




BID DESCRIPTION: DIRECTORATE ENGINEERING UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

**BID NUMBER: PM47/2017
CIDB GRADE: 6CE OR HIGHER**

Polokwane Municipality Manager: SCM Contact: Mr. Kwen Mashiane Tel: (015) 290 2148 Email: kwenama@polokwane.gov.za	Polokwane Municipality SBU Manager: Roads and Storm water Contact: Mr Pilot Ramothwala Tel: (015) 290 2204 Email: pilotr@polokwane.gov.za	Consultants Principal Agent: Morula Consulting Engineers and Project Managers Contact: Mr H Tsanwani Tel: 015 291 1161 Fax: 015 291 1344
Name of Bidder:		
Central Supplier Database (CSD) Number:		
Bidder Address		
Telephone Number		
Fax Number:		
E-Mail Address		
Bid Amount (VAT Inclusive)		
BBEE LEVEL		
Closing Date:		
Closing Time:		
Contact numbers	Cell:	
 Municipal Infrastructure Grant		  EXPANDED PUBLIC WORKS PROGRAMME Creating opportunities towards human fulfilment

POLOKWANE MUNICIPALITY

RESPONSIVENESS AND EVALUATION CRITERIA

1. RESPONSIVENESS CRITERIA

The Polokwane Municipality will consider no Bid unless it meets the following responsiveness criteria:

- The bid must be properly received in a sealed envelope clearly indicating the description of the service and the bid number for which the bid is submitted.
- The bid must be deposited in the relevant bid box as indicated on the notice of the bid on or before the closing date and time of the bid.
- Valid CSD Certificate must be submitted with the bid on or before the closing time and date of the bid.
- Bid forms must be completed in full and each page of the bid initialed.
- Submission of a Joint Venture Agreement, where applicable, which has been properly signed by all parties.
- Proof of payment of Municipal Rates and Taxes or letter for Tribal Authority or lease agreement must be attached.
- Complies with the requirements of the bid and technical specifications.
- Registered in the relevant contractor category in the Construction Industry Development Board Register of Contractors (CIDB).
- Adheres to Pricing Instructions.
- Financial ability to execute the contract.
- Comply in full and observe the requirements of the Notice to Bidders.
- Experience with similar work – demonstrate a track record of a project of similar scope and size

2. EVALUATION OF BIDS

- a) All bids received shall be evaluated in terms of the Supply Chain Management Regulations, Polokwane Municipality Supply Chain Management Policy (on request from Municipality), the preferential procurement regulation 2011, and other applicable legislations.
- b) The Council reserves the right to accept all, some, or none of the bids submitted – either wholly or in part – and it is not obliged to accept the lowest bid.

By submitting this bid, bidder authorises the Council or its delegate(s) to carry out any investigation deemed necessary to verify the correctness of the statements and documents submitted and that such documents reasonably reflect the ability of the Bidder to provide the goods and services required by the Council.

PLEASE NOTE

- 1. The Municipal Manager may cancel a contract awarded to a person if:**
 - a) The person committed a corrupt or fraudulent act during the procurement process or in the execution of the contract, or
 - b) An official or other role player committed any corrupt or fraudulent act during the procurement process or in the execution of the contract that benefited that person.
- 2. The Municipal Manager may reject the bid or quote of any person if that person or any of its directors has:**
 - a) Failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months;
 - b) Failed, during the last five years, to perform satisfactorily on a previous contract with the Polokwane Municipality or any other organ of State after written notice was given to that bidder that performance was unsatisfactory;
 - c) Abused the supply chain management system of the Municipality or have committed any improper conduct in relation to this system;
 - d) Been convicted of fraud or corruption during the past five years;
 - e) Willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - f) Been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No. 12 of 2004) or has been listed on National Treasury's database as a person prohibited from doing business with public sector.

POLOKWANE MUNICIPALITY

CONTENTS OF TENDER DOCUMENTATION

Volume 1: Tender requirements, Contract and Pricing Data		
Number	Heading	Colour
Part T1: Tendering procedures		
T1.1	Tender Notice and Invitation to Tender	White
T1.2	Tender Data	Pink
T1.3	Standard and Particular Conditions of Tender	Pink
Part T2: Returnable Documents		
T2.1	List of Returnable Documents	Yellow
T2.2	Returnable Schedules	Yellow
Part C1: Agreements and Contract Data		
C1.1	Form of Offer and Acceptance	White
C1.2	Contract Data	White
C1.3	Forms for Adjudicators Appointment	White
C1.4	Occupational Health and Safety Agreement	White
Part C2: Pricing data		
C2.1	Pricing Instructions	Yellow
C2.2	Bill of Quantities	Yellow
Part C3: Scope of Work		
C3.1	Description of the Works	Blue
C3.2	List of Drawings	Blue
C3.3	Procurement	Blue
C3.4	Construction	Blue
C3.5	Variations and Additions to SABS 1200 Standardized Specifications for Civil Engineering Construction	Blue
C3.6	Particular Specifications – Civil and Building Work	Blue
C3.7	Health and Safety Specifications	Blue
C3.8	Environmental Management during Construction	Blue
C3.9	Management of the Works	Blue
Part C4: Site information		
C4	Site Information	Green

POLOKWANE MUNICIPALITY
CONTENTS OF TENDER DOCUMENTATION

Volume 1: Tender requirements, Contract and Pricing Data		
Number	Heading	Colour
Part T1: Tendering procedures		
T1.1	Tender Notice and Invitation to Tender	White
T1.2	Tender Data	Pink
T1.3	Standard and Particular Conditions of Tender	Pink
Part T2: Returnable Documents		
T2.1	List of Returnable Documents	Yellow
T2.2	Returnable Schedules	Yellow
Part C1: Agreements and Contract Data		
C1.1	Form of Offer and Acceptance	White
C1.3	Forms for Adjudicators Appointment	White
C1.4	Occupational Health and Safety Agreement	White
C1.2	Contract Data	White
Part C2: Pricing data		
C2.1	Pricing Instructions	Yellow
C2.2	Bill of Quantities	Yellow
Part C3: Scope of Work		
C3.1	Description of the Works	Blue
C3.2	List of Drawings	Blue
C3.3	Procurement	Blue
C3.4	Construction	Blue
C3.5	Variations and Additions to SABS 1200 Standardized Specifications for Civil Engineering Construction	Blue
C3.6	Particular Specifications – Civil and Building Work	Blue
C3.7	Health and Safety Specifications	Blue
C3.8	Environmental Management during Construction	Blue
C3.9	Management of the Works	Blue
Part C4: Site information		
C4	Site Information	Green

T1.1 TENDER NOTICE AND INVITATION TO TENDER



T1.1 TENDER NOTICE AND INVITATION TO TENDER

BID NUMBER:PM47/2017: UPGRADING RAMONGOANA BUS AND TAXI ROUTE

DIRECTORATE: ENGINEERING SERVICES

BUSINESS UNIT: ROADS AND STORMWATER

Bids are hereby invited for Upgrading of Ramongoana Bus and Taxi Route Phase 2

Tender No.	CIDB grade	Description of Service	Minimum Work Opportunities to be created	Closing Date
PM47/2017	6CE	Upgrading of Ramongoana Bus and Taxi Route Phase 2 and 3	69	10 August 2017

Bids documents containing the Conditions of Bid and other requirements in terms of the Supply Chain Management Policy will be downloaded from e-tender Publication Portal at www.etenders.gov.za as of 07th July 2017 at no fee.

An official and compulsory site inspection will be held on the 19th July 2017 at 10h00 Bidders are requested to meet at the New Peter Mokaba Stadium Complex, Executive Lounge 1st Floor.

The Council also reserves the right to negotiate further conditions and requirements with the successful bidder.

Complete Bid document, fully priced and signed must be sealed in an envelope marked "Bid number" PM47/2017" Upgrading of Ramongoana Bus and Taxi Route Phase 2 Closing date 10th August 2017 at 10h00 and should be deposited in the tender box at the Polokwane Municipality, Civic Centre, Landdros Mare street, Polokwane City, not later than 10h00 on the 10th August 2017. The Bid box is generally open 24 hours, 7 days a week. Bidders should ensure that bids are delivered timeously to the correct address.

If the bid is late, it will not be accepted for consideration.

THIS BID IS SUBJECT TO THE, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATION, 2011, AND THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (Second Edition) (2010).

The Municipality shall adjudicate and award bids in accordance with B-BBEE status level of contribution on 80/20 point system, 80 points for the price and 20 points for contribution. Prospective bidders must accept that the bid will be adjudicated, according to the said legislation. Bids will remain **valid for 90 (ninety) days**.

N.B: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (as defined in Regulation 1 of the Local Government: Municipal supply chain Management Regulations)

Only bidders who are registered in the relevant contractor category in the Construction Industry Development Board Register of Contractors will be considered. This requirement will remain in force as long as it is a requirement of the CIDB: 6CE

With Joint Ventures, all companies, which are part of the joint venture, must be registered with the CIDB. The Joint Venture that meets the grading for the bid will be considered.

Enquiries related to this bid should be addressed to Mr Pilot Ramothwala at telephone number (015) 290 2204 or Mr Kulani Malubane at (015) 290 2241 respectively.

**Mr. DH Makobe
MUNICIPAL MANAGER
CIVIC CENTRE
LANDDROS MARE STREET,
POLOKWANE**

T1.2 TENDER DATA

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE

T1.2 Tender Data

1. CONDITIONS OF TENDER

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (SFU) of May 2010, as published in Government Gazette No 33239, Board Notice 86 of 2010 of 28 May 2010. Those Standard Conditions of Tender remained the same as those published in the previous edition of the SFU as published in Government Gazette No 31823, Board Notice 12 of 2009 of 30 January 2009 - See www.cidb.org.za.

Each Tenderer shall obtain its own copy of the Standard Conditions of Tender.

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

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

Clause number	Tender Data
2. <u>EMPLOYER</u> Cl. F1.1	<p>The "Employer" is "Polokwane Municipality"</p> <p>The Employer's domicilium citandi et executandi (permanent physical business address) is: Polokwane Municipality, Civic Centre, Landdros Mare Street, Polokwane</p> <p>The Employer's address for communication relating to this project is: PO Box 111, Polokwane, 0700</p>
3. <u>TENDER DOCUMENTS</u> Cl. F.1.2	<p>"The following documents form part of this tender:</p> <p>VOLUME 1</p> <p>Part T1 Tendering procedures</p> <p>T1.1 Tender notice and invitation to tender</p> <p>T1.2 Tender data</p> <p>T1.3 Standard and Particular conditions to tender</p> <p>Part T2 Returnable Documents</p> <p>T2.1 List of Returnable Documents</p> <p>T2.2 Returnable Schedules that will be incorporated into the Contract</p> <p>Part C1 Agreements and Contract Data</p> <p>C1.1 Form of offer and acceptance</p> <p>C1.2 Contract data</p> <p>C1.3 Form for Adjudicators Appointment</p> <p>C1.4 Agreement in terms of Occupational Health and Safety</p> <p>Part C2 Pricing Data</p> <p>C2.1 Pricing Instructions</p> <p>C2.2 Bill of Quantities</p> <p>Part C3 Scope of Work</p> <p>C3.1 Description of the Works</p> <p>C3.2 List of Drawings</p> <p>C3.3 Procurement</p> <p>C3.4 Construction</p> <p>C3.5 Variations and Additions to SABS 1200 Standardized Specifications</p> <p>C3.6 Particular Specifications</p> <p>C3.7 Health and Safety Specifications</p> <p>C3.8 Environmental Management during Construction</p>

Clause number	Tender Data
	<p>C3.9 Management of the Works Part C4 Site information</p> <p>VOLUME 2 Tender Drawings</p>
4. <u>EMPLOYER'S AGENT</u> Cl. F.1.4	<p>The Employer's agent's are:</p> <p>a) Principal Agent Morula Consulting Engineers and Project Managers</p> <p><u>Physical Address:</u> Stand 54 Drop street Polokwane 0700</p> <p><u>Postal Address:</u> P O Box 2740 Polokwane 0700</p> <p>Tel.: (015) 291 1161 E-mail: hulisani@morulaconsulting.co.za</p> <p>Fax: (015) 291 1344</p>
5. <u>TENDERER'S OBLIGATIONS</u>	
5.1. <u>Eligibility</u> Cl. F.2.1	<p>A tender offer may only be submitted if the Tenderer satisfies the criteria stated in the Tender Data and if the Tenderer, or any of his principals, is not under any restriction to do business with the Employer.</p>
5.2. <u>Site Visit and Clarification Meeting</u> Cl. F.2.7	<p>The arrangements for a compulsory pre-tender meeting are:</p> <p>Location: New Peter Mokaba Stadium Complex, Executive Lounge 1st Floor Date: 19th July 2017 at 10h00</p>
5.3. <u>Insurance</u> Cl. F.2.9	<p>No insurance cover will be provided by the Employer.</p>
5.4. <u>Alternative Tender Offers</u> Cl. F. 2.12	<p>Unless anything to the contrary has been determined in the Contract Data, a Tenderer may, together with his tender for the original designs contained in the contract documents, submit alternative designs and tender offers for consideration. 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. Such alternative designs and offers shall be subject to the following conditions and requirements:</p> <p>5.4.1. <u>Tenders</u></p> <p>An alternative offer or design will be considered only if the tender for the original items has been fully priced and completed. The alternative tender offer is to be submitted in the same envelope as the main tender offer, together with a schedule that compares the requirements of the tender documents with the alternative requirements the Tenderer proposes. No alternative tender will be considered unless a tender free from qualifications is also submitted. Unless the alternative offer stipulates to the contrary, it shall be assumed that the period for completion of the Works shall be the same as for the original design.</p> <p>Designs, calculations, drawings and a modified schedule of quantities (as determined hereafter) in respect of each alternative offer or design shall accompany the alternative tender offer and shall be endorsed fully by a third party registered</p>

