's cost) | number (No) |

The unit of measurement for G 11.02(a) to (f) shall be the number of serious violation incidents. The penalty rates to be applied shall be those stated in clause G 10.02.

The relevant sections of Mineral and Petroleum Resources Development Act and its supporting Regulations are summarised below for the information of applicants. The onus is on the applicant to familiarise him/herself with the provisions of the full version of the Mineral and Petroleum Resources Development Act and its Regulations.

Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
5(4)	No person may prospect, mine, or undertake reconnaissance operations or any other activity without an approved EMP, right, permit or permission or without notifying land owner	R100 000 or two years imprisonment or both
19	Holder of a Prospecting right must: lodge right with Mining Titles Office within 30 days; commence with prospecting within 120 days, comply with terms and conditions of prospecting right, continuously and actively conduct prospecting operations; comply with requirements of approved EMP, pay prospecting fees and royalties	R100 000 or two years imprisonment or both
20(2)	Holder of prospecting right must obtain Minister's permission to remove any mineral or bulk samples	R100 000 or two years imprisonment or both
26(3)	A person who intends to beneficiate any mineral mined in SA outside the borders of SA may only do so after notifying the Minister in writing and after consultation with the Minister.	R500 000 for each day of contravention
28	Holder of a mining right or permit must keep records of operations and financial records AND must submit to the DG: monthly returns, annual financial report and a report detailing compliance with social & labour plan and charter	R100 000 or two years imprisonment or both
29	Minister may direct owner of land or holder/applicant of permit/right to submit data or information	R10 000
38(1)(c)	Holder of permission/permit/right MUST manage environmental impacts according to EMP and as ongoing part of the operations	R500 000 or ten years imprisonment or both.
42(1)	Residue stockpiles must be managed in prescribed manner on a site demarcated in the EMP	A fine or imprisonment of up to six months or both
42(2)	No person may temporarily or permanently deposit residue on any other site than that demarcated and indicated in the EMP	A fine or imprisonment of up to six months or both
44	When any permit/right/permission lapses, the holder may not remove or demolish buildings, which may not be demolished in terms of any other law, which has been identified by the Minister or which is to be retained by agreement with the landowner.	Penalty that may be imposed by Magistrate's Court for similar offence
92	Authorised persons may enter mining sites and require holder of permit to produce documents/ reports/ or any material deemed necessary for inspection	Penalty as may be imposed for perjury
94	No person may obstruct or hinder an authorised person in the performance of their duties or powers under the Act.	Penalty as may be imposed for perjury
95	Holder of a permit/right may not subject employees to occupational detriment on account of employee disclosing evidence or information to authorised person (official)	Penalty as may be imposed for perjury
All sections	Inaccurate, incorrect or misleading information	A fine or imprisonment of up to six months or both
All sections	Failure to comply with any directive, notice, suspension, order, instruction, or condition issued	A fine or imprisonment of up to six months or both

Item	Unit
G 11.03 Penalty for less serious violations:	
(a) Littering on site.....	number (No)
(b) Lighting of illegal fires on site.....	number (No)
(c) Persistent or un-repaired fuel and oil leaks	number (No)
(d) Excess dust or excess noise emanating from site	number (No)
(e) Dumping of milled material in side drains or on grassed areas	number (No)
(f) Possession or use of intoxicating substances on site	number (No)
(g) Any vehicles being driven in excess of designated speed limits	number (No)
(h) Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife	number (No)
(i) Illegal hunting	number (No)
(j) Urination and defecation anywhere except in designated areas	number (No)

The unit of measurement shall be the number of less serious violation incidents. The penalty rates applied shall be those stated in clause G 10.03.

The Engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

Item	Unit
G 11.04 Contractor's time related obligations in respect of	
Environmental management plans and specifications	monthly

The tendered monthly amount shall represent full compensation for that part of the Contractor's general obligations in terms of the environmental management plans and specifications which are mainly a function of time. This includes inter alia payment of all costs of the approved designated environmental office (DEO) and other staff contemplated in the administration of the environmental obligations, including the transport of employees on site. Payment will be monthly. The following obligations will be directed by the Audit reports to be compiled by the Environmental control officer and that report will give a clue on the basis of contractor's compliance on the below obligations:

Below is the list of time related obligations in respect of EMP specifications but not limited to:

- Servicing of Toilets on site & Submission of proof of safe disposal
- Dust Suppression
- Cleaning of spillages on site
- Methods statement for all the activities
- Waste disposal and proof of safe disposal (Registered landfill site)
- Designated Environmental officer (Full time on site)
- Administration for all the required documents for Environmental Compliance
- Maintenance of site camp standard
- Provision of all the Covid-19 requirements

Contractor's initial obligations in respect to Environmental Management Plans Specifications.....	Lump Sum
• Site Establishment • Fencing of Borrow pits & Quarrying Area • Provision of Toilets on site, Quarrying and Borrow pit	

- Provision of Waste Bins on sites for waste separations
- Legal Requirements in terms of NEMA
- Mining Requirements as per the Mine regulations and Bylaws.
- Methods statement for all the activities
- Waste management plan
- All necessary Signage's to be posted on site
- Provision of PPE

Table 1: Mechanisms that Cause Environmental Impacts during Construction Activities

CONTENTS	ENVIRONMENTAL IMPACTS				
	POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS
Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	High Sensitivity
Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Moderate Sensitivity
Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Moderate
Overhaul	Spillage Storage Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil	Moderate
Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil	Moderate
Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Moderate

CONTENTS	ENVIRONMENTAL IMPACTS				
	POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS
Borrow pits/Quarrying	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	High Sensitivity
Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Moderate/Low
Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Low-Moderate
Pavement layers	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Low
Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	High Sensitivity
Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Low-Moderate

CONTENTS	ENVIRONMENTAL IMPACTS				
	POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS
Structures	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Low-Moderate
Concrete/Cement	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Moderate to High

I, the Director (NAME), the Contractor hereby undertake to implement the measures as described in Section G hereof. I understand that this undertaking is legally binding and that failure to give effect hereto will render me liable for prosecution in terms of Section 98 (b) and 99 (1)(g) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). I am also aware that the Regional Manager may, at any time but after consultation with me, make such changes to this plan as he/she may deem necessary.

Signed on thisday of 20.....at(Place)

.....
Signature

C5.2 Annex II - Abstracts of the Mine Health and Safety Act No. 29 of 1996 and Amendment Act No. 72 of 1997

DEFINITIONS:

Section 102 of the Mine Health and Safety Act refers.

"mine" means, when –

- (a) "used as a noun-
 - (i) any borehole, or excavation, in any tailing or in the earth, including the portion of the earth that is under the sea or other water, made for the purpose of searching for or winning a mineral, whether is being worked or not, or
 - (ii) any other place where a mineral deposit is being exploited, including the mining area and all buildings, structures, machinery, mine dumps, access roads or objects situated on or in that area that are used or intended to be used in connection with searching, winning, exploiting or processing of a mineral, or for health and safety purposes. But, if two or more excavations, boreholes or places are being worked in conjunction with one another
 - (iii) a works; and
- (b) used as a verb, the making of any excavation or borehole referred to in paragraph (a) (i), or the exploitation of any mineral deposit in any other manner, for the purpose of winning a mineral including prospecting in connection with the winning of a mineral.
 - (a) whether that substance is in solid, liquid or gaseous form;
 - (b) that occurs naturally in or on the earth, in or under water or in tailings, and
 - (c) that has been formed by or subjected to a geological process.

"processing" means the recovering, extracting, concentrating, refining, calcimining, classifying, crushing, milling, screening, washing, reduction, smelting or gasification or any mineral, and "process" has a similar meaning

"works" means any place, excluding a mine, where any person carries out-

- (a) The transmitting and distributing to another consumer of any form of power from a mine, by the owner thereof, to the terminal point of bulk, to the power supply meter on any such other consumer's premises, or
- (b) Training at any central rescue station, or
- (c) The making, repairing, re-opening or closing of any subterranean tunnel, or
- (d) Any operations necessary in connection with any of the operational listed in this paragraph.

**EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE
MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.
(To printed on Contractors letter head)**

**APPOINTMENT IN TERMS OF SUB-ORDINATE MANAGER: REGULATION 2.6.1 IN FORCE IN TERMS
OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO. 29 OF 1996) AS AMENDED BY
THE HEALTH SAFETY AMENDMENT ACT (ACT NO. 72 OF 1997)**

I, in my capacity as **Commercial Manager**, having been
appointed in terms of **Section 3(1)** of the Act (as amended), by the Ephraim Mogale Local Municipality and
owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of
Regulation 2.6.1 of the Act as

amended, appoint as Sub-Ordinate Manager of the Contractor,

..... of address,

and contact number, on contract no **Tender No. EPMLM 8/3/397:**

CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD.

In accordance with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996), you are also
appointed in terms of Section 7(2) of the Mine Health and Safety Act, 1996 to perform the following functions,
assigned to the Mine Manager in terms of Section 7(1), 10(2) (b) and (c) and 11 (1) in so far as your area of
responsibilities are concerned: -

1. You must identify the hazards, assess the risk and record the hazards to health and safety to which
employees may be exposed while they are at work, and
2. To the extent that is reasonable, you must ensure that every employee is properly trained:
 - a. In the measures necessary to eliminate, control and minimise those risks to health and safety.
 - b. In the procedures to be followed to perform the employee's work.

3. To the extent that is reasonably practical, you must:

Ensure that every employee becomes familiar with the work-related hazards and risk and the
measures that must be taken to eliminate, control and minimise those hazards and risks.

4. To the extent that is reasonably practical, you must:

Ensure that every employee under your control complies with the requirements of the Act.

Institutes the measures necessary to secure, maintain and enhance health and safety.

Considers and employees training and capabilities in respect of health and safety before assigning a
task to that employee.

Ensure that work is performed under the general supervision of a person trained to understand the
hazards associated with the work, and who has the authority to ensure that the precautionary
measures laid down by the Manager are implemented.

You will be responsible for the control, management and direction of all the activities and employees
connected with work and you are required to ensure that all such activities take place in accordance
with the provisions of the Mine Health and Safety Act and the Regulations are complied with.

You are further required to inform the Manager, as soon as practicable, of any
breach of any provision of these Regulation, to enable him to inform the Principal Inspector of Mines,
Department of Minerals and Energy, or take such steps as may be necessary.

Please acquaint yourself with the relevant Regulations, Standards and Procedures, which have a bearing on your appointment. You must ensure that you are fully conversant with the requirements of the Procedures for Reporting Accidents.

SIGNED:

DATE:

WITNESS: 1. 2.

NAME(Print): 1. 2.

I,, having been appointed in terms of Regulation 2.6.1 of the act (as amended) to perform all functions entrusted to

In terms of the Act (as amended) hereby accept the above appointment.

SIGNED:

DATE:

WITNESS: 1. 2.

NAME(Print): 1. 2.

**EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE
MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.
(To printed on Contractors letter head)**

**APPOINTMENT OF RESPONSIBLE MINE SURVEYOR / COMPETENT PERSON: REGULATION 2.12.2
AND 2.12.6 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT, (ACT
NO.29 OF 1996) AS AMENDED BY THE HEALTH AND SAFETY AMENDMENT ACT (ACT NO. 72 OF
1997)**

I,in my capacity as Commercial Manager, having been
appointed in terms of Section 3(1) of the Act (as amended), by the Ephraim Mogale Local Municipality and
owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of
Regulations 2.12.2 and 2.12.6 of the Act as amended, appoint
..... as Competent Person responsible for mine survey for the
Contractor, of address
and contact number, on all contracts in the North West that are undertaken by
the Contractor.

Please confirm this appointment by signing at the bottom.

SIGNED: DATE:

NAME:

SIGNED: DATE:

NAME:

**EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN TERMS OF THE
MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.
(To printed on Contractors letter head)**

**APPOINTMENT AS COMPETENT PERSON IN CHARGE OF MACHINERY IN TERMS OF REGULATION
2.13.2 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO. 29
OF 1996) AS AMENDED BY THE HEALTH AND SAFETY AMENDMENT ACT (ACT NO. 72 OF 1997)**

I, in my capacity as **Commercial Manager**, having been appointed in terms of **Section 3(1)** of the Act (as amended), by the Ephraim Mogale Local Municipality and owner of the Mine(s) to be worked under the requirements of the above mentioned Acts hereby, in terms of **Regulations 2.13.2** of the Act as amended, appoint as Competent Person in charge of machinery for the Contractor, of address and contact number, on all contracts in the North West that are undertaken by the Contractor.

You are to report any accident to the mine manager immediately and personally visit the scene of the accident without delay.

You must familiarise yourself with the Mine Health and Safety Act and the Minerals Act and the Regulations and ensure that you have a copy in your possession and you must take all reasonable measures to ensure that the provisions of this Act are complied with.

Your attention is further drawn to Regulation 2.13.4.1 as well as the requirements of Chapter 18,20 and 21.

Please confirm this appointment by signing at the bottom.

SIGNED: DATE:

NAME:

SIGNED: DATE:

NAME:

C5.3 *Annex III - Borrow Pit Guarantee*

(BANK OR GUARANTOR'S LETTER HEAD)

(Reference number)

(Guarantee number)

**The Regional Manager
The Department of Mineral and Energy
POLOKWANE**

Dear Sir/ Madam

FINANCIAL GUARANTEE FOR THE REHABILITATION OF LAND DISTURBED BY MINING (EXECUTION OF ENVIRONMENTAL MANAGEMENT PROGRAMME)

- 1 Concerning the responsibility in terms of the Mineral and Petroleum Resources Development Act 28 of 2002, which is incumbent on

.....
.(hereinafter referred to as "the mine owner") to execute the environmental management programme approved in terms of the provisions of the said Act for the mine known as

.....
situated in the magisterial district ofProvince

....., I/We....., in my/our

Capacity/capacities of

and as duly authorized representative

.....
(Hereinafter referred to as "the guarantor") confirm that the amount of R.....

R..... (.....) is available to you for the purpose of executing the said environmental management programme.

- 2 The guarantor, who hereby waives the advantages of the exceptions non numerate pecuniae non causa debiti executionis et divisionis the meaning and the consequences of which is known to the guarantor undertakes to pay to you the said

sum of R (.....) upon receipt of a written claim from you to do so and the claim may be submitted by you, if (in your opinion and discretion) the mine owner fails or remains in default to execute the said environmental management programme, or if he ceases mining/prospecting operations, or if his estate is sequestrated, or if he should hand over his estate in terms of the Insolvency act which are applicable in the Republic of South Africa, or if the guarantor gives written notice to you in terms of clause 5 of this agreement. The said claim may be instituted by you at any stage commencing from the date of signature of this guarantee.

- 3 The said amount of R may be held by you on the condition that you, after having complied with all the provisions of the said environmental management programme, will give account to the guarantor of how the amount was appropriated and repay any inappropriate amount to the guarantor.

- 4 This undertaking is neither negotiable nor transferable, and –

- (a) must be returned to the guarantor when giving account to the guarantor in terms of clause 3 above,
- (b) shall lapse on the granting of a closure certificate in terms of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and
- (c) shall not be construed as placing any other responsibility on the guarantor other than the paying of the guaranteed amount.

5 The guarantor reserves the right to withdraw from this guarantee after having given you at least three months written notice in advance of his intention to do so.

Yours faithfully

.....

ADDRESS:

.....

.....

.....

DATE:

PLEASE NOTE: (1) No amendments and/or additions to the wording of this Guarantee will be accepted.
(2) The address of the guarantee must be stated clearly.
(3) This guarantee must be returned to:

.....

.....

.....

.....

C5.4 Part H Annex IV - Health and Safety Specification

Project		CONSTRUCTION OF MORARELA MBUZINI INTERNAL ROAD.	
Client		Department Of Public Works and Roads	
Prepared By		Complied By	Approved By
Shumani HSE Consulting CC			T3 CONSULTING ENGINEERS CC
		DOCUMENT CHANGE RECORD	
Rev	Date	Section(s) change(d)	Description of Revision

H 1. Introduction

Construction regulation 7(1) states that a principal contractor shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan based on the client's documented health and safety specifications which shall be applied from the date of commencement of and for the duration of the construction work

This document therefore describes the health and safety specifications required by the client for any principal contractor who is making a bid for or who has been appointed to perform construction work on behalf of the client. [Ref. CR 5(1)(b)]. The specification is based on relevant legislation as a minimum requirement and any best practices the client subscribes to that will contribute to an improved health and safety performance

Principal contractors are requested to compile their Health and Safety Plans including risk assessments, based on the specifications detailed and referred to, in this document. In other words, the Health and Safety Plan must specify how the principal contractor will control and manage all health and safety aspects on the construction site. The importance of the plan cannot be emphasized enough, as it is the direct response to these specifications which is the minimum health and safety standard required by the contractor on site.

The Health and Safety Plan and all required documentation that are part of the health and safety file on site must be reviewed and approved by the client's agent prior to the principal contractor commencing work on site.

H 2. Reference Documents

The following Acts and Regulations are referred to in this document followed by their abbreviations in brackets. Note that this is not an exhaustive list and other documents may be referred to if necessary, in order to compile a Health and Safety Plan:

2.1. Occupational Health and Safety Act, (Act No. 85 of 1993) and Mining Health and Safety Act - [OHSA] and Regulations as follows:

- Construction Regulations [CR]
- General Admin Regulations [GAR]
- General Safety Regulations [GSR]
- Environmental Regulations for Workplaces [ERW]
- Hazardous Chemical Substances Regulations [HCSR]
- Lead Regulations [LR]
- Noise Induced Hearing Loss Regulations [NIHLR]
- General Machinery Regulations [GMR]
- Electrical Installation Regulations [EIR]
- Electrical Machinery Regulations [EMR]
- Pressure Equipment Regulations [PER]
- Basic Conditions of Employment Act (Act 75 of 1197)
- National Environmental Management Act no 107 of 1998

2.2. Compensation for Occupational Injury and Diseases Act – [COIDA]

2.3. The Gauteng Noise Control regulation (GN 5479 of 1999)

2.4. Standards applicable such as:

- SANS10103 the Measurement and Rating of Environmental Noise with Respect to annoyance and to Speech Communication.

H 3. Definitions

The following definitions apply. (Abbreviations and legal references in brackets where applicable):

Construction Work [CR 1]:

Means any work in connection with –

- a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or an addition to a building or any similar structure;
- b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- c) The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- d) The moving of earth, clearing of land or making of an excavation or work on any similar type of work.

Hazard Identification, Risk Assessment and Risk Control (HIRA)

Means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Site

Means the area in the possession of the Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Contractor, and approved for such use by the client.

Hazard

Means a source of or exposure to danger (source which may cause injury or damage to persons or property)

Risk

Means the probability or likelihood that a hazard can result in injury or damage.

Construction Manager [CR 8(1)]

Means a full time, competent employee appointed in writing by the Contractor to supervise construction work. The appointment, as required by the OHSA, shall stipulate health and safety responsibilities, area of responsibility and the proposed duration of the project.

Hazardous Chemical Substance (HCS)

Means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

Construction Plant

Encompasses all types of plant including but not limited to, cranes, piling frames, boring machines, excavators, dewatering equipment and road vehicles with or without lifting equipment.

Contractor [CR 1]

Means an employer [OHSA 1] who performs construction work and includes principal contractors and sub-contractors

Health and Safety Plan (HSP) [CR 1]

Means a documented plan, which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

The plan shall be applied from the date of commencement of and for the duration of construction work

[CR 7(1)]

Health and Safety File (HSF) [CR 1]

The file holding all documentation and records on health and safety for the project, which shall be available at all times for evaluation, and a copy of which will be forwarded to the client upon completion of the project.

Disabling Injury Frequency Rate (DIFR)

The number of disabling injuries (DI's) multiplied by a constant (man hours relative to period worked) divided by total man hours worked over a rolling period (usually 12 months, but can be less)

Disabling Injury Severity Rate (DISR)

The number of days lost due to DI's multiplied by a constant (man hours relative to period worked) divided by total man hours worked over a rolling period (usually 12 months, but can be less)

Confined Space

An enclosed, restricted or limited space in which, because of its construction, location or contents, or any work carried on therein, a hazardous substance may accumulate or an oxygen deficient atmosphere may occur, and includes any chamber, tunnel, pipe, pit, sewer, container, valve, machinery or object in which a dangerous liquid or dangerous concentration of gas, vapour, dust or fumes may be present.

H 4. Responsibilities of Contractors for Construction Work

H 4.1. Notification of Intention to Commence Construction Work [CR 4]

The principal contractor shall within 7 days notify the Provincial Director of the Department of Labour before any work commences, in accordance with the following requirements:

- The demolition of a structure exceeding a height of 3 meters; or
- The use of explosives to perform construction work; or
- The dismantling of fixed plant at a height greater than 3 meters;
or
- The work exceeds 30 days or will involve more than 300 person days of construction work;
and
- Includes excavation work deeper than 1 meter; or
- Includes working at a height greater than 3 meters above ground or a landing.

The notification must be done on a form similar to that shown in **Annexure** and a copy of the completed form kept in the HSF for inspection by an inspector, the client or an employee.

H 4.2. Principal Contractor's Responsibilities [CR 7]

- a) Compile a HSP [CR 7(1)]
- b) Ensure co-operation between all contractors to comply to the Act
- c) Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on this client's health and safety specifications of which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses.
- d) Ensure compliance to the Act in terms of
 - a) Provide relevant sections of these specifications to contractors as required
 - b) Appoint each contractor in (a) above in writing. Only contractors who have the necessary competencies and resources may be appointed

- c) Ensure each contractor's HSP is implemented and maintained on site
- d) Stop any contractor from work which is not in accordance with HSP's or which pose a threat to health and safety of persons
- e) Sufficient information is provided to contractors where there are changes to design and construction
- f) Ensure every contractor is registered and in good standing with the Compensation Commissioner
- g) Ensure potential contractors have made provision for the cost of health and safety measures
- e) Negotiate and approve the HSP of each contractor
- f) All HSP's including the principal contractor's to be available on site
- g) All HSF's including the principal contractor's to be available on site
- h) A consolidated HSF to be handed over to the client on completion of construction including records of drawings, designs etc
- i) HSF to include updated list of all contractors, the agreements and their type of work

H 4.3. Contractor's Responsibilities (including sub-contractors)

- a) Provide their HSP to the principal contractor
- b) Where a contractor appoints another contractor (sub-contractor) it is the responsibility of that contractor to apply a) above as if he were the principal contractor.
- c) No contractor to appoint another contractor (sub-contractor) unless the latter has the necessary competency and resources to perform the required work.
- d) To provide any information which affects the health and safety of any persons at work to the principal contractor.
- e)

H 4.4. Supervision of Construction Work [CR 8]

The appointments embodied in this regulation are as follows:

- a) Construction Manager [CR 8(1)]
- b) Assistant construction manager [CR 8(2)]
- c) Safety officer [CR 8(5)], in terms of the nature of project such Safety Officer must be full-time on site and must avail him/herself whenever there is work at the Quarry. Registered with SACPCMP council.
- d) Construction Supervisor [CR 8(7)]

The detailed requirements of these appointments can be found under the relevant regulation. In terms of competence of these appointees, they are to be approved by the client's agent before being appointed for the project.

H 4.5. Legal Appointments

The principal contractor shall ensure copies of the appointment letters of all responsible persons appointed on site will be kept in the HSF. All legal appointments shall be conducted in accordance with the requirements set out in the OHSA and as per this specification. The appointment protocols for the CR and the OHSA are set out in the tables below. It should be noted that these represent complete lists and not all these appointments may be required:

H 4.5.1. Construction Regulations

Reg.	Appointment	Appointee	Appointed by	Represented by
CR 7(1 c)	Principal Contractor	16(2) for the company	Client	Project Manager
CR7 (3)	Contractor	Competent person	Principal Contractor	16(2)
CR 8 (1)	Construction Manager	Competent person	Principal Contractor	16(2)
CR 8 (2)	Assistant Construction Manager	Competent person	Principal Contractor	16(2)
CR 8 (5)	Safety Officer (SACPCMP registered)	Competent person	Principal Contractor	16(2)
CR 9 (1)	Risk Assessor	Competent person	Principal Contractor	16(2)
CR 10 (1a)	Fall Protection Planner	Competent person	Principal Contractor	16(2)
CR 11(2 a)	Structure Inspector	Competent person	Principal Contractor	16(2)
CR 12 (a)	Formwork & Support work Inspector	Competent person	Principal Contractor	16(2)
CR 13 (1)	Excavation Work Inspector	Competent person	Principal Contractor	16(2)
CR 14 (1)	Demolition Work Supervisor	Competent person	Principal Contractor	16(2)
CR 17	Suspended Platform Supervisor	Competent person	Principal Contractor	16(2)
CR 20	Batch Plant Supervisor	Competent person	Principal Contractor	16(2)
CR 21	Explosive power tool Controller	Competent person	Principal Contractor	16(2)
CR 22	Mobile Crane Operator	Competent person	Principal Contractor	16(2)
CR 23	Construction Vehicle Inspector	Competent person	Principal Contractor	16(2)
CR 24	Temporary Electrical Installation Inspector	Competent person	Principal Contractor	16(2)
CR 28	Stacking and Storage Supervisor	Competent person	Principal Contractor	16(2)
CR 29	Fire Equipment Inspector	Competent person	Principal Contractor	16(2)
CR 29	Fire Team Members	Competent person	Principal Contractor	16(2)

OHS Act

Reg.	Appointment	Appointee	Appointed by	Represented by
OHS 16 (1)	16 (1)	CEO	Board members	
OHS 16 (2)	16 (2)	Contract Manager	16(1)	CEO
OHS 17 (1)	Health & Safety Rep	Nominated employee	16(1)	CEO
OHS 8	Hand Tools Inspector	Competent person	Principal Contractor	16(2)
GAR 9 (2)	Incident Investigator	Competent person	Principal Contractor	16(2)
GSR 3 (4)	First Aider	Competent person	Principal Contractor	16(2)
GSR 13	Ladder Inspector	Competent person	Principal Contractor	16(2)
FR 9	Welfare Facilities Inspector	Competent person	Principal Contractor	16(2)
HCSR 3	Hazardous Chemical Substances Co-ordinator	Competent person	Principal Contractor	16(2)
DMR 18 (11)	Lifting Equipment Operator	Competent person	Principal Contractor	16(2)
DMR 18 (5)	Lifting Equipment Inspector	Competent person	Principal Contractor	16(2)
PER 10	Portable Gas Bottle Inspector	Competent person	Principal Contractor	16(2)

The responsibilities of each appointment are detailed in the relevant written appointment form, which are signed by both the authorised person and the appointee and kept in the Health and Safety file.

H 5. Documentation and Procedures

All required documentation for the construction work, shall be kept in the HSF, which shall be available on site. The Construction Supervisor shall be responsible for the file on site and ensure that documentation is valid and up to date. The procedures to be used for the project are to be in accordance with contractor policy and as per the outcome of the HRA exercise. It is required that the documentation is filed in an orderly fashion for easy access.

The following sections are suggested:

- Policies, permits etc
- Health & Safety plans, specifications
- Appointments
- Incident management
- Inspection checklists
- Risk assessments

- Training and Competency
- Procedures
- Hazardous Chemical Substances
- Environmental Risk Assessments and protocols

H 6. Application of COIDA and OHS to Construction Work

H 6.1 Compensation of Occupational Injuries and Diseases Act, Act No. 130 of 1993 (COIDA)

Every contractor shall provide proof of registration and updated letter of good standing with the Compensation Commissioner.

H 6.2 Occupational Health and Safety Policy [OHS 7] and copy of the Act [GAR 4]

Every contractor's OHS Policy statement should be available for scrutiny and as evidence of their commitment their employees' occupational health and safety. If the contractor has 5 or more employees on site, a copy of the OHS Act and regulations must be available on the site and ensure that such copies are displayed at visible areas such site offices, boardrooms and notice boards.

H 6.3 Health and Safety Training and Competency

Training of personnel is a necessity and a legal requirement when required. A record of all training shall be kept and provided on request.

H 6.3.1 Induction Training

The principal contractor shall be responsible for the induction of all personnel entering the site including visitors, inspectors etc. An identification card confirming induction training must be carried by all contract personnel and site security informed so that only contractors carrying a card may be admitted to the site. Contractors doing specific construction work shall be responsible for the induction of their employees with respect to that specific work.

H 6.3.2 Awareness Training

In addition, the client would favour awareness training to be carried out such as Toolbox Talks on relevant topics e.g. manual lifting, wearing PPE, safe use of portable electric tools etc.

H 6.3.3 Competency and CV's

Where applicable, valid copies of certificates of competency of appointed personnel to be provided and kept in the HSF. Other training requirements such as those identified through the HIRA process, to be completed and proof of that training also kept in the HSF. Where competency is achieved through experience, a brief CV will be required.

H 6.3.4 Specific OHS training

Valid certificates of training from registered service providers preferably accredited by the appropriate SETA are required for First Aiders, H&S reps, Fire Marshals etc.

H 6.3.5 Medical Fitness

All employees will have entry and exit valid medical fitness certificate, certified by a HPCSA registered occupational medical practitioner to be fit for work. See the annexure 3A template

H 6.4 Hazards and Potentially Hazardous Situations [OHS 13]

The principal contractor is responsible to ensure that all contractors and any visitors are warned of any hazardous or potentially hazardous situations, which may affect them on site and shall put any additional measures in place to assist in mitigating the risk of these hazards.

H 6.5 Health and Safety Reps [OHSA 17 and 18]

The principal contractor shall be responsible to ensure compliance to this section of the OHSA as required and to ensure similar compliance of all contractors. All contractors are required to have at least one OHS rep even if the minimum requirement of 20 employees is not met.

H 6.6 Health and Safety Committee [OHSA 19 and 20]

The principal contractor shall be responsible to ensure compliance to this section of the OHSA as required. A health and safety committee must be formed that will be chaired by the principal contractor's 16(2) and which will consist of all OHS reps from both the principal contractor and all contractors. They will meet at least once a month and a record kept of all meetings.