Clause number	Tender Data
	<p>engineer, accomplished in such specific field of practice.</p> <p>5.4.2. <u>Preliminary calculations</u></p> <p>Preliminary calculations for an alternative design shall be submitted with the tender. Such calculations shall give adequate details so as to enable an assessment to be made of the general efficacy of the design and of its principal elements, also of the degree to which the design prescriptions and codes of the Employer are being complied with. The calculations shall be clear and in a logical sequence and shall clearly reflect all the design assumptions.</p> <p>5.4.3. <u>Preliminary drawings</u></p> <p>Preliminary drawings of the alternative designs shall also be submitted with the tender. These drawings shall comprise adequate layout plans, elevations and sections and shall clearly illustrate the general efficacy of the design and its principal elements.</p> <p>5.4.4. <u>Quantities</u></p> <p>Each alternative offer shall be accompanied by a modified priced schedule of quantities compiled in accordance with the specifications, in so far as it is applicable, which clearly shows the manner in which the price for the alternative offer has been determined and the items in the original schedule of quantities which fall away or are being changed. In addition to the schedule of quantities, a set of calculations shall be supplied to show how the quantities have been determined. All assumptions in regard to factors which will determine quantities shall be clearly and conspicuously marked by underlining or colouring, and shall indicate whether or not the assumptions have been based on information furnished in the Contract Data (with the necessary references).</p> <p>5.4.5. <u>Further details</u></p> <p>Should the Employer's Agent find that the calculations and drawings submitted for alternative designs are not complete enough for proper adjudication of the alternative designs, the Employer reserves to itself the right to call on the Tenderer to submit such further calculations and drawings as may be required. If such further details are not submitted within ten days of having been requested, the alternative designs will not be given further consideration.</p> <p>5.4.6. <u>Preliminary adjudication of alternative designs</u></p> <p>The Employer's Agent will undertake a preliminary scrutiny of any alternative designs for compliance with the specified requirements of the Employer. Should he find any mistakes or unsatisfactory aspects, he may afford the Bidder the opportunity to rectify them within a period to be determined by the Employer's Agent. However, it is emphasized that the preliminary scrutiny of the design and tender by the Employer's Agent, by its very nature, cannot be comprehensive, and no guarantee can be given in this regard that all the mistakes made by the Bidder will in fact be detected. Any correction of such mistakes shall be made with the tender price of the bidder being retained, and, wherever necessary, the priced schedule of quantities for the alternative design shall be adjusted accordingly.</p> <p>5.4.7. <u>Acceptance of alternative design</u></p> <p>The Bidder shall note that the acceptance of a tender which includes alternative designs shall mean that the alternative designs have been approved in principle only. If the final calculations, drawings and details do not comply with the specified requirements, such alternative designs may be rejected, unless they are suitably</p>

Clause number	Tender Data
	<p>amended by the Bidder so as to be acceptable to the Employer.</p> <p>5.4.8. <u>Final drawings and calculations and the priced schedule of quantities</u></p> <p>Where a tender with an alternative design has been accepted, the Contractor shall, not less than two months before he intends starting with the construction of such design, submit to the Employer's Agent a complete set of working drawings, detailed calculations and a complete schedule of quantities, for approval. The schedule of quantities shall be based on the preliminary schedule of quantities, but with the necessary adjustments in quantities and prices and with the tendered price for the alternative design being retained.</p> <p>Within three weeks of having received the above, the Employer's Agent will indicate which drawings, calculations, quantities, prices and other particulars are acceptable to him and which not, with reasons furnished. The Contractor shall then submit to the Employer's Agent in good time any modified drawings and other particulars for approval, for which he will require two weeks. Any delay arising from the fact that the amended particulars do not meet the requirements shall be the responsibility of the Contractor.</p> <p>No work which will be affected by an alternative design may be commenced, unless the drawings, schedule of quantities and prices for such alternative design have been approved. Should the Contractor fail to modify any drawings, calculations, quantities, prices or any other particulars to the satisfaction of the Employer's Agent, the alternative design will be rejected and the original design shall be constructed for the same amount as has been tendered for the alternative design.</p> <p>5.4.9. <u>Responsibility for alternative design</u></p> <p>The approval of a design by the Employer's Agent shall not in any way relieve the Bidder of his responsibility to produce a design which conforms in all respects to all the specified requirements and which will be suitable for the purpose envisaged. Should it appear later during construction or during the maintenance period that the design does not conform to the specified requirements, the Contractor only, shall be liable for any damage arising there from and he shall, at his own expense, do all the necessary work to ensure that the Works conforms to all the specified requirements.</p> <p>5.4.10. <u>Indemnity</u></p> <p>Once the alternative design has been approved, the Contractor shall indemnify and hold harmless the Employer, its agents and assigns, against all claims howsoever arising out of the said design whether in contract or delict.</p>
<p>5.1. <u>Submitting a Tender Offer</u> Cl. F2.13</p>	<p>5.5.1. <u>Whole of the Works</u> (Cl. F.2.13.1)</p> <p>Tenderers shall offer to provide for the whole of the Works identified.</p> <p>5.5.2. <u>Original tender documents</u> (Cl. F2.13.3)</p> <p>The original tender document, issued to the Bidder, shall be submitted in its entirety. No copies are required.</p> <p>5.5.3. <u>Marking of Tender Submissions</u> (Cl. F2.13.5)</p> <p>The complete tender documents shall be enclosed and sealed in a single envelope, marked: "BID NO. PM47/2017 – Upgrading of Ramongoana Bus and Taxi Route Phase 2"</p>

Clause number	Tender Data
	<p>The Employer's address for delivery of tender offers to be shown on each tender submission package is the Tender Box located at: Polokwane Municipality Civic Centre Landdros Mare Street Polokwane</p> <p>5.5.4. <u>Two envelope system</u> (Cl. F.2.13.6)</p> <p>A two-envelope procedure will not be followed.</p> <p>5.5.5. <u>Closing time</u> (Cl. F.2.15)</p> <p>The closing time for submission of tender offers is: 10H00</p> <p>Telegraphic, telephonic, telex, facsimile, e-mail, electronic and late tender offers will not be accepted.</p> <p>5.5.6. <u>Tender offer validity</u> (Cl. F.2.16)</p> <p>The tender offer validity period is 90 days after tender closing date.</p> <p>5.5.7. <u>Clarification of tender offer after submission</u> (Cl. F.2.17)</p> <p>Delete the last part of the second sentence, commencing with the word "and". Furthermore, delete the last two sentences of Cl. F2.17.</p> <p>Add the following sentence: "The rates stated by the Bidder shall be binding".</p> <p>5.5.8. <u>Provide other Material</u> (Cl. F.2.18.1)</p> <p>Upon request by the Employer, the Bidder shall promptly supply any other material that has a bearing on the tender offer, the bidder's commercial position (including, where applicable, notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the Employer for the purpose of a full and fair assessment. Should the Bidder not provide the information or material called for, by the time for submission stated in the Employer's request, the Employer will regard the tender offer as being non-responsive.</p> <p>5.5.9. <u>Certificates</u> (Cl. F.2.23)</p> <p>The following certificates are to be provided with this tender:</p> <ul style="list-style-type: none"> a) Valid CSD Number b) Compensation Fund registration certificate c) Certificate of Contractor Registration issued by the Construction Industry Development Board or a copy of the application Form for registration in terms of the Construction Industry Development Board Act (Form F006). <p>A minimum grading of 6CE is required.</p> <p><u>Important Note:</u> Failure to provide the required particulars as per the above-listed certificates implies a non-responsive tender and warrants rejection of the tender on account of non-compliance with the requirements of the Tender Data</p>
6. <u>EMPLOYER'S</u>	

Clause number	Tender Data
<u>UNDERTAKING</u>	
6.1. <u>Opening of Tender Submissions</u> Cl. F3.4	The time and location for opening of the tender offers are: 10h00 on the 10th August 2017 Location: 1st Floor Technical Boardroom, Polokwane Municipality
6.2. <u>Arithmetical Errors</u> Cl. F.3.9.1	Delete paragraphs (b) and (c) of Cl. F.3.9.1 and replace with: b) If a bill of quantities (or schedule of quantities or schedule of rates) applies and 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 tender offer will be corrected by the Employer in determining the Contract Price. c) 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. d) The Contract Price for the completed Contract shall be computed from the actual quantities of authorised work done and compliant with the Contract Data, valued at rates contracted against the respective items in the bill of quantities, schedule of Quantities or schedule of rates and shall include such authorised Provisional Sums and items of extra work as have become payable in terms of the Contract Data.
7. <u>ACCEPTANCE OF TENDER OFFER</u> Cl. F3.13	Tender offers will only be accepted if: a) The bidder has in his or her possession a valid CSD number; b) The bidder is registered with the Construction Industry Development Board in an appropriate contractor grading designation. A minimum grading of 6CE is required for the main contractor. c) The bidder has demonstrated previous experience with the type of work required under this contract having successfully completed a project of similar scope and size d) The bidder or any of its principals is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; and e) The bidder has not abused the Employer's Supply Chain Management System. f) The bidder has not failed to perform on any previous contract. g) has complete the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the bidder's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.

Clause number	Tender Data
8. <u>PROVIDE COPIES</u> <u>OF THE CONTRACT</u> <u>DOCUMENT</u> Cl. F.3.18	The number of paper copies of the signed Contract to be provided by the Employer to the successful bidder is one

MBD 6.1**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2011****I.**

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 exceed/not exceed R50 000 000 (all applicable taxes included) and therefore the preference point system shall be applicable; or
- b) Either the 80/20 or 90/10 preference point system will be applicable to this tender (*delete whichever is not applicable for 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	
B-BBEE STATUS LEVEL OF CONTRIBUTOR	
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) | Status level certificate issued by an authorized body or person; | B-BBEE |
| 2) | affidavit as prescribed by the B-BBEE Codes of Good Practice; | A sworn |
| 3) | requirement prescribed in terms of the B-BBEE Act; | Any other |
- (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:

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

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	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- 7.1.1 If yes, indicate:

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

(Tick applicable box)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are youth	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are women	<input type="checkbox"/>	<input type="checkbox"/>
Black people with disabilities	<input type="checkbox"/>	<input type="checkbox"/>
Black people living in rural or underdeveloped areas or townships	<input type="checkbox"/>	<input type="checkbox"/>
Cooperative owned by black people	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are military veterans	<input type="checkbox"/>	<input type="checkbox"/>
OR		
Any EME	<input type="checkbox"/>	<input type="checkbox"/>

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
.....
.....

ANNEXURE A
SUPPLY CHAIN MANAGEMENT
EVALUATION PROCESS AND CRITERIA

The following evaluation process and criteria will be used to evaluate all bids submitted:

1. Administrative Compliance – Phase One

- 1.1 All bids duly lodged will be examined to determine compliance with bidding requirements and conditions. Bids with obvious deviations from the requirements/conditions, will be eliminated from further evaluation.
- 1.2 **Critical Criteria:**
- The following critical criteria have been identified for this bid and any noncompliance thereto will lead to the bid being regarded as non-responsive and disqualified from further evaluation:
- Provide a Central Supplier Database (CSD) number.
 - All Pages of the Bid document must be initialled.
 - Compulsory site inspection attended.
 - Completed and signed declaration on past SCM practices form.
 - Compulsory enterprise questionnaire completed.
 - Signed J/V agreement must be attached (Where applicable).
 - Proof of registration with CIDB attached.
 - Proof of Municipal Rates and Taxes or letter for Tribal Authority or lease agreement must be attached (Not older than 3 months).
 - Complete **MBD5** and submit Audited Financial Statements (**AFS**) for the last three (3) years. – (Only where the tender amount **exceeds R10mil** - including VAT).
 - Signing of the declaration of interest form (**MBD4**).

2. Functionality – Phase Two (50 points allocation)

The bidders who complied administratively are considered for further evaluation on ability to execute the project.

The assessment of functionality will be done in terms of the evaluation criteria and minimum threshold as specified. A bid will be disqualified if it fails to meet the minimum threshold for functionality as per the bid invitation.

1.1. Relevant Experience of Company (25 points)

This will take into consideration similar contracts successfully completed by the bidder.

NB. Proof of largest similar project must be attached (e.g. Completion certificate). Failure to provide proof will result in disqualification of points.

The score will be calculated as follows:

$$R_t = \frac{L_c}{T_{avg}} \times R_{max}$$

Where:

R_t = Points for relevant experience of company.

L_c = Largest similar contract over the last **three (3) years. (Determined on project size.)**

T_{avg} = Average value of tendered amounts of eligible tenders.

R_{max} = Maximum points allocated for relevant experience of company.
 (R max = 25)

2.2 Plant and Equipment (15 points)

This will be assessed against a minimum number of different types of plant and equipment required to successfully complete the project within the stipulated construction period as determined by the engineer.

Access to plant may be in a form of ownership, hire or leasing arrangements, orders etc. A letter of intent from hiring or leasing companies stating the number and type of plant and equipment on which arrangement has been made must be submitted. Any changes to the lease/hire agreement must be approved by the Municipality prior commencement.

NB. 50% of points will be allocated to equipment leased/hired.

Consultants Estimation				
(A) Plant and equipment required	Points allocation	(B) Minimum Plant required	(C) Bidder Plant own	(D) Bidder Plant hire
Grader (140G or equivalent)	3	1		
Tipper Truck (6 – 10m ³)	6	3		
Water Tanker	2	1		
Excavator (20 to minimum)	3	1		
TLB (4x 4)	1	1		

NB. Proof of ownership on equipment indicated above must be submitted with the bid document. Failing to submit will result in disqualification of points.

2.3 Financial Status (10 points)

This will be assessed against Bank ratings as follows: (If a Bank letter is submitted, it should be specific for this project and not older than 30 days)

Bank Rating	Score
A	10
B	10
C	7
D	5
E	2
F,G,H	0

NB: A bid will be disqualified if it fails to meet the minimum threshold of 60% on functionality and a minimum of 15 points on relevant experience.