H 6.7 General Record Keeping

The principal contractor shall ensure that all Health and Safety records, required by OHSA and Regulations are kept for reference purposes and auditing.

H 6.7.1 Inspections

The principal contractor shall keep all records of inspections undertaken during the contract. The total list of inspections can be found under **Annexure 1 (at the bottom)**. An assessment will need to be made of what inspections are required and their frequency. The principal contractor is also responsible to ensure compliance to this requirement by all contractors.

H 6.7.2 Audits

The client's agent shall carry out regular audits on the principal contractor at least once per month. Similarly, principal contractors shall be responsible for carrying out regular audits on their contractors at least once per month. The results shall be tabled for action and discussed at the Health and Safety Committee meetings or the site meetings, as appropriate. Records of such meetings must be kept in the file, made available upon request by inspector, client or client's agent.

H 6.8 Incident management and emergency plans

The principal contractor shall create an Emergency Plan for the construction site. The plan shall be clearly laid out for all types of emergencies including responsibilities, evacuation routes, siren, emergency no.'s etc. The plan shall be fully explained to all personnel during the induction training. All contractors will become completely familiar with the requirements of the plan and will participate in any evacuation drills that may take place.

H 6.8.1 First Aid [GSR 3]

The principal contractor shall be responsible to ensure compliance to this regulation as required. In particular, a first aid box with the minimum stock as specified in the regulation will be located at the site office and there will be signage to indicate the location of the box. Attention is drawn to GSR 3(4) for the requirement of trained first aiders. It is also suggested that a trained first aider be made responsible for the box in terms of the following:

- a) Security – the box should not be left open but it must be accessible in case of emergency
- b) (spare key availability)
- c) Injuries - a record of first aid box injuries treated and the stock issued (Dressing Register)
- d) Stock – a regular inspection to maintain stock levels and check expiry dates

In addition, the first aid requirements should be noted for high risk substances or hazardous chemical substances and if these are to be used, then it should be addressed in the HRA and the need for eye wash facilities assessed.

H 6.8.2 Incidents and Injuries

a) *Incidents*

The principal contractor shall provide evidence by means of a procedure or chart that he is fully aware of the "hierarchy" of incidents that can occur e.g. unsafe situations, near misses, first aid box injuries, medical cases, disabling injuries etc. He shall keep an incident register of all such incidents, investigate and apply corrective action where required. The client also reserves the right to request incident statistics from the principal contractor such as DI's, DIFR and DISR and it is advised that these are maintained.

b) *Injuries*

First aid box injuries have been addressed under 6.8.1 above. More serious injuries requiring transport of the injured person to the nearest hospital or doctor or the calling of an ambulance and paramedic personnel will be the responsibility of the principal contractor's appointed personnel such as the Construction Supervisor, First Aider and Safety Officer. It is advised that all required emergency numbers be on hand and prominently displayed. As all contractors are registered and in good standing with the Compensation Commissioner, it will be the responsibility of the contractor whose employee has been injured, to make the necessary report and claims to the Commissioner.

H 6.8.3 Accident and Incident Reporting and Investigation [OHSA 24, GAR 8, 9 (1) & (2)]

Should an incident or accident investigation need to be conducted, a competent person shall be appointed to conduct the said investigation. The procedure to be followed will be in accordance with Annexure 1 of GAR 9 – "Recording and Investigation of incidents". A copy of this annexure can be found under **Annexure 2 (at the bottom)** in this document. Particular attention is also drawn to OHSA 24, the reporting of certain incidents to an inspector of the Department of Labour.

The principal contractor shall ensure that the investigations are kept for record purposes and he shall ensure that the outcome of the investigation is communicated to all affected parties as required i.e. the client and contractors.

The client reserves the right to participate in all investigations into accidents or incidents and to conduct their own investigation if required.

H 6.8.4 Fire Precautions on Construction Site.

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, ensure that:

- All appropriate measures are taken to avoid the risk of fire.
- A sufficient and well-functioning mobile fire alarm must be in place.
- Sufficient and suitable storage is provided for flammable liquids, solids and gases.
- Smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials.
- Combustible materials do not accumulate on the construction site; (welding, flame cutting and other hot work are done only after appropriate precautions have been taken to reduce the risk of fire.
- Suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order.
- The fire equipment contemplated in paragraph (g) is inspected by a competent person, who has been appointed in writing for that purpose, in the manner indicated by the manufacturer thereof:
 - (i) A sufficient number of workers are trained in the use of fire-extinguishing equipment;) where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire.
- The means of escape is kept clear at all times; there is an effective evacuation plan providing for all:
 - (i) Persons to be evacuated speedily without panic.

(ii) Persons to be accounted for at the Assembly point.

H 6.9 Contractors and suppliers [OHSA 37(2)]

The client shall enter into an "Agreement with Mandatory" in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993, with all appointed principal contractors, a copy of which can be found under **Annexure 3 (at the bottom)**. Likewise, all principal contractors shall enter into a similar agreement with all contractors, sub-contracted to them for the duration of their contract. Please note that if contractors hire any construction vehicles including operator, the companies from which the equipment is hired are subject to the requirements as "contractors" detailed in this document

The principal contractor shall ensure that all contractors are issued with this safety specification where reasonably practicable including any contractor pack for the project, should they not be contained in the safety specification.

The principal contractor shall assist and ensure that contractors engaged comply with all of these requirements and adhere to the requirements set out in the OHSA. Contractors will be stopped from working in the event of unsafe conditions and activities being observed.

All contractors shall be subject to the requirements specified in the HSP and will be issued with a copy of the plan. If the contractor is not able to comply with the requirements set out in the plan, he shall not be appointed as contractor.

H 6.10 Personal Protective Equipment, Intoxication, Signage and Access Control [GSR 2]

H 6.10.1 Personal Protective Equipment (PPE) [GSR 2]

The principal contractor shall through the Risk Assessment process identify the specific PPE needs per activity. Contractors, as employers, will be responsible for the issue of the required PPE. Should PPE be lost or stolen, then the employee will be issued with new PPE. Should PPE be worn out or damaged, the user shall return the worn or damaged PPE and will be issued with a replacement. Contractor is required to issue PPE every after 6 months, whether worn out or damaged. Training in the use of this shall be provided. Visitors shall be informed of PPE requirements prior to their visit so that they may enter the site.

H 6.10.2 Intoxication [GSR 2A]

The principal contractor shall be responsible to ensure that no persons may enter or remain at the construction site if under or apparently under the influence of intoxicating liquor or drugs. Random breathalyser testing shall be carried out using the marked ping pong ball method. If anyone is found intoxicated such person must not be allowed entry.

H 6.10.3 Display of signs [GSR 2B]

The principal contractor should make use of signage to assist in enforcing compliance to any requirement specified in this document or as required by law. Standard symbolic signs are acceptable for conveying these requirements where applicable.

H 6.10.4 Access control [GSR 2C]

The principal contractor shall be responsible to ensure control of all persons entering the construction site by means of the biometric access control system and access registrar controlled by the security guard. The reasons for this are as follows:

- a) The principal contractor is the 'employer' on the site and for all intents and purposes is responsible for section 8 of OHSA for employees and contractors and section 9 for any other person on site such as visitors and inspectors
- b) All persons entering the site must undergo induction training to inform them of the hazards present on the site. This includes contractors, visitors, inspectors etc
- c) The construction supervisor will be aware of who is on site and their function

- d) The construction supervisor will be able to control tasks that may impact on other work being carried out on the site by a permit to work system
- e) The number of people and their purpose on the site must be known in case of emergency and evacuation
- f) Security reasons.

The principal contractor shall post conspicuous notices at the site informing all those entering the site of these requirements.

H 6.11 Ladders [GSR 13A]

The following requirements shall be complied with regarding Ladders and Ladder work:

- a) A competent person shall be identified and appointed as the ladder inspector.
- b) Where aluminium ladders cannot be used, then wooden ladders shall be straight grained, unpainted to allow for proper inspection of the grain for cracking.
- c) Ladders shall be secured at the top and chocked at the base to prevent slipping.
- d) Where chocking of the base is not possible, then the user shall ensure that the ladder is held in position by another employee when ascending the ladder.
- e) Ladders shall be inspected a minimum once per month by the person appointed as the ladder inspector.
- f) Proper storage shall be provided for all ladders when not in use.

H 6.12 Ramps [GSR 13B]

The following requirements shall be complied with regarding Ramps:

- i. Is constructed in accordance with accepted standards
- ii. Has a safety factor of at least 2 with respect to the load it is expected to carry
- iii. Has an inclination to the horizontal of not more than 34°
- iv. Every ramp steeper than 14° is provided with stepping laths at suitable intervals which may be interrupted to allow for wheel barrows
- v. All ramps higher than 2m must be provided on both sides with substantial handrails at least 900 mm and not more than 1000 mm in height and toe boards at least 150mm in height.

H 6.13 Pressure Equipment Regulations (Gas Bottles) [PER]

If gas bottle sets (Oxy-Acetylene for heating, cutting, welding) are used, these regulations, as required, shall be adhered to. Regular inspection of the sets shall be carried out. In particular:

- Only trained personnel shall operate such equipment.
- The Construction Supervisor shall ensure operation of the equipment is in accordance with the HIRA requirements and Safe Working Procedure (SWP) or method statement.
- All users shall undergo regular awareness training (toolbox talk) to ensure compliance.
- The Construction Supervisor shall ensure the required PPE is used.

H 6.14 Portable Electrical Tools [EMR 9]

This regulation shall be complied with as a minimum requirement. Regular inspections of all Portable Electrical Tools such as drills, angle grinders etc, and shall be carried out. In particular:

- Only trained personnel shall operate such equipment.
- The Construction Supervisor shall ensure operation of the equipment is in accordance with the HIRA requirements and Safe Working Procedure (SWP).
- All users shall undergo regular awareness training (toolbox talk) to ensure compliance.
- The Construction Supervisor shall ensure the required PPE is used.

H 6.15 Permit to work (including hot work)

The principal contractor shall be responsible to ensure that:

- All work being carried out on the site has been approved through the necessary project control system
- Permits required from third parties such as town councils for utility and sewage services are in place
- If required, a permit system is operational so that work consisting of many tasks related to the construction on site, can be carried out without endangering the health and safety of personnel on site, neighbours and the public surrounding the site and/or causing damage to property.
- In particular, attention is drawn to GSR 9, which details the requirements for welding, flame cutting, soldering and similar operations (hot work).

H 6.16 Work in confined spaces [GSR 5]

The principal contractor shall be responsible to ensure that no work is carried out in a confined space unless it is safe to do so. All the requirements of this regulation shall be met. Attention is drawn to the fact that further precautions are required if hot work is to be carried out in a confined space as per GSR 5(5) and GSR 9(2).

In addition, CR 11(3)(j) specifies that excavations are regarded as confined spaces and these precautions need to be applied.

H 6.17 Noise within the construction site [NIHL]

The principal contractor shall be responsible to ensure compliance with this regulation where applicable within the construction site.

H 6.18 Noise impacting the surrounding neighbourhood

The principal contractor shall be responsible to ensure compliance as follows:

H 6.18.1 The Noise Control regulation (GN 5479 of 1999) provides:

- A uniform minimum standard for noise regulation in the Province
- Accommodates the specific circumstances of different neighbourhoods and areas, and
- Creates new mechanisms for effective enforcement in neighbourhoods.

Section 9(m) prohibits the use any power tool or power equipment used for **construction work, drilling work or demolition work**, or allow it to be used, in or near a residential area if it may cause a noise nuisance. Noise nuisance is defined as any sound, which disturbs or impairs, or may disturb or impair the convenience or peace of any reasonable person considering time of day and environment.

The regulations define a “disturbing noise” as meaning, “...a noise level that causes the ambient noise level to rise above the designated zone level, or if no zone level has been designated, the typical rating levels for ambient noise in districts which can be obtained from the following code of practice below.

H 6.18.2 The South African National Standard SANS 10103:2008 - The Measurement and Rating of Environmental Noise with Respect to Annoyance and to Speech Communication provides guidance in defining noise impact criteria limits and standards and is also used by local authorities in the control of environmental noise

The code of practice should be referred to obtain typical noise rating levels for various land use types and expected community response that may be elicited should these levels be exceeded.

H 6.19 Hazardous Chemical Substances [HCSR]

The principal contractor shall be responsible to ensure compliance with this regulation where applicable within the construction site. A hazardous chemical substance is any toxic, harmful, corrosive irritant or asphyxiant substance or mixture of such substances for which an occupational exposure limit is prescribed or which creates a hazard to health. For example cement is a hazardous chemical substance.

The principal contractor shall ensure that all hazardous chemicals brought to site have a Material Safety Data Sheet (MSDS) and the users are made aware of the important sections of the MSDS such as:

- Hazards
- First aid measures
- Fire-fighting
measures
Accidental
release measures
- Handling and storage
Exposure control
especially PPE
- Disposal

First Aiders shall be made aware of the MSDS and how to treat HCS incidents appropriately. Copies of MSDS's will be available on site and in the HSF.

H 6.20 Traffic control

The principal contractor shall appoint a competent person to design and maintain a site specific traffic control management plan and have this plan approved and accepted by the local authorities and have a copy available in the file.

The Principal Contractor shall ensure that a fulltime traffic safety officer be appointed in writing, upon the commencement of construction activities.

The traffic safety officer shall be tasked with regular inspections and movement of road traffic signs as per the approved traffic accommodation plans and will report to the safety officer. This document must indicate the potential risk to the public or environment posed by all vehicles travelling to and from the areas of construction for the purpose of the construction work, and proposes methods to eradicate or minimize these risks. Such a plan must include the following aspects:

- Design of Traffic Management Plan
- Site specific base line risk assessment
- Protection of employees
- Protection of pedestrians
- Specific signage and distances applicable
- Applicable training
- Appointments of road safety officers
- Management after hours/weekend/adverse weather conditions
- Setup and clearing of signage

The Principal Contractor will also put in place flagmen to control the entry and exit of vehicles to and from the site onto the public roads

The Principal Contractor must bear in mind that there are two villages within the proposed road. Therefore traffic safety should be strengthened and timeously monitored.

H 6.21. Public Health and Safety

The contractor shall ensure that each person working on or visiting a site, and the surrounding community shall be made aware of the dangers likely to arise from onsite activities and the

precautions to be observed to avoid or minimize those dangers. Appropriate health and safety signage shall be posted at all times.

H 6.22. Borrow Pit usage

There are two identified borrow pits authorised to borrow materials from. Contractor shall safely fence both borrow pits with access lockable gates installed.

Each borrow pit must have all the warning signs and emergency contact board attached to it.

Chemical toilets with toilet papers and hand-washing water shall be provided.

Contractor must ensure that each borrow as long as it is in use, it is stationed with a security guard and such security guard is provided with a guard-house at the gate.

Contractor must ensure that a safe excavation when borrowing material, it is adhered to and trucks are able to move around safely.

Ensure that excessive dust is controlled.

Material from the mine

The contractor will be required to collect material from the mine to be stockpiled in a designated area to be identified outside the mine.

All the loading plant will not be allowed to stay overnight at the mine and therefore the contractor will be required to make that arrangement on a daily basis to remove all the plant from the mine

Induction for all the personnel to enter the mine will be conducted timeously

Valid Medical fitness certificate will be required from a qualified Occupational Doctor

These requirements are in terms of the Mine Health and Safety Act, Act 29 of 1996.

- Every Borrow Pit must have a valid Mining Permit issued by the Department of Minerals and Energy.
- Adequately safeguard Borrow Pits to prevent unauthorized entry.
- Appropriate, conspicuous safety signs must be placed around the excavations.
- No undercutting or under mining may be allowed to take place in the Borrow Pit.
- All undesired material must be used to backfill the excavations made.
- Excavations to be sloped to a safe angel.
- All excavations must be design such that they will drain any water accumulated. Where this is impractical, means of protection must be provided.
- All operators must be appointed to work in Borrow Pits.
- All operators must be authorized to work with machinery in Borrow Pits.
- All vehicles working in Borrow Pits shall have reverse hooters, at least 3 mirrors for reversing and shall be fitted with a rotating light.
- All machinery working in the Borrow Pit shall have a certificate of compliance by a competent person.
- A monthly labour compliment report must be submitted of employees worked in a Borrow Pit.
- The contractor shall submit a Code of Practice on Trackless Mobile Machines to the Department of Minerals and Energy for approval.
- A Risk Assessment for each Borrow Pit must be submitted.

Note: Principal Contractor must note that road material will be collected from a mining area and such must be considered and ensure that the Mine health and safety act will be adhere to at all times.

H 7. Application of the Construction Regulations [CR]

H 7.1 Hazard Identification, Risk Assessment and Risk Control (HIRA) [CR 9]

The contractor shall prior to the commencement of any construction work perform a HIRA exercise, known as a Baseline Risk Assessment which will form part of the HSP for the project. An Issue Based Risk Assessment will be carried out during construction for any changes or variations to procedures or methods and Continuous Risk Assessments may be done during construction as a result of audit findings, inspections, hazard awareness etc.

A copy of the HIRA shall be made available for viewing to the client's agent and shall be kept in the HSF the contractor shall ensure that the outcome of all HIRA exercises will be conveyed to all relevant employees with respect to the hazards and the related control measures before any work commences.

Below is a list of activities, which may be considered for the risk assessment. The list is not exhaustive but covers the main activities applicable on site:

- Contractual appointments, agreements and notifications
- Traffic – restrictions, existing systems, site traffic
- Site security and access
- Existing services, overhead and underground
- Ground conditions / ground water
- Employees and visitors (all persons outside the construction site) safety and liaison
- Demolitions, excavations using explosives
- Tree felling
- Activities that affect adjacent sites and roads during construction
- Excavations in particular those adjacent to roads or sidewalks Construction Vehicles and mobile plant use
- Stacking, storage and good housekeeping
- Use and storage of flammable and hazardous chemicals such as petrol, diesel, etc Use of hand tools
- Use of portable electrical equipment (power tools)
- Use of flammable and hazardous chemical substances
- Waste management such as removal of excavation waste and debris
- Environmental restraints such as excessive dust
- General hazards to site personnel such as cleaning, noise and dust and correct issuing of PPE
- Welfare facilities such as toilets, change rooms and eating areas
- Emergency evacuation
- Temporary site accommodation
- Construction activities

H 7.2 Excavations [CR13]

Section 1 of this regulation states that this work must be carried out under the supervision of a competent person, who has been appointed in writing. All the requirements of CR 13 shall be met. For inspection of excavations, attention is drawn to section 3(h), the records of which must be available on site.

Contractor shall consider the safety and health of the surrounding livestock and ensure that excavations that can be closed immediately are closed and that those that cannot be closed are solidly barricaded with warning signs.

H 7.3 Demolition [CR14]

Section 1 of this regulation states that this work must be carried out under the supervision of a competent person.

Contractor must in terms of section 4 (d), where the stability of an adjoining building road is likely to be affected by the removal of the guardrails (demolition), take steps to ensure the stability of such road and safety of persons.

Contractor must also ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless it is effectively protected.

H 7.4 Batch Plants [CR 20]

Contractor will be collecting stone materials from a quarry at a mining area, to an established batch plant, where the contractor will need to comply to such mines health and safety requirements.

In terms of section 1 Contractor must appoint a competent person, for supervising such batch plant in writing and such person must be aware of the dangers involved within the operation and ensure precautionary measures are taken in the interest of health and safety.

All requirements of CR 20 shall be met if applicable.

H 7.5 Explosive powered tools [CR 21]

Section 2(b) of this regulation states that these tools must be cleaned and inspected daily before use by an appointed, competent person and a trained person (3b) can only operate them.

Contractor must bear in mind that there might be any live explosives buried under at the quarry and ensure that an effective risk assessment is taken into consideration prior any mining.

All the requirements of CR 21 shall be met.

H 7.6 Cranes [CR 22] including lifting machines and lifting tackle [GMR 18]

If applicable, the requirements of CR 22 shall be met. If a mobile crane or other mobile plant is hired, only approved hire companies shall be contracted to provide such equipment. The Construction Supervisor shall ensure compliance of the provider to these regulations. In particular attention is drawn to the competence and fitness of the operator [section 1(d)] and the inspection of the equipment [section 1(j)]. As far as GMR 18 is concerned, compliance to these requirements will be the responsibility of contractors using any lifting equipment and lifting tackle. Especially in lifting items such as mobile offices brought during site establishment.

H 7.7 Construction vehicles and mobile plant [CR 23]

It will be the responsibility of each contractor on site to ensure compliance of their construction vehicles and mobile plant to these regulations.

Each contractor will have to take into consideration the busyness of provincials roads and the public road users within, and make it a priority that such vehicles and plants are in perfect working conditions and road worthy in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).

Contractor must ensure that all the tipper trucks that will be loading rocks from the quarry are well guarded, to prevent loaded rocks from falling.

This includes vehicles to be used for transporting personnel to and from site, which will be subject to relevant requirements such as licensing and roadworthiness checks. In addition, the following will apply:

- Safe transport for personnel working on the project to and from the workplace, which shall include proper seating, side restraints and cover.

- Road safety principles shall be adhered to on and off site.

If a mobile crane or other mobile plant is hired, only approved hire companies shall be contracted to provide such equipment. The Construction Supervisor shall ensure compliance of the provider to these regulations. In particular attention is drawn to the competence and fitness of the operator [section 1(d)] and the inspection of the equipment [section 1(j)].

H 7.8 Electrical Installations [CR 24], including [EIR] and [EMR]

The requirements of these regulations shall be met as required, by the appointed electrical contractor. A competent person will be appointed for inspection and control of all temporary electrical installations as per CR 24(d) and (e) respectively.

H 7.9 Use and storage of flammable liquids [CR 25], and [GSR 4]

All the requirements of CR 25 shall be met and attention is drawn to the storage requirements of flammable liquids as specified in GSR 4.

H 7.10 Water Environments [CR 26]

All requirements of CR 26 shall be met if applicable.

H 7.11 Housekeeping [CR 27] including [ERW(6)]

All contractors shall ensure that housekeeping standards as per these regulations shall be maintained at all times. The principal contractor is responsible to ensure that building waste and debris is removed at regular intervals and not allowed to build up to any degree. The building's domestic and compactable waste removal systems may not be used for this purpose under any circumstances.

H 7.12 Stacking of Materials [CR 28] including [GSR(8)]

All contractors shall ensure that materials are only stored in defined and allocated storage areas and that materials being stored are stacked in accordance with sound stacking principles as per these regulations.

H 7.13 Fire precautions [CR 29]

All contractors on site will comply fully with the requirements of this regulation. In particular, the principal contractor will be responsible for the evacuation plan (section (l)) the details of which will be imparted to contractors, visitors etc. through the site induction.

H 7.14 Construction welfare facilities [CR 30] including [FR 2- 9]

The principal contractor shall be responsible for implementing this regulation and shall ensure that adequate facilities are provided for the personnel on site in terms of the following:

- At least one shower for every 15 workers
- At least one sanitary facility for every 30 workers
- Changing facilities for each sex
- Sheltered eating areas
- Potable water.

On-site chemical toilets must be serviced daily.

No food preparation shall be conducted on site. Eating and drinking will only be permitted in the designated eating areas, which must be provided with adequate seating. Waste bins shall be strategically placed and cleared regularly.

B12.12 Contractor's initial obligations in respect of the Occupational Health And Safety act (OHS), General Safety Regulations 1986, Covid-19 Regulations and Construction regulations 2014

Lump Sum

The full amount will be paid in one instalment only once: -

- (a) The contractor has notified the Provincial Director of the Department of Labour in writing of the project and to obtain construction permit.
- (b) The contractor has made the required initial appointments of employees and sub-contractors and their entry medical fitness certificates are in place.
- (e) The client has approved the contractor's Health and Safety Plan.
- (f) Compliance with the Covid-19 Regulations
- (g) The contractor has set up his Health and Safety File.
- (h) All employees are provided with PPE
- (i) Compliance with General Safety Regulations is met
- (j) All general site posters and signage in terms of GSR is met

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations, 2014) at all times for the full duration of the Contract, as described in clause B1228 of the project specifications. The successful Tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

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

B12.13 Submission of the Health and Safety File.....Lump Sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements with regard to the Health and Safety File and Approval.

B4 SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

B1301 GENERAL REQUIREMENTS

(c) Legal and contractual requirements and responsibility to the public

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall comply with all statutory and contractual requirements of the Environmental Management Programme, as included in the Project Document.

Separate items will be scheduled under payment item B13.01 (The contractor's general obligations) to cover the following components of the Contractor's preliminary and general costs, Contractor's General items (Clause 1.1.1.21 of the Conditions of Contract):

- (i) fixed,
- (ii) value-related and
- (iii) time-related in respect of the

1. Mobilisation Period:

Shall be the number of days as specified in Clause 1.1.1.35 in the Contract Data.

The Contractor shall note that on this Contract all costs associated with this period shall be deemed to be included in other rates.

2. Construction Period:

Shall be the number of days within which the Contractor has to complete the construction of the Works as specified in Clause 1.1.1.36 in the Contract Data, and as adjusted by such extensions of time or acceleration as may be allowed in terms of the Contract."

ADD THE FOLLOWING NEW SUBCLAUSE:

"(d) Contractor's ablution facilities

The Contractor shall, at each construction section, provide sufficient portable chemical latrine units. Furthermore, the Contractor shall also provide a portable chemical latrine unit at each temporary traffic control facility. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Engineer. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor's time-related obligations."

B1301 PAYMENT

Item

B13.01 The Contractor's general obligations:

DELETE SUBITEM(c) AND REPLACE WITH THE FOLLOWING:

- "(c) Time related obligations:
- | | |
|--------------------------|--------|
| (i) Mobilisation Period | days |
| (ii) Construction Period | month" |

INSERT THE FOLLOWING PARAGRAPH AFTER THE FOURTH PARAGRAPH:

"Should the combined total tendered for subitems (a), (b), and (c) exceed 15% of the Tender Sum (excluding CPA, contingencies and VAT), the tenderer shall state his reasons in writing for tendering in this manner. The tenderer's attention is drawn to Form B1: Contractor's establishment on Site (bound in this Volume) to be completed by the tenderer."

After the paragraph starting with "Should the combined" Insert the following:

"In the 11th paragraph, the following amendments apply:

Delete "from the date on which the contractor has received the letter of acceptance in terms of clause 12 of the general conditions of contract" *and replace with* "for subitem 13.01(c)(i) Mobilisation Period from the Commencement Date in terms of Clause 1.1.1.5 of the General Conditions of Contract, until the end of the Mobilisation Period and for subitem 13.01(c)(ii) Construction Period from the end of the Mobilisation Period.

Payment for the Mobilisation Period shall only be made if such item B13.01(c)(i) is included in the Bill of Quantities".

DELETE THE SEVENTEENTH PARAGRAPH COMMENCING WITH "The tendered rate per month for subitem B13.01(c) ..." *AND REPLACE WITH:*

"The tendered rate per month for sub item B13.01(c) represents full compensation for that part of the Contractor's general obligations which is mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date until the end of the period for completion of the Works, plus any extension thereof as provided in Clause 5.12 of the General Conditions of Contract, provided that –

- (c) Should the works be certified as having been completed before the Due Completion Date, the Contractor will then be entitled to payments in regard to the unexpired period up to the approved Due Completion Date."

ADD THE FOLLOWING AT THE END OF THIS PAY ITEM:

"The amount payable to the Contractor for time-related costs arising from extensions of time granted by the Employer, where the Contractor is fairly entitled to such compensation in terms of Clause 5.12.3 of the General Conditions of Contract, shall be calculated by taking account of only payment items for which the unit of measurement is 'month'. All pay items for which the unit of measurement is 'month' shall be deemed to be based upon an average of 30 days per month."

B13.01 Contractor's time related obligation in respect of the month Occupational Health and Safety Act and Construction Regulations.

Payment of the rate per month shall include full compensation for all the contractor's obligation relevant to the Occupational Health and Safety Act No. 85 and Amendment Act No.181 of 1993, General Safety Regulations 1986 and OHS Act 1993 Construction Regulations 20014 issued on August 2014 by the Department of Labour.

The rate must also include a full-time Traffic Safety Officer who will be full-time on site for the duration of the contract.

B6 SECTION 1500: ACCOMMODATION OF TRAFFIC

B1501 SCOPE

ADD THE FOLLOWING:

"This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public."

B1502 GENERAL REQUIREMENTS

(a) Safety

ADD THE FOLLOWING:

"Should the Contractor park any of his vehicles within the road reserve at night, it shall be done in such a way that the vehicle is more than 6 m away from the shoulder of the road and it shall be properly illuminated and signposted to ensure safe passing by motorists."

(b) Providing temporary deviations

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall keep the provincial traffic police and the Engineer fully informed of changes in the normal traffic flow and obtain their approval for these changes."

(f) Approval of temporary deviations

ADD THE FOLLOWING:

"If, after any temporary deviation has been constructed, any changes are considered necessary or desirable, the proposal shall be submitted to the Engineer for his approval." Contractor must ensure that such temporary deviation is safe and drivable for motorist

and must be maintained timeously.

(i) Traffic Safety Officer

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"The Contractor shall submit a Curriculum Vitae of the candidate to the Engineer for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall make himself available to discuss road safety and traffic accommodation matters whenever required by the Engineer."

REPLACE SUBSUBCLAUSES (ii) AND (iii) WITH THE FOLLOWING:

"(ii) Record on neat and dimensioned sketches and submit to the Engineer the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each shall be adequately referenced to identifiable permanent features located along the site of the Works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the Traffic Safety Officer and shall be signed by the Traffic Safety Officer before being submitted to the Engineer.

The records shall be amended whenever changes are made in the field and the revised detailed sketches shall be submitted to the Engineer. This shall include the recording of the position of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used.

(iii) Personally inspect the position and condition of each traffic accommodation feature on the whole site of the Works twice each day, 9:30 and 16:30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Engineer such record sheets by 10:00 and by 17:00 each day. The Traffic Safety Officer shall keep a duplicate book for this specific purpose.

The Traffic Safety Officer shall also submit to the Engineer by 10:00 each morning, a record of all matters pertinent to site safety and traffic accommodation throughout the site of the Works the previous day. He shall also record the daily labour returns of flagmen, stop/go and traffic signal control men employed.

The Traffic Safety Officer shall be equipped with a cellular telephone and shall have a vehicle and three labourers at his disposal 24 hours a day and he shall be directly answerable to the Contractor's Site Agent. The traffic safety vehicle shall be a truck with a capacity of 5 tons and shall be equipped with a high visibility rear panel in accordance with the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual. The Traffic Safety Officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within the limits of the Contract. The provision of the road safety vehicle, driver, three labourers and the cost of the cellular telephone shall be deemed to be included in the rates tendered for the Contractor's establishment on Site."

ADD THE FOLLOWING SUBSUBCLAUSES:

"(ix) Ensure that all obstructions related to the Contractor's activities be removed before nightfall where applicable and instructed by the Engineer and that the roads are safe for night traffic.

(x) The Traffic Safety Officer shall also be responsible for arranging the removal of broken down vehicles off the roadway and implementing actions requested by the traffic authorities with regard to the work to be carried out and for the erection and maintenance of all traffic signs necessary for the accommodation of traffic."

ADD THE FOLLOWING SUBCLAUSES:

"(j) Failure to comply with provisions

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public traffic, accommodation of traffic, plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Engineer, shall be sufficient cause for the Engineer to deduct penalties as follows:

- A fixed penalty of **R5 000,00** per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of Section 1500 of the Standard Specifications and/or the Project Specifications.
- In addition, a time-related penalty of **R500,00** per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Engineer. The Engineer's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

(k) Public traffic

The travelling public shall have right of way on public roads. The Contractor shall arrange his activities so as to bring about the least possible disruption to the traffic on the roads on which he works.

The closure of one lane of the road shall only be done:

- on written instruction of the Engineer,
- after approval of a specific accommodation of traffic detail,
- subject to all the road signs and markings being implemented and
- subject to such other conditions as the Engineer would reasonably require to ensure the safety of the travelling public.

The closure of more than one lane of traffic will only be considered in exceptional cases. The Engineer shall determine the maximum period for which such a closure may be allowed. It is also an express provision that such an eventuality will be controlled by the traffic authority concerned. Should the traffic authority not be available for such control, the Contractor shall control such an event, provided that he has proven that he has exercised his best endeavours and taken all actions timeously to involve the traffic authority to control the traffic. No additional payment will be made for such control by the Contractor and the rates tendered for Section 1500 will be deemed to include full compensation for all costs pertaining to such control.

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public in accordance with these specifications or as required by the Engineer or the traffic authorities shall be sufficient cause for the closing down of all work under this Contract until all provisions prescribed have been complied with to the satisfaction of the Engineer.

(l) Handing over the Site

The road reserves of all the roads to be constructed under this Contract will be handed over to the Contractor at commencement of the Contract. The Contractor will be permitted to work on any structure or service provided that a free and safe flow of traffic is maintained at all times and that the requirements of the Specifications are complied with.

The Contractor's programme for the accommodation of traffic and any proposed deviation from the approved programme shall be subject to the Engineer's approval."

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"All temporary road signs, devices, sequences, layouts and spacings shall comply with the requirements set out in the National Road Traffic Act, 1996 (Act No 93 of 1996), the National Road Traffic Regulations, 2000 of the relevant authorities and on the Drawings or as instructed by the Engineer.

The Contractor shall indemnify the Employer against all proceedings, claims, actions, damages and costs which may arise from or be related to the absence or improper functioning or placement of road traffic signs, barricades, traffic-control facilities, channelization devices and warning devices.

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"The type of construction, spacing and placement of traffic-control devices shall be in accordance with Volume 2 of The South African Road Traffic Signs Manual (in particular Part 13), these special provisions and the Drawings. The recommended arrangements of the traffic-control devices illustrated in Part 13 of the above Manual and/or Drawings shall not be departed from without prior approval of the Engineer. The arrangements expected to be most commonly used on the Contract are given on the tender drawings.

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

(a) Traffic-control devices

REPLACE THE SECOND SENTENCE OF THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Two-way communication systems in good working condition shall be available at both ends of those sections of the works where the road is barricaded and only one-way traffic is accommodated. A standby communication system set in good working order shall also be made available."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"The Contractor shall provide portable shelters to protect his personnel who regulate the STOP and GO-RY signs against the elements. The personnel regulating the traffic shall at all times wear reflective safety jackets."

(b) Road signs and barricades

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

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

All temporary road signs shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted ballasting of the sign supports shall be by using durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included for in the tendered rates for the various types of temporary road signs.

The traffic-control devices, temporary signs and devices required in the Contract are those designated in Part 13 of Volume 2 of the South African Road Traffic Signs Manual.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regards to signposting are met and written approval of the Engineer is obtained. The Contractor shall keep sufficient surplus signs, delineators and barricades on the site to allow for the immediate replacement of damaged or missing items, in any case, within three hours of instructions having been given by the Engineer. Delineators shall be of the flexible plastic reversible variety and not of the rigid metal variety.

Should the Contractor fail to respond to an instruction to re-erect a road sign within three hours or fail to comply to the requirements, the work on that section will be suspended without any compensation to the Contractor."

(c) Channelization devices and barricades

ADD THE FOLLOWING PARAGRAPHS:

"Drums shall not be used as channelization devices.

TW 401 and TW 402 delineators shall comply with the following requirements:

- (i) They shall be manufactured from a flexible material and shall comply with SANS 1555:2011. The blade portion of the delineator shall be positively affixed to a base unit which in turn shall be stable on its own or be stabilized by means of sandbags when used on the road.
- (ii) The blade shall be retro-reflectorised, with Class I yellow sheeting on the side facing oncoming traffic.
- (iii) It shall be nominally 1 000 mm high x 250 mm wide and the bottom edge of the delineator shall not be more than 200 mm above the road surface.
- (iv) The delineators shall be subject to the approval of the Engineer.
- (v) The maximum spacing between centres of delineators shall be as shown on the Drawings or as directed by the Engineer.

(d) Barriers

ADD THE FOLLOWING:

"Guardrails mounted on steel drums shall not be used as barriers."

(e) Warning devices

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

"The flashing lights shall have a minimum intensity of 55 W."

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"The warning boards shall be at least 1,5 m above ground level."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"All construction vehicles and Plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. Clearance permits for all vehicles and Plant shall be obtained from the Engineer before being allowed onto the Site.

Rotating lights shall have an amber lens with a minimum height of 200 mm and shall be mounted in order to be clearly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted

sections of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, and as the vehicles accelerate to the general speed when entering the road from a construction area. Lights on Plant shall operate continuously while the Plant is working alongside sections of road open to public traffic.

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

The Contractor shall provide the Engineer with four (4) rotating amber-coloured flashing lights. These lights shall be at least 200 mm high, shall have magnetic bases and must be equipped with fittings to draw power from a cigarette lighter point in a vehicle. No separate payment will be made for the supply and maintenance of these flashing lights and full compensation therefor shall be included in the rates tendered for in Section 1500.

Rotating lights and the 'Construction Vehicle' signs on the Contractor's vehicles and Plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles.

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

ADD THE FOLLOWING SUBCLAUSES:

"(g) Safety jackets

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way. Any person found not wearing a reflective jacket under these circumstances shall be removed from the Site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Engineer, ineffective shall be replaced immediately by the Contractor.

The Engineer, his personnel and visitors shall wear safety jackets at all times when they move about the Site. The Contractor shall provide the Engineer with safety jackets. The safety jackets shall be orange in colour and shall be submitted for the Engineer's approval before they are purchased. Payment for the safety jackets will be made under item B15.14(b).

(h) Other signs or facilities

The Engineer may instruct the Contractor to provide any other road sign, reflective tape, etc not measured in standard pay items. The road signs shall conform to the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual, or specification provided by the Engineer.

The Contractor shall inform the general public of the intended road works, construction period and accommodation of traffic proposal through press releases in local and provincial newspapers."

B1222 USE OF EXPLOSIVES

REPLACE PARAGRAPH (g) WITH THE FOLLOWING:

"(g) The Contractor shall, seven (7) days before each blasting operation is carried out, advise the Engineer thereof in writing. Any such blasting operation shall be confirmed with the Engineer twenty-four (24) hours prior to execution. The Contractor shall make all the

necessary arrangements to keep the public and the provincial traffic authorities fully informed with regard to the closures of the road for blasting purposes."

ADD THE FOLLOWING PARAGRAPH:

- "(h) Where blasting needs to be carried out within the road reserve of the existing road, it shall only be allowed between 10:00 and 14:00. The road may not be closed for a period longer than thirty (30) minutes during which time all blasting shall be carried out, debris removed from the road surface and the road made safe and passable for traffic."

Annexure 1

No.	Inspection	By who	Frequency	Record
1	Structures	Appointed person	As required for design compliance	Checklist
2	Formwork & Support work	Appointed person	Before, during, after loading, then daily	Checklist
3	Excavations	Appointed person	Daily before shift, plus other	Checklist
4	Traffic Accommodation	Appointed person	Daily	Inventory / checklist
5	Suspended Platforms	Appointed person	Manufacturer's spec, not more than 3 mo.	Inventory / checklist
6	Material Hoists	Appointed person	Daily	Checklist
7	Construction Vehicles	Appointed person	Daily	Inventory / checklist
8	Electrical Installations	Appointed person	Weekly	Inventory / checklist
9	Explosive Powered Tools	Appointed person	Daily	Inventory / checklist
10	Fire Equipment	Appointed person	Manufacturer's spec	Inventory / checklist
11	First Aid Box Contents	First Aider	Monthly	Inventory
12	Ladders	Competent person	Monthly	Inventory / checklist
13	Lifting Tackle	Appointed person	3-monthly	Inventory / checklist
14	Hand Tools	Appointed person	Monthly	Inventory / checklist
15	Portable Electrical Equipment	Appointed person	Monthly	Inventory / checklist
16	Gas Bottle Sets (OxyAcetylene)	Appointed person	Monthly	Inventory / checklist
17	Safety Harnesses	H&S Rep / Safety Officer	Monthly	Inventory / checklist
18	Health & Safety Rep	H&S Rep / Safety Officer	Monthly	Checklist
19	Good Housekeeping	H&S Rep / Safety Officer	Monthly	Report
20	Stacking and Storage	Appointed person	Monthly	Report
21	Change rooms and toilets	H&S Rep / Safety Officer	Monthly	Inventory / checklist

Annexure 2

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) REGULATION 9 OF THE GENERAL ADMINISTRATIVE REGULATIONS RECORDING AND INVESTIGATION OF INCIDENTS A. RECORDING OF INCIDENT							
Name of employer. _____							
1	Name of affected person	_____					
2	Identity number of affected person	_____					
3	Date of incident					5. Time of incident. _____	
4	_____						
6	Part of the body affected.*	Head or Neck	Eye	Trunk	Finger	Head	
		Arm	Foot	Leg	Internal	Multiple	
7	Effect on the person.*	Sprains or strains	Contusions or wounds	Fractures	Burns	Amputation	
		Electric shock	Asphyxiation	Unconsciousness	Poisoning	Occupational diseases	
8	Expected period of disablement.*	0-13 days	2-4 weeks	>4-16 weeks	>16-52 weeks	>52 weeks or permanent disablement	Killed
9	Description of Occupational disease**						
10	Job and type of work performed/exposure* _____						
11	Was the incident reported to the Compensation Commissioner? Make a cross in the appropriate square			Yes	No		
12	Was incident reported to the police?*			Yes	No		
13	SAPS office and reference to be completed in case of a fatal incident. _____						
*	in case of a hazardous chemical substance, indicate substance exposed to						
**							

B. INVESTIGATION OF THE ABOVE INCIDENT BY A PERSON DESIGNATED THERETO		
1	Name of investigator _____	
	2. Date of investigation _____	
3	Designation of investigator _____	
4	Short description of incident _____ _____	
5	Suspected cause of incident _____ _____	
6	Recommended steps to prevent a recurrence _____ _____ _____	
Signature of investigator _____ Date _____		
C. ACTION TAKEN BY THE EMPLOYER TO PREVENT THE RECURRENCE OF A SIMILAR INCIDENT		
Signature of employer _____ Date _____		
D. REMARKS BY HEALTH AND SAFETY COMMITTEE		
Signature of chairman of health and safety committee _____ Date _____		

Annexure 3

Definition of Mandatory

Includes an agent, a contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or user.

Occupational Health and Safety Act (No. 85 of 1993)

You are requested to, as far as you reasonably can, comply with the requirements of the OHS ACT and Regulations. Your attention is drawn to “**General Duties of Employers to their Employees**” as required by Sect 8 of the Act.

You are required to:

- Sign a written “**Agreement with Mandatory**” as required by Sect 37(1)(2) of the Act with us before you
- 3.1 commence any work on my / our premises / site.
- 3.2 Provide the **client / principal contractor** with a documented health and safety plan.
- Provide the **client / principal contractor** with written appointment of the person who is going to supervise the
- 3.3 construction work as per Construction Regulation 6(1).
Note: Electrician to provide copy of certificate of registration as per Elect. Install Reg. 9(3).
- Provide the **client / principal contractor** with written designation of your nominated Health and Safety 3.4 Representative as per Sect 17(1).
- If you employ more than five (5) persons, you are required to provide your own First Aid Box. (General Safety
- 2.5 Regulation 3 (2).)
- If you employ more than ten (10) persons, you are required to provide your own qualified First Aider as per
- 2.6 General Safety Regulation 3(4).
- 2.7 When working with hazardous chemical substances, comply with Hazardous Chemical Substances Regulation 3. *Note: Asbestos and Lead regulations are separate.*
- 2.8 When using a Materials Hoist , comply with Construction Regulation 17.
- 2.9 When using Lifting Machines and Lifting Tackle, comply with Driven Machinery Regulation 18.
- 2.10 When using Explosive Powered Tools, comply with Construction Regulation 19.
- 2.11 When using Scaffolding, Formwork and support work, comply with Construction Regulation 10 and 14.
- 2.12 When Excavating or Demolishing, comply with Construction Regulation 11 and 12.
- 2.13 When Welding, Flame Cutting, Soldering, comply with General Safety Regulation 9.
- 2.14 When working in confined spaces, comply with General Safety Regulation 5.
3. You are responsible for providing your own **legal safety documents and registers** to comply with the Act's requirements. *A copy of the OHS Act of 1993 should be available in the main contractor's office.*
4. You are required to comply with General Safety Regulation 2(1) to (7) and provide employees with: personal protective equipment which will allow them to carry out their work in a safe manner, e.g. hard hats, safety belts, gloves, safe footwear, eye protection, ear protection, waterproof clothing etc.
5. Reporting of Incidents and Occupational Diseases shall be done as per General Admin. Regulation 6. (Also see Sect 24 of the Act.)

Compensation for Occupational Injuries and Diseases Act (No 130 of 1993)

You are required to provide the **client** proof of registration with the Compensation Commissioner/Federated Employer's Mutual within seven (7) days after signing this agreement. Failure to do so would result in the **client** notifying the agent of the Commissioner to investigate and make an assessment of your wage return and the applicable levy you have to pay, which will be liable for a deduction from your monthly progress payments and paid over to the Commissioner. (Copies of proof of payment will be provided to the contractor) **See Section 89(1) of the COID Act.**

Annexure 3A

OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993

Medical Certificate of Fitness

CONSTRUCTION REGULATIONS, 2014

Name of Employee _____ ID Number _____

Co Number _____

* Occupation e.g General worker, Welder, Bricklayer, Steel fixer, Mobile crane operator, etc	* Possible Exposure e.g Noise, Heat, Fall risk, Confined spaces, etc	* Job Specific Requirements e.g Operating mobile crane, Digging trenches, Erecting formwork and support work etc	* Protective Clothing e.g Dust respirator, Welding gloves, etc

* The Employer to complete the information in the spaces marked with an * before sending the Employee for a medical examination Declaration by the Medical Examiner: I certify that I have, by examination and testing, using the above criteria specified by the employer, satisfied myself that the abovementioned employee is fit to perform the duties as described by the employer in the matrix above.

Occupational Medicine Practitioner / Occupational Health Nursing Practitioner: _____
Signature _____ Practice Number _____ Date _____
Address _____

AGREEMENT WITH MANDATARY In terms of Section 37 (1) and (2)

Section 37 (1)

Whenever an employee does or omits to do any act which it would be an offence in terms of this Act for the employer of such employee or a user to do or omit to do, then unless it is proved that -

(a) in doing or omitting to do that act the employee was acting without the connivance or permission of the employer or any such user;

(b) it was not under any condition or in any circumstance within the scope of the authority of the employee to do or omit to do an act, whether lawful or unlawful, of the character of the act or omission charged; and

(c) all reasonable steps were taken by the employer or any such user to prevent any act or omission of the kind in question,

the employer or any such user himself shall be presumed to have done or omitted to do that act, and shall be liable to be convicted and sentenced in respect thereof; and the fact that he issued instructions forbidding any act or omission of the kind in question shall not, in itself, be accepted as sufficient proof that he took all reasonable steps to prevent the act or omission.

Section 37 (2) The provisions of subsection (1) shall "*mutatis mutandis*" apply in the case of a mandatory of any employer or user, except if the parties have agreed in writing to the arrangements and procedures between them to ensure compliance by the mandatory with the provisions of the Act.

I, (Responsible person) for, (Company) appoint, (Contractor) at the following premises / site:

Period:

AUTHORISED SIGNATORY FOR THE COMPANY (CLIENT)

Signature

Designation

Date

ACCEPTANCE SIGNATORY FOR THE CONTRACTOR

I, hereby acknowledge receipt of and accept and understand the requirements of this agreement and shall ensure compliance with the OHS Act 85, of 1993.

Signature

Designation

Date

BASELINE RISK ASSESSMENT

RISK AND ASSURANCE STANDARD RISK MATRIX		Hazard Effect / Consequence				
Loss Type		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
Timeline		No impact on overall project timeline	May result in overall project timeline overrun of less than 5%	May result in overall project timeline overrun of between 5% and less than 20%	May result in overall project timeline overrun of between 20% and less than 50%	May result in overall project timeline overrun of 50% or more
Budget		No impact on the budget of the project	May result in overall project budget overrun of less than 5%	May result in overall project budget overrun of between 5% and less than 20%	May result in overall project budget overrun of between 20% and less than 50%	May result in overall project budget overrun of 50% or more
Investment Return – NPV loss		Less than R25 000	R25 000 to less than R100 000	R100 000 to less than R1 000 000	R1 000 000 to R10 000 000	R10 000 000 or more
Quality		No impact on quality	Minimal quality issues that can be addressed in a short timeframe with minimal interactions	Some quality issues that requires immediate management action	Significant quality issues that requires senior project management interaction	Significant quality issues that requires sponsorship intervention with significant resource and cost implications for rework
Safety / Health		First aid case / Exposure to minor health risk	Medical treatment case / Exposure to major health risk	Lost time injury / Reversible impact on health	Single fatality or loss of quality of life / Irreversible impact on health	Multiple fatalities / Impact on health ultimately fatal
Environment		Minimal environmental harm – L1 incident	Material environmental harm – L2 incident remediable short term	Serious environmental harm – L2 incident remediable within LOM	Major environmental harm – L2 incident remediable post LOM	Extreme environmental harm – L3 incident irreversible
Legal & Regulatory		No legal impact	Minor legal concerns with minor impact	Some legal concerns with manageable level of impact	Serious legal concerns and significant impact on operations	Legal noncompliance with risk of shutdown of operations with significant cost impacts
Likelihood		Risk Rating				
5 Almost Certain	The unwanted event has occurred frequently; has a 90% and higher probability of reoccurring	Medium (11)	Significant (16)	Significant (20)	High (23)	High (25)
4 Likely	The unwanted event has a probability of between 60% and less than 90% of occurring	Medium (7)	Medium (12)	Significant (17)	High (21)	High (24)
3 Possible	The unwanted event has a probability of between 30% and less than 60% of occurring	Low (4)	Medium (8)	Significant (13)	Significant (18)	High (22)
2 Unlikely	The unwanted event has a probability of between 1% and less than 30% of occurring	Low (2)	Low (5)	Medium (9)	Significant (14)	Significant (19)
1 Rare	The unwanted event has never occurred, has a probability of less than 1% of occurring	Low (1)	Low (3)	Medium (6)	Medium (10)	Significant (15)

CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)

Activity Description:	BASELINE RISK ASSESSMENT				Project No:	PWRT99/13	
Assessment Team:		Assessment Date:		Review Date:			

Task #	Task Description	Hazards / Aspects / Failures	Potential Risks / Impacts	SHEQ Category	Likelihood	Consequence	Raw Risk Rating	Mitigation / Control Measures	SHEQ Category	Likelihood	Consequence	Residual Risk Rating	Resp Person
1	Induction and training	- Injuries due to employees not aware of dangers in work area - Long hours of induction. - Use of unfamiliar language. - Imcompetent trainer/facilitator. - Issuing Incorrect PPE afterwards. - Employment of underaged employees.	Injury Disability Property damage	S&H BI/AD L&R	4	4	21(H)	- Inductions- Employees to be informed to all hazards in the work area as well as the recommended precautionary measures - Site specific induction to be conducted to all employees, sub-contractors and visitor's - Employees to be trained on all tools and equipment. - Ensuring that all the employees understood the training including questionnaires raised. - Ensure all employees get the correct PPE. - The contractor to hire people that are legal to work in terms of age.	S&H BI/AD L&R	2	3	9(M)	Safety Officer Site Agent General Foreman
2	Site establishment	- Fence erection. - Exposure to hazardous materials. - Exposure to moving machinery and vehicles. - Exposure to existing services.	Injury, disease, Property damage,	S&H BI/AD L&R	4	2	12 (H)	- Management to ensure site layout be approved by relevant engineer to consider site traffic, plant movement and other interfacing contractor site layouts. - Ensure that proper PPE is provided. - Ensure that Plants used for clearing are inspected and well serviced.	S&H BI/AD L&R	1	3	8 (M)	Site Agent General Foreman

		- Office building building and installation of ventilations. - Installation of electrical connections. - Clearing of site						Contractor to ensure that competent persons are hired for installations.					
3	Environmental control	Environmental risks	Environmental	EN	1	3	6(M)	- Ensure all waste areas controlling hazardous waste is kept clear - Ensure area housing hazardous waste is banded to prevent run-off and absorption into the ground water systems - Ensure the area is well demarcated and screened off - Ensure that waste is disposed legally with an appointment letter from legal appointee. - Ensure all spills are reported immediately - Ensure drip trays are used when the risk to spillage is high - Ensure the waste storage area has sufficient capacity - Ensure that all loose materials are covered and tied down to prevent wind picking the loose items out of the storage area or facility - Ensure storage areas and facilities are kept neat and tidy at all times - Ensure these areas are cleared regularly of waste material - Ensure all hazardous waste is removed to an approved dumping site/facility - Ensure correct colour coded waste bin for the discarding of waste	EN	1	2	3(L)	Environmental officer
4	Access/egress to site & correct placing of units	Restricted/unsafe access & parking of vehicles and plant	Injury Property damage	S&H BI/AD L&R	5	2	16(S)	Management to ensure site layout approved by client to consider site traffic, plant movement and other	S&H BI/AD L&R	1	4	10 (M)	Site Agent General Foreman

								interfacing contractor site layouts					
5	Create access through berm using TLB	Substandard plant	Injury Property damage Production loss	S&H BI L&R	3	4	14 M)	- Only certified and approved operator to be used. - Plant pre-inspection checklist to be completed - Tool box talk and risk assessment training before work commences - Work area to be barricaded and flag man to control people and plant movement	S&H BI L&R	1	4	4(L)	Site Agent General Foreman
6	Truck onto site and lay down area	- Reckless driving - Uncertified driver - Substandard truck - Conditions	Injury Fatality Property damage	S&H BI/AD L&R	3	5	15 (H)	- Ensure drivers are qualified and competent. - Ensure drivers are informed of route and site traffic requirements - Vehicle to be approved and licensed to enter site - Ensure that the plant is serviced on intervals and by competent and certified personnel.	S&H BI/AD L&R	2	4	10 (M)	Site Agent General Foreman
7	Pedestrian access to site Construction plant access to site.	- Unsafe pedestrian access (Walkway) - Plants that are not road worthy - Incompetent drivers or operators.	Injury Property damage Production loss	S&H BI L&R	4	4	16(H)	- Safe demarcated walkway to be conducted - Walkway to be barricaded with snow netting - Pedestrian crossings to be conducted and utilised. - Pedestrian and plants access must be separated. - Vehicle and plant signages must be made available. - Monitoring of site. - Appointment of qualified security service provider.	S&H BI L&R	1	4	4(L)	Site Agent General Foreman

PROJECT NAME: CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)

8	Offloading and positioning of containers/offices (mobile crane)	- Equipment failure - Load falling - Rigger (falling) - Load striking employees - Load striking other containers - Load swinging	Injury Property damage Production loss Fatality	S&H BI L&R	4	5	20 (H)	- Management (supervisor) to ensure that only certified and approved operator, crane and lifting tackle to be used. - All lifting equipment to be inspected and registered - Plant pre-inspection checklist to be completed - Operator and rigger to attend tool box talk and risk assessment training before work commences - Supervisor and rigger to ensure correct lifting tackle and attaching method/procedures applied - Qualified and competent rigger allocated to specific crane (one on one communication) - Rigger to wear safety harness and tie-off at all times. - Step ladder must be used for access to top of container - If working on top of load the rigger must then be hooked on the crane or on a life line - Area to be barricaded off during lifting activities to prevent unauthorised entry - Two guide ropes to be used on load to ensure stable movement - No lifting during high winds or inclement weather - Heavy equipment must be identified and a rigging study to be in place - Swing radius must be identified to ensure that the load can be of loaded in a safe manner - Stay out of the swing radius of the crane - Ensure there are barrier guards showing swing radius - A boom angle indicator must be on the crane	S&H BI L&R	1	4	4 (L)	Site Agent General Foreman
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9	Erecting safety and security fencing	Employees Fencing material (Wire and poles) Tools (Tensioners and pliers) Theft (Unauthorised entry) Hi-hub Crane truck Unfenced borrow pits	Injury Disability, Production loss, Property damage, animal loss	S&H BI/AD L&R	2	4	8(M)	• Ensure outriggers are in full extended position and on firm and stable ground using spreader boards • Crane may not travel with outriggers in extended position • Trained and competent workers to be used under supervision for fence erecting • No borrow pit will be excavated prior fencing together with an access gate. • Only approved and correct hand tools for the job may be used • No homemade or modified tools allowed on site • Tools to be inspected before commencing of work • Security guard will be appointed to provide security and access controll. • Labelled tools or plants.	S&H BI/AD L&R	1	2	2(L)	Site Agent General Foreman
10	Installation of safety signs and notice boards	Un-informed employees Inadequate signage Incorrect signage	Injury Property damage	S&H BI/AD L&R	2	2	4 (L)	• Legal required signage must be displayed to be clearly visible at all times. • All required signage to be available • Informative, prohibitive, mandatory and emergency signs • Signage change and applicability should be maintained	S&H BI/AD L&R	1	1	2(L)	Site Agent General Foreman
11	Emergency preparedness	Fire fighting equipment Insufficient no's	Injury Property damage Production loss	S&H BI/AD L&R	2	3	6(M)	• Fire fighting equipment must be placed in accordance to survey conducted during site establishment • Identification and signage must be clear and visible • All relevant equipment to be inspected and on register	S&H BI/AD L&R	1	4	4 (L)	Site Agent General Foreman Safety Officer
12	First aid	Inadequate medical assistance Untreated injuries	Diseases, disability	S&H BI L&R	2	4	8 (M)	• First aid boxes to be available at each work area clearly identified, signage installed and qualified first aider identified • First aid boxes to comply with minimum requirements inspected and registered	S&H BI L&R	1	3	3(L)	Safety Officer First Aider

13	Facilities	Hygiene Insufficient no Waste Eating area Drinking water	Hygiene Environmental Poor hygiene Illnesses and ailments Water contaminated	S&H BI L&R	2	2	4(L)	- Separate toilets for both genders must be available and clearly identified - Ration 1 to 20 and to be cleaned 3 times a week - Separate waste bins for different waste categories to be available and identified - Waste disposal plan and schedule must be maintained - Skips must have lids - Adequate, clean and shaded eating area to be ensured - Facilities to be ensured from start of site establishment - Clean drinking water must be available - Signage to be installed to all drinking and non drinking water	S&H BI L&R	1	2	2(L)	Safety Officer Site Agent
14	Power supply and electricity to office area	Generator	Injury	S&H	4	4	16 (H)	- DB board must stand on firm level base and should be locked at all times - DB board to be inspected and approved by qualified electrician	S&H	2	4	8 (M)	Site Agent General Foreman
		Electrical cables	Injury Electrocution	S&H BI L&R	3	4	12 (H)	- All cables to be routed underground - Only qualified electrician to do installation and termination	S&H BI L&R	2	4	8 (M)	Site Agent General Foreman
15	Refuelling Tank	Environmental spillage	Soil contamination Fire risk	S&H EN	3	3	12 (H)	- Bunding or drip tray to be utilised - Spill kit to be available at all times - MSDS available at generator - Fire extinguisher and relevant required signage to be installed (no smoking, no open flames and hearing protection) - Boundry wall to be available.	S&H EN	1	3	3 (L)	Site Agent General Foreman Environmental officer
16	Lay down area Stacking and storage	Inadequate space	Injury	S&H BI L&R	3	3	12 (H)	Lay down area must be well planned to ensure adequate space	S&H BI L&R	1	3	3 (L)	Site Agent General Foreman
		Poor stack/storage practices	Property damage	S&H BI L&R	2	5	10(H)	Safe stacking and storing practices/procedures must be maintained	S&H BI L&R	1	3	3 (L)	Site Agent General Foreman