2.4 Commercial Risk Analysis

Prior to being recommended for further evaluation, a bid will be subjected to risk analysis to ensure that it would, if accepted, not place the Municipality or the bidder, at undue risk.

A risk analysis will be performed to ascertain if any of the following might present an unacceptable commercial risk to the Municipality:

- Unduly low tendered sums
- Unduly high individual rates
- Unduly low rates
- Imbalances in pricing

The bidders will be disqualified if the commercial risk analysis indicate unacceptable commercial risk to the Municipality.

Tendered rates

Rates for all the bids which have complied with the bid conditions will be assessed for the following:

- Comparison of rates and amounts with the average tendered amount.
- Sensitivity Analysis of Rates (i.e. whether the rates are balanced, acceptable, etc).
- Expected cash flows requirements.

NB: Bids with unbalanced rates will be disqualified for further evaluation on price and preference points system.

3 Business Registration

Prospective bidders shall be registered:

- (a) With the South African Revenue Services for all categories of taxes applicable to it.
- (b) With the Compensation Commissioner
- (c) With the Construction Industry Development Board. (A minimum grading of 6CE is required).

4 Acceptance of Tender Offer (Cl. F3.13)

Tender offers will only be accepted if:

- a) Provide a Central Supplier Database (CSD) number.
- b) The bidder is registered with the Construction Industry Development Board in an appropriate contractor grading designation. (A minimum grading of 6CE is required);
- c) the bidder or any of its principals is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; and
- d) The bidder has not abused the Employer's Supply Chain Management System.
- e) The bidder has not failed to perform on any previous contract.
- f) has complete the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the bidder's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.

5. Provide copies of the Contract Document (Cl. F3.18)

The number of paper copies of the signed Contract to be provided by the Employer to the successful bidder is **one**

Annexure A: Standard Conditions of Tender

F.1 General

F.1.1 Actions

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

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

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

- a) **Comparative offer** means the Tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other Tendered 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 Tender process; and
- c) **Fraudulent practice** means the misrepresentation of the facts in order to influence the Tender process or the award of a contract arising from a Tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- 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 Tenderer 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 Tenderer. The name and contact details of the employer's agent are stated in the Tender data.

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

F.1.5.1 The employer may accept or reject any variation, deviation, Tender offer, or alternative Tender offer, and may cancel the Tender process and reject all Tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a Tenderer 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 Tender process or the rejection of all responsive Tender offers re-issue a Tender covering substantially the same scope of work within a period of six months unless only one Tender was received and such Tender was returned unopened to the Tenderer.

F.2 Tenderer's obligations

F.2.1 Eligibility

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

F.2.2 Cost of Tendering

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the Tender offer

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

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

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

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

F.2.11 Alterations to documents

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

F.2.12 Alternative Tender offers

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

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

F.2.13 Submitting a Tender offer

F.2.13.1 Submit a Tender 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 Tender data.

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

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

F.2.13.4 Sign the original and all copies of the Tender offer where required in terms of the Tender data. The employer will hold all authorized signatories liable on behalf of the Tenderer. Signatories for Tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the Tender offer.

F.2.13.5 Seal the original and each copy of the Tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the Tender data, as well as the Tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the Tender data, place and seal the returnable documents listed in the Tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the Tender data, as well as the Tenderer's name and contact address.

F.2.13.7 Seal the original Tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the Tender data.

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

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

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

F.2.15 Closing time

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

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

F.2.16 Tender offer validity

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

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

F.2.17 Clarification of Tender offer after submission

Provide clarification of a Tender offer in response to a request to do so from the employer during the evaluation of Tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the total of the prices or substance of the Tender offer is sought, offered, or permitted. The total of the prices stated by the Tenderer shall be binding upon the Tenderer.

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the Tender offer, the Tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the Tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the Tender offer as non-responsive.

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

F.2.19 Inspections, tests and analysis

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

F.2.20 Submit securities, bonds, 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 Tender documents

If so instructed by the employer, return all retained Tender documents within 28 days after the expiry of the validity period stated in the Tender data.

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to clarification

Respond to a request for clarification received up to five working days before the Tender closing time stated in the Tender Data and notify all Tenderers who drew procurement documents.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the Tender documents to each Tenderer during the period from the date that Tender documents are available until seven days before the Tender closing time stated in the Tender Data. If, as a result a Tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all Tenderers who drew documents.

F.3.3 Return late Tender offers

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

F.3.4 Opening of Tender submissions

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

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

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

F.3.5 Two-envelope system

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

F.3.5.2 Evaluate the quality of the technical proposals offered by Tenderers, then advise Tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of Tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the Tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to Tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

F.3.8.1 Determine, on opening and before detailed evaluation, whether each Tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the Tender documents.

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

- a) Detrimentially 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 Tenderer's risks and responsibilities under the contract, or
- c) Affect the competitive position of other Tenderers presenting responsive Tenders, if it were to be rectified. Reject a non-responsive Tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors

F.3.9.1 Check responsive Tender offers for arithmetical errors, correcting them in the following manner:

- a) Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- b) If bills of quantities (or schedule 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 shall be corrected.
- c) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the Tenderer's addition of prices, the total of the prices shall govern and the Tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the Tendered total of the prices.

F.3.9.2 Consider the rejection of a Tender offer if the Tenderer does not correct or accept the correction of his arithmetical errors in the manner described in F.3.9.1.

F.3.10 Clarification of a Tender offer

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

F.3.11 Evaluation of Tender offers

F.3.11.1 General

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

Method 1: Financial offer	1) Rank Tender offers from the most favourable to the least favourable comparative offer.
	2) Recommend highest ranked Tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2:	1) Score Tender evaluation points for financial offer.

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

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 Tender offers using the following formula:

NFO = $W1 \times A$ where:
 NFO = the number of Tender evaluation points awarded for the financial offer.
 W1 = the maximum possible number of Tender evaluation points awarded for the financial offer as stated in the Tender Data.
 A = a number calculated using either formulas 1 or 2 below as stated in the Tender Data.

Formula	Comparison aimed at achieving	Option 1	Option 2
1	Highest price or discount	$A = (1 + \frac{P - P_m}{P_m})$	$A = P / P_m$
2	Lowest price or percentage commission / fee	$A = (1 - \frac{P - P_m}{P_m})$	$A = P_m / P$

where:

P_m = the comparative offer of the most favourable Tender offer.
 P = the comparative offer of Tender offer under consideration.

F.3.11.3 Scoring quality (functionality)

Score quality in each of the categories in accordance with the Tender Data and calculate total score for quality.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of Tender offer

F.3.13.1 Accept Tender offer only if the Tenderer complies with the legal requirements stated in the Tender Data.

F.3.13.2 Notify the successful Tenderer of the employer's acceptance of his Tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the Tender data, or agreed additional period. 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 Tenderer as described in the form of offer and acceptance.

F.3.14 Notice to unsuccessful Tenderers

After the successful Tenderer has acknowledged the employer's notice of acceptance, notify other Tenderers that their Tender 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 Tender documents to take account of:

- a) addenda issued during the Tender period,
- b) inclusion of some of the returnable documents,
- c) other revisions agreed between the employer and the successful Tenderer, 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 Tenderer 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 Tender require the Tenderer 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 Tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

A: SCHEDULE OF LABOUR CONTENT

The Tenderer 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 5% of the contract value

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

Notes to Tenderer:

- (1) Labour is defined as hourly paid personnel.
- (2) The penalty will be applied for non-compliance during the contract or for fraudulent disclosure

SIGNED ON BEHALF OF THE TENDERER:

B: EMPLOYMENT OF AFFIRMATIVE BUSINESS ENTERPRISE (ABE)

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	
			Rands (Excl VAT)	% of Tender Sum (Excl VAT)
TOTAL				

Notes to tenderer:

1. Regardless whether the tenderer fits the classification of an SMME/PDI, as defined in Section 3.3 of this specification, the tenderer nevertheless retains the obligation to commit to the target values prescribed
2. Tenderers shall insert "unknown" if an SMME/PDI has not been selected prior to tender closing date.
3. The penalty will be applied for non-compliance during the contract or for fraudulent disclosure

SIGNED ON BEHALF OF THE TENDERER

B.1 EMPLOYMENT OF AFFIRMATIVE BUSINESS ENTERPRISE DECLARATION AFFIDAVIT (ABE).

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 ON BEHALF OF THE TENDERER

1. TRAINING

Name of Training Institution:.....

Name of Programme:.....

Trainer's Name	Qualification	Subject

Notes to tenderer:

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

SIGNED ON BEHALF OF THE TENDERER.....

2. ENGINEERING SKILLS TRAINING

Name of Training Institution:.....

Name of Programme:.....

Trainer's Name	Qualification	Subject

Notes to tenderer:

1. Provide details here, or attach hereto, the subjects to be covered and the manner in which the training is to be delivered.
2. Provision should also include on-job student / (in-service) training for a period of not less than 08 months at a monthly stipend of R 4500.00

SIGNED ON BEHALF OF THE TENDERER

T2.1 LIST OF RETURNABLE DOCUMENTS

POLOKWANE MUNICIPALITY

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. Certificate of Registration with the Construction Industry Development Board
- D. Certificate of authority for joint ventures (where applicable)
- E. Compulsory Enterprise Questionnaire
- F. Record of Addenda to Tender Documents
- G. Proposed Amendments and Qualifications
- H. Form of Intent to Provide a Demand Guarantee
- I. Schedule of Subcontractors
- J. Schedule of Available Infrastructure, Resources and Experience
- K. Financial Information of the Tenderer
- L. Certificate for Municipal Services and Payments: Annexure B
- M. Authorisation for deduction of outstanding amounts owed to Council: Annexure C
- N. Declaration of Tenderer's Past Supply Chain Management Practices: MBD 8
- O. Declaration of interest : MBD 4
- P. National industrial participation programme :SBD 5
- Q. Declaration for procurement above R10 Million :MBD 5
- R. Declaration certificate for local production and content: MBD 6.2
- S. Certificate of the Independent Tender Determination: MBD 9
- T. Compliance with OHSA (Act 85 of 1993)
- U. Original Bank rating letter
- V. Day Works
- W. Names of management and supervisory staff for the LIC works

2. Other documents required only for Tender evaluation purposes

- Compensation Fund Registration Certificate
- Curricula Vitae of Personnel
- Rates of Labour and Materials (Day work Rates)
- A valid CSD Certificate
- Schedule of Labour Content
- Employment of ABE'S
- ABE Declaration Affidavit
- Generic Training
- Complete MBD 5 where the Tender amount inclusive of VAT exceeds R 10 million:

3. Other documents that will be incorporated into the contract

- 3.1 The offer portion of the C1.1 Offer and Acceptance
- 3.2 C1.2 Contract Data (Part 2)
- 3.3 C2.2 Bills of Quantities

T2.2 RETURNABLE SCHEDULES

A. CERTIFICATE OF ATTENDANCE AT SITE CLARIFICATION MEETING

This is to certify that:

..... (Tenderer)

of (Address)

.....
.

was represented by the person(s) named below at the compulsory meeting held for all Tenderers 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 Tender documents in order for us to take account of everything necessary when compiling our entire Tender 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 Tenderer **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

B. CERTIFICATE OF AUTHORITY OF SIGNATORY

Indicate the status of the Tenderer by ticking the appropriate box hereunder. The Tenderer must complete the certificate set out below for the relevant category.

1	Company	
---	---------	--

2	Partnership	
---	-------------	--

3	Joint Venture	
---	---------------	--

4	Sole Proprietor	
---	-----------------	--

5	Close Corporation	
---	-------------------	--

1. Certificate for company

I,, chairperson of the board of directors of

....., hereby confirm that by resolution of the board

(copy attached) taken on 20....., Mr/Ms

acting in the capacity of, was authorised to sign all documents in connection with this Tender and any contract resulting from it on behalf of the company.

As witnesses:

1.

.....

Chairman

.....

Print Name

.....

Print Name

2.

.....

Date

.....

Print Name

2. Certificate of partnership

We, the undersigned, being the key partners in the business trading as, hereby authorise Mr/Ms, acting in the capacity of, to sign all documents in connection with the Tender 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 each and all of the key partners** upon whom rests the direction of the affairs of the Partnership as a whole.

3. Certificate for Joint Venture

We, the undersigned, are submitting this Tender offer in Joint Venture and hereby authorize Mr/Ms, authorised signatory of the firm, acting in the capacity of lead partner, to sign all documents in connection with the Tender offer for Contract and any 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
Lead Partner			

4. Certificate for sole proprietor

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

As witnesses:-

1.
Signature: Sole Owner

Print Name
Print Name

2.
Date

Print Name

5. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as hereby authorise Mr/Ms, acting in the capacity of, to sign all documents in connection with the Tender 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 each and all of the key members upon whom rests the direction of the affairs of the Close Corporation as a whole.

C. CERTIFICATE OF REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

1. General

The Register of Contractors is established by the Construction Industry Development Board in terms of the CIDB Act 38 of 2000 and Construction Industry Development Regulations as published in Government Gazette number 26427 of 2004.

The Act makes it mandatory for public sector clients to apply this register when considering Tenders. Any enterprise that submits a Tender or enters into contract for construction works with the public sector, must be registered.

Once-off joint ventures do not have to register, provided that each partner of the joint venture is separately registered.

2. Status

Tenderers shall fill in the following sections of this form, depending on their status:

2.1 Section A

Tenderers who have accomplished registration and can provide proof of their grading designation.

2.2 Section B

Tenderers who are in the process of registration of an update to an existing registration or a renewal.

2.3 Section C

Tenderers who have submitted the first application.

2.4 Section D

Tenderers submitting this Tender offer in Joint Venture and can provide proof that each partner of the Joint Venture is separately registered.

SECTION B

I, acting in capacity of
was authorised to sign all documents in connection with this tender and any contract resulting from it on

behalf of the following entity:
hereby declare that the above mentioned entity has achieved registration with the Construction Industry Development Board on date, furthermore declare that the existing grading designation is:

Contract Value	
----------------	--

Type of Work		
--------------	--	--

and the following update has been applied for:

Amendment of category status	
Change of Particulars	
Annual confirmation of Particulars	
Renewal of Registration	

mark with "❄"

.....
Signature of Tenderer

.....
Signature of Witness

.....
Print Name

.....
Print Name

SECTION C

I, acting in capacity of
 was authorised to sign all documents in connection with this tender and any contract resulting from it on

behalf of the following entity:
 hereby declare that the above mentioned entity has submitted its FIRST APPLICATION FOR
 REGISTRATION with the Construction Industry Development board on date

I furthermore accept that failure to achieve registration with the Construction Industry Development Board in a category stipulated in the Tender Data within 10 days from the date of closing this tender, implies a non-responsive tender and warrants rejection of the Tender on account of non-compliance with the requirements of the Tender Data.

.....
 Signature of Tenderer

.....
 Signature of Witness

.....
 Print Name

.....
 Print Name

SECTION D

I, acting in capacity of the LEAD PARTNER in the Joint Venture

.....
was authorised to sign all documents in connection with this tender and any contract resulting from it, hereby declare that each partner of the Joint Venture is separately registered with the Construction Industry Development Board and declare that the grading designation is reflected in the following **symbols** on the registration certificates:

Name of Lead Partner:		
Contract Value		
Type of Work		

Name of 2 nd Partner:		
Contract Value		
Type of Work		

Name of 3 rd Partner:		
Contract Value		
Type of Work		

.....
Signature of Tenderer

.....
Signature of Witness

.....
Print Name

.....
Print Name

D. CERTIFICATE OF AUTHORITY FOR JOINT VENTURES (WHERE APPLICABLE)

Employer:

Contract Number:

NOTE 1 This form need only be completed in the event of a Joint Venture submitting this Tender.

NOTE 2 Fill in all the information requested in the spaces provided. Attach additional sheets if required.

NOTE 3 Provide a copy of the Joint Venture agreement. Demonstrate that the partners to the Joint Venture share in the ownership, control, management responsibilities, risks and profits of the Joint Venture. The Joint Venture agreement shall include specific details relating to:

- a) the contributions of capital and equipment;
- b) portions of the Contract to be performed by the partner's own resources; and
- c) portions of the Contract to be performed under the supervision of each partner.

NOTE 4 Provide copies of all written agreements between partners concerning the Joint Venture, including those that relate to ownership options and to restrictions/limits regarding ownership and control.

1. Joint Venture Particulars

Name

Postal Address

Physical Address

Telephone

Fax

Name of authorized representative

2. Identity of Partner No. 1

Name

Postal Address

Physical Address

Telephone

Fax

Contact Person

3. Identity of Partner No. 2

Name

Postal Address

Physical Address

.....

Telephone

Fax

Contact Person

4. Identity of Partner No. 3

Name

Postal Address

Physical Address

.....

Telephone

Fax

Contact Person

5. Description of the role of the partners in the joint venture

Partner No. 1:

.....

Partner No. 2:

.....

Partner No. 3:

.....

6. Ownership of the joint venture

(i) Ownership percentage(s) Partner No. 1 %

Partner No. 2 %

Partner No. 3 %

- (ii) Partner percentage in respect of:
- a) Profit and loss sharing: Partner No. 1 %
- Partner No. 2 %
- Partner No. 3 %
- b) Initial capital contribution Partner No. 1 R.....
- Partner No. 2 R.....
- Partner No. 3 R.....
- (iii) Anticipated ongoing capital contributions:
- Partner No. 1 R.....
- Partner No. 2 R.....
- Partner No. 3 R.....
- (iv) Contributions of equipment (specify types, quality and quantities of equipment) to be provided by each partner:
- Partner No. 1:
-
- Partner No. 2:
-
- Partner No. 3:
-

7. Recent contracts performed by partners in their own right or as partners in other joint ventures

- a) Partner No. 1
- (i)
- (ii)
- (iii)
- (iv)
- (v)
- b) Partner No. 2
- (i)
- (ii)

- (iii)
- (iv)
- (v)
- c) Partner No. 3
 - (i)
 - (ii)
 - (iii)
 - (iv)
 - (v)

8. Control and participation in the joint venture

(Identify by name and firm those individuals who are, or will be, responsible for, and have authority to engage in the relevant management functions and policy and decision making, indicating any limitations in their authority, for example, co-signature requirements and monetary limits).

- a) Joint Venture cheque signing
 -
 -
 -
- b) Authority to enter into contracts on behalf of the Joint Venture
 -
 -
 -
- c) Signing, co-signing or collateralizing of loans
 -
 -
 -
- d) Acquisition of lines of credit
 -
 -
 -

e) Acquisition of demand bonds

.....

.....

.....

f) Negotiating and signing of labour agreements

.....

.....

.....

9. Management of the performance of the Contract
(Fill in the name and firm of the responsible person)

a) Supervision of field operations.....

.....

b) Major purchasing.....

.....

c) Estimating

.....

d) Technical management.....

.....

10. Management and control of the joint venture

a) Identify the managing partner

.....

.....

b) What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors or other parties participating in the performance of the contemplated works:

Partner No. 1:

.....

Partner No. 2:

.....

Partner No. 3:

.....

- c) Describe the management structure for the joint venture's work under this Contract

Management Function/Designation	Name	Partner

11. Personnel

- a) State the approximate number of operative personnel (by trade/function/discipline) needed to execute the Joint Venture contract.

Trade/function/discipline	Number

- b) State the number of operative personnel to be employed on the Contract who are currently in the employ of partners:

.....

- c) State the number of operative personnel who are not currently in the employ of the respective partners and shall be engaged on the project by the Joint Venture:

.....

- d) State the name of the individual who shall be responsible for hiring Joint Venture employees:

.....

- e) State the name of the partner who shall be responsible for the preparation of Joint Venture payrolls:

12. Services

List the firms who provide the following services:

Service	Name	Contact Person	Telephone No.
Accounting			
Auditing			
Banking			
Insurance			
Legal			

13. Control and structure of the Joint Venture

Briefly describe the manner in which the Joint Venture is structured and controlled.

.....

.....

.....

The undersigned warrants that he/she is duly authorised to sign this Joint Venture disclosure form and affirms that the foregoing statements are correct and include all the material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual joint venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture Agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorized representatives of the Employer.

Duly authorized to sign on behalf of:

..... (the Joint Venture)

Signature: Print Name:

Name:

Address:

.....

Telephone:

Date:

Duly authorized to sign on behalf of:

..... (Partner No. 1)

Signature: Print Name:

Name:

Address:

.....

Telephone:

Date:

Duly authorized to sign on behalf of:

..... (Partner No. 2)

Signature: Print Name:

Name:

Address:

.....

Telephone:

Date:

Duly authorized to sign on behalf of:

..... (Partner No. 3)

Signature: Print Name:

Name:

Address:

.....

Telephone:

Date:

E. 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:

<input type="checkbox"/> a member of any municipal council <input type="checkbox"/> a member of any provincial legislature <input type="checkbox"/> a member of the National Assembly or the National Council of Province <input type="checkbox"/> a member of the board of directors of any municipal entity <input type="checkbox"/> an official of any municipality or municipal entity	<input type="checkbox"/> 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) <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity <input type="checkbox"/> 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:

<input type="checkbox"/> a member of any municipal council <input type="checkbox"/> a member of any provincial legislature <input type="checkbox"/> a member of the National Assembly or the National Council of Province <input type="checkbox"/> a member of the board of directors of any municipal entity <input type="checkbox"/> an official of any municipality or municipal entity	<input type="checkbox"/> 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) <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity <input type="checkbox"/> 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 Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other Tendering entities submitting Tender offers and have no other relationship with any of the Tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; 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			

F. RECORD OF ADDENDA TO TENDER DOCUMENTS

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

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

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Tenderer			

G. PROPOSED AMENDMENTS AND QUALIFICATIONS

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

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

Page	Clause or item	Proposal

Signed

Date

Name

Position

Tenderer

H. FORM OF INTENT TO PROVIDE A DEMAND GUARANTEE

If my/our Tender 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
Tenderer		

I. SCHEDULE OF PROPOSED SUBCONTRACTORS

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

We confirm that all Subcontractors who are contracted to construct a house are registered as home builders with the National Home Builders Registration Council.

	Name and address of proposed Subcontractor	Nature and extent of work	Previous experience with Subcontractor.
1.			
2.			
3.			
4.			
5.			
Signed		Date	
Name		Position	
Tenderer			

J. SCHEDULE OF AVAILABLE INFRASTRUCTURE, RESOURCES AND EXPERIENCE

1. Tenderer's List of Third Party Design Engineers

In the event that the Tenderer desires to design all or part of the Works or submit any alternative, he/she shall list here-following, the Design Engineers, accomplished in the specific field of practice, which he/she proposes to employ for the purpose of third party certification of all works designed by the Tenderer for the Works.

- Notes: (i) All costs of third party designs shall be borne solely by the Tenderer.
(ii) This Schedule must be accurately completed. Phrases such as "to be advised" will not be accepted.

Section of Works	Name and Address of Registered Engineer				ECSA Registration No.

2. Tenderer's Personnel Profile

Key Staff Permanently employed, of foreman level and above	Number of staff
Sub-Total	
Other Permanent Staff	Number of staff
Sub-Total	
Temporary Staff	Number of staff
Sub-Total	

3. **List the Firms who provide the following services:**

Service	Name	Contact Person	Telephone
Accounting			
Auditing			
Insurance			
Legal			

4. **Identify any amounts of money loaned to your enterprise, indicating the loan source, date and amount**

Loan Source	Address	Date of Loan	Loan Amount

5. **List a maximum of five contract which your enterprise is engaged in and has not yet completed**

Contract Description	Location	Client	Contract Amount	Expected Completion (month & year)

6. **List the four largest assignments completed by your enterprise in the last three years**

Nature of Work Performed	Client	Consultant Contact Person	Telephone No.	Contract Amount

7. **Address of workshop facilities from where maintenance of works will be undertaken**

.....

.....

8. **Address of Branch Offices in the RSA**

.....

.....

K. FINANCIAL INFORMATION OF TENDERER

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

Tenderer Details

Tender Description :

Contract Period :

Name of Tenderer :
.....

Bank Account Number :

Tendered 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

..... (Tenderer)

has operated an account with us for the last years.

We have been requested to provide a bank rating based in relation to the financial capability of the Tenderer, taking into account directives set out in the following two tables.

Financial Capability	
Maximum value of contract that the Tenderer is considered capable of	Value on which Bank Rating must be used
up to R300 000	R24 000
R1 000 000	R78 000
R3 000 000	R240 000
R5 000 000	R480 000
R10 000 000	R900 000
R30 000 000	R2 400 000
R100 000 000	R7 800 000

BANK RATING	
Bank Code	Description of Bank Code
A	Undoubted for the amount of enquiry
B	Good for the amount of enquiry
C	Good for the amount quoted if strictly in the way of business
D	Fair trade risk for amount of enquiry
E	Figures considered too high
F	Financial position unknown
G	Occasional dishonours
H	Frequent dishonours

A bank letter must be submitted and should be specific for this project and not older than 30 days

ANNEXURE: B

L. CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: _____ (Name of Tenderer)

FURTHER DETAILS OF TENDERER(S); DIRECTORS/SHAREHOLDERS/PARTNERS, ETC.

Directors/share holders/Partner	Physical address of the Business	Municipal Account No.	Physical residential address of the Director/ Shareholder/ Partner	Municipal Account No.

NB: Please attach certified copy of ID document(s)

Signatory

Date

Witnesses

1. _____
Full Names

Signature

Date

2. _____
Full Names

Signature

Date

ANNEXURE: C

M. AUTHORISATION FOR DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: _____ (Name of the Tenderer or Consortium)

I, _____ the undersigned, hereby authorise the Polokwane Municipality to deduct the full amount outstanding by the business organisation/Director/Shareholder/Partner, etc. from any payment due by us/me.

Signed at _____ Date _____ Month _____ 20_____

Print Name: _____

Signature: _____

Thus done and signed for and on behalf of the Tenderer/Contractor

Signatory

Date

Witnesses

1. _____
Full Names

Signature

Date

2. _____
Full Names

Signature

Date

MBD 8

N. DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1. This Municipal Tendering Document must form part of all Tenders 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 to combat the abuse of the supply chain management system.
3. **The of any Tenderer may be rejected if the Tenderer, or any of its directors have:**
 - a) Abused the Municipality'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) Wilfully neglected, reneged or failed to comply with any government, municipal or public sector contract during the past five years; or
 - d) Been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corruption 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 Tender.**

ITEM	QUESTION	YES	NO
4.1	Is the Tenderer or any of its directors listed on the National Treasury's database as a company or person 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 National Treasury after the audi alteram partem rule was applied).		
4.1.1	If so, furnish particulars:		
4.2	Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corruption Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury's website www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012 326 5445).		
4.2.1	If so, furnish particulars:		
4.3	Was the Tenderer 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?		
4.3.1	If so, furnish particulars:		
4.4	Does the Tenderer or any of its directors owe any municipal rates and taxes or municipal charges to the municipality/municipal entity, or any other municipality/municipal entity, that is in arrears for more than three months?		
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the Tenderer 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?		
4.5.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) _____
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TO BE 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 Tenderer

SBD 4

O. DECLARATION OF INTEREST

1. No Tender will be accepted from persons in the service of the State*.
2. Any person, having a kinship with persons in the service of the State, including a blood relationship, may make an offer/s in terms of this invitation to Tender. In view of possible allegations of favouritism, should the resulting Tender, or part thereof, be awarded to persons connected with or related to persons in service of the State, it is required that the Tenderer 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 Tender.

Full Name: _____

Identity No: _____

Company Registration No: _____

Tax Reference No: _____

VAT Registration No: _____

Are you at present in the service of the State? **Yes/No**

If so, furnish particulars

- **Municipal Supply Chain Management Regulation:** "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 National Council of Provinces

(b) A member of 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 Parliament or provincial legislature.