								- Access and off-loading space must be a priority - Area to be barricaded - Flammable material not to be stacked together.					
		Dunnage	Injury Property damage	S&H BI L&R	3	3	9 (M)	Timber poles (Dunnage) to be used for stacking material	S&H BI L&R	1	3	3 (L)	Site Agent General Foreman
17	Loading and off-loading of truck with mobile crane	Unfit personnell on site Incorrect PPE Incompetent personnel Under the influences of alcohol and substances	Injury Fatality	S&H BI/AD L&R	4	4	16 (H)	- Insure all personnel are fit by means of medical clearance certificate - All personnel shall undergo all relative inductions, site inductions and risk assessment training - Daily DSTI plus toolbox talks to be conducted - Correct PPE to be worn for the right job or site requirements - Safety harnesses to be worn when working at heights and safety life lines to be erected when required - Safety harnesses will be issued per person and will be inspected and booked out accordingly - Supervisor to ensure personnel is competent for the task at hand with competency/qualifications certificates - All competency certificates to be kept in the safety officer office - All appointments to be up to date - Crane operator must be licence by an authorised training institution - Only competent rigger to do lifting operations - No employee to work when under the influence of drugs or alcohol - Random alcohol test will be conducted	S&H BI/AD L&R	1	4	4 (L)	Site Agent General Foreman Banksman

18	Approval of mobile crane	Non compliance No crane certification	Injury Fatality	S&H BI/AD L&R	3	4	12 (H)	- All cranes to be checked and tested by an testing station - All cranes shall be finally inspected and passed by project vehicle inspector - The crans shall have an up to date and valid load test certificate, rope test certificate, LMI calibration certificate and crane hook certificate - Full maintenance record of crane - Operator competence certificate - Crane pre-use checklist available and checklist completed daily - Crane specification and load chart available in crane cab, understood and used by operator	S&H BI/AD L&R	1	4	4 (L)	Site Agent General Foreman Safety Officer
20	Establishing crane on site	- No set-up/traffic plan - Poor or unstable ground condition - Obstructions - Excavations - Power lines (arc flash/electrocution)	Injury Fatality	S&H BI/AD L&R	4	4	14(H)	- Site traffic plan/area establishment plan shall be available and be approved by site manager and Project construction manager - Training and awarness to be conducted - Crane to be escorted to set-up area - Barricade crane and work area - Supervisor and crane operator to do a pre-inspection of ground conditions - Check and verify that there is no unknown services - Supervisor/rigger to ensure area is free of any obstructions - Crane not to be established closer than 3 menter to any excavation to prevent possible side wall collapse - Do not work within 15 meters of any power line - Site manager to ensure a pre-plan meeting and site inspection	S&H BI/AD L&R	2	4	8(M)	Site Agent General Foreman

								- Site specific traffic plan in place and approved by Projects construction manager - Permit to work near power lines.					
21	Select correct lifting equipment	Pinch points Lifting equipment failure	Injury Property damage	S&H BI/AD L&R	3	4	12 (H)	- Pre task assessment for correct lifting equipment above 5 ton – Rigging study - Wear correct PPE - Client representative can inspect tools and equipment and request tools to be replaced or repaired - Competent person/s shall be appointed for the responsibility of looking after equipment and tools must be inspected as required Hazard awareness briefings - Rigging study to be approved by construction manager and master rigger	S&H BI/AD L&R	2	3	6 (L)	Site Agent General Foreman
22	Hook up lifting equipment , crane and material to be lifted. Hoist up crane slowly to get equipment slack out	Pinch points	Injury	S&H BI/AD L&R	4	4	16 (H)	- Connect lifting equipment to correct procedures - All lifting equipment must have a load certificate inspection and must be updated and lock down in register - Keep hands clear once hooked up - Rigger to ensure all personnel are clear when hoisting, to get slack out	S&H BI/AD L&R	2	4	8 (M)	Site Agent General Foreman
23	Raise load slowly to check load stability and centre of gravity	Equipment failure	Injury Fatality Disability Property damage	S&H BI L&R	3	5	15 (H)	- Use correct and certified equipment - Work within crane and lifting equipment specification - Rigger only personnel to communicate with crane operator by means of hand signals, radio communications and or whistles - Rigger to remove glove when giving hand signals	S&H BI L&R	2	4	8 (M)	Site Agent General Foreman

								- Do not exceed wind speed for elevated lifts - Rigger to ensure no person to be under a suspended load. - No personnel within the swing radius of the crane					
24	Raise load to desired height and slew to designated installation area Remove lifting equipment	Incorrect lifting practices Lifting equipment failure Crane toppling over	Injury Fatality Property damage Production loss	S&H BI L&R	3	4	12 (H)	- Work to lifting procedures/task analysis - Rigger to communicate with operator - Ensure sufficient guide ropes attached - Work to equipment specifications - Work within crane load chart specification - Work within wind regulations – 6m/s or analyse situation - Rigger to ensure he/she constant eye contact with crane operator or radio contact - Rigger to ensure no person to be under a suspended load	S&H BI L&R	2	3	6 (M)	Site Agent General Foreman
25	Weather conditions	Lightning/wind Storms and thunder storms	Injury Fatality	S&H BI/AD L&R	2	4	14 (H)	- Work within wind regulation – 6m/or analyse situation - Stop task and call manager or rigger for assistance if in doubt ask crane operator - Do not work in thunderstorms and lightning - No work to be conducted on elevated positions when raining - If possible when load is suspended lower the load to ground level - Do not work with any steel/lifting of any steel when raining	S&H BI/AD L&R	1	4	4 (L)	Site Agent General Foreman

26	Truck arrived at site	Un informed operator Restricted access to loading area	Injury Property damage	S&H BI L&R	2	4	8 (M)	- Supervisor to inspect driver's public licence and condition of truck by means of an checklist. - Truck maintenance/service record to be with driver of truck - Driver to be send back if condition are not complied with - Supervisor to escort trucks to lie-down area - Communication with truck and crane operator - Area to be identified and barricaded - If delivery truck from a supplier come to site they need to complete the proforma checklist at the warehouse and manager to sign off.	S&H BI L&R	1	4	4 (L)	Site Agent General Foreman
		Truck operator under influence of alcohol and substances	Injury Property damage	S&H BI L&R	3	4	12 (H)	- Randomly drug and alcohol test to be conducted - All truck drivers compulsory to do alcohol test prior of enter site area	S&H BI L&R	2	3	6(M)	Site Agent General Foreman
		Load not secure	Property damage	S&H BI L&R	3	3	9(M)	- Suppliers must be notified before hand that supplier is not allowed on site. - If delivery truck from an supplier come to site and complete proforma checklist at warehouse and their manager must sign - Signed form accompany with truck to site - Delivery truck to be inspected for secure load before entry on site.	S&H BI L&R	1	2	2(L)	Site Agent General Foreman
		Not in position of stop blocks and PPE	Injury	S&H BI L&R	2	2	4(L)	- Spare stop blocks to be provided or operator remain in truck. - Engine to be stopped engage park brakes and stay seated to take action if track comes in motion - Operator not allowed exiting truck without correct PPE	S&H BI L&R	1	1	1 (L)	Site Agent General Foreman

PROJECT NAME: CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)

		Incorrect parking on site	Injury Property damage	S&H BI L&R	3	3	9 (M)	- Supervisor to plan off load area before trucks arrived - Supervisor to eliminate that roads been close for other users - Barricade area off	S&H BI L&R	1	2	2(M)	Site Agent General Foreman
27	Climbing on to truck to connect lifting equipment	Falling from truck	Injury	S&H BI L&R	3	4	12 (H)	- Personnel must take tripping hazard in consideration and not walk on the edge of truck load bed - Ensure 3 point contact when climbing on and off the truck - Ladder to be used when ascending or descending truck - Workers to wear safety harness attached to life line if working height exceeds 18m; lineyard on harness not exceeds 1 meter	S&H BI L&R	2	3	6 (M)	Site Agent General Foreman Banksman/Slinger
		Caught between	Injury	S&H BI L&R	2	3	6(M)	- Ensure loads are stable when offloading - Workers to ensure proper footing and keep their feet out from line of fire	S&H BI L&R	1	2	2(L)	Site Agent General Foreman
		Cuts and brazes	Injury	S&H BI L&R	1	2	2(L)	- Ensure all material is free from sharp edges and protruding objects - Gloves and safety boots to be worn	S&H BI L&R	1	1	1 (L)	Site Agent General Foreman
28	Traffic Accomodation	Failure to inform members of the public about project thru PSC and CLO Non/incorrect placing of signage signage	Injury Fatality Disability Property damage due to traffic accidents	S&H BI L&R	3	4	12(H)	- Discuss Traffic Plan with PSC and CLO and inform members of the public including employees - Placement of correct signage - Pre use inspection prior of use - No damage equipment to be used - Informing members of the public of construction activities thru CLO	S&H BI L&R	1	5	5 (M)	Site Agent General Foreman
29	Identifying and Exposing of existing services Hand excavations	Unsafe conditions unstable ground, incorrect identification Hand tools	Damage to services and disruption to existing services Production loss Loss of production	S&H BI L&R	2	2	5	- Pre-checks on hand tools - Discuss DSTI with employees - Identify and expose services - Pre-checks on hand tools	S&H BI L&R S&H BI L&R	1	2	3 (L)	Site Agent General Foreman

	Setting out points (Survey)	Incorrect setting out points (Demarcation)	Injury to employees					Warn others in close proximity when excavating using hand tools Barricade all excavations Management, surveyor and supervisor must ensure that SOP's are in accordance with approved and accepted drawings and survey results					
30	Barricading of work area	Uncontrolled movement	Injury Disability Fatality Property damage Production loss	S&H BI L&R	2	2	5 (L)	- All excavation areas will be barricaded with solid barricading from before excavations start until after backfilling is completed - Excavation to be numbered and put on register - Daily pre-work check list to be completed and permit obtained by appointed supervisor - Signage for barricading to be installed at access to excavation	S&H BI L&R	1	2	3(L)	Site Agent General Foreman
31	Excavation with Excavator Handling and storage of excess spoil	Man and machine interface Failure of equipment Property damage Excess spoil (Rocks, stone boulders etc.) Plant lock out	Injury Fatal Property damage	HS	3	5	15H	- Discuss traffic management plan - Pre-use inspection of plant daily before use - Operator and supervisor to inspect site before actual works - Excess spoil will be removed from excavation work area with tipper - Spoil remain in work site area for backfilling purposes will be stock piled in safe area - All spoil will be stored further than 2m way from excavation edges and outside barricading - Stock pile will not cause restriction to access/egress of work area	S&H BI L&R	1	4	4(M)	Site Agent General Foreman
32	Placing spoil	Excess material/spoil (Excavation sides collapsing)	Injury Fatality Property damage	S&H BI L&R	2	2	4(L)	- No excess spoil will be placed within 2m from excavation - All spoil material to be removed offsite to a identified land fill - All excavation sides will be shored to prevent collapsing of materials	S&H BI L&R	1	2	3(L)	Site Agent General Foreman

								Spoil at edges will not exceed height of 2m and will be shored 1-2 at all times					
33	Access/egress to excavation	Poor or no access/egress at excavation	Injury	S&H BI L&R	2	2	5(L)	All excavation will be supplied with sufficient access/egress ladders for entry and exit, placed no further than 6m away from nearest workers and no further than 6m apart.	S&H BI L&R	1	2	3(L)	Site Agent General Foreman
34	Using of drilling machine Pre-use inspection Changing of drill bits	- Inspection not done and on register - Drilling machine not made safe - Incorrect tools used - Incorrect bit fitted - Bit fitted wrong way - Damaged bit fitted	Injury Equipment damage	S&H BI L&R									
					3	3	9(M)	- Inspection to be done by competent person - User of drilling machine to be trained and found competent - Checklist to be signed off by competent appointed supervisor - Permanent lock switch not allowed	S&H BI L&R	1	3	3 (L)	Site Agent General Foreman
								- Only trained and found competent employees to change drill bits on a drilling machine - To ensure drilling machine is unplugged - Equipment needs to be inspected prior entering site - Proper tool (Chuck key) to be use - Supervisor to ensure correct bit is provided and fitted - Bit to be inspected prior of fitment by competent and trained employee					

35	Use of drilling machine (drilling thru hard rock)	• Drilling machine used by incompetent employee • Noise • Dust • Bit coming off while working with drilling machine • Employee injured as a result of an electric shock	Injury Disability Fatality	S&H BI L&R	3	3	9(M)	• Only trained employees allowed to work with drilling machine • Ensure drilling machine not to be left unsupervised • Ear plugs to be worn when drilling • No loose clothing to be worn • Dust mask to be used • Correct PPE to be worn at all times • Employee to ensure drill bit is attached properly and secured with suck key • Drilling machine not to be used while standing in water • Drilling machine to be inspected before use • Faulty equipment to be removed from site • No drilling operations to be done during rain	S&H BI L&R	1	3	3 (L)	Site Agent General Foreman
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36	Use of mobile compressor	• Unauthorised persons using equipment • Operator not knowing where emergency stop button is • No inspection done prior of commencement of work • Leakage of diesel/petrol • Oil decomposition • Rotating parts • Cleaning of clothes and skin with compressed air	Fire risk Injury Fatality Property damage Injury	S&H BI L&R	3	4	12(H)	• Only authorised trained employees to use equipment • Supervisor to be present at all times • Supervisor to give employee on the job training as to the hazards and risk associated with the mobile Compressor and emergency preparedness • Only trained employees to use mobile Compressor • Inspection to be done daily by supervisor prior commencement of entering site. • Material safety data sheets must be on site and communicated to all employees by supervisor • Drip trays to be utilised • No smoking or open flames near Mobile Compressors that are in operation • Contaminated soil will be properly disposed in line with construction EMP • Disposal certificate will be kept on record • Only certified companies used to dispose of hazardous waste • Regular cleaning of cylinders and valves • Supervisor to ensure employees comply • All rotating parts must be guarded. • Supervisor to ensure that items are covered in pre start inspection • Supervisor to ensure no employees uses compressed air to dust off clothes or skin as irritation can occur • Communicate to employees in Toolbox Talk • Warning signs to be displayed	S&H BI L&R	2	3	6 (M)	Site Agent General Foreman
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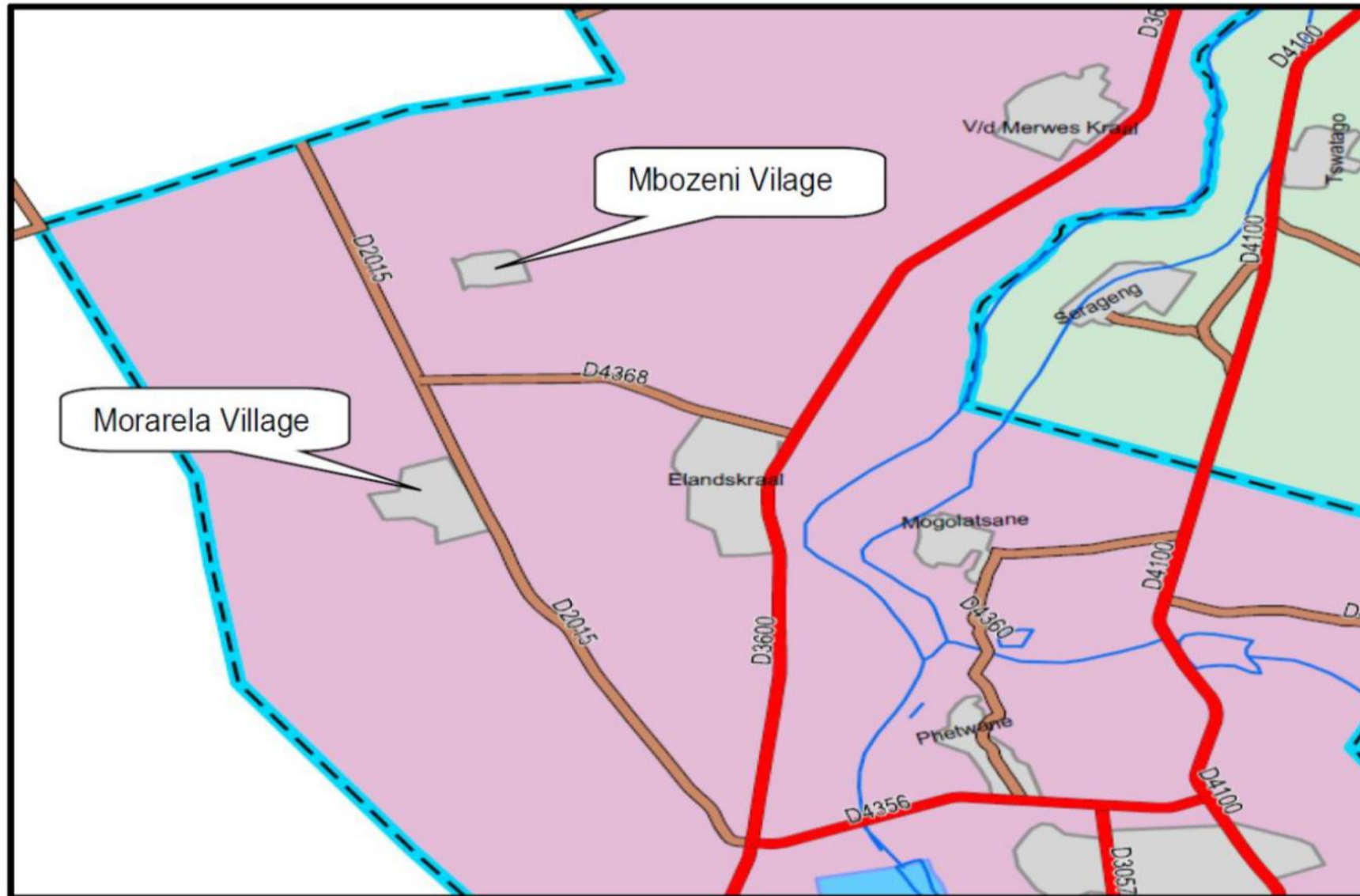
37	Hazardouse chemical storage	- Employees not familiar with MSDS - Liquid splashing - Employees inhaling fumes - Liquid spilling from container - No information of hazardous substance signage - No fire extinguisher	Injury Disability Fatality	S&H BI L&R	3	4	12(H)	- Obtain formal approval of flammable store from the relevant local authority and display the certificate at the entrance to the store - Flammable liquid store to conform all legal requirements - Assessment to be carried out to determine the quantity of flammable liquid kept on site - No open flames and no smoking symbolic signs to be displayed in the vicinity of flammable liquid store - All material safety data sheets (MSDS) to be available at all times - Liquid bulk storage tanks to be bunded. - Each bund to be capable of containing the maximum volume of the tank +10% - Fire extinguisher to be in 10 meter radius.	S&H BI L&R	2	3	6{M}	Site Agent General Foreman
38	Borrowing of materials at the Quarry	- Working without conducting a risk assessment. - Without the supervsion. - Defective and faulty construction plant and equipments. - No induction conducted. - No PPE worn - Live burried explosives under-ground qaurry. - Uncontrolled access	Medical treatment cases Injuries/Fatality Damage to property Incidents/accident s lead by high speeding/no traffic compliance. Falling of rocks from tippers at the public road could lead to incidents/accident		4	4	16(H)	- Conducting site specific risk assessment - Appointment of Site Safety officer and supervisors. - Contruccion plant daily checklists - Conducting induction training awareness prior accessing the quarry - All employees shall be provided with task specific PPE - Ensure the risk assessment also tackles the possibility of live buried explosives. - Control access and register every one accessing.		1	5	5(M)	Site Agent Safety officer Traffic ooficer

C4: SITE INFORMATION

C4.1 LOCALITY PLAN

C4.2 TENDER DRAWINGS

C4.1 LOCALITY PLAN



C4.2 TENDER DRAWINGS

TENDER DRAWINGS ARE INCLUDED IN A SEPARATE DOCUMENT

C4.2.1 LIST OF DRAWINGS (For tendering purposes only)

LIST OF DRAWINGS

Drw No. Descriptions

T3CE/EMLM/01	Locality Map
T3CE/EMLM/02	Main Layout Plan
T3CE/EMLM/03	Layout Plan and Longitudinal Section fro Road 1 from CH 0.000 to CH 1.000km
T3CE/EMLM/04	Layout Plan and Longitudinal Section fro Road 1 from CH 1.000 to CH 1.115km
T3CE/EMLM/05	Layout Plan and Longitudinal Section fro Road 2 from CH 0.000 to CH 1.000km
T3CE/EMLM/06	Layout Plan and Longitudinal Section fro Road 2 from CH 1.000 to CH 1.160km
T3CE/EMLM/07	Layout Plan and Longitudinal Section fro Road 3 from CH 0.000 to CH 1.000km
T3CE/EMLM/08	Layout Plan and Longitudinal Section fro Road 3 from CH 1.000 to CH 1.056km
T3CE/EMLM/09	Layout Plan and Longitudinal Section fro Road 4 from CH 0.000 to CH 0.590km
T3CE/EMLM/10	Cross-Section for Road 1 from CH 0.000 to CH 0.540 km
T3CE/EMLM/11	Cross-Section for Road 1 from CH 0.560 to CH 1.115 km
T3CE/EMLM/12	Cross-Section for Road 2 from CH 0.000 to CH 0.580 km
T3CE/EMLM/13	Cross-Section for Road 2 from CH 0.600 to CH 1.160 km
T3CE/EMLM/14	Cross-Section for Road 3 from CH 0.000 to CH 0.580 km
T3CE/EMLM/15	Cross-Section for Road 4 from CH 0.600 to CH 1.056 km
T3CE/EMLM/16	Cross-Section for Road 4 from CH 0.000 to CH 0.590 km
T3CE/EMLM/17	Stormwater Long - Section 1
T3CE/EMLM/18	Stormwater Long - Section 2
T3CE/EMLM/19	Stormwater Long - Section 3
T3CE/EMLM/20	Open Stormwater Channel Long-Section 11
T3CE/EMLM/21	Open Stormwater Channel Long-Section 12
T3CE/EMLM/22	Stormwater Typical Details
T3CE/EMLM/23	Details of kerb In-let catchpit
T3CE/EMLM/24	Stormwater junction box
T3CE/EMLM/25	Typical Cross-Fall Section
T3CE/EMLM/26	Head and Wing Wall General Arrangements
T3CE/EMLM/27	Road Marking 1
T3CE/EMLM/28	Road Marking 2
T3CE/EMLM/29	Contract Nameboard

EPHRAIM MOGALE LOCAL MUNICIPALITY



BOOK OF DRAWINGS

VOLUME 1

PROJECT No. EPMLM 8/3/397

CONSTRUCTION OF MORARELA/MBUZINI INTERNAL ROAD (MULTI-YEAR PROJECT)

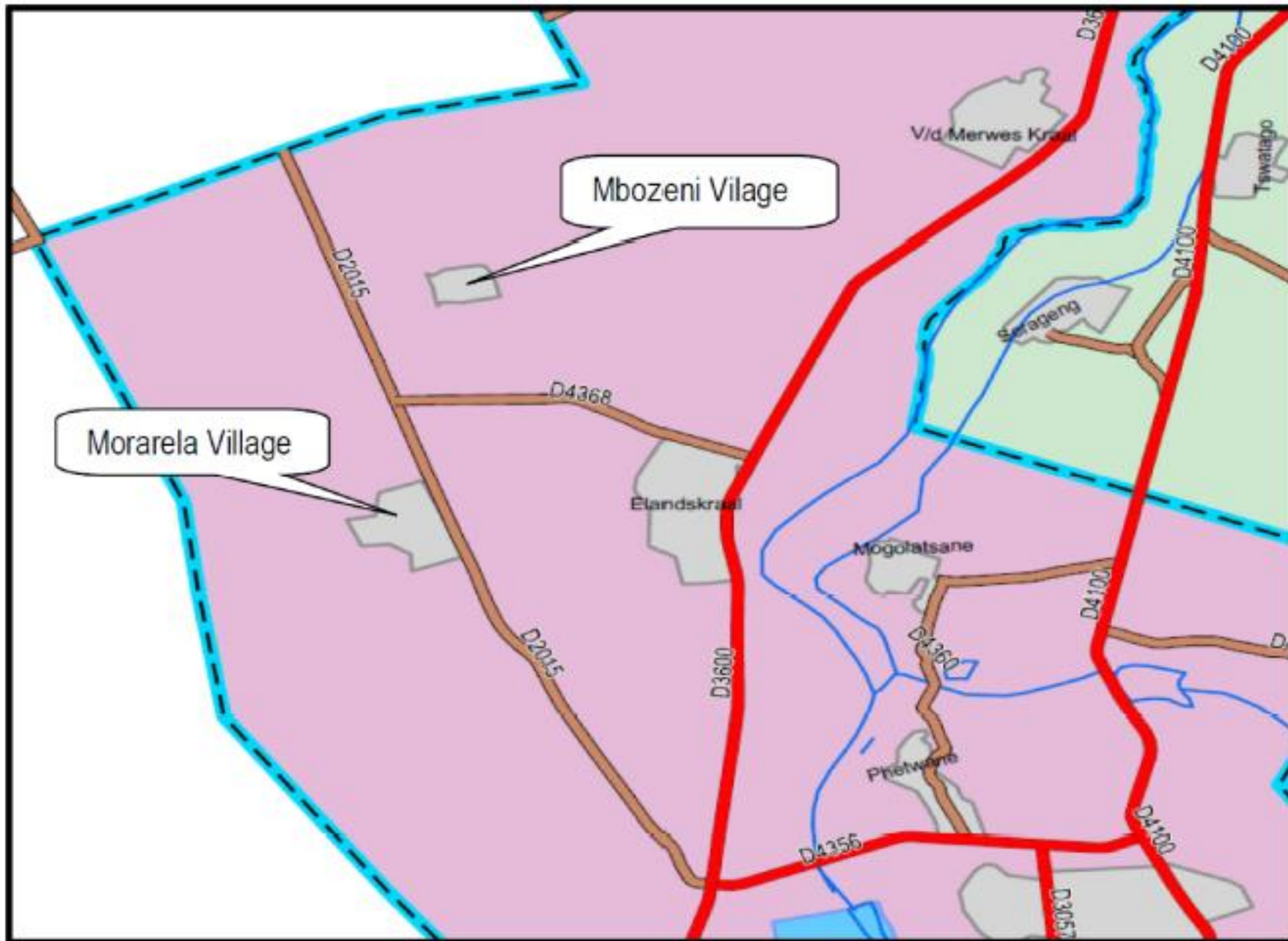
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TENDERING DRAWINGS

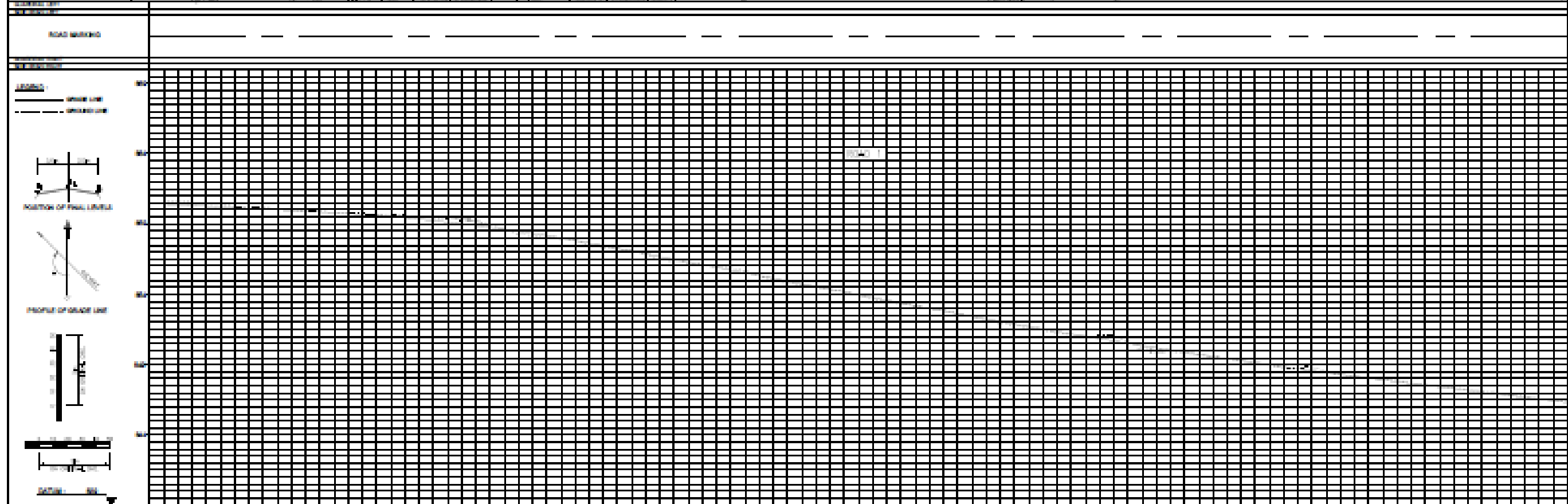
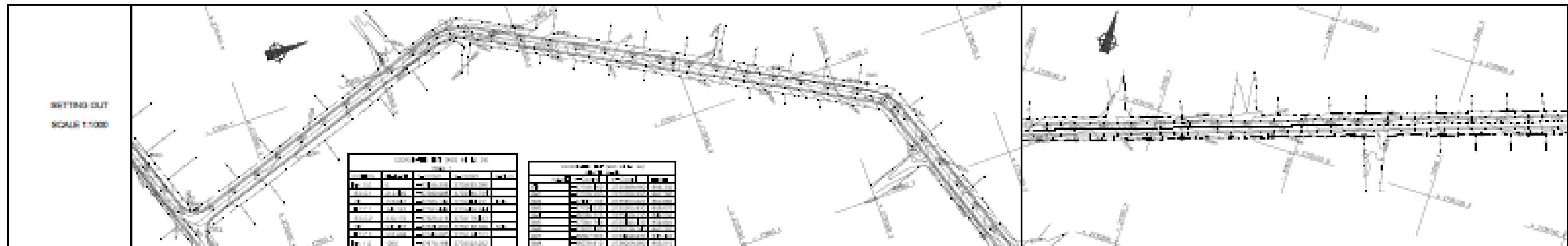


LIST OF DRAWINGS

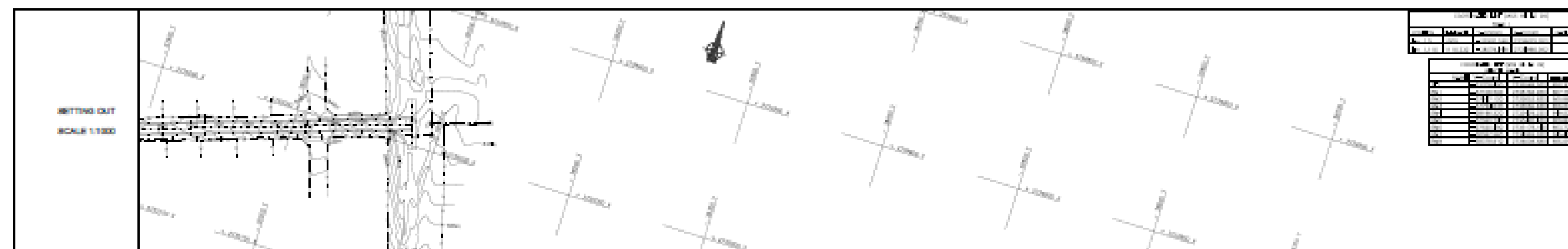
Drw No. Descriptions

TDCMMLM01	Locality Map
TDCMMLM02	Masterplan Plan
TDCMMLM03	Layout Plan and Longitudinal Section for Road 1 from CH 0+000 to CH 1+000m
TDCMMLM04	Layout Plan and Longitudinal Section for Road 2 from CH 0+000 to CH 1+100m
TDCMMLM05	Layout Plan and Longitudinal Section for Road 3 from CH 0+000 to CH 1+000m
TDCMMLM06	Layout Plan and Longitudinal Section for Road 4 from CH 0+000 to CH 1+000m
TDCMMLM07	Layout Plan and Longitudinal Section for Road 5 from CH 0+000 to CH 1+000m
TDCMMLM08	Layout Plan and Longitudinal Section for Road 6 from CH 0+000 to CH 1+000m
TDCMMLM09	Layout Plan and Longitudinal Section for Road 7 from CH 0+000 to CH 1+000m
TDCMMLM10	Cross Section for Road 1 from CH 0+000 to CH 0+500m
TDCMMLM11	Cross Section for Road 1 from CH 0+500 to CH 1+100m
TDCMMLM12	Cross Section for Road 2 from CH 0+000 to CH 0+500m
TDCMMLM13	Cross Section for Road 2 from CH 0+500 to CH 1+100m
TDCMMLM14	Cross Section for Road 3 from CH 0+000 to CH 0+500m
TDCMMLM15	Cross Section for Road 3 from CH 0+500 to CH 1+000m
TDCMMLM16	Cross Section for Road 4 from CH 0+000 to CH 0+500m
TDCMMLM17	Cross Section for Road 4 from CH 0+500 to CH 1+000m
TDCMMLM18	Stormwater Long Section 1
TDCMMLM19	Stormwater Long Section 2
TDCMMLM20	Stormwater Long Section 3
TDCMMLM21	Open Stormwater Channel Long Section 11
TDCMMLM22	Open Stormwater Channel Long Section 12
TDCMMLM23	Stormwater Typical Details
TDCMMLM24	Details of Silt in Stormwater
TDCMMLM25	Stormwater Junctions
TDCMMLM26	Typical Cross Fall Section
TDCMMLM27	Head and Wing Wall General Arrangement
TDCMMLM28	Road Marking 1
TDCMMLM29	Road Marking 2
TDCMMLM30	General Notes

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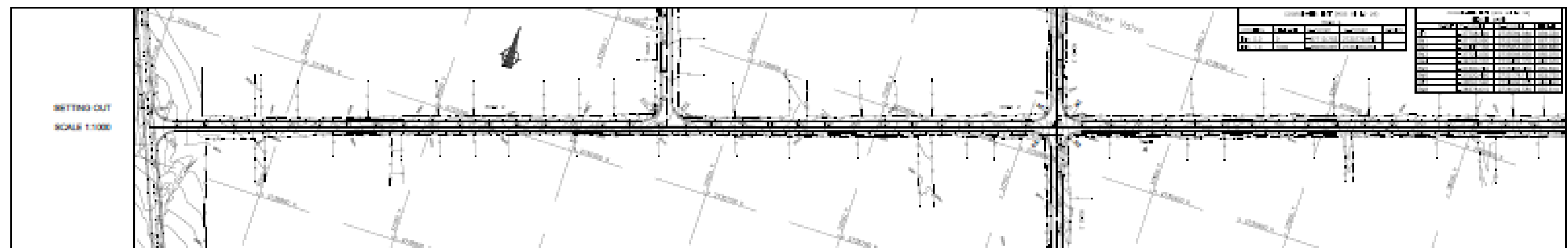


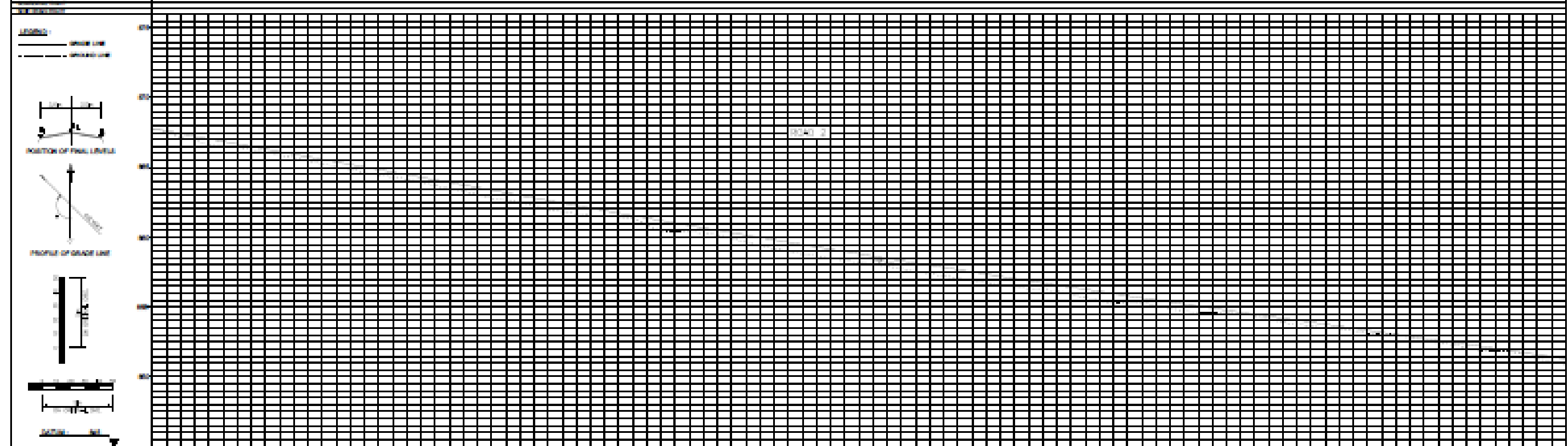
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PAUL LEVEL	H ₁ 0.0 m LEFT																						
	H ₂ 0.0 m CENTER																						
	H ₃ 0.0 m RIGHT																						
GRADE																							
VERTICAL CURVES																							
SUPERELEVATION																							
HORIZONTAL ALIGNMENT																							
CHANGING DISTANCE																							
CHANGING DISTANCE, SET AND RESET																							



DRAWING		DATE		BY		CHECKED		APPROVED	
PROJECT NAME		PROJECT NO.		SHEET NO.		SHEET TOTAL		SCALE	
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POSITION OF ROAD LINE		STATIONING		ELEVATION		DISTANCE		CURVE DATA	
PROFILE OF GRADE LINE		STATIONING		ELEVATION		DISTANCE		CURVE DATA	
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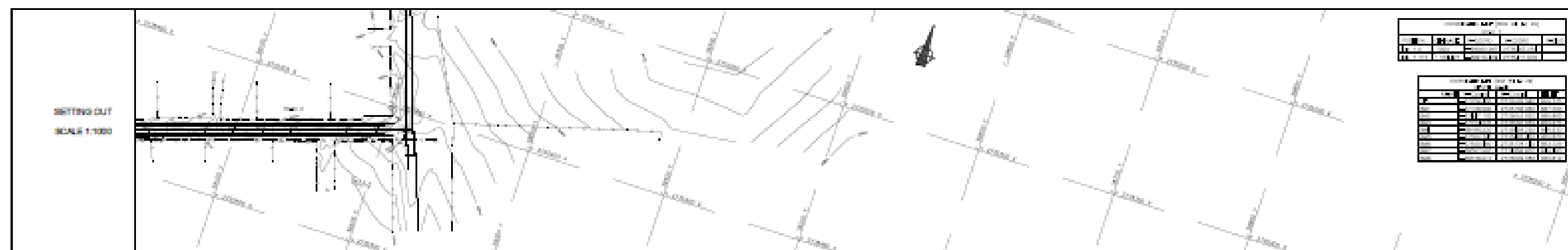
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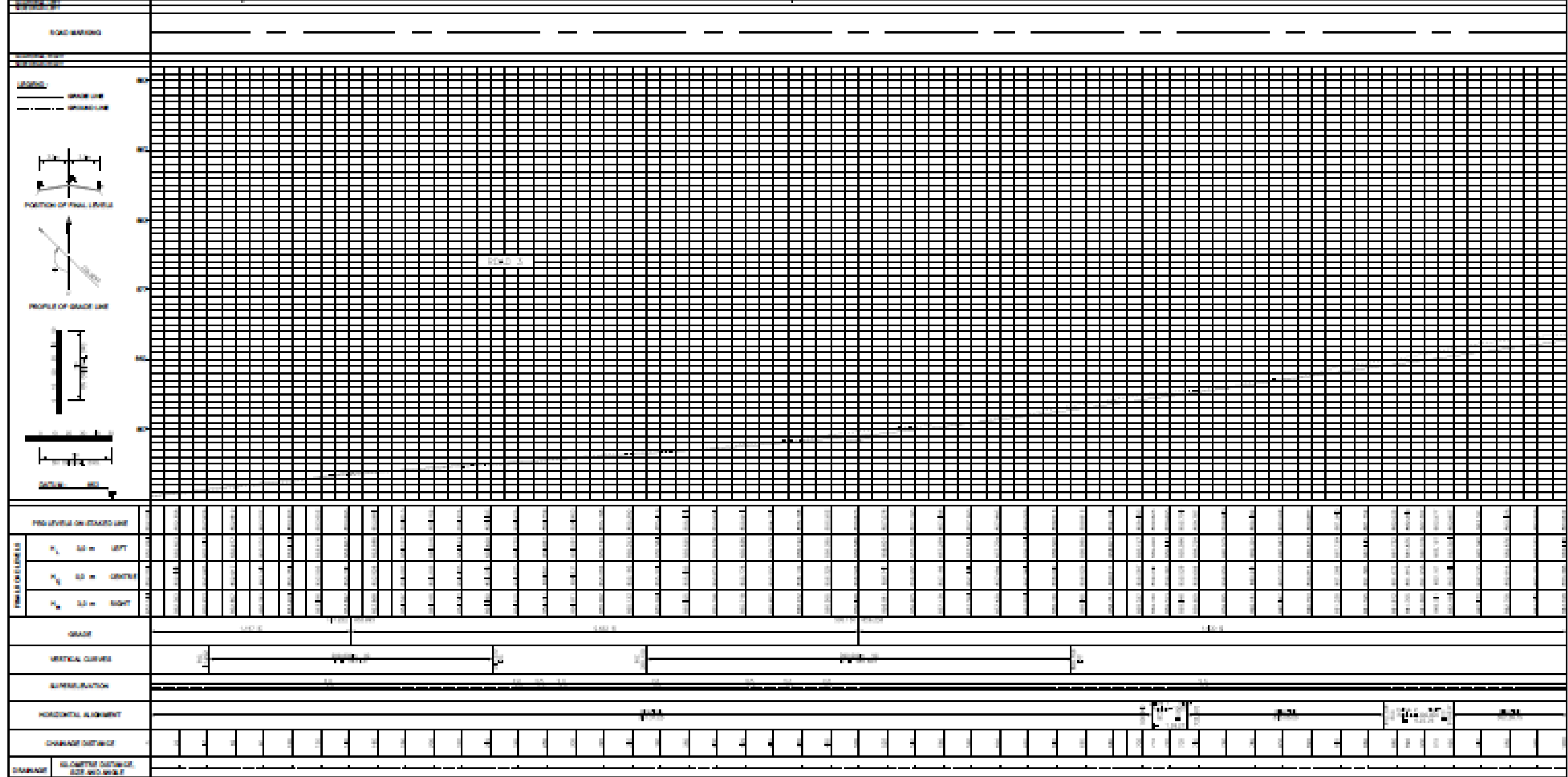
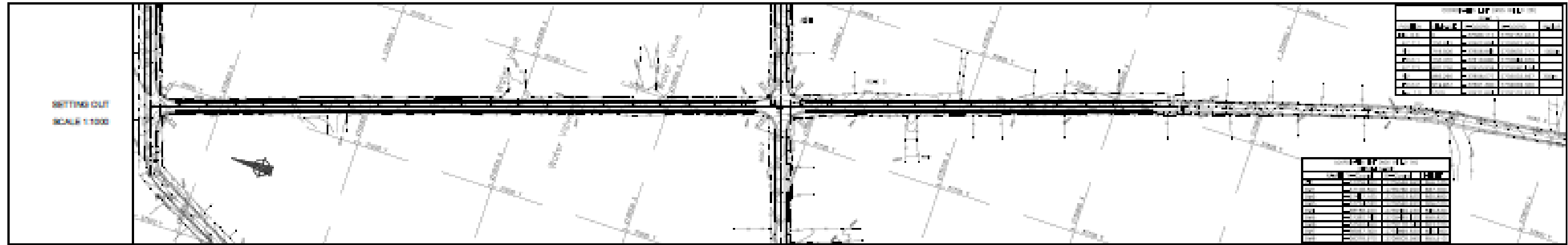


PRELIMINARY ON STATION LINE		STATIONING																																															
P.L. POINTS		STATIONING																																															
		STATIONING																																															
		STATIONING																																															
GRADE		GRADE																																															
VERTICAL CURVE		VERTICAL CURVE																																															
SUPERELEVATION		SUPERELEVATION																																															
HORIZONTAL ALIGNMENT		HORIZONTAL ALIGNMENT																																															
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CHANGING DISTANCE FOR 100' WIDE		CHANGING DISTANCE FOR 100' WIDE																																															

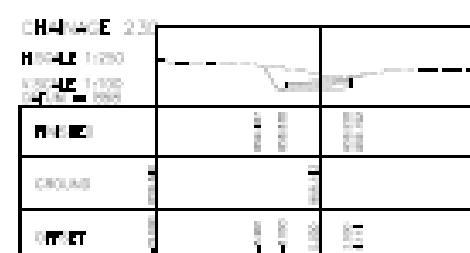
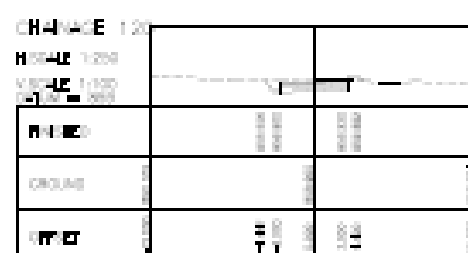
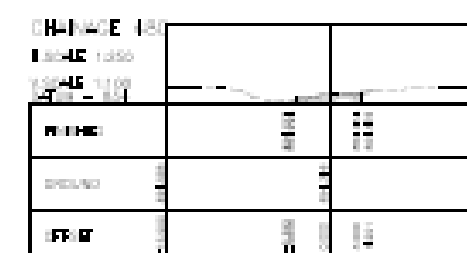
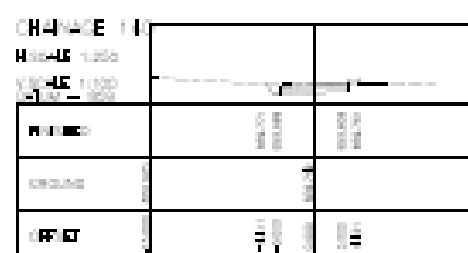
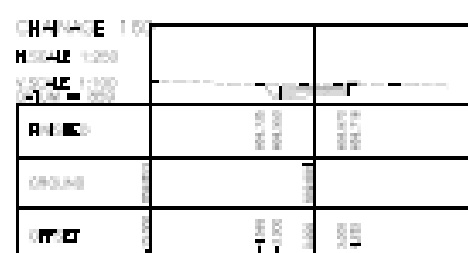
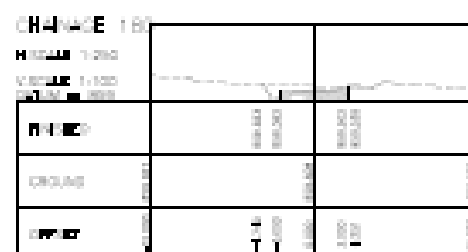
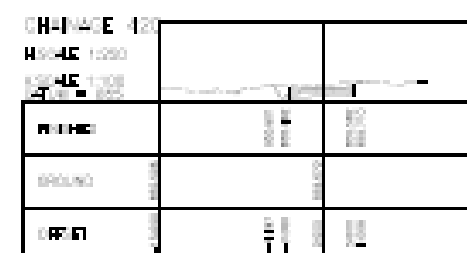
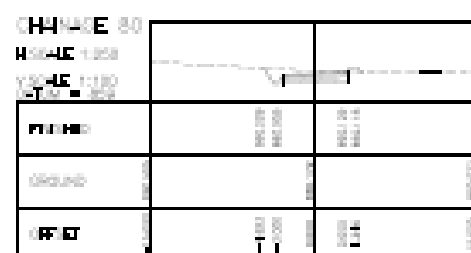
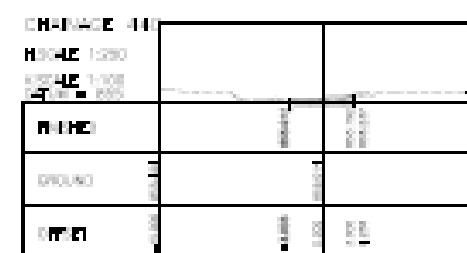
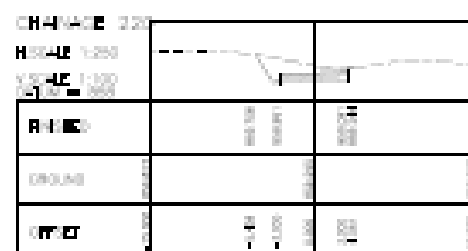
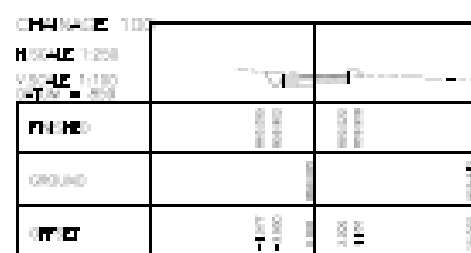
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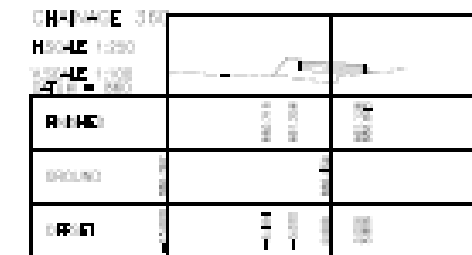
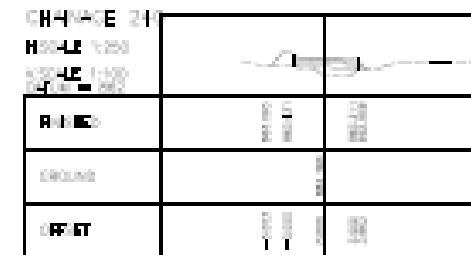
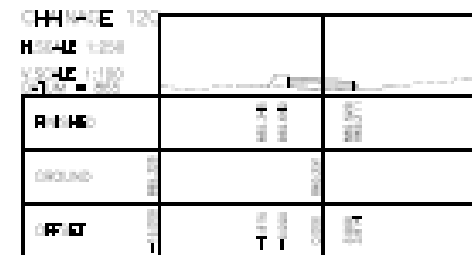
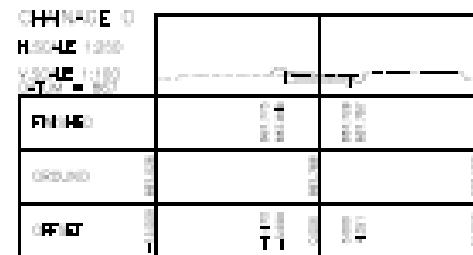
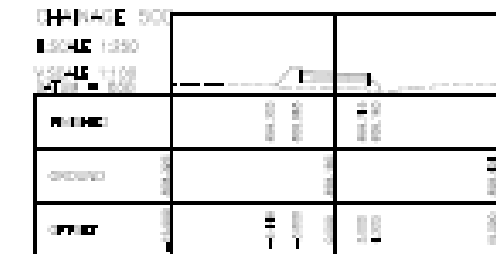
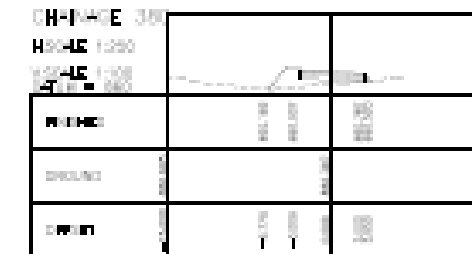
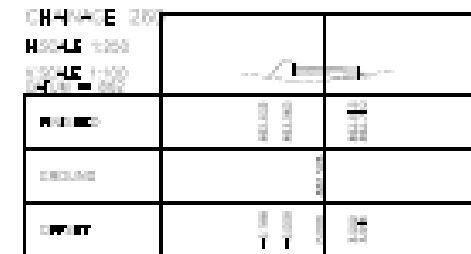
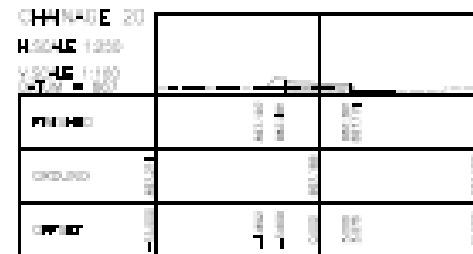
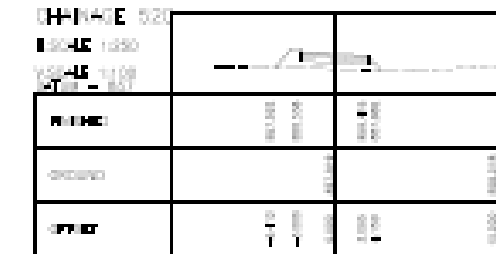
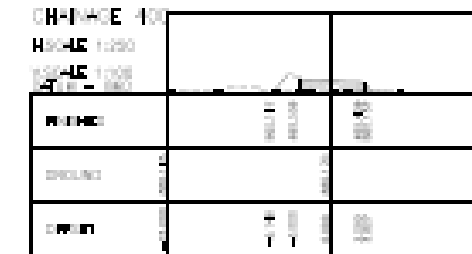
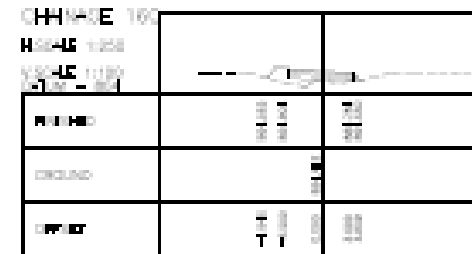
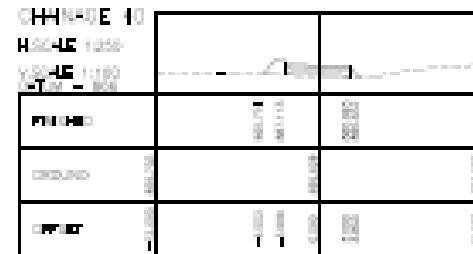
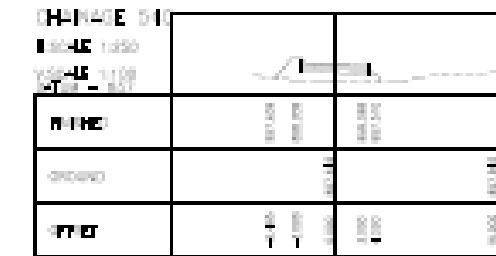
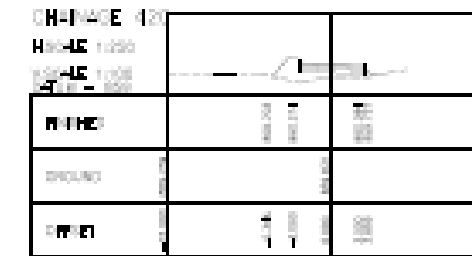
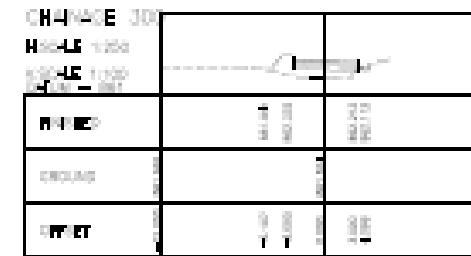
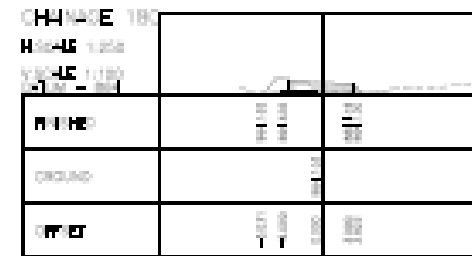
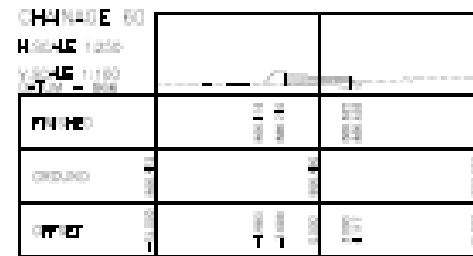
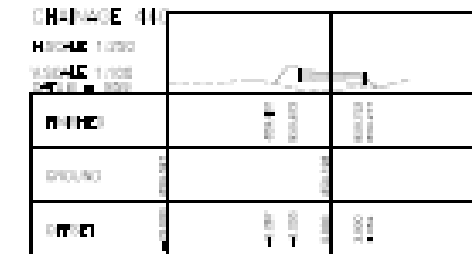
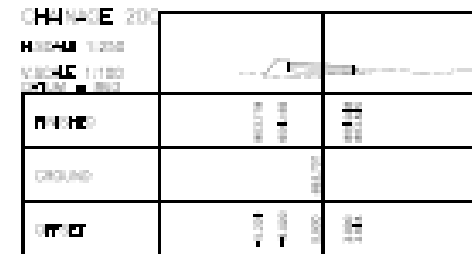
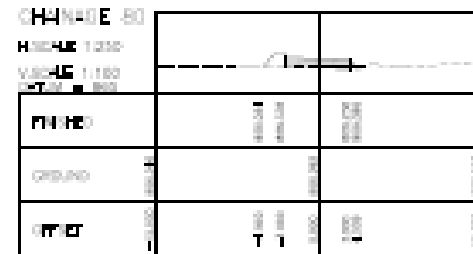
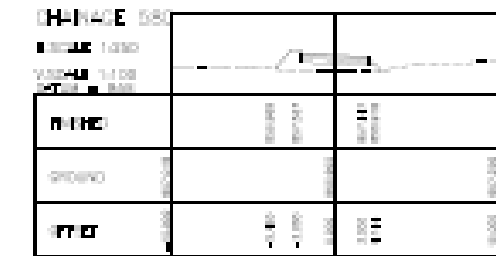
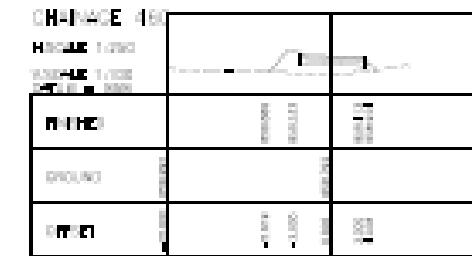
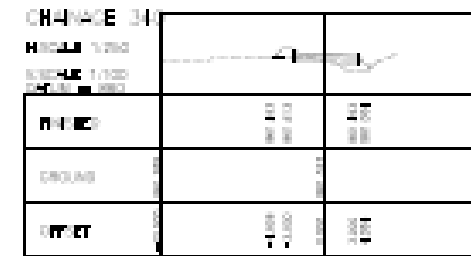
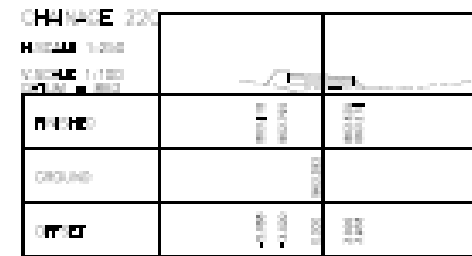
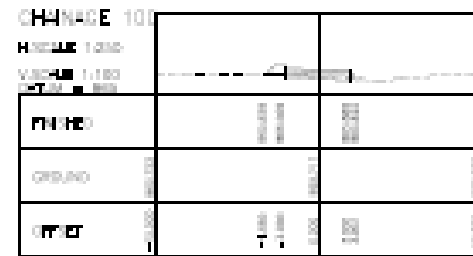
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DRAWN BY: E.N. CHECKED BY: P.S. DATE: 2024/05/20 SCALE: N.T.S.		DESIGNED BY: E.N. CHECKED BY: P.S. DATE: 2024/05/20 SCALE: N.T.S.		PROJECT NUMBER: EPMLM/5/3/367 CONSTRUCTION OF MORARUWALUWU INTERNAL ROAD (MULTI-YEAR PROJECT) LAYOUT AND LONGITUDINAL SECTION FOR ROAD 2 FROM CH 1.000KM TO CH 1.100KM		DESIGNER: T3 CONSULTING ENGINEERS CC DRAWING NUMBER: T3CE/EPMLM/00		SHEET 1 OF 1 SCALE: N.T.S. REVISION: 1	
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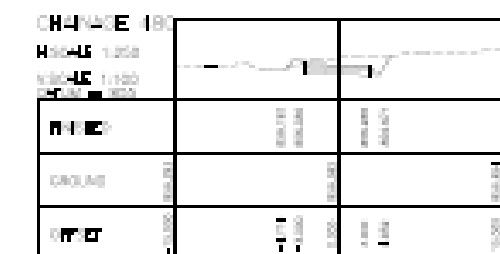
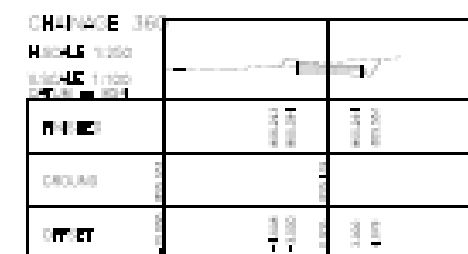
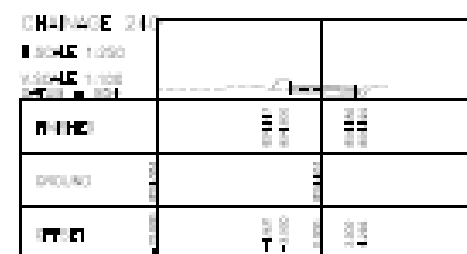
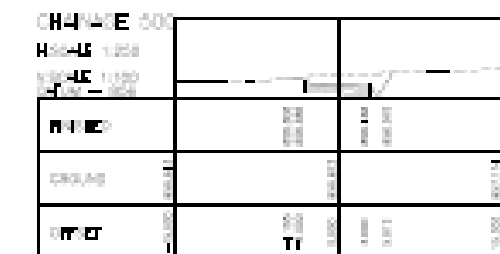
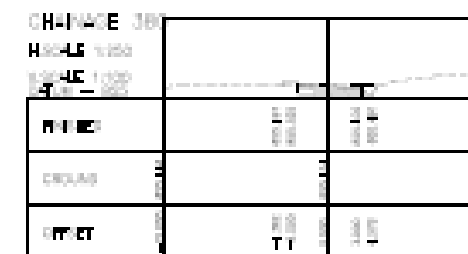
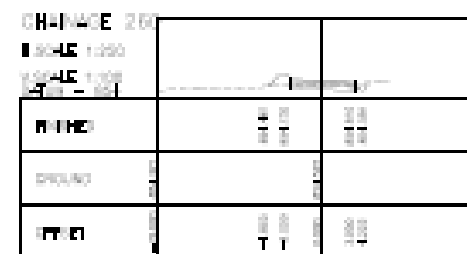
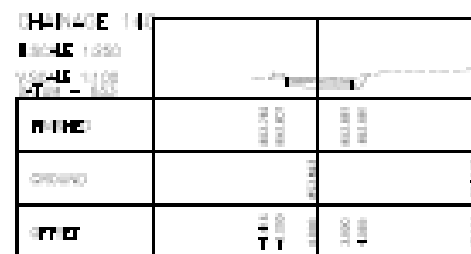
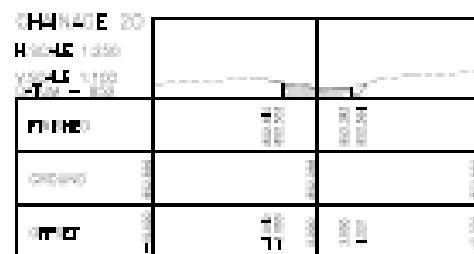
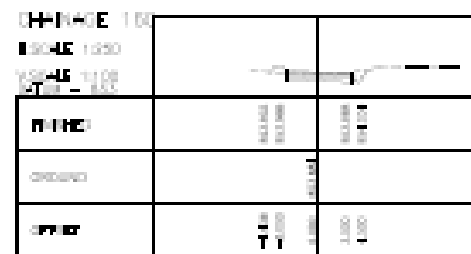
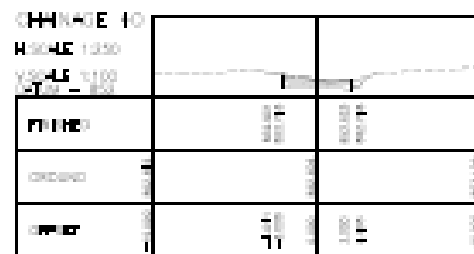
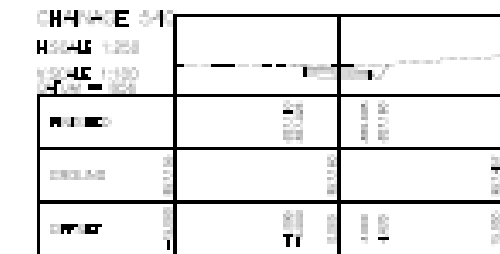
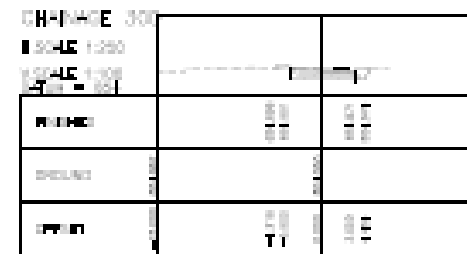
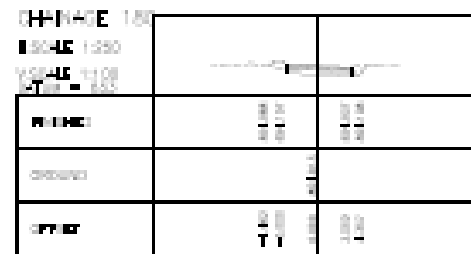
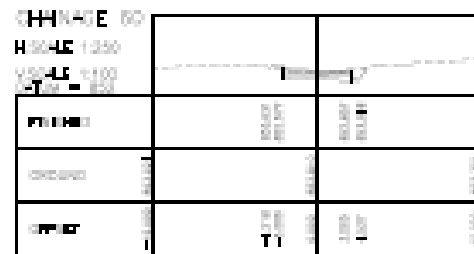
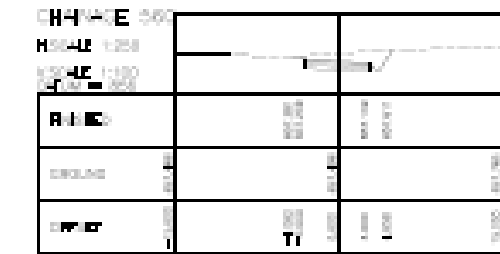
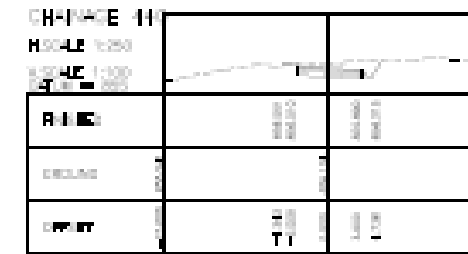
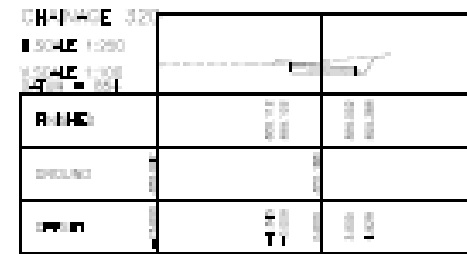
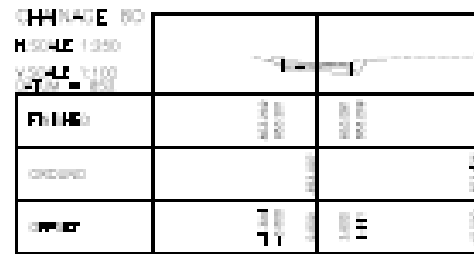
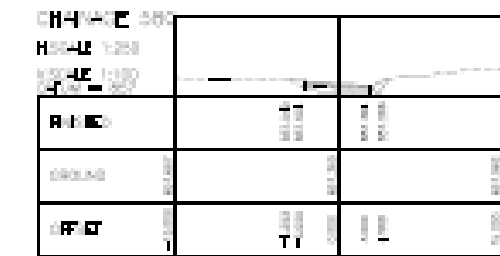
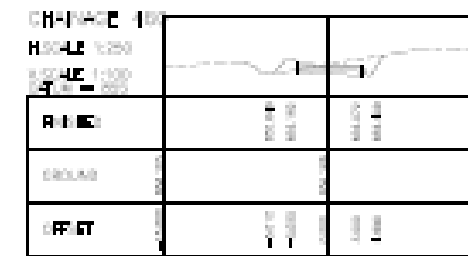
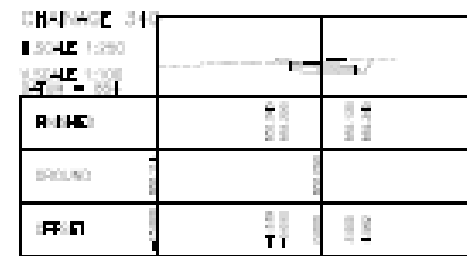
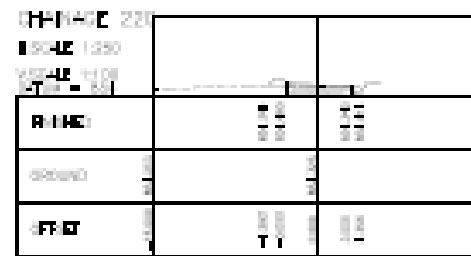
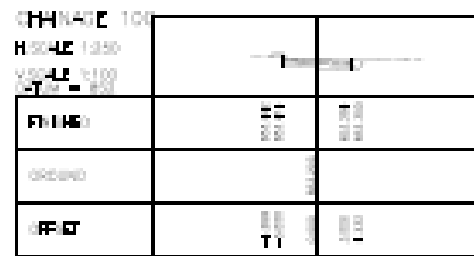