(f) A member of the accounting authority of any national or provincial public entity; or

(g) An employee of Parliament or a provincial legislature

Have you been in the service of the State for the past twelve months? **YES/NO**

If so, furnish particulars.

Do you have any relationship (family, friend, other) with persons in the service of the State and who may be involved with the evaluation or adjudication of this Tender?

YES/NO

If so, furnish particulars.

Are you aware of any relationship (family, friend, other) between a Tenderer and any persons in the service of the State who may be involved with the evaluation or adjudication of this Tender?

YES/NO

If so, furnish particulars?

Are any of the company's directors, managers, principle shareholders or stakeholders in service of the State?

YES/NO

If so, furnish particulars.

Are any spouses, child or parent of the company's directors, managers, principle shareholders or stakeholders in service of the State?

YES/NO

If so, furnish particulars?

CERTIFICATION

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

Position

Name of Tenderer

SBD5

This document must be signed and submitted together with your Tender

P. THE NATIONAL INDUSTRIAL PARTICIPATION PROGRAMME

INTRODUCTION

The National Industrial Participation (NIP) Programme, which is applicable to all government procurement contracts that have an imported content, became effective on the 1 September 1996. The NIP policy and guidelines were fully endorsed by Cabinet on 30 April 1997. In terms of the Cabinet decision, all state and parastatal purchases / lease contracts (for goods, works and services) entered into after this date, are subject to the NIP requirements. NIP is obligatory and therefore must be complied with. The Industrial Participation Secretariat (IPS) of the Department of Trade and Industry (DTI) is charged with the responsibility of administering the programme.

1 PILLARS OF THE PROGRAMME

1.1 The NIP obligation is benchmarked on the imported content of the contract. Any contract having an imported content equal to or exceeding US\$ 10 million or other currency equivalent to US\$ 10 million will have a NIP obligation. This threshold of US\$ 10 million can be reached as follows:

- (a) Any single contract with imported content exceeding US\$10 million.or
- (b) Multiple contracts for the same goods, works or services each with imported content exceeding US\$3 million awarded to one seller over a 2 year period which in total exceeds US\$10 million. or
- (c) A contract with a renewable option clause, where should the option be exercised the total value of the imported content will exceed US\$10 million. or
- (d) Multiple suppliers of the same goods, works or services under the same contract, where the value of the imported content of each allocation is equal to or exceeds US\$ 3 million worth of goods, works or services to the same government institution, which in total over a two (2) year period exceeds US\$10 million.

1.2 The NIP obligation applicable to suppliers in respect of sub-paragraphs 1.1 (a) to 1.1 (c) above will amount to 30 % of the imported content whilst suppliers in respect of paragraph 1.1 (d) shall incur 30% of the total NIP obligation on a *pro-rata* basis.

1.3 To satisfy the NIP obligation, the DTI would negotiate and conclude agreements such as investments, joint ventures, sub-contracting, licensee production, export promotion, sourcing arrangements and research and development (R&D) with partners or suppliers

A period of seven years has been identified as the time frame within which to discharge the obligation

2. REQUIREMENTS OF THE DEPARTMENT OF TRADE AND INDUSTRY

2.1 In order to ensure effective implementation of the programme, successful Tenderers (contractors) are required to, immediately after the award of a contract that is in excess of **R10 million** (ten million Rands), submit details of such a contract to the DTI for reporting purposes.

- 2.2 The purpose for reporting details of contracts in excess of the amount of R10 million (ten million Rands) is to cater for multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as provided for in paragraphs 1.1.(b) to 1.1. (d) above.

3 TENDER SUBMISSIONS AND CONTRACT REPORTING REQUIREMENTS OF TENDERERS AND SUCCESSFUL TENDERERS (CONTRACTORS)

- 3.1 Tenderers are required to sign and submit this Standard Tendering Document (SBD 5) together with the Tender on the closing date and time.

- 3.2 In order to accommodate multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as indicated in sub-paragraphs 1.1 (b) to 1.1 (d) above and to enable the DTI in determining the NIP obligation, successful Tenderers (contractors) are required, immediately after being officially notified about any successful Tender with a value in excess of R10 million (ten million Rands), to contact and furnish the **DTI with the following information:**

- Tender / contract number.
- Description of the goods, works or services.
- Date on which the contract was accepted.
- Name, address and contact details of the government institution.
- Value of the contract.
- Imported content of the contract, if possible.

- 3.3 The information required in paragraph 3.2 above must be sent to the Department of Trade and Industry, Private Bag X 84, Pretoria, 0001 for the attention of Mr Elias Malapane within five (5) working days after award of the contract. Mr Malapane may be contacted on telephone (012) 394 1401, facsimile (012) 394 2401 or e-mail at Elias@thedti.gov.za for further details about the programme.

4 PROCESSES TO SATISFY THE NIP OBLIGATION

- 4.1 Once the successful Tenderer (contractor) has made contact with and furnished the DTI with the information required, the following steps will be followed:

- (a) the contractor and the DTI will determine the NIP obligation;
- (b) the contractor and the DTI will sign the NIP obligation agreement;
- (c) the contractor will submit a performance guarantee to the DTI;
- (d) the contractor will submit a business concept for consideration and approval by the DTI;
- (e) upon approval of the business concept by the DTI, the contractor will submit detailed business plans outlining the business concepts;
- (f) the contractor will implement the business plans; and
- (g) the contractor will submit bi-annual progress reports on approved plans to the DTI.

- 4.2 The NIP obligation agreement is between the DTI and the successful Tenderer (contractor) and, therefore, does not involve the purchasing institution

Tender number Closing date:.....

Name of Tenderer.....

Postal address

.....

Signature..... Name (in print).....

Date.....

MBD 5

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

For all procurement expected to exceed R10 million (all applicable taxes included), Tenderers 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.

.....

.....

- 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 Tenderer 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.

.....

.....

.....

.....

* Delete if not applicable

- 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, furnish particulars

.....

.....

- 4 Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic? ***YES/NO**

- 4.1 If yes, furnish particulars

.....

.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

**I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO
BE FALSE.**

.....
Signature

.....
Date

.....
Position

.....
Name of Tenderer

R. DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT

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

Before completing this declaration, Tenderers must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2011 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:201x.

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9. (1) and 9. (3) make provision for the promotion of local production and content.
- 1.2. Regulation 9.(1) prescribes that in the case of designated sectors, where in the award of Tenders local production and content is of critical importance, such Tenders must be advertised with the specific Tendering condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Regulation 9.(3) prescribes that where there is no designated sector, a specific Tendering condition may be included, that only locally produced services, works or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.
- 1.4. Where necessary, for Tenders referred to in paragraphs 1.2 and 1.3 above, a two stage Tendering process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.5. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.6. The local content (LC) as a percentage of the Tender price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 201x as follows:

$$LC = 1 - \left(\frac{x}{y} \right) \times 100$$

Where

x imported content

y Tender price excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date, one week (7 calendar days) prior to the closing date of the Tender as required in paragraph 4.1 below.

- 1.7. A Tender will be disqualified if:

- The Tenderer fails to achieve the stipulated minimum threshold for local production and content indicated in paragraph 3 below; and this declaration certificate is not submitted as part of the Tender documentation.

2. Definitions

- 2.1. **“Tender”** includes advertised competitive Tenders, written price quotations or proposals;
- 2.2. **“Tender price”** price offered by the Tenderer, excluding value added tax (VAT);
- 2.3. **“contract”** means the agreement that results from the acceptance of a Tender by an organ of state;
- 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
- 2.5. **“Duly sign”** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility (close corporation, partnership or individual).
- 2.6. **“imported content”** means that portion of the Tender price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
- 2.7. **“local content”** means that portion of the Tender price which is not included in the imported content, provided that local manufacture does take place;
- 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
- 2.9. **“Sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.
3. **The stipulated minimum threshold(s) for local production and content for this Tender is/are as follows:**

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
_____	_____ %
_____	_____ %
_____	_____ %

4. **Does any portion of the services, works or goods offered have any imported content?**
YES / NO
- 4.1 If yes, the rate(s) of exchange to be used in this Tender to calculate the local content as prescribed in paragraph 1.6 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date of the Tender.

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

Indicate the rate(s) of exchange against the appropriate currency in the table below:

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	

Other

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

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

IN RESPECT OF TENDER No.

ISSUED BY: (Procurement Authority / Name of Municipality / Municipal Entity):

.....

NB The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the Tenderer.

I, the undersigned, (full names),

do hereby declare, in my capacity as

of(name of Tenderer entity),
the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified Tender comply with the minimum local content requirements as specified in the Tender, and as measured in terms of SATS 1286.
- (c) The local content has been calculated using the formula given in clause 3 of SATS 1286, the rates of exchange indicated in paragraph 4.1 above and the following figures:

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

If the Tender is for more than one product, a schedule of the local content by product shall be attached.

- (d) I accept that the Procurement Authority / Municipality /Municipal Entity has the right to request that the local content be verified in terms of the requirements of SATS 1286.
- (e) I understand that the awarding of the Tender is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

MBD 9

S. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

- 1 This Municipal Tendering Document (MBD) must form part of all Tenders¹ 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 Tendering (or Tender rigging).² Collusive Tendering is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the Tender of any Tenderer if that Tenderer 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 Tendering 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 Tenders are considered, reasonable steps are taken to prevent any form of Tender-rigging.
- 5 In order to give effect to the above, the attached Certificate of Tender Determination (MBD 9) must be completed and submitted with the Tender:

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

² Tender rigging (or collusive Tendering) 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 Tendering process. Tender rigging is, therefore, an agreement between competitors not to compete.

S. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Tender:

(Tender Number and Description)

in response to the invitation for the Tender made by:

(Name of Municipality / Municipal Entity)

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

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

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the Tenderer to sign this Certificate, and to submit the accompanying Tender, on behalf of the Tenderer;
4. Each person whose signature appears on the accompanying Tender has been authorized by the Tenderer to determine the terms of, and to sign, the Tender, on behalf of the Tenderer;
5. For the purposes of this Certificate and the accompanying Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - (a) has been requested to submit a Tender in response to this Tender invitation;
 - (b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the Tenderer and/or is in the same line of business as the Tenderer
6. The Tenderer has arrived at the accompanying Tender 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 Tendering.
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 Tender;
 - (e) the submission of a Tender which does not meet the specifications and conditions of the Tender; or
 - (f) Tendering with the intention not to win the Tender.

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 Tender invitation relates.
9. The terms of the accompanying Tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.

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

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders 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 Tenderer

T. COMPLIANCE WITH OHSA (ACT 85 OF 1993)

Tenderers are required to satisfy the Employer and the Engineer as to their ability and available resources to comply with the above by answering the following questions and providing the relevant information required below.

1. Is the Contractor familiar with the OHSA (ACT 85 of 1993) and its Regulations?		YES	/	NO
2. Who will prepare the Contractor's Health and Safety Plan? (Provide a copy of the person/s curriculum vitae/s or company profile).				
3. Does the Contractor have a health and safety policy? (If yes, provide a copy). How is this policy communicated to all employees?		YES	/	NO
4. Does the Contractor keep records of safety aspects of each construction site? If yes, what records are kept?		YES	/	NO
5. Does the Contractor conduct monthly safety meetings? If yes, who is the chairperson of the meeting, and who attend these meetings?		YES	/	NO
6. Does the Contractor have a safety officer in his employment, responsible for the overall safety of his company? If yes, please explain his duties and provide a copy of his CV.		YES	/	NO
7. Does the Contractor have trained first aid employees? If yes, indicate, who.		YES	/	NO
8. Does the Contractor have a safety induction-training programme in place? (If yes, provide a copy)		YES	/	NO

Signature of Tenderer:

Date:

U. ORIGINAL BANK RATING LETTER

Attached the Bank Rating to this Page

V. 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 Tenderer 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 Tenderers 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 Tenderers interest to ensure that the list is complete.

Should there be insufficient space on the pages provided; the Tenderer 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.

I. LABOUR

DESIGNATION		RATE	
		R	C
Brick Layers	per hour		
Pipe Layers	per hour		
Plant Operators	per hour		
Truck Drivers	per hour		
Labour - unskilled	per hour		
- semi-skilled	per hour		
- skilled	per hour		

II. MATERIALS

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

III. TRANSPORT

DESIGNATION		RATE	
		R	C
Per cubic metre kilometre			

IV. PLANT AND EQUIPMENT

ITEM	DESCRIPTION	NON WORKING RATE*		OPERATING RATE		PER UNIT
		R	c	R	C	
	Excavator					
	LDV					
	Tipper 10 cubic meter					
	Grader (140G or equivalent)					
	Roller					
	Excavator					
	LDV					
	Tipper 10 cubic meter					
	Grader (140G or equivalent)					

*Only applicable on authority of the Engineer

THE CONTRACT

PART C1:	AGREEMENT AND CONTACT DATA
PART C2:	PRICING DATA
PART C3:	SCOPE OF THE WORKS
PART C4:	SITE INFORMATION

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

TABLE OF CONTENTS

PART C1: AGREEMENTS AND CONTRACT DATA (YELLOW COLOUR)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.2: CONTRACT DATA

C1.2.1: CONDITIONS OF CONTRACT

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

C1.3: DEMAND GUARANTEE AND RETENTION MONEY GUARANTEE

C1.4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1993

C1.5: AGREEMENT WITH ADJUDICATOR

PART C2: PRICING DATA (YELLOW COLOUR)

C2.1: PRICING INSTRUCTIONS

C2.2: BILL OF QUANTITIES

PART C3: SCOPE OF WORK (BLUE COLOUR) TABLE OF CONTENTS

C3.1: STANDARD SPECIFICATIONS

C3.2: PROJECT SPECIFICATIONS

C3.3: PARTICULAR SPECIFICATIONS

PART C 4: SITE INFORMATION (GREEN COLOUR)

C4.1: LOCALITY PLAN

C4.2: TENDER DRAWINGS

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

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 construction works viz.:

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2: CONTRACT NO.
.....: POLOKWANE MUNICIPALITY:

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

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

The offered total of the prices inclusive of value-added-tax is

.....