DESIGNED BY	E.R.	EPHRAIM MOGALE LOCAL MUNICIPALITY	T3 CONSULTING ENGINEERS CC	PROJECT NUMBER: EPMLM 603067	DATE	10/01/2018
CHECKED BY	P.S.	P.O. BOX 111 MORARABANJULI 0480	P.O. Box 1108 FAIRVIEW 0181	CONSTRUCTION OF MORARABANJULI INTERNAL ROAD (MULTI YEAR PROJECT)	SCALE	N.T.S.
DRAWN BY	E.N.	Tel: (018) 361 8400 Fax: (018) 361 8588	Tel: (018) 361 8501 Fax: (018) 361 8581	LAYOUT AND LONGITUDINAL SECTION FOR ROAD 3 FROM CH 0.000KM TO CH 1.000KM	DRAWING NUMBER	TSC/ENL/MJ07
CHECKED BY	E.R.				REVISION	1

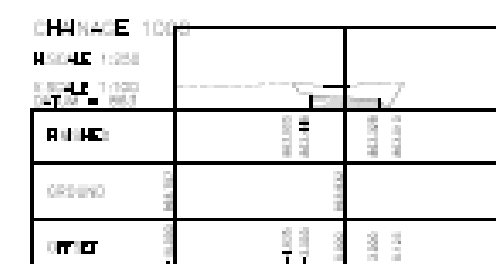
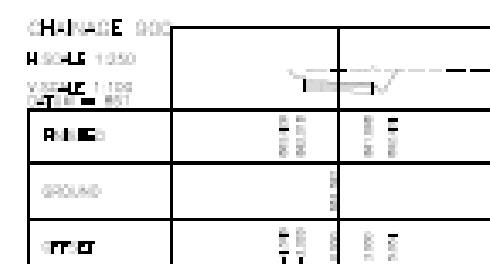
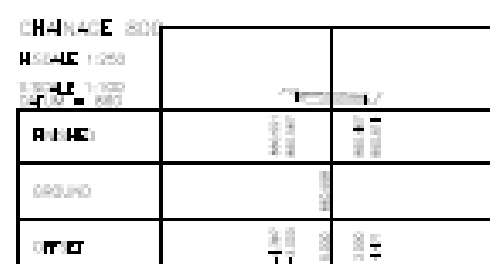
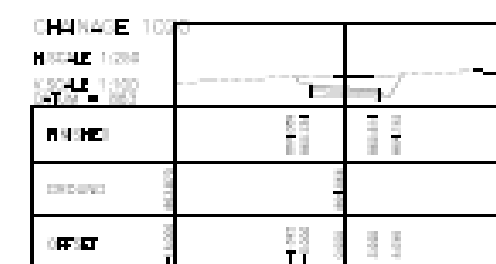
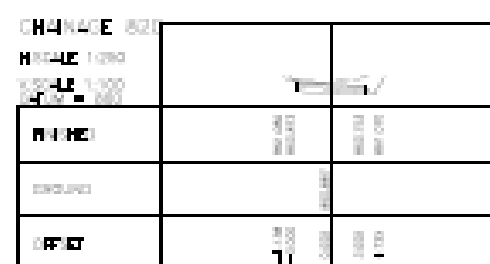
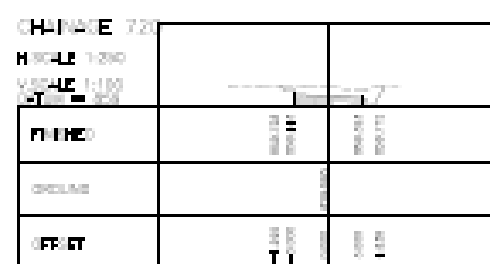
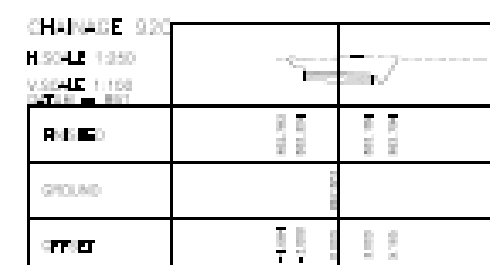
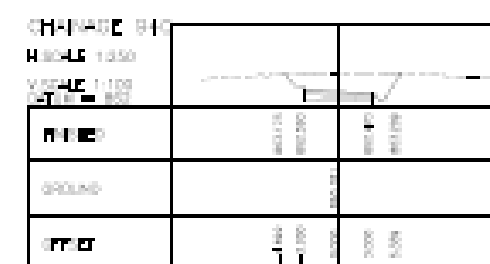
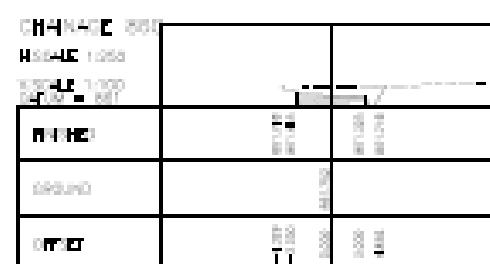
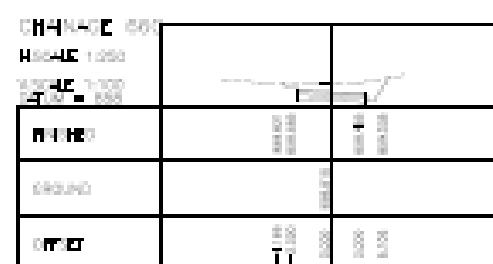
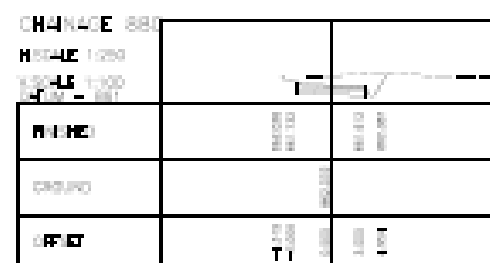
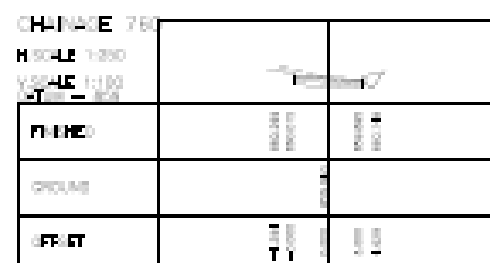
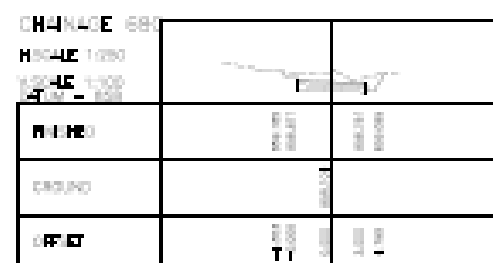
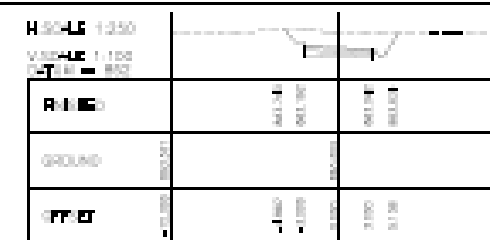
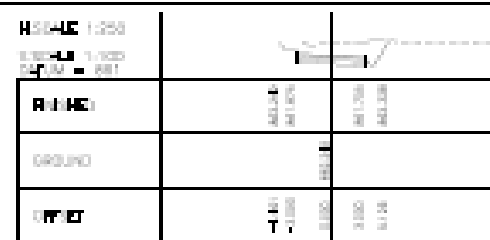
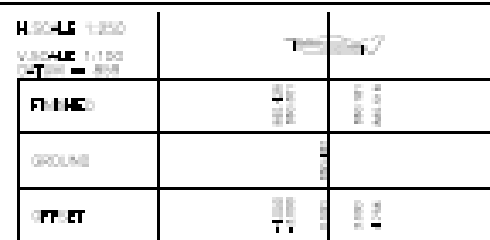


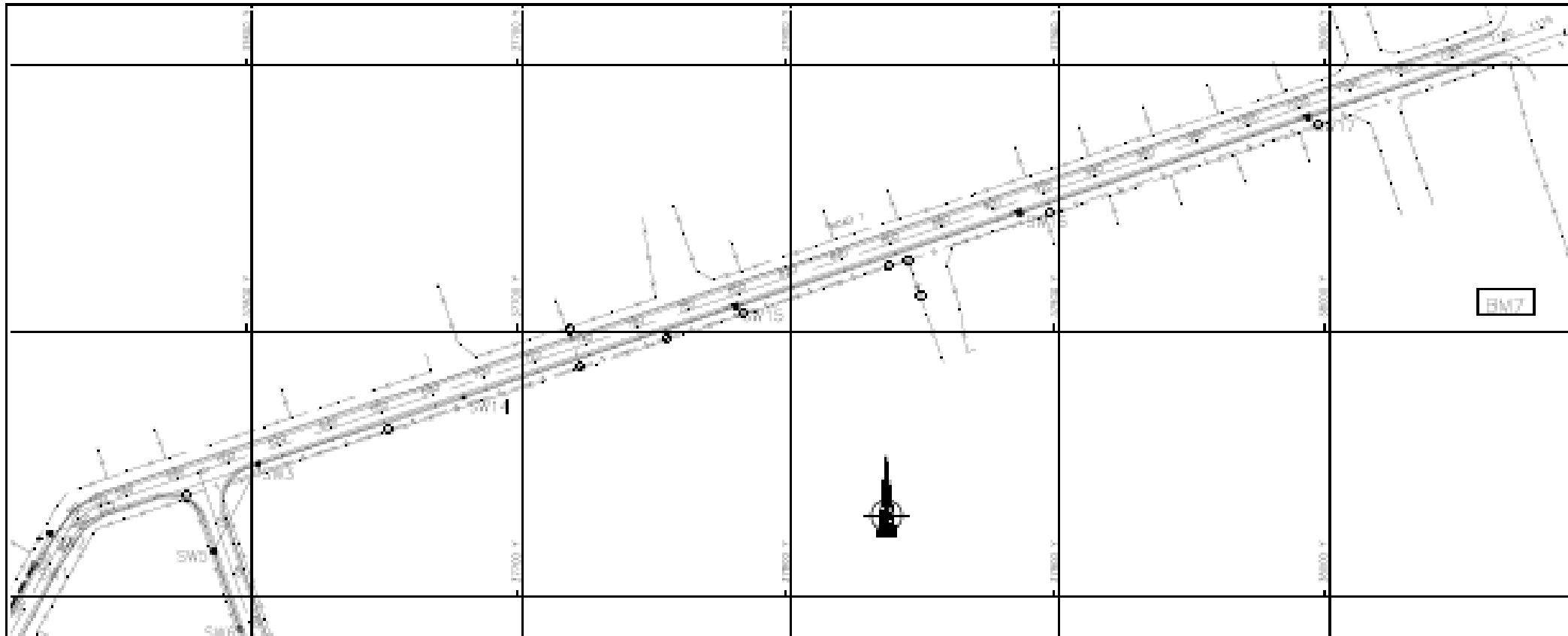


DESIGNED BY	E.R.	EPHRAIM MOGALE LOCAL MUNICIPALITY	T3 CONSULTING ENGINEERS CC	PROJECT NUMBER: TBA	DESIGNER	SHEET 1 OF 1
CHECKED BY	P.B.	P.O. BOX 111 MORRIS HALL 0201	P.O. Box 1108 FAIRVIEW PARK 0201	CONSTRUCTION OF MORRIS HALL INTERNAL ROAD (MULTI-YEAR PROJECT)	SCALE	N.T.S.
DRAWN BY	E.R.	Tel: (018) 281 8301 Fax: (018) 281 8301	Tel: (018) 281 8301 Fax: (018) 281 8301	CROSS-SECTIONS FOR ROAD 2 FROM CH 0.000 KM TO CH 0.500 KM	DRAWING NUMBER	REVISION
CHECKED BY	E.R.				T3CE/MW/H12	

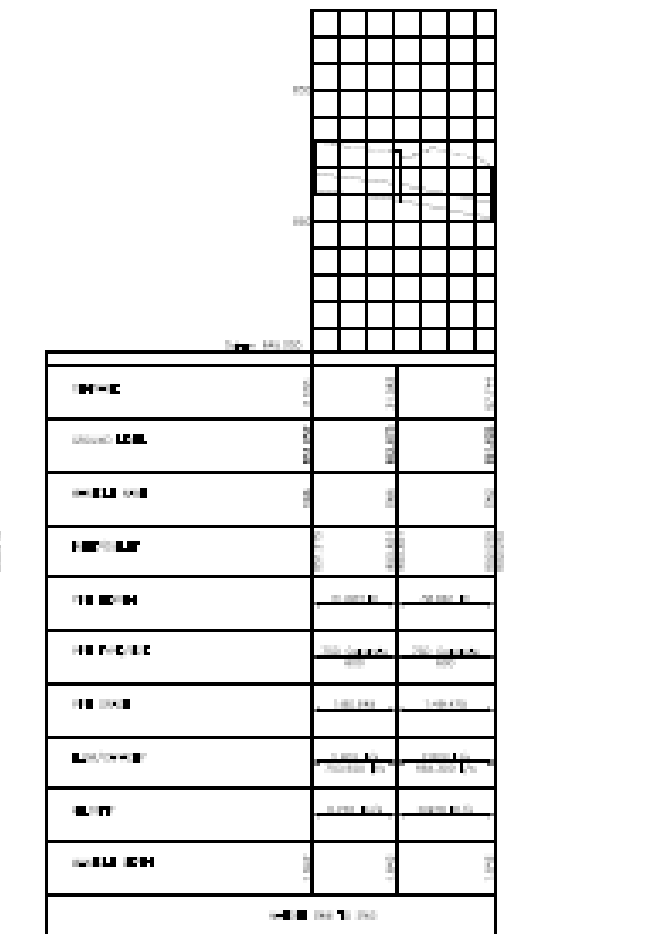
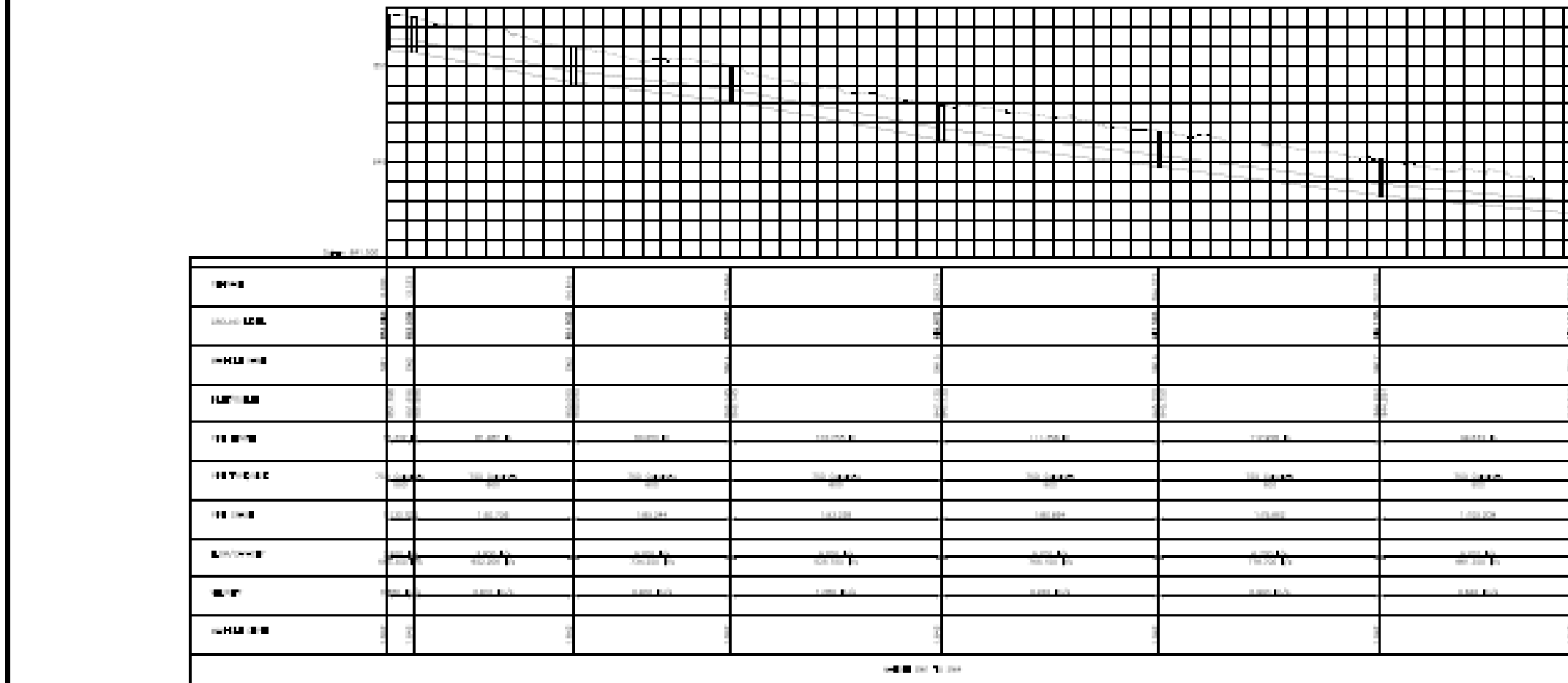
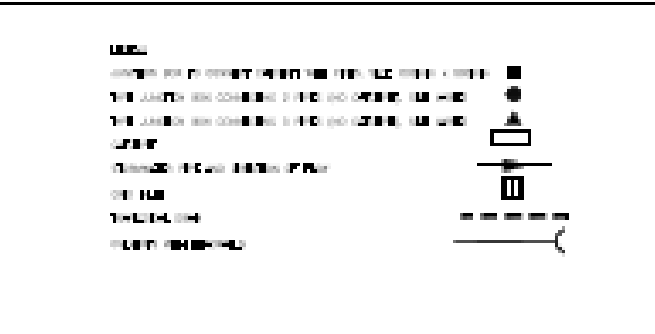


DESIGNED BY: S.R. EPHRAIM MOGALE LOCAL MUNICIPALITY CHECKED BY: P.S. DRAWN BY: S.R. CHECKED BY: S.R.				TS CONSULTING ENGINEERS CC P.O. BOX 1118 FAIRVIEW 2010 Tel: (011) 261 8888 Fax: (011) 261 8888		PROJECT NUMBER: EPMLM 500087 CONSTRUCTION OF MORARIBANLEBENI INTERNAL ROAD (MULTI YEAR PROJECT) CROSS-SECTIONS FOR ROAD 3 FROM CH 0.000 KM TO CH 0.500KM		DRAWING NUMBER: TSC/EPMLM/4 REVISION: 1		SCALE: N.T.S. SHEET 1 OF 1
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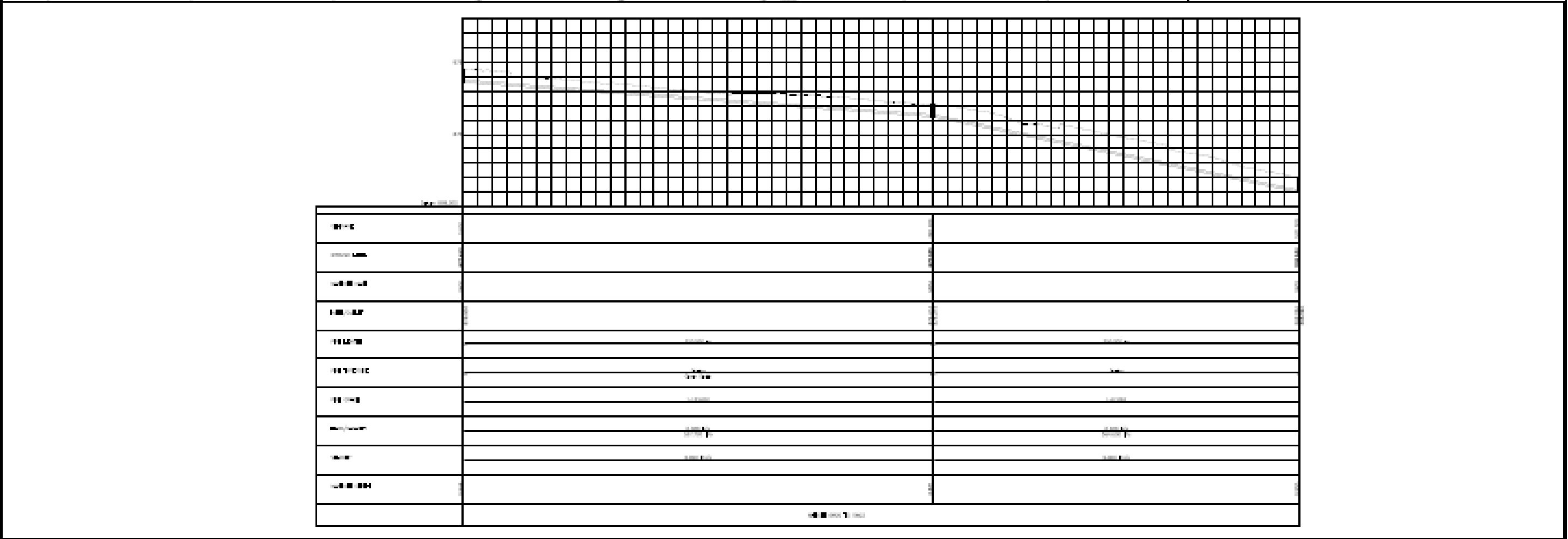