..... (Amount in words); R..... (Amount in figures)

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

Signature(s)

Print Name(s)

Capacity

For the Tenderer

.....
 (Name and address of organization)

Signature of witness..... Date:

Print Name

Important Note

This page to be duly completed by the **Tenderer** before submitting the Tender.

ACCEPTANCE

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

The terms of the contract are contained in

Part 1: Agreements and Contract Data (which include this Agreement)

Part 2: Pricing Data

Part 3: Scope of Work

Part 4: Site Information

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

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto, as listed in the Tender Schedules, as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which shall be signed by the authorized representative(s) of both parties.

The Tenderer shall, within 7 days of receiving a completed copy of this Agreement (including the Schedule of Deviations, if any), contact the Employer's Agent (whose details are given in the Contract Data) to arrange the delivery of any 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 the obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed copy of this original document, including the Schedule of Deviations (if any). Such date should be confirmed in a manner that can be read, copied and recorded and shall be accepted by the contracting parties as the Commencement Date. This agreement shall constitute a binding contract between the parties.

Signature(s)

Print Name(s)

Capacity

For the Employer

.....
(Name and address of organization)

Signature of witness..... Date:

Print Name

SCHEDULE OF DEVIATIONS

The extent of deviations from the Tender documents issued by the Employer before the Tender closing date is limited to those permitted in terms of the Conditions of Tender.

A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, be the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the Tender documents, and which it is agreed by the Parties becomes an obligation of the contract, shall also be recorded here.

Any change or addition to the Tender documents arising from the above agreements and recorded here shall also be incorporated into the final Contract Document.

- | | | |
|-----|--------------------|-------|
| 3.1 | Subject
Details | |
| 3.2 | Subject
Details | |
| 3.3 | Subject
Details | |

By the duly authorized representatives signing this Schedule of Deviations, the Employer and the Contractor agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Contractor and the Employer in concluding this process of offer and acceptance; in witness thereof the parties hereto have caused this agreement to be executed.

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

Signed by: Signed by:

Print Name: Print Name:

Address: Address:

For and on behalf of the **Employer** in the Presence of for and on behalf of the **Contractor** in the presence of

Witness: Witness:

Print Name: Print Name:

Date: Date:

C1.3 DEMAND GUARANTEE AND RETENTION MONEY

POLOKWANE MUNICIPALITY
(Not to be completed at tender stage)

C1.3 Performance Guarantee

In accordance with clause 6.2.1 of General Conditions of Contract, 2nd Edition 2010

Contract No: -----

Description of Contract: -----

GUARANTOR DETAILS AND DEFINATIONS

"Guarantor" means: -----

----- (Please put name of firm)

Please address: -----

Postal address: -----

Tel:-----

Fax: -----

"Employer" means: **POLOKWANE MUNICIPALITY.**

"Contractor" means: -----

----- (Please put name of firm)

"Guarantee sum" means: 10% of the contract amount

"**Engineer**" means: -----

"**Works**" means: Permanent works together with temporary works

"**Site**" means: The land and other places, made available by the Employer for the purpose of the contract, on under over in or through which the works are to be executed or carried out.

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

"**Contract Sum**" means: The accepted amount inclusive for tax of R-----

Amount in words: -----

"**Expiry Date**" This Guarantee shall expire upon the issue of the completion certificate issued by Polokwane Municipality signed by the Director of ENGINEERING Services, as such date is advised to the Guarantor in writing confirmed by the Employer.

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Work as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. Expiry Date" This Guarantee shall expire upon the issue of the final completion certificate issued by Polokwane Municipality signed by the Director of ENGINEERING Services, as such date is advised to the Guarantor in writing confirmed by the Employer
The Engineer and/or the Employer shall advise the Guarantor in writing of the date on the Certificate of the works has been issued.
3. The Guarantor hereby acknowledges that:
 - 3.1. Any reference in this performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a surety ship;
 - 3.2 . Its obligation under this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4.1. A copy of a first written demand issues by the Employer to the Contractor stating that payment of a sum certified by the Engineer and/ or Employer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2. A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address and / or postal address with a copy to the Contractor stating that period of seven (7) days has elapsed since the first written demand terms of 4.1 and the sum certificate has still not been paid;
 - 4.3. A copy of the aforesaid payment certificate which entails the Employer to receive payment in terms of the Contract sum in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address and/ or postal address calling up this Performance Guarantee, such demand stating that:

- 5.1. The contractor has been termination due to the Contractor's default and this performance Guarantee is called up in terms of 5; or
- 5.2. A provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
- 5.3. The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional /final sequestration and/or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the guarantor.
8. Payment by Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from his Performance Guarantee on account alleged to be prejudicial to the Guarantor.
10. The Guarantor chooses the physical address and postal address as stated above for the service of all notices for all purposes in connection herewith.
11. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after on claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
12. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
13. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Sign at -----

Date -----

Guarantor's signatory (1) -----

Capacity -----

Guarantor's signatory (2) -----

Capacity -----

Witness signatory (1) -----

Witness signatory (2) -----

RETENTION MONEY GUARANTEE (Not to be completed at tender stage)

In accordance with clause 6.2.1 of General Conditions of Contract, 2nd Edition 2010

Contract No: -----

Description of Contract: -----

GUARANTOR DETAILS AND DEFINATIONS

"Guarantor" means: -----

----- (Please put name of firm)

Please address: -----

Postal address: -----

Tel:-----

Fax: -----

"Employer" means: **POLOKWANE MUNICIPALITY.**

"Contractor" means: -----

----- (Please put name of firm)

"Guarantee sum" means: 10% of the contract amount

"**Engineer**" means: -----

"**Works**" means: Permanent works together with temporary works

"**Site**" means: The land and other places, made available by the Employer for the purpose of the contract, on under over in or through which the works are to be executed or carried out.

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

"**Contract Sum**" means: The accepted amount inclusive for tax of R-----

Amount in words: -----

"**Expiry Date**" This Guarantee shall expire upon the issue of the final completion certificate issued by Polokwane Municipality signed by the Director of ENGINEERING Services, as such date is advised to the Guarantor in writing confirmed by the Employer.

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Work as defined in the Contract.

RETENTION GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. Expiry Date" This Guarantee shall expire upon the issue of the final completion certificate issued by Polokwane Municipality signed by the Director of ENGINEERING Services, as such date is advised to the Guarantor in writing confirmed by the Employer
The Engineer and/or the Employer shall advise the Guarantor in writing of the date on the Certificate of the works has been issued.
3. The Guarantor hereby acknowledges that:
 - 3.1. Any reference in this performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a surety ship;
 - 3.3 . Its obligation under this Retention Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4.1. A copy of a first written demand issues by the Employer to the Contractor stating that payment of a sum certified by the Engineer and/ or Employer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2. A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address and / or postal address with a copy to the Contractor stating that period of seven (7) days has elapsed since the first written demand terms of 4.1 and the sum certificate has still not been paid;
 - 4.3. A copy of the aforesaid payment certificate which entails the Employer to receive payment in terms of the Contract sum in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address and/ or postal address calling up this Performance Guarantee, such demand stating that:
 - 5.1. The contractor has been terminated due to the Contractor's default and this Retention Guarantee is called up in terms of 5; or
 - 5.2. A provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Retention Guarantee is called up in terms of 5; and
 - 5.3. The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional /final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the guarantor.
8. Payment by Guarantor in terms of 5 will only be made against the return of the original Retention Guarantee by the Employer.
9. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from his Retention Guarantee on account alleged to be prejudicial to the Guarantor.
10. The Guarantor chooses the physical address and postal address as stated above for the service of all notices for all purposes in connection herewith.
11. This Retention Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after on claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
12. This Retention Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
13. Where this Retention Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Sign at -----

Date -----

Guarantor's signatory (1) -----

Capacity -----

Guarantor's signatory (2) -----

Capacity -----

Witness signatory (1) -----

Witness signatory (2) -----

**Coherent Health & Safety
Specifications**

Tender Number: 156/2016

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

FOREWORD

These health & safety specifications have been compiled in terms of the Occupational Health & Safety Act no. 85 of 1993 and Construction Regulations of 7 February 2014 as amended. It must be clear that this document is a management tool and should be used by the Principal Contractor and Contractors in order to comply with the aforementioned Act and regulations.

Should there be any contradiction between this document and the Act; the Act must take preference except where explicitly stated.

Similarly where this document is silent on a specific health & safety requirement, the Act must be used as the minimum requirement.

Should you be unclear about anything set out in this document, please contact this office.

These specifications are site specific and include all works to be done by the principal contractor. The principal contractor will be responsible for all the work on site.

COHERENT HEALTH AND SAFETY SPECIFICATIONS FOR: TARRING OF INTERNAL STREETS IN MUNICIPAL DEVELOPMENT IN BENDOR

TABLE OF CONTENTS

1. Introduction and background

- 1.1** Background to the Health and Safety Specifications
- 1.2** Responsibility and Accountability
- 1.3** Purpose of the Health and Safety Specifications
- 1.4** Implementation of the Health and Safety Specifications

2. Occupational Health & Safety Management System

- 2.1** Scope and Description of Project
- 2.2** Interpretation
 - 2.2.1** Application
 - 2.2.2** Definitions
- 2.3** Minimum Administrative Requirements
 - 2.3.1** Notification of Intention to Commence Construction Work
 - 2.3.2** Assignment of Principal Contractor's and Contractors' Responsible Persons to supervise and Co-ordinate Health and Safety on Site
 - 2.3.3** Competence of Principal Contractor's and Contractors' Responsible Persons
 - 2.3.4** Compensation of Occupational injuries and Diseases Act (COIDA) 130 of 1993
 - 2.3.5** Health and Safety Organogram
 - 2.3.6** Preliminary Hazard Identification and Risk Assessment, Progress Hazard Identification and Risk Assessment Reviews
 - 2.3.7** General Record Keeping
 - 2.3.8** Injury / Incident Reporting and Investigation
 - 2.3.9** Consolidation of Health & Safety Documentation
 - 2.3.10** Offences and Penalties
- 2.4** Principal Contractors, Contractors and Sub-contractors
 - 2.4.1** Principal Contractors and Contractors' Requirements
 - 2.4.2** Principal Contractor / Contractor Competency Assessment
 - 2.4.3** Pricing for health and safety compliance
 - 2.4.4** Principal Contractor's / Contractors' Health & Safety Plans
 - 2.4.5** Communication and Management

2.5 Polokwane Municipality identified Hazards and Potentially Hazardous Situations**2.5.1 Unforeseeable Hazards****2.6 Site Operational Requirements****2.6.1 Health and Safety Representative(s)****2.6.2 Health and Safety Committee(s)****2.6.3 Health and Safety Training****2.6.3.1 Induction****2.6.3.2 Awareness****2.6.3.3 Competence****2.6.4 Health & Safety Audits, Monitoring and Reporting****2.6.5 Emergency Procedures****2.6.6 First Aid Boxes and First Aid Equipment****2.6.7 Personal Protective Equipment (PPE) and Clothing****2.6.8 Occupational Health and Safety (OHS) Signage****2.6.9 Public and Site Visitor Health & Safety****2.6.10 Access to Site****2.6.11 Night Work (Before and After Hours)****2.6.12 Transport of Workers****2.6.13 Construction Health & Safety Officer****2.7 Physical Requirements****2.7.1 Earthworks (Including Trenching and Bulk Excavations)****2.7.2 Deliveries, Waste Removal, Stacking/Storage of Materials****2.7.3 Fire Extinguishers and Fire Fighting Equipment****2.7.4 Edge Protection and Penetrations****2.8 Plant, Machinery and Equipment****2.8.1 Construction Vehicles and Mobile Plant****2.8.2 Vessels under Pressure (VuP) and Gas Bottles****2.8.3 Hired Plant and Machinery****2.8.4 Traffic Control****2.8.5 Fall Protection / Scaffolding / Working in Elevated Positions****2.8.6 Lifting Machines, Tackle and Lifting Operations****2.8.7 Ladders and Ladder work****2.8.8 General Machinery****2.8.9 Electrical Installations and Portable Electrical Tools****2.9 Occupational Health****2.9.1 Medical Fitness****2.9.2 Industrial Hygiene (Exposure to Physical and Chemical Stresses)****2.9.3 Hazardous Chemical Substances (HCS)**

- 2.9.4 Welfare Facilities
- 2.9.5 Alcohol and Other Drugs
- 2.9.6 Duties of Designers

Annexure A

Primary Health & Safety Compliance

Annexure B

Principal Contractor and Contractors' Responsible Persons

Annexure C

General Compliance Requirements

Annexure D

Occupational Health & Safety – Health & Safety pricing guidelines

Annexure E

Occupational Health & Safety File Index

Annexure F

Notification of Construction work

1. INTRODUCTION AND BACKGROUND

- 1.1 The Construction Regulations (February 2014) places the onus on the Polokwane Municipality to prepare coherent health & safety specifications, highlighting risks not successfully eliminated during design. The Polokwane Municipality also has the opportunity to set the tone and standard of occupational health & safety on the construction site.

1.2 Responsibility and Accountability

It is imperative to understand the process of determining legal accountability, as the OHS-Act is the only criminal Act still administered by the Department of Labour. It *assumes* that the CEO is overall accountable even though he may delegate some of his responsibilities. This principal is entrenched in Section 37(1) of the Act and copied below for your benefit. This is generally referred to as the REASONABLE MAN TEST. SECTION 37: Acts or omissions by employees or Mandataries

Occupational Health and Safety Act of 1993 AND CONSTRUCTION REGULATIONS 2014

REQUIREMENTS:

1. Your attention is drawn to “General Duties of Employers to their Employees” as required by Section 8 of the Act.
2. You are required to:
 - 2.1 Sign a written “Agreement with Mandatary” as required by Sect 37(1) (2) of the Act before commencing any work on site.
 - 2.2 Ensure that all your employees receive the necessary Induction Training and have proof thereof.
Note: You must ensure that all employees under your control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences.
 - 2.3 Ensure the provision of Welfare Facilities for your employees as per Construction Regulation 30.
 - 2.4 Provide the Polokwane Municipality/Principal Contractor with your SHE Plan and Specifications
 - 2.5 Ensure that Method Statements, Risk Assessments and Safe Work Procedures are done and available.
 - 2.6 Provide the Polokwane Municipality/Principal Contractor with written appointment of the person who is going to supervise the Construction Work per Construction Reg. 8(1).