LINE	FROM	TO	LENGTH	GRADE	INVERT	OUTLET	TYPE	NOTE
1	SW15	SW14	10.00	1:100	100.00	99.00	1:100	
2	SW14	SW13	10.00	1:100	99.00	98.00	1:100	
3	SW13	SW12	10.00	1:100	98.00	97.00	1:100	
4	SW12	SW11	10.00	1:100	97.00	96.00	1:100	
5	SW11	SW10	10.00	1:100	96.00	95.00	1:100	
6	SW10	SW9	10.00	1:100	95.00	94.00	1:100	
7	SW9	SW8	10.00	1:100	94.00	93.00	1:100	
8	SW8	SW7	10.00	1:100	93.00	92.00	1:100	
9	SW7	SW6	10.00	1:100	92.00	91.00	1:100	
10	SW6	SW5	10.00	1:100	91.00	90.00	1:100	
11	SW5	SW4	10.00	1:100	90.00	89.00	1:100	
12	SW4	SW3	10.00	1:100	89.00	88.00	1:100	
13	SW3	SW2	10.00	1:100	88.00	87.00	1:100	
14	SW2	SW1	10.00	1:100	87.00	86.00	1:100	
15	SW1	SW0	10.00	1:100	86.00	85.00	1:100	
16	SW0	SW-1	10.00	1:100	85.00	84.00	1:100	
17	SW-1	SW-2	10.00	1:100	84.00	83.00	1:100	
18	SW-2	SW-3	10.00	1:100	83.00	82.00	1:100	
19	SW-3	SW-4	10.00	1:100	82.00	81.00	1:100	
20	SW-4	SW-5	10.00	1:100	81.00	80.00	1:100	
21	SW-5	SW-6	10.00	1:100	80.00	79.00	1:100	
22	SW-6	SW-7	10.00	1:100	79.00	78.00	1:100	
23	SW-7	SW-8	10.00	1:100	78.00	77.00	1:100	
24	SW-8	SW-9	10.00	1:100	77.00	76.00	1:100	
25	SW-9	SW-10	10.00	1:100	76.00	75.00	1:100	
26	SW-10	SW-11	10.00	1:100	75.00	74.00	1:100	
27	SW-11	SW-12	10.00	1:100	74.00	73.00	1:100	
28	SW-12	SW-13	10.00	1:100	73.00	72.00	1:100	
29	SW-13	SW-14	10.00	1:100	72.00	71.00	1:100	
30	SW-14	SW-15	10.00	1:100	71.00	70.00	1:100	
31	SW-15	SW-16	10.00	1:100	70.00	69.00	1:100	
32	SW-16	SW-17	10.00	1:100	69.00	68.00	1:100	
33	SW-17	SW-18	10.00	1:100	68.00	67.00	1:100	
34	SW-18	SW-19	10.00	1:100	67.00	66.00	1:100	
35	SW-19	SW-20	10.00	1:100	66.00	65.00	1:100	
36	SW-20	SW-21	10.00	1:100	65.00	64.00	1:100	
37	SW-21	SW-22	10.00	1:100	64.00	63.00	1:100	
38	SW-22	SW-23	10.00	1:100	63.00	62.00	1:100	
39	SW-23	SW-24	10.00	1:100	62.00	61.00	1:100	
40	SW-24	SW-25	10.00	1:100	61.00	60.00	1:100	
41	SW-25	SW-26	10.00	1:100	60.00	59.00	1:100	
42	SW-26	SW-27	10.00	1:100	59.00	58.00	1:100	
43	SW-27	SW-28	10.00	1:100	58.00	57.00	1:100	
44	SW-28	SW-29	10.00	1:100	57.00	56.00	1:100	
45	SW-29	SW-30	10.00	1:100	56.00	55.00	1:100	
46	SW-30	SW-31	10.00	1:100	55.00	54.00	1:100	
47	SW-31	SW-32	10.00	1:100	54.00	53.00	1:100	
48	SW-32	SW-33	10.00	1:100	53.00	52.00	1:100	
49	SW-33	SW-34	10.00	1:100	52.00	51.00	1:100	
50	SW-34	SW-35	10.00	1:100	51.00	50.00	1:100	
51	SW-35	SW-36	10.00	1:100	50.00	49.00	1:100	
52	SW-36	SW-37	10.00	1:100	49.00	48.00	1:100	
53	SW-37	SW-38	10.00	1:100	48.00	47.00	1:100	
54	SW-38	SW-39	10.00	1:100	47.00	46.00	1:100	
55	SW-39	SW-40	10.00	1:100	46.00	45.00	1:100	
56	SW-40	SW-41	10.00	1:100	45.00	44.00	1:100	
57	SW-41	SW-42	10.00	1:100	44.00	43.00	1:100	
58	SW-42	SW-43	10.00	1:100	43.00	42.00	1:100	
59	SW-43	SW-44	10.00	1:100	42.00	41.00	1:100	
60	SW-44	SW-45	10.00	1:100	41.00	40.00	1:100	
61	SW-45	SW-46	10.00	1:100	40.00	39.00	1:100	
62	SW-46	SW-47	10.00	1:100	39.00	38.00	1:100	
63	SW-47	SW-48	10.00	1:100	38.00	37.00	1:100	
64	SW-48	SW-49	10.00	1:100	37.00	36.00	1:100	
65	SW-49	SW-50	10.00	1:100	36.00	35.00	1:100	
66	SW-50	SW-51	10.00	1:100	35.00	34.00	1:100	
67	SW-51	SW-52	10.00	1:100	34.00	33.00	1:100	
68	SW-52	SW-53	10.00	1:100	33.00	32.00	1:100	
69	SW-53	SW-54	10.00	1:100	32.00	31.00	1:100	
70	SW-54	SW-55	10.00	1:100	31.00	30.00	1:100	
71	SW-55	SW-56	10.00	1:100	30.00	29.00	1:100	
72	SW-56	SW-57	10.00	1:100	29.00	28.00	1:100	
73	SW-57	SW-58	10.00	1:100	28.00	27.00	1:100	
74	SW-58	SW-59	10.00	1:100	27.00	26.00	1:100	
75	SW-59	SW-60	10.00	1:100	26.00	25.00	1:100	
76	SW-60	SW-61	10.00	1:100	25.00	24.00	1:100	
77	SW-61	SW-62	10.00	1:100	24.00	23.00	1:100	
78	SW-62	SW-63	10.00	1:100	23.00	22.00	1:100	
79	SW-63	SW-64	10.00	1:100	22.00	21.00	1:100	
80	SW-64	SW-65	10.00	1:100	21.00	20.00	1:100	
81	SW-65	SW-66	10.00	1:100	20.00	19.00	1:100	
82	SW-66	SW-67	10.00	1:100	19.00	18.00	1:100	
83	SW-67	SW-68	10.00	1:100	18.00	17.00	1:100	
84	SW-68	SW-69	10.00	1:100	17.00	16.00	1:100	
85	SW-69	SW-70	10.00	1:100	16.00	15.00	1:100	
86	SW-70	SW-71	10.00	1:100	15.00	14.00	1:100	
87	SW-71	SW-72	10.00	1:100	14.00	13.00	1:100	
88	SW-72	SW-73	10.00	1:100	13.00	12.00	1:100	
89	SW-73	SW-74	10.00	1:100	12.00	11.00	1:100	
90	SW-74	SW-75	10.00	1:100	11.00	10.00	1:100	
91	SW-75	SW-76	10.00	1:100	10.00	9.00	1:100	
92	SW-76	SW-77	10.00	1:100	9.00	8.00	1:100	
93	SW-77	SW-78	10.00	1:100	8.00	7.00	1:100	
94	SW-78	SW-79	10.00	1:100	7.00	6.00	1:100	
95	SW-79	SW-80	10.00	1:100	6.00	5.00	1:100	
96	SW-80	SW-81	10.00	1:100	5.00	4.00	1:100	
97	SW-81	SW-82	10.00	1:100	4.00	3.00	1:100	
98	SW-82	SW-83	10.00	1:100	3.00	2.00	1:100	
99	SW-83	SW-84	10.00	1:100	2.00	1.00	1:100	
100	SW-84	SW-85	10.00	1:100	1.00	0.00	1:100	

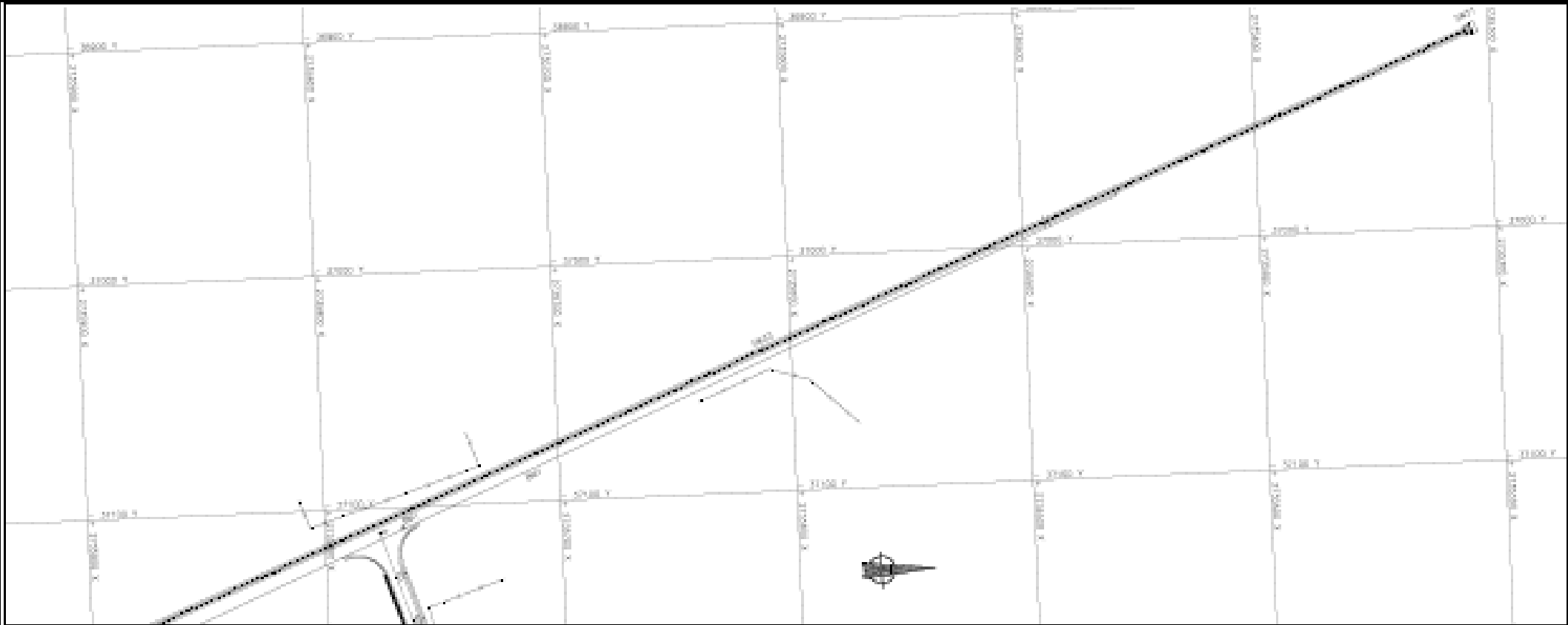




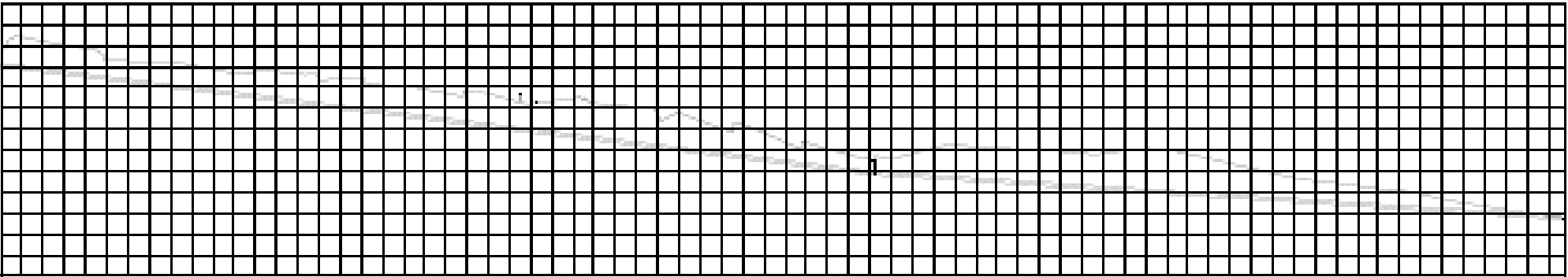
PROJECT SUMMARY									
NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE	NO.	DESCRIPTION	UNIT	QUANTITY
1	PROPOSED ROAD	M	1000	1000	1000000	11	PROPOSED ROAD	M	1000
2	PROPOSED ROAD	M	1000	1000	1000000	12	PROPOSED ROAD	M	1000
3	PROPOSED ROAD	M	1000	1000	1000000	13	PROPOSED ROAD	M	1000
4	PROPOSED ROAD	M	1000	1000	1000000	14	PROPOSED ROAD	M	1000
5	PROPOSED ROAD	M	1000	1000	1000000	15	PROPOSED ROAD	M	1000
6	PROPOSED ROAD	M	1000	1000	1000000	16	PROPOSED ROAD	M	1000
7	PROPOSED ROAD	M	1000	1000	1000000	17	PROPOSED ROAD	M	1000
8	PROPOSED ROAD	M	1000	1000	1000000	18	PROPOSED ROAD	M	1000
9	PROPOSED ROAD	M	1000	1000	1000000	19	PROPOSED ROAD	M	1000
10	PROPOSED ROAD	M	1000	1000	1000000	20	PROPOSED ROAD	M	1000



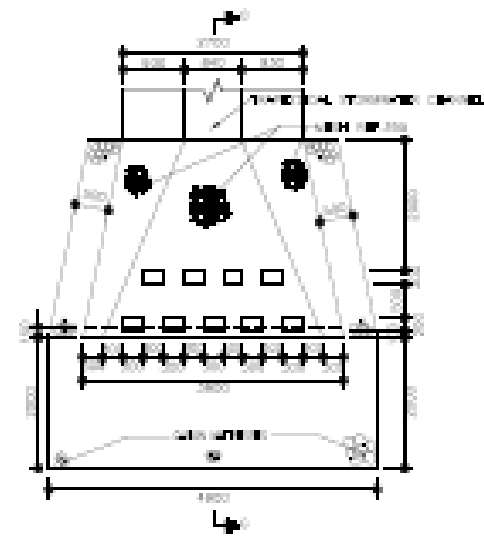
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1	PROPOSED ROAD	M	1000	1000	1000000
2	PROPOSED ROAD	M	1000	1000	1000000
3	PROPOSED ROAD	M	1000	1000	1000000
4	PROPOSED ROAD	M	1000	1000	1000000
5	PROPOSED ROAD	M	1000	1000	1000000
6	PROPOSED ROAD	M	1000	1000	1000000
7	PROPOSED ROAD	M	1000	1000	1000000
8	PROPOSED ROAD	M	1000	1000	1000000
9	PROPOSED ROAD	M	1000	1000	1000000
10	PROPOSED ROAD	M	1000	1000	1000000
11	PROPOSED ROAD	M	1000	1000	1000000
12	PROPOSED ROAD	M	1000	1000	1000000
13	PROPOSED ROAD	M	1000	1000	1000000
14	PROPOSED ROAD	M	1000	1000	1000000
15	PROPOSED ROAD	M	1000	1000	1000000
16	PROPOSED ROAD	M	1000	1000	1000000
17	PROPOSED ROAD	M	1000	1000	1000000
18	PROPOSED ROAD	M	1000	1000	1000000
19	PROPOSED ROAD	M	1000	1000	1000000
20	PROPOSED ROAD	M	1000	1000	1000000



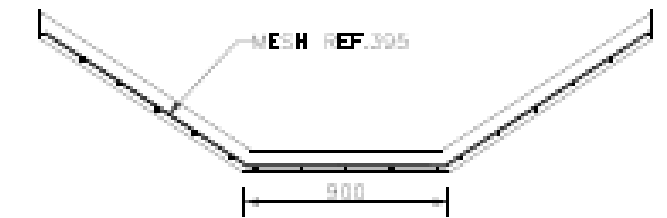
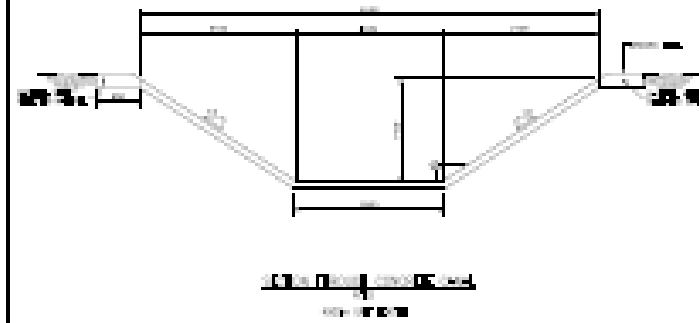
T3 CONSULTING ENGINEERS CC									
NO.	REVISION	DATE	BY	CHKD.	DATE	BY	CHKD.	DATE	BY
01	ISSUED FOR TENDERS	2013/04/24	P.S.	P.S.					
02	FOR APPROVAL	2013/05/01	P.S.	P.S.					
03	FOR APPROVAL	2013/05/01	P.S.	P.S.					
04	FOR APPROVAL	2013/05/01	P.S.	P.S.					
05	FOR APPROVAL	2013/05/01	P.S.	P.S.					
06	FOR APPROVAL	2013/05/01	P.S.	P.S.					



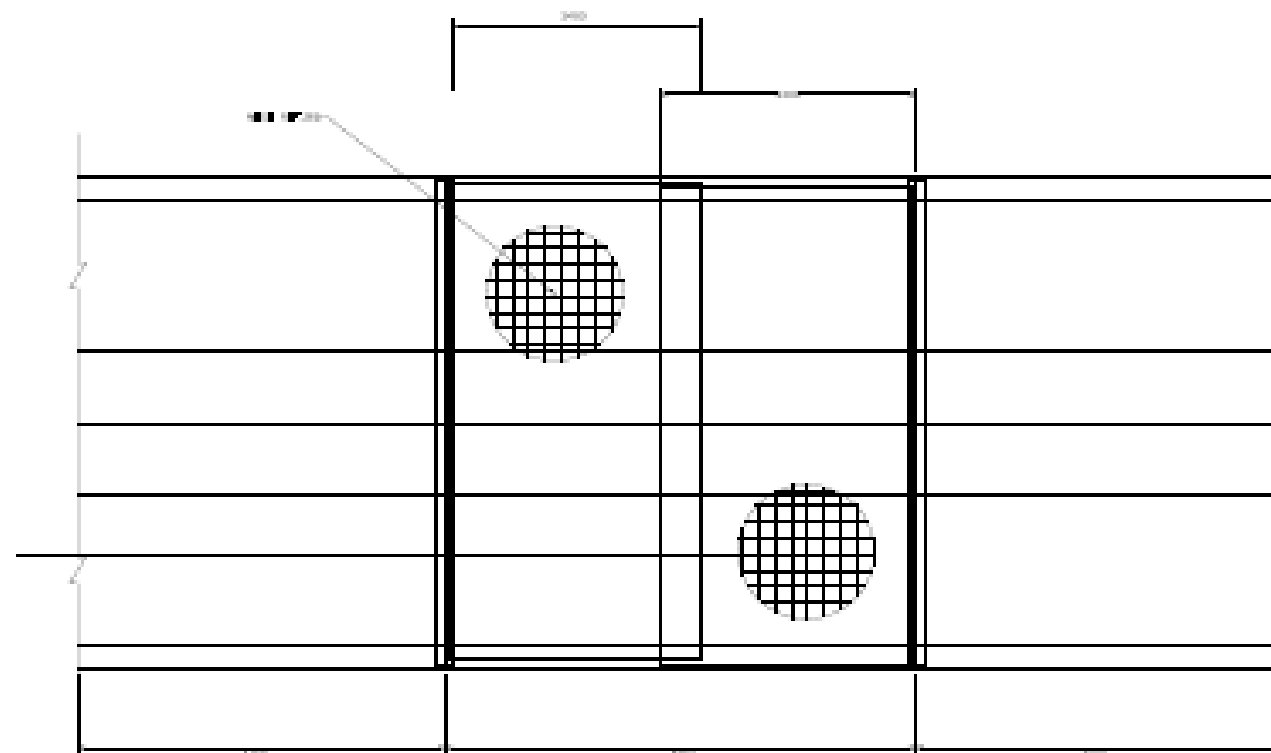
NO.	REVISION	DATE	BY	CHKD.	DATE	BY	CHKD.	DATE	BY
01	ISSUED FOR TENDERS	2013/04/24	P.S.	P.S.					
02	FOR APPROVAL	2013/05/01	P.S.	P.S.					
03	FOR APPROVAL	2013/05/01	P.S.	P.S.					
04	FOR APPROVAL	2013/05/01	P.S.	P.S.					
05	FOR APPROVAL	2013/05/01	P.S.	P.S.					
06	FOR APPROVAL	2013/05/01	P.S.	P.S.					



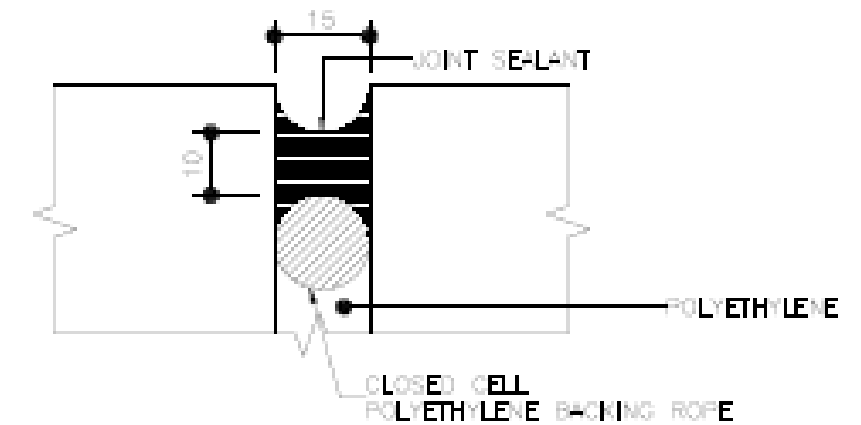
PLAN OF ENERGY BREATHER
SCALE 1:25
DETAIL OF ENERGY BREATHER SYSTEM AT
DISCHARGE POINT OF CONCRETE CHANNEL



CONCRETE CANAL REINFORCEMENT
N.T.S.

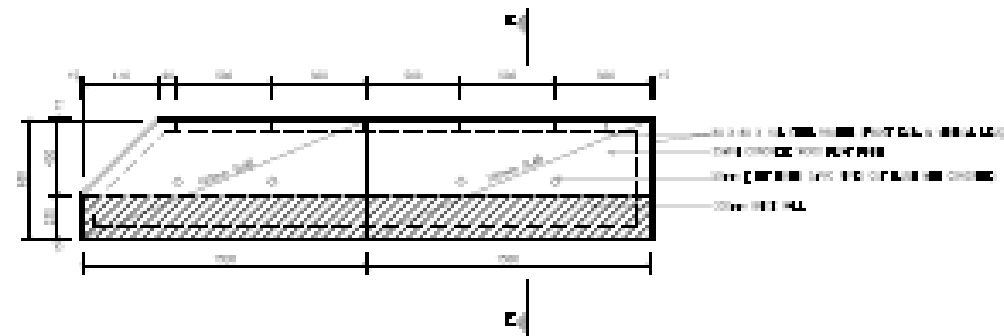


STORMWATER CANAL
N.T.S.

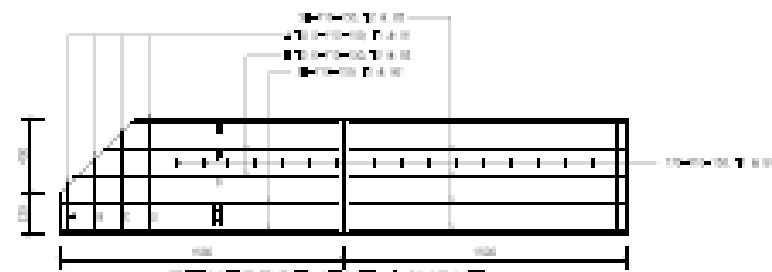


EXPANSION JOINT
NOTE: EXPANSION JOINT
EVERY 5th PANEL (10m)
N.T.S.

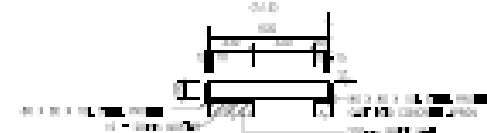
DESIGNED BY	ELR	EPHRAIM MOGALE LOCAL MUNICIPALITY	T3 CONSULTING ENGINEERS CC	PROJECT NUMBER: EPMLM/2023/007	DESIGNED BY	ELR	SHEET 1 OF 1
CHECKED BY	PLS	P.O. BOX 1111 MORRISBURG 5400	P.O. Box 1108 FAIRVIEW 5707	CONSTRUCTION OF MORRISBURG INTERNAL ROAD (MULTI-YEAR PROJECT)	CHECKED BY	PLS	SCALE
DRAWN BY	ELR	Tel: (018) 281 8888 Fax: (018) 281 2888	Tel: (018) 281 8301 Fax: (018) 281 8301	DETAILS OF THE STORMWATER CANAL	DRAWING NUMBER	T3/06/MLM/023	N.T.S.
DATE	2023/06/02				REVISION		



CONCRETE LAYOUT
(1:100)



REINFORCEMENT LAYOUT
(1:100)



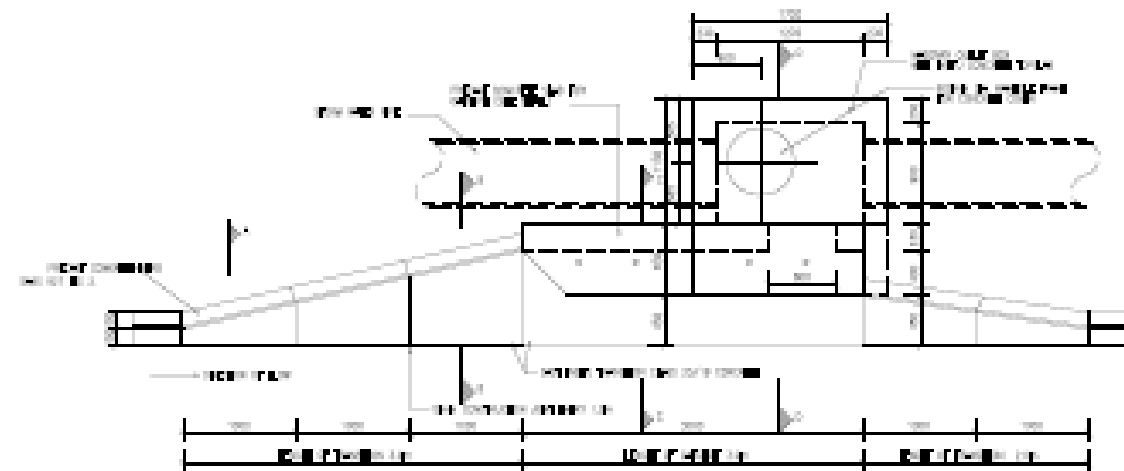
SECTION EE
(1:100)

NO.	TYPE	NO. OF	TOTAL	NO. OF	NO. OF	NO. OF
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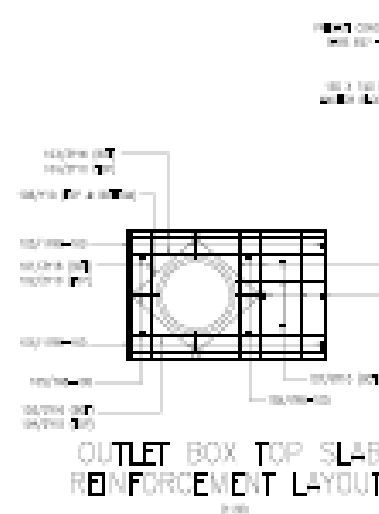
BENDING SCHEDULE
PRECAST SLAB FOR CATCHPIT

NO.	TYPE	NO. OF	TOTAL	NO. OF	NO. OF	NO. OF
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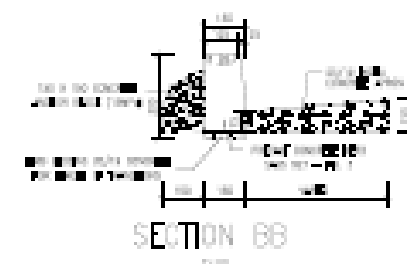
BENDING SCHEDULE
OUTLET BOX TOP SLAB



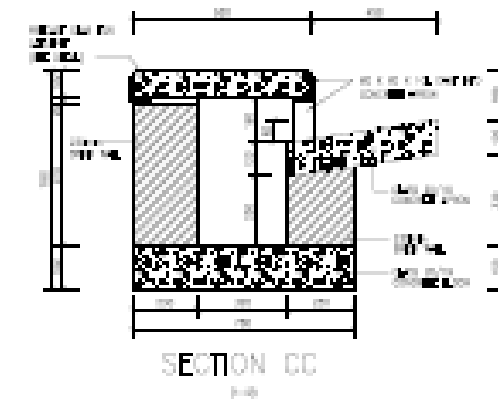
PLAN OF CATCHPIT & OUTLET BOX
(1:100)



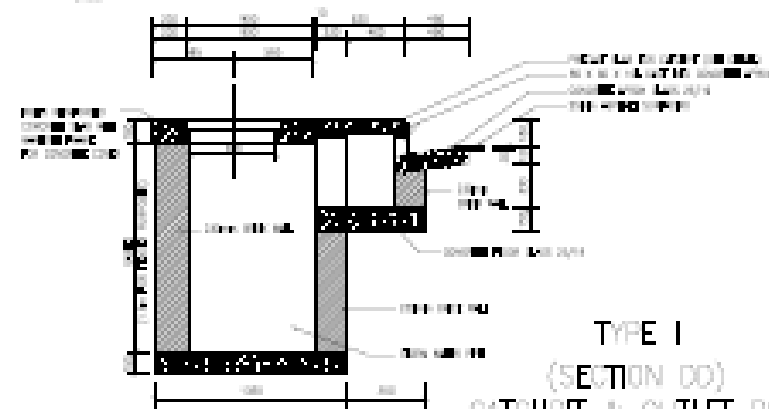
SECTION AA
(1:100)



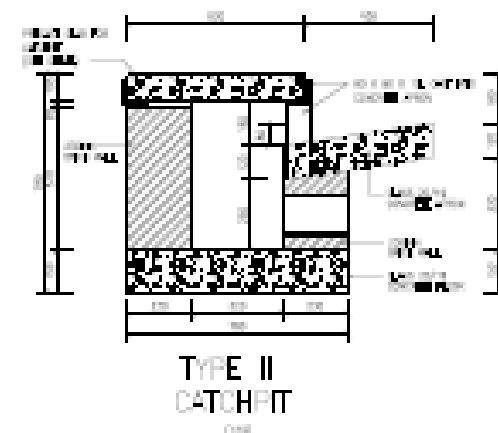
SECTION BB
(1:100)



SECTION CC
(1:100)

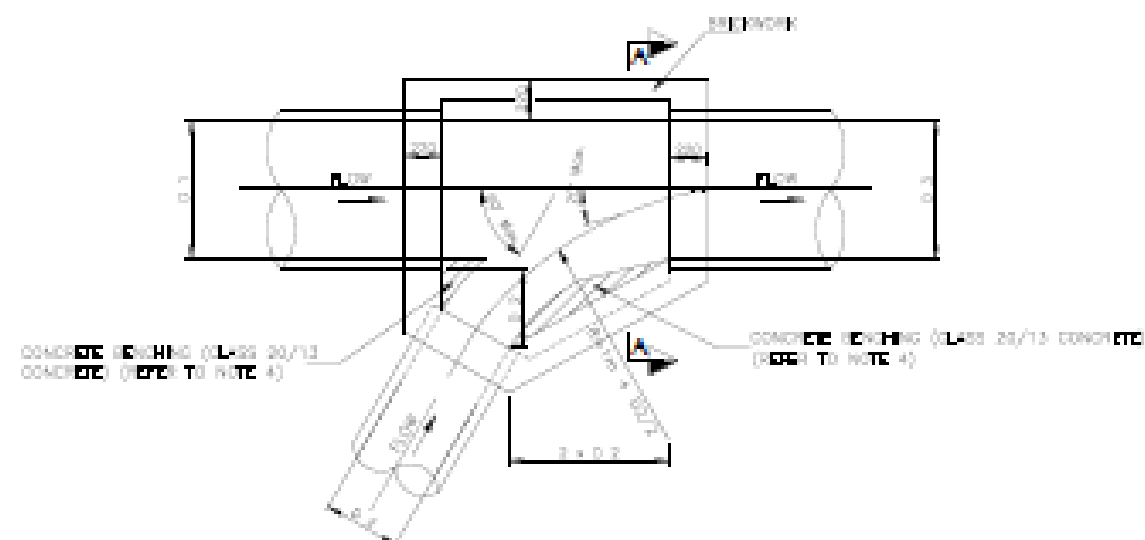


TYPE I
(SECTION CC)
CATCHPIT & OUTLET BOX
(1:100)



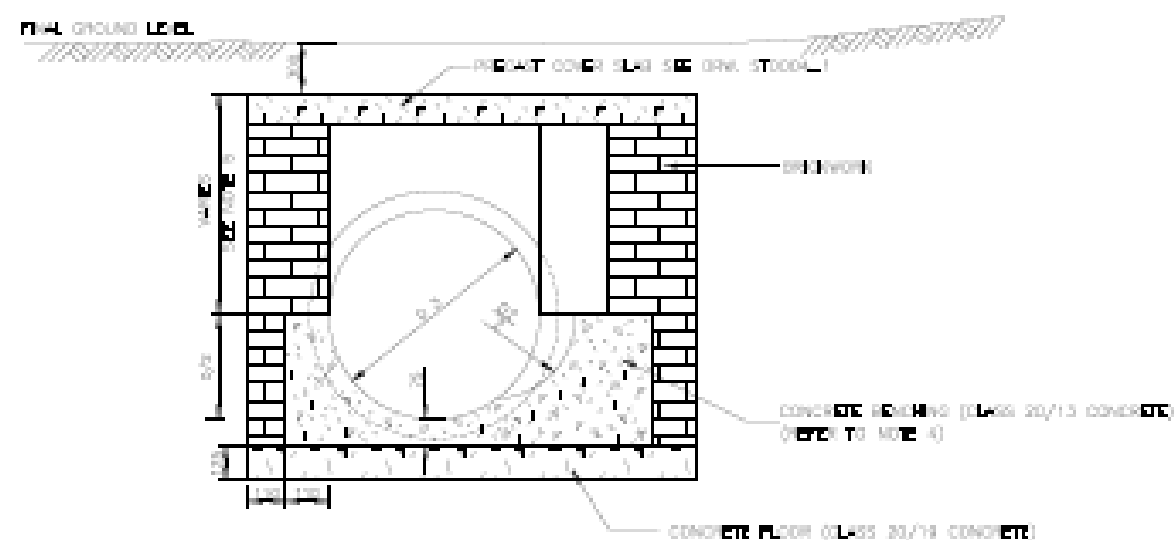
TYPE II
CATCHPIT
(1:100)

DESIGNED BY	ELR	EPHRAIM MOGALE LOCAL MUNICIPALITY	TS CONSULTING ENGINEERS CC	PROJECT NUMBER: EPMLM 03/087	DESIGNER	SHEET 1 OF 1
CHECKED BY	P.S.	P.O. BOX 111 MORRIS HALL 0480	P.O. Box 1108 FAIRVIEW 0107	CONSTRUCTION OF MORRIS HALL/INLET ROAD (MULTI-YEAR PROJECT)	SCALE	N.T.S.
DRAWN BY	ELR	Tel: (018) 281 8382 Fax: (018) 281 8383	Tel: (018) 281 8301 Fax: (018) 281 8301	DETAILS OF KERS INLET-CATCHPIT	DRAWING NUMBER	REVISION
CHECKED BY	ELR				TSCE/MLM/03	



PLAN OF TYPE C JUNCTION BOX (WITHOUT COVER SLAB)

D 1 = D 3 AND D 2 VARIES

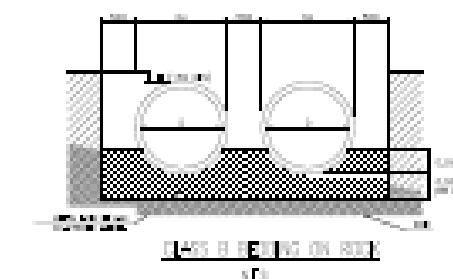
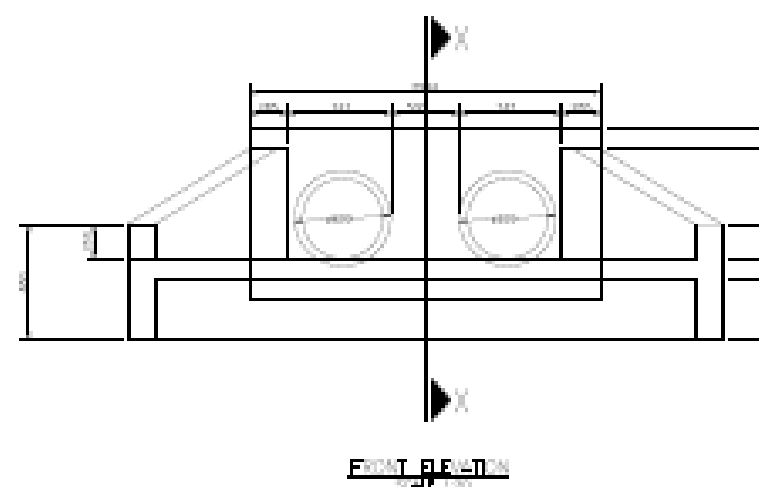
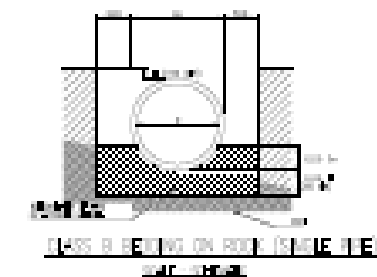
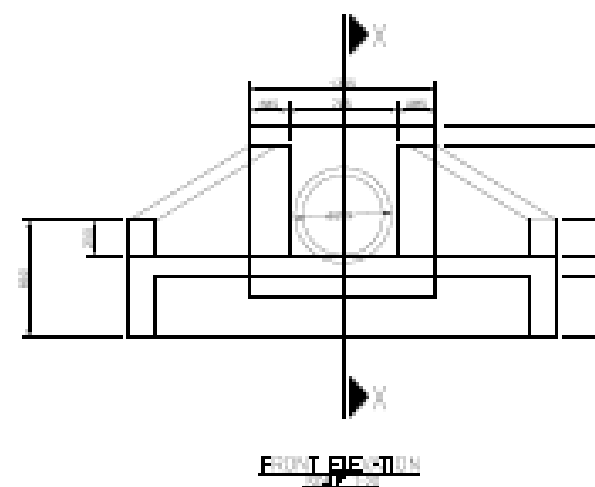
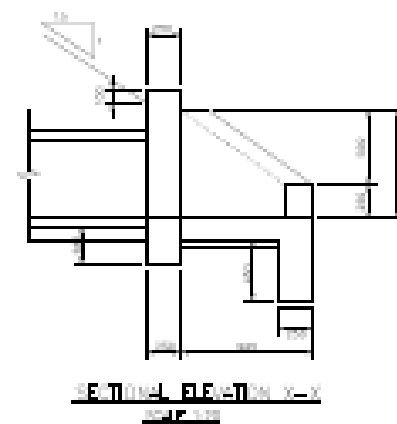


SECTION A-A

NOTES

1. All stormwater pipes to be laid socket to socket.
2. Minimum pipe diameter of all pipes is 450mm.
3. Maximum angle between adjoining pipes is 45°.
4. Where a pipe wall is at least 75mm from the nearest junction box wall, the concrete landing can be shared adjacent to the double lock wall.
5. Where the total depth of the junction box (invert level to finished ground level) exceeds 2,0m a structural design must be submitted by a professional engineer.
6. All bricks shall comply with SABS 227 and shall be engineering bricks of class RE5 (face brick standard) with a nominal compressive strength of 12 MPa.
7. Also refer to Section 502 of the Standard Specifications for Municipal Civil Engineering Works, 1991.

1. DATE 2. DESIGNED 3. CHECKED 4. DRAWN 5. REVISIONS	DRAWN TO CONSULTANT PROJECT NO. 1104 PROJECT NAME PROJECT LOCATION PROJECT DESCRIPTION PROJECT STATUS	DESIGNED BY: S.R. CHECKED BY: P.S. DRAWN BY: S.N. CHECKED BY: S.R.	EPHRAIM MOGALE LOCAL MUNICIPALITY  P.O. BOX 1104 MAFIKENG 0101 Tel: (018) 281 5555 Fax: (018) 281 5555	T3 CONSULTING ENGINEERS CC  P.O. Box 1104 FAIRVIEW PARK 0101 Tel: (018) 281 5555 Fax: (018) 281 5555	DRAWN: _____ DATE: _____ CHECKED: _____ DATE: _____	PROJECT NUMBER: EPMLM 803/2007 CONSTRUCTION OF MORAPHELAMBEZINE INTERNAL ROAD (MULTI YEAR PROJECT) STORMWATER JUNCTION BOX	DRAWING NUMBER T3CC/EMLM024	SHEET 1 OF 1 SCALE N.T.S. REVISION
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DESIGNING FIRM: T3 CONSULTING ENGINEERS CC		DESIGNED BY: S.R. CHECKED BY: P.S. DRAWN BY: S.N. CHECKED BY: S.R.	EPHRAIM MOGALE LOCAL MUNICIPALITY  P.O. BOX 119 MARSHALL 0480 Tel: (015) 291 8301 Fax: (015) 291 8302	 T3 CONSULTING ENGINEERS CC P.O. Box 1158 FALGOUTADE 0202 Tel: (018) 291 8301 Fax: (018) 291 8302	PROJECT NUMBER: EPMLM 8030ST CONSTRUCTION OF MORABE/LAMBELON INTERNAL ROAD (MULTI-YEAR PROJECT) HEAD AND WINGWALL GENERAL ARRANGEMENTS	DESIGNER (Full Signature) Date: _____ Tel: _____ DRAWING NUMBER T3/CE/MLM/8030	SHEET 1 OF 1 SCALE N.T.S. REVISION
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SHEET 1 OF 3



RURAL LONGITUDINAL LINE TYPES



URBAN LONGITUDINAL LINE TYPES

1. 對於下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
2. 有關下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
3. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
4. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
5. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
6. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
7. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
8. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
9. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。
10. 下列之問題，請在每個問題後面之四個答案中，選出最正確的一個答案。



DETAILS



1. **Identify the type of problem.** Is it a problem of finding a maximum or minimum value?
2. **Formulate the objective function.** Write down the function that you want to maximize or minimize.
3. **Identify the constraints.** Write down the conditions that must be satisfied.

- [illegible]

1. **THESE FORMS ARE NOT TO BE REPRODUCED OR COPIED**
FOR ANY PURPOSES WITHOUT THE WRITTEN PERMISSION OF THE
FEDERAL BUREAU OF INVESTIGATION, U.S. DEPARTMENT OF JUSTICE
2. **FOR INFORMATION OF THE FIELD, THE FOLLOWING IS THE
FEDERAL BUREAU OF INVESTIGATION, U.S. DEPARTMENT OF JUSTICE**

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Speed of Sound		Temperature (°C)									
Speed of Sound (m/s)	Temperature (°C)	1	2	3	4	5	6	7	8	9	10
340 - 350	10 - 20	340.0	341.0	342.0	343.0	344.0	345.0	346.0	347.0	348.0	349.0
350 - 360	20 - 30	349.0	350.0	351.0	352.0	353.0	354.0	355.0	356.0	357.0	358.0
360 - 370	30 - 40	358.0	359.0	360.0	361.0	362.0	363.0	364.0	365.0	366.0	367.0

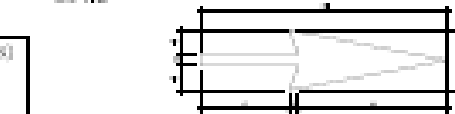


Table 1. Summary of the data used in the study.				
Study	Year	Sample size (n)	Sample size (m)	Sample size (f)
Study 1	2010	100	50	50
	2011	100	50	50
Study 2	2012	100	50	50
	2013	100	50	50
Study 3	2014	100	50	50
	2015	100	50	50
Study 4	2016	100	50	50
	2017	100	50	50
Study 5	2018	100	50	50
	2019	100	50	50
Study 6	2020	100	50	50
	2021	100	50	50
Study 7	2022	100	50	50
	2023	100	50	50
Study 8	2024	100	50	50
	2025	100	50	50
Study 9	2026	100	50	50
	2027	100	50	50
Study 10	2028	100	50	50
	2029	100	50	50
Study 11	2030	100	50	50
	2031	100	50	50
Study 12	2032	100	50	50
	2033	100	50	50
Study 13	2034	100	50	50
	2035	100	50	50
Study 14	2036	100	50	50
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Study 15	2038	100	50	50
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Study 16	2040	100	50	50
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Study 17	2042	100	50	50
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Study 18	2044	100	50	50
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Study 19	2046	100	50	50
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Study 20	2048	100	50	50
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Study 21	2050	100	50	50
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Study 22	2052	100	50	50
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Study 33	2074	100	50	50
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	2205	100	50	50
Study 99	2206	100	50	50
	2207	100	50	50
Study 100	2208	100	50	50
	2209	100	50	50

- NOTE:**
1. THE BOARD HAS A POLICY OF OPENLY INVITING ALL INTERESTED PARTIES TO SUBMIT COMMENTS TO THE BOARD. COMMENTS SHOULD BE SUBMITTED TO THE BOARD AT THE PUBLIC MEETING. SEE AGENDA.
2. THE BOARD HAS A POLICY OF OPENLY INVITING ALL INTERESTED PARTIES TO SUBMIT COMMENTS TO THE BOARD. COMMENTS SHOULD BE SUBMITTED TO THE BOARD AT THE PUBLIC MEETING. SEE AGENDA.



100

	A	B	C	D	E	F
Value:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Model	Year	Price	MPG (City)	MPG (Highway)	MPG (Combined)
2000 - 2001	2000	\$12,000	24	34	28
2002 - 2003	2002	\$14,000	26	36	30

[illegible]

CHECKED BY	ELK
CHECKED BY	ELK
CHECKED BY	ELK
CHECKED BY	ELK



ENTER IN MAGALÉ LOCAL MUNICIPALITY

TS CONSULTING ENGINEERS, INC.



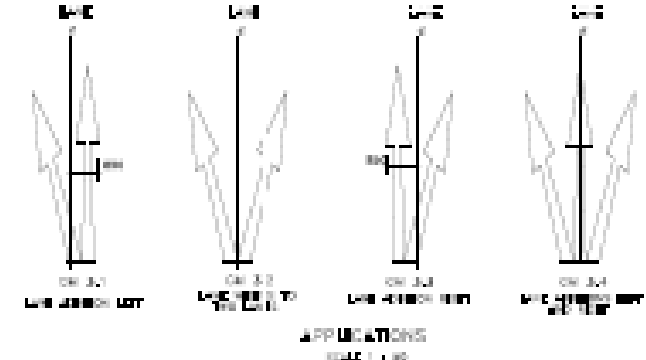
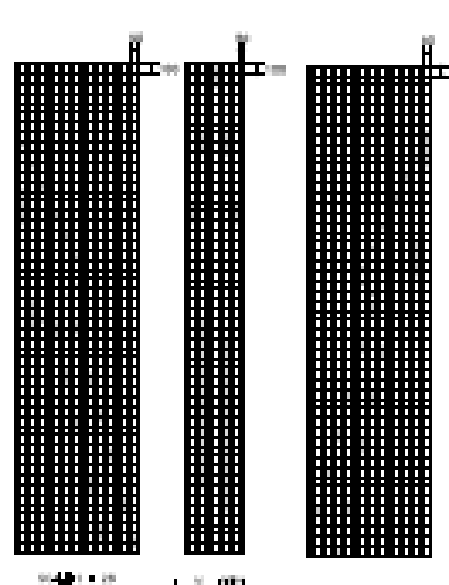
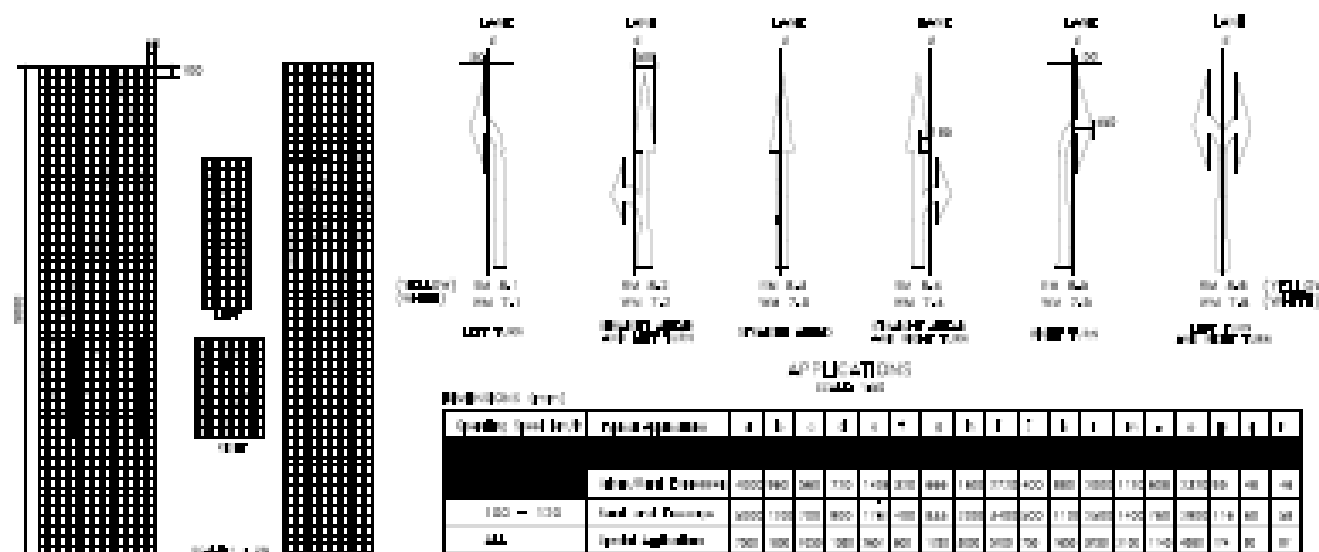
PROJECT NUMBER: PMA 1000000

ROAD MARKING DETAILS

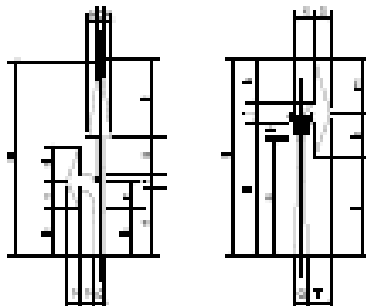
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ROAD MARKING DETAILS

SHEET 2 OF 2

[illegible]

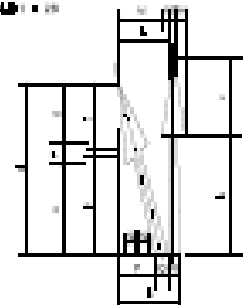
Operating Days	L	M	T	W	Th	F	S	S	R
1,000	1,250	1,000	1,100	1,000	1,200	1,000	1,000	1,000	1,000

[illegible]

	2007/2006	2008/2007	2009/2008	2010/2009
2006	0.07	0.00	0.00	1.03
2007	1.11	1.00	1.00	1.00
2008	1.00	1.00	1.00	1.00
2009	1.11	1.00	1.00	1.00

THE **CONSTITUTION** **OF** **THE** **UNITED** **STATES** **OF** **AMERICA**

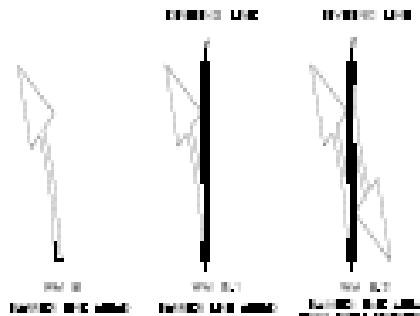
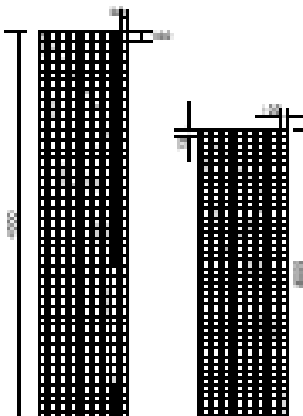
- [illegible]



- [illegible]

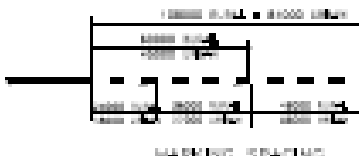
α	$\text{EML}(\text{EML}_{\text{EML}})$	EML_{EML}	EML_{EML}
0.000	1.000	1.000	1.000
0.001	0.997	0.999	0.999
0.005	0.999	0.999	0.999
0.010	0.999	0.999	0.999

MANDATORY DIRECTION ARROWS



Total Available	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Actual	1000	1000	80	976	174	200	750	1000

	H	I	J	K	L	M
2000	1040	1000	1000	1000	1000	1000



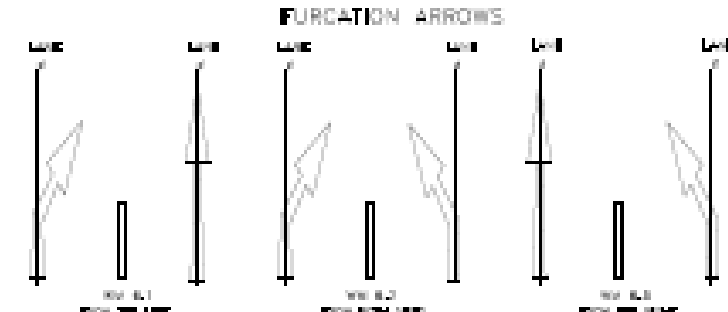
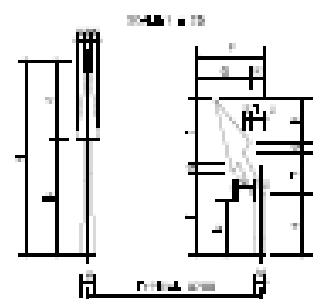
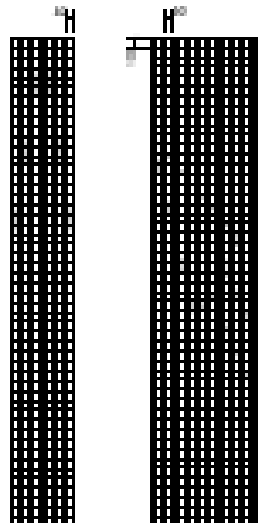
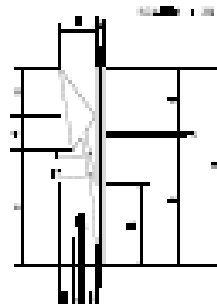
HEBREW SCRIPT

姓名	学号
性别	年龄
职业	学历
住址	电话

NOTE: ALL FIELD MEASUREMENTS WERE MADE AT THE SAME TIME OF DAY.

1. THE COMPANY HAS BEEN ADVISED BY THE BOARD OF DIRECTORS THAT THE COMPANY IS CURRENTLY IN VIOLATION OF THE SEC'S RULES REGARDING THE DISCLOSURE OF MATERIAL INFORMATION. THE COMPANY HAS BEEN ADVISED THAT THE BOARD OF DIRECTORS HAS DECIDED TO TAKE IMMEDIATE ACTION TO CORRECT THE VIOLATION.
2. THE COMPANY HAS BEEN ADVISED BY THE BOARD OF DIRECTORS THAT THE COMPANY IS CURRENTLY IN VIOLATION OF THE SEC'S RULES REGARDING THE DISCLOSURE OF MATERIAL INFORMATION. THE COMPANY HAS BEEN ADVISED THAT THE BOARD OF DIRECTORS HAS DECIDED TO TAKE IMMEDIATE ACTION TO CORRECT THE VIOLATION.
3. THE COMPANY HAS BEEN ADVISED BY THE BOARD OF DIRECTORS THAT THE COMPANY IS CURRENTLY IN VIOLATION OF THE SEC'S RULES REGARDING THE DISCLOSURE OF MATERIAL INFORMATION. THE COMPANY HAS BEEN ADVISED THAT THE BOARD OF DIRECTORS HAS DECIDED TO TAKE IMMEDIATE ACTION TO CORRECT THE VIOLATION.

BARRIER LINE AHEAD AROUND



— **UNION**

[illegible]

Operating Speed	60	80	90	100	110	120	130	140	150
Application	2000	2500	3000	3500	4000	4500	5000	5500	6000

- NOTES: (LINE REDUCTION ANSWERS)**
1. IT'S INTERESTING THAT THE CITY OF WASHINGTON HAS ONE OF THE MOST RACIAL, POLITICAL AND HIGHLY POLICED POLICE DEPARTMENTS IN THE NATION. THE CITY OF WASHINGTON HAS ONE OF THE MOST RACIAL AND HIGHLY POLICED POLICE DEPARTMENTS IN THE NATION.
2. THE CITY OF WASHINGTON HAS ONE OF THE MOST RACIAL AND HIGHLY POLICED POLICE DEPARTMENTS IN THE NATION. THE CITY OF WASHINGTON HAS ONE OF THE MOST RACIAL AND HIGHLY POLICED POLICE DEPARTMENTS IN THE NATION.

id	NAME / SYMBOL	VALUE
10000	1.000	1.000
20000	2.000	2.000
30000	3.000	3.000
40000	4.000	4.000

LINE PRODUCTION ABOWS

[illegible]