- 2.7 Provide the Polokwane Municipality/Principal Contractor with written designation of your nominated Health and Safety Representative as per Section 17(1).
Note: Your Health and Safety Representative will be expected to attend the Polokwane Municipality/Principal Contractor safety meetings.
- 2.8 If you employ more than five (5) persons, you are required to provide your own First Aid Box (GSR 3(2)).
- 2.9 If you employ more than ten (10) persons, you are required to provide your own qualified First Aider as per GSR 3(4)
Note: If you have difficulty in complying with items 2.7 and 2.8 above, you may arrange/come to an agreement with the Polokwane Municipality/Principal Contractor to make use of his First Aid facilities in case of injury. You will be expected to communicate such an agreement to your employees.
- 2.10 When working with Hazardous Chemical Substances, comply with HCS Reg. 3
Note: Asbestos and Lead Regulations are separate.
- 2.11 When doing blasting to comply with Explosives Regulations Chapter 10
- 2.12 When doing Excavation Work, comply with Construction Reg. 13
- 2.13 When using Construction Vehicles, comply with Construction Reg. 23
- 2.14 Ensure that good Housekeeping, Stacking and Storage principles are applied on this project as per Construction Reg. 27 and 28
- 2.15 Ensure that appropriate measures are taken to avoid the risk of Fire/Explosion and comply with requirements of Reg. 29
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 and the Construction Regulations; 2014 will be available for perusal in the Principal Contractor's site office.
4. You are required to comply with General Safety Regulations 2(1) to (7) and provide your employees with: personal protective equipment which will allow them to carry out their work in a safe manner, e.g. hard hats, gloves, safe footwear, eye protection, ear protection, waterproof clothing etc.
5. Reporting of Incidents of Occupational Diseases shall be done as per General Admin. Regulation 8 (Also see Sect 24 of the Act)
6. Compensation for Occupational Injuries and Diseases Act (No 130 of 1993) You are required to provide the Polokwane Municipality/Principal Contractor with proof of registration with the Compensation Commissioner/Federated Employer(s) Mutual when signing this agreement. If you are not registered, the Polokwane Municipality/Principal Contractor may deduct the necessary amounts from your progress payments and pay it over to the Commissioner to ensure that you are insured. See Section 80 and 89 of the COID Act.

Signature: _____
(Polokwane Municipality/Agent of Polokwane Municipality or Principal Contractor)

Signature _____
(Principal Contractor or Contractor)

AGREEMENT WITH MANDATARY IN TERMS OF SECTION 37(1) AND (2)

DEFINITION OF MANDATARY

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

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 provided that –

- (a) in doing or omitting to do that act the employee was acting without the connivance of 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 mutates mutandis apply in the case of a mandatary 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 mandatary with the provisions of this Act.

ACCEPTANCE BY MANDATARY

In terms of the provisions of Section 37(2) of the Occupational Health and Safety Act 1993

I, _____

acting for and on behalf of _____

(Company/Close Corporation/Enterprise/Owner/User) undertake to ensure that the requirements and provisions of the Act and Regulations are complied with.

Signature: _____

Print Name: _____
(Principal Contractor or Contractor)

Designation: _____

Date: _____

Mandatory-Workmen's Compensation/Federated Employers Mutual No.:

Signature: _____ Print Name: _____
(Polokwane Municipality/Agent of Polokwane Municipality or Principal Contractor)

Designation: _____ Date: _____

Company: _____

Project/Site: _____

**OCCUPATIONAL HEALTH AND SAFETY ACT OF 1993
CONSTRUCTION REGULATIONS 2014
CONTRACTOR**

CONSTRUCTION REGULATION 7

7(3): A principal contractor shall be responsible for the following:

- (a)** to provide any contractor who is making a bid or is appointed to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications pertaining to the construction work that has to be performed;
- (b)** to appoint each contractor contemplated in paragraph (a) in writing for the part of the project on a construction site

APPOINTMENT

Contractor, _____ (name)

of: _____
(Company/Close Corporation/Enterprise/Owner/and Labour Only Contractor)

is hereby appointed to perform construction work at:

Project/Site: _____

Company: _____
(Principal Contractor)Job/Safety specifications: _____
_____**You are reminded that:**

1. your documented Health and Safety plan based on the relevant applicable sections of the Principal Contractors Health and Safety Specifications, are provided to the Principal Contractor before commencing work on site
2. the Principal Contractor will discuss/negotiate with you regarding the contents of the Health and Safety Plan to approve it for implementation
3. a Health and Safety File, which shall include all documentation required in terms of the provisions of the Act and Regulations are kept available on site for inspection (Risk Assessments)
4. should you appoint another Contractor to perform or assist you with Construction Work, the responsibilities as required by the Construction Regulations shall apply to you as if you were the Principal Contractor
5. you promptly provide the Principal Contractor with any information which might affect the Health and Safety of any person at work carrying out Construction Work or any person who might be affected by the work of such a person at work or which might justify a review of the Health and Safety Plan
6. per Regulation 5(c) audits of your Health and Safety Plan will be undertaken on at least a monthly basis.
7. all your Employees have to undergo Safety Induction before starting work

Signature: _____ Date: _____
(Principal Contractor)

Designation: _____

ACCEPTANCE OF APPOINTMENT

I, _____ accept and understand the requirements of this appointment

Signature: _____ Date: _____
(Contractor)

Designation: _____

1.3 Purpose of the Health and Safety Specifications

The purpose of the H&S specifications document is to assist in achieving compliance with the Occupational Health & Safety Act 85/1993 (OHS Act) and the now promulgated Construction Regulations (February 2014) in order to prevent or as far as possible, reduce incidents and injuries. These specifications should act as the basis for the drafting of the Principal Contractor and Contractors' coherent health & safety plans. The health & safety specifications set out the requirements to be followed by the Principal Contractor and other Contractors (BASE – LINE RISK ASSESSMENT) so that the health & safety of all persons, including the public potentially at risk may receive the same priority as other facets of the project e.g. cost, program, environment, quality, etc.

1.4 Implementation of the Health and Safety Specifications (Drafting of the coherent Health & Safety Plan)

These health & safety specifications document forms an integral part of the contract, and the Principal Contractor is expected to use it when compiling its project-specific coherent health & safety plan. The Principal Contractor must forward a copy of these specifications to all Contractors at their bidding stage so that they can in turn prepare coherent health & safety plans relating to their operations.

2. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM ELEMENTS

2.1 Scope of the Project

These Specifications set out the requirements for eliminating or if this is not possible, for minimising as far as reasonably practicable, the risk of incidents and injuries occurring at Twickenham Mine. **This document covers work to be undertaken of the project and sets out the rules and procedures for**

engagement on the project. The scope also addresses legal compliance, Twickenham Mine standards, hazard identification and risk assessment, risk control, and the promotion of a health and safety culture amongst those working on the project. The health & safety specifications also make provision for the protection of those persons other than employees.

The Extent of the works:

- Establishment of Contractor Site Camp
- Setting out of Works
- Construction of 2.08 km Bus Route
- Construction of Kerbs
- Construction of a Pipe Culvert
- Construction of a Concrete V-Drain(concrete channel)
- Sealing using 30mm Continuously Graded Asphalt
- Road Signs
- Road Marking

2.2 Interpretations

2.2.1 Application

This specifications document is a legal compliance document compiled in terms of the OHS Act & Construction Regulations 2014 and is therefore binding. The document must be read in conjunction with other relevant legislation.

2.2.2 Definitions

The definitions as listed in the OHS Act 85/1993 and Construction Regulations (February 2014) shall apply.

2.3 Minimum Administrative Requirements

2.3.1 Notification of Intention to Commence Construction Work

The Principal Contractor must notify the Provincial Director of the Department of Labour in writing before construction work commences. A copy of this notification must be held in the Principal Contractor's health & safety file on site. Proof will only accept when the Department of Labour appear on the document or an acknowledgement letter from the Department of Labour.
See attached **Annexure "F"**

2.3.2 Assignment of the Principal Contractor's / Contractors' Responsible Persons to supervise and Co-ordinate Health and Safety on Site

The Principal Contractor and all Contractors must make supervisory appointments as well as other relevant appointments in writing (as stipulated by the OHS Act and Construction Regulations 2014). See attached **Annexure 'B'** for more detail on what health & safety management appointments are relevant on this project.

2.3.3 Competence of the Principal Contractor's / Contractors' Appointed Competent Persons

The Principal Contractor and Contractors' competent persons for the various risk management portfolios must fulfil the criteria as stipulated in terms of the definition 'Competent' in accordance with the Construction Regulations (February 2014).

2.3.4 Compensation for Occupational Injuries and Diseases Act 130 of 1993 (COIDA)

The Principal Contractor must have in its possession a letter of good standing issued by its Compensation Assuror as proof of registration. Contractors must also hold proof of workman's compensation assurance registration in the form of a letter of good standing and forward a copy to the Principal Contractor before they begin work on site. Contractors must be in good standing at all times while carrying out work on site.

2.3.5 Health and Safety Organogram

Including all appointed risk management competent persons. In cases where appointments have not yet been made, the organogram shall reflect the intended positions.

The organogram must be updated when there are changes in the Site Management Structure, and dated accordingly. The organogram merely serves as a quick reference to who is responsible for what risk portfolio in what area.

2.3.6 Preliminary Hazard Identification and Risk Assessments, Progress Hazard Identification and Risk Assessments Reviews.

The Principal Contractor must cause preliminary hazard identification and risk assessment to be performed under the leadership of a competent person before commencement of construction work. On this project detailed task-specific risk assessments based on the proposed sequence of work (method of work) must be compiled. Generic risk assessments will not be accepted.

The assessed risks, together with written safe work procedures for the 'medium & high-risk' rated activities must form part of the coherent site specific health and safety plan submitted for approval by House of Safety. The risk assessments must include:

- a) A list of hazards identified as well as potentially hazardous tasks; b) The risks which may result based on the list of hazards and tasks; c) A set of safe work procedures to be implemented with the aim of eliminating or if this is not possible, reducing and/or controlling the risks as far as reasonably practicable to ALARP (as low as reasonably practicable);
- d) A monitoring and review procedure of the risk assessments as they change i.e. how will the risk assessments be reviewed, when will they be reviewed and by whom.

The Principal Contractor must ensure that all Contractors inform, instruct and train their workers regarding any hazards, the associated risks and the related safe work procedures to be implemented before any work commences and thereafter at regular intervals as the risks change and as new risks develop. This training should be carried out in the form of toolbox health & safety talks. Contractors must conduct their own toolbox talks and submit proof of these talks in the form of attendance registers to the Principal Contractor at least every two weeks. Every worker on site must undergo such toolbox safety talks with the attendance registers kept in the Principal Contractor's safety file.

Contractors must conduct their own hazard identifications and risk assessments specific to their operations and forward a copy to the Principal Contractor.

The Principal Contractor when required must report on the status of these Contractor risk assessments to the Polokwane Municipality i.e. at audits.

2.3.7 General Record Keeping

The Principal Contractor and all Contractors must keep and maintain all the necessary Health and Safety records to demonstrate compliance with these Coherent Specifications, the OHS Act 85/1993, and the Construction Regulations (February 2014). The Principal Contractor must also ensure that all records of incidents/injuries, emergency procedures, training, planned maintenance inspections, monthly contractor audits, etc. are kept in the health & safety file(s) held in the site office. The Principal Contractor must ensure that every Contractor keeps its own health & safety file, maintains the file and makes it available on request (the file must include the Contractor's health & safety plan and all relevant records). Such 'Contractor safety files' must be audited by the Principal Contractor on a monthly basis with audit reports kept as proof.

2.3.8 Injury / Incident Reporting and Investigation

Injuries are to be categorised into first aid; medical; disabling (lost day); and fatal. When reporting injuries to the Polokwane Municipality, these categories must be used. The Principal Contractor must investigate all injuries. All Contractors must report injuries to the Principal Contractor immediately and the

Principal Contractor must inform the Polokwane Municipality immediately. All incidents reportable in terms of the provisions of Section 24 of the OHS Act must be reported to the local Dept. of Labour in the prescribed manner.

2.3.9 Consolidation of Health & Safety Documentation

It is the duty of the Principal Contractor to ensure that all documentation required to be kept or generated during the construction phase is consolidated into one set of documents that must be handed over to the Polokwane Municipality upon completion of the construction work. This consolidated safety file(s) should include instructions from the design team that will be required for the continued safe operation and maintenance of the new structure(s).

2.3.10 Offences and Penalties

Penalties may be imposed on the Principal Contractor and Contractors for ongoing non-compliance with the provisions of the Polokwane Municipality's coherent health & safety specifications, the Principal Contractor's coherent health & safety plan, site health & safety procedures and rules. Non-compliances identified during safety agent audits and visits will be categorised into one of three levels based on severity. These will be as follows: Life threatening situation - a prohibition order will be issued by means of a written instruction in the site instruction book or an explanation in an audit report. This activity must be seized immediately and corrective measures taken. Serious injury possible – a contravention notice will be issued with a time frame for compliance stipulated. Minor or no injury may result – an improvement notice will be issued. The corrective measures stipulated in the audit report must be taken. The methodology used to decide the above levels will be directly linked to the risk assessments of the Principal Contractor and contractors, Twickenham Mine Standards. The decision of the safety Agent will be final.

2.4 Principal Contractors, Contractors and Sub-contractors

2.4.1 Principal Contractor's and Contractors' Requirements

The Principal Contractor must ensure that all Contractors appointed by them comply with these Specifications, the Principal coherent health & safety plan as well as the OHS Act, Construction Regulations (February 2014), and other relevant legislation that may relate to the activities directly or indirectly. A Contractor, when appointing other Contractors as 'Sub-

contractors', shall mutatis mutandis ensure compliance as if it was the Principal Contractor.

The Principal Contractor may only allow a Contractor to begin work on site after receiving a coherent health & safety plan which must include a project specific hazard identification, risk assessments and safety measures. The Principal Contractor must test competency and finally approve his sub – contractor coherent site specific health and safety plan. The Principal Contractor must audit each of its contractors on a monthly basis, with audit reports kept in the health & safety file on site. The audit must include an administrative assessment as well as a physical inspection of the contractor's site activities. *The Principal Contractor must stop any Contractor from carrying out construction work that is not in accordance with the Principal Contractor's and/or Contractor's health & safety plan or if there is an immediate threat to the health and safety of persons.*

The Principal Contractor shall take all reasonable steps necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of the Construction Regulations;

The Principal Contractor shall take all reasonable steps to ensure that each contractor's coherent health and safety plan is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the Principal Contractor and contractors, but at least once every month;

The Principal Contractor must ensure that where changes are brought about to the design and construction, that sufficient health and safety information and appropriate resources are made available to contractors so as to allow them to execute the work safely;

The Principal Contractor must ensure that every contractor is registered and in good standing with a recognised compensation fund or with a licensed compensation insurer prior to work commencing on site;

The Principal Contractor must ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process;

The Principal Contractor shall discuss and negotiate with the contractor the contents of the coherent health and safety plan and shall finally approve that plan for implementation;

The Principal Contractor shall hand over a consolidated health and safety file to the Polokwane Municipality upon completion of the construction work and shall include a record of all drawings, designs, materials used and other similar information concerning the completed structure;

The Principal Contractor may only appoint a contractor to perform construction work when such Principal Contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary

competencies and resources to perform the construction work safely and that the contractor is an approved Twickenham Mine contractor.

2.4.2 Principal Contractor / Contractor Competency Assessment

The Principal Contractor must be reasonably satisfied that the contractors it intends to appoint have the necessary competencies and resources to safely conduct the work they will be appointed for. This should be established at tender stage and before appointments are made. One of the preferred ways of determining whether a contractor is competent is to make sure the contractor is an accredited contractor for Twickenham Mine. Once the contractor is appointed, but before it begins work on site a site- specific safety plan must be discussed and negotiated with the Principal Contractor. Such safety plan must be approved for implementation by the Principal Contractor.

The Principal Contractor and Contractors should submit the following documentation for perusal and verification by the Polokwane Municipality and Principal Contractor respectively:

- Coherent health & safety plan as compiled for this project; (including Risk assessments, safe work procedures, fall protection plan, PTW Issuer/PTW Holder certificates
- Management Structure as envisaged at tender (organogram);
- Letter of Good Standing with the Compensation Commissioner or FEM;
- Proof of health & safety training and other related training; (CV and certificates) Legislative appointment letters
- Notification of Construction work; (proof notification was done)

2.4.3 Pricing for Occupational Health & Safety Compliance All parties bidding to do work on this construction project must ensure that they have made provision for the cost of complying with this Specifications document as well as with the OHS Act and incorporated Regulations as a minimum requirement in their tender documentation. It must also be taken into consideration that time is money, which implies that sufficient time must be allowed for the implementation of the minimum OHS standards. No additional claims will be entertained at a later stage should a compliance requirement be prescribed in the OHS Act, incorporated regulations or in this Specifications document.

Annexure:

2.4.4 Contractors' Coherent Health & Safety Plans [Construction Regulations 7]

1. Introduction:

The Construction Regulations (2014) aims to improve overall management and co-ordination of Health, Safety and Welfare

throughout the Construction Phase and reduce the large number of serious and fatal injuries and cases of ill health, which occur every year in the Construction Industry.

In terms of the Construction Regulations (2014), the Principal Contractor is required to develop a Health and Safety Plan before work commences on site and review it throughout the Construction Phase. The degree of detail required in the Health and Safety Plan and the time and effort in preparing it should be in proportion to the nature, size and level of Health and Safety risks involved in the project. Projects involving minimal risks will call for simple, straightforward plans. Large projects or those involving significant risks such as this project will need much more detail.

Annexure:

2. What should the construction health & safety plan cover?

The Construction Health and Safety Plan should set out the arrangements for ensuring the Health and Safety of everyone carrying out the construction work as well as all other persons who may be affected by it. The index of this plan must be in line with Annexure:

2.4.5 Communication and Management of the work

The Principal Contractor must indicate in its health and safety management plan that it has made provision for the following:

- a. Management structure and responsibilities
- b. Health and Safety goals for the project and arrangements for monitoring and review of Health and Safety performance i.e. safety meetings; contractor meetings; risk assessment review, etc
- c. Arrangement for:
 - i. Regular liaison between parties on site i.e. meetings ii. Consultation with the work force i.e. toolbox talks
 - iii. The exchange of design information between the Polokwane Municipality, designers, and Contractors on site
 - iv. Selection and control of Contractors i.e. selection criteria; inspections; audits, etc.
 - v. Site health & safety induction and onsite training i.e. toolbox talks
 - vi. Welfare facilities, first aid, emergency planning and fire prevention strategy

- vii. The reporting and investigation of injuries and incidents including near misses what the intended system will be
 - viii. The production, approval and review of risk assessments, safe work procedures and method statements and how does the company's risk assessment system work.
- d. Site specific rules and procedures.

2.5 Polokwane Municipality identified Hazards and Potentially Hazardous Situations

The base line risk assessments for this project are a separate document. It must be clearly stated that this is by all means not limited to these risks alone.

2.5.1 Unforeseeable Hazards

The Principal Contractor must immediately notify Contractors as well as the Polokwane Municipality, in writing, of any hazardous or potentially hazardous situations that may arise during the performance of construction activities so that the necessary precautions may be taken before such work begins.

2.6 Site Operational Requirements

2.6.1 Health and Safety Representative(s)

The Principal Contractor and all Contractors must ensure that Health and Safety Representative(s) are appointed under consultation with the employees. The H&S representatives must be competent to carry out their functions. The appointments must be in writing. The Health and Safety Representatives should carry out monthly inspections, keep records of the inspections and report all findings to the Responsible Person or safety officer forthwith and at monthly health & safety committee meetings. At least one Health & safety representatives is required by all Employers on site.

2.6.2 Health and Safety Committees

The Principal Contractor must ensure that project health and safety committee meetings are held monthly with minutes kept. Meetings must be chaired by the Principal Contractor's Responsible Person. All Contractors' Responsible Persons and Health & Safety Representatives must attend the Principal Contractor's monthly health & safety meetings. The Principal Contractor's appointed supervisors must also attend health & safety meetings. The following topics must be tabled at meetings: management appointments and risk management portfolios; sub-contractor legal compliance issues; injuries and incidents; hazards and risk assessments (present and foreseen); safety procedures; method statements for

upcoming activities; planned inspections and registers/record keeping, etc. The committee chairperson must sign off and date the minutes.

2.6.3 Health and Safety Training

2.6.3.1 Induction

The Principal Contractor must ensure that all site personnel including all sub-contractors undergo the agreed health & safety induction training session held and managed by the P/Contractor before any worker starts work on the project. A record of attendance must be kept in the health & safety file. Workers must carry proof of inductions on their person while on site i.e. identification passport cards or similar to be agreed.

2.6.3.2 Awareness

The Principal Contractor must ensure that, on site, periodic toolbox health & safety talks take place at least once every two weeks. All site personnel including all sub-contractors must attend safety talks at such intervals and keep proof thereof. These talks should deal with risks relevant to the construction work at hand i.e. they should be based on the job-specific risk assessments and safe work procedures. Records of attendance must be kept in the P/contractor's health & safety file. All contractors' employees must attend safety awareness toolbox talks carried out by their supervisors, the attendance registers must be copied to the Principal Contractor together with information on the information discussed at the session.

2.6.3.3 Competence

All competent persons must have the knowledge, experience, training, and qualifications specific to the work they have been appointed to supervise, control and/or carry out. This must be assessed on a regular basis e.g. training, evaluation, and periodic audits by the Polokwane Municipality, progress meetings, etc. The Principal Contractor is responsible to ensure that Competent Contractors are appointed to carry out construction work on site.

2.6.4 Health & Safety Audits, Monitoring and Reporting

The Principal Contractor is obligated to conduct monthly audits on all Contractors appointed by it and keep audit reports in its health & safety file. Contractors have to audit their sub-contractors and keep records of these audits in *their* health & safety files, made available on request. The Polokwane Municipality/Agent will conduct monthly audits on the Principal Contractors' safety management plan.

2.6.5 Emergency Procedures

The procedure must detail the response procedures including the following key elements:

List of key competent personnel;
Details of emergency services;
Actions or steps to be taken in the event of the specific types of emergencies; Evacuation procedures: including routes and exits to be available on a drawing. Emergency procedure(s) must include, but shall not be limited to: fire; spills; injury to employees; damage to material / equipment / plant; use of hazardous substances; bomb threats; major incidents/injuries; evacuation; etc. The Principal Contractor must advise the Polokwane Municipality in writing forthwith, of any emergency situations, together with a record of action taken/action to be taken. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and made available to site personnel. The emergency plan will need to be reviewed from time to time as conditions/environment changes i.e. as building work increases in extent.

2.6.6 First Aid Boxes and First Aid Equipment

The Principal Contractor and all Contractors must appoint First Aider(s) in writing. The Principal Contractor must appoint at least one First Aider to start with, which first aider must be certificated. Copies of valid certificates are to be kept on site. The Principal Contractor must provide at least 1 (one) first aid box, adequately stocked at all times. Due to the nature of this project i.e. satellite work stations/areas, further first aid boxes must be provided close to the various work stations to allow for quick, effective treatment of injured persons. As the work progresses and the structure increases in height, extra first aid

2.6.7 Personal Protective Equipment (PPE) and Clothing

The Contractor must ensure that all site workers are issued with and wear the appropriate PPE as indicated in their risk assessments. The Contractors must make provision and keep adequate quantities of SANS approved PPE on site at all times according to their risk assessments. Safety harnesses are mandatory wherever work takes place in an elevated area where safe working platforms or ladders are not possible. Overalls clearly indicating the Contractor's logo must be worn and all sub- contractors must conform to this requirement. Eye protection must be worn by those working grinders, skill saws, high pressure water cleaners.. Even those workers in close proximity to these operations will also be required to wear such eye protection.

Safe footwear will be required by all workers. A high visibility vest is mandatory on a Twickenham Mine site.
Hard hats will be required by all workers, including those involved with internal work.

2.6.8 Occupational Health and Safety (OHS) Signage

The Principal Contractor must provide adequate on-site OHS signage. Including but not limited to: 'construction work - no unauthorised entry', 'beware of overhead work', 'hard hat area', first aid – to be posted up at all work areas/zones.

Signage must also be posted up at strategic locations to warn the public of diversions, alternative through ways and other irregularities caused by construction work (pedestrians and motorists).

Signs are also required as per law e.g. scaffolding and other potential risk areas/operations such as exposed edges and openings and trenches/excavations where persons are at work. Safety signs and awareness posters will also be required in strategic locations on site such as frequently used access routes, stairways and entrances to structures and buildings where the workers will continuously be made aware of health & safety. Health & safety signage must be well maintained including weekly inspections, cleaning, replacement and repair.

2.6.9 Public and Site Visitor Health & Safety

Public walkways and roadways must be kept clean and free of construction materials so as to prevent any negative impact on the public. Public roadways and walkways will have to be cleaned on a regular basis – daily inspections to be conducted by the Principal Contractor with action to be taken without delay (daily). Site visitors must be briefed on the hazards they may be exposed to as well as what measures are in place or should be taken to control these hazards. The Construction Regulations require that a record of these 'inductions' be kept on site. It is advised that a visitor book with site rules leaflet be kept at the reception/site office and all visitors to be directed to such point where they must read through the site safety information and sign the visitor book. It will be the Principal Contractor's prerogative to decide whether site visitors require supervision while on site. Visitor hard hats must be kept in the site office.

Where hoarding structures are required, such hoarding must be at least 1.8m high ready fence panels covered with shade cloth, secured in place and erected at a safe distance from the actual work. The public will also have to be diverted away from any demolition zones by means of signs and other suitable diversion methods. Glazed windows facing onto public walkways and roadways must be secured so as to prevent any risk of windows shattering and falling onto persons below. This may require boarding windows closed where the risk prevails. Where loading/offloading of equipment/plant/rubble/other materials takes place adjacent to public roadways or walkways, flagmen will be required to direct vehicles and pedestrians away from the loading area. Traffic cones or delineators will also be required demarcating the loading zone.

It is envisaged that mobile aluminium scaffolds and the like will be used extensively on site. These scaffolds will have to conform to the minimum requirements as set out in SANS 10085-2004 (A sketch. The maximum height of these scaffolds is not expected to be more than 6m and height to base width ratio are not seen to a problem (2,5m x 2m frames will be adequate) It has also been identified that some work, especially on the will be directly over exits, shop entrances and public walkways. It is of utmost importance that all work takes place behind an appropriate set of hoarding, thus keeping the public well away from overhead work. Scaffolds will also need to be enclosed by means of readymade fence at all times, isolating any potentially hazardous activities to within the scaffold platform and structure. An opening will be permitted to allow workers to enter/exit the scaffold in order to access the working platform (by means of an access ladder fastened to the internal face of the frames). The Safety Agent reserves the right to impose such scaffold safety measures.

Walkways must be kept free of materials and must remain slip free. Due to the fact that water, detergents, wet cement, etc. will be used; slippery wet floors will be a risk and must be controlled as far as reasonable. Members of the public will probably have to be re-routed at times to allow for public walkway cleaning and drying. Signs will also have to be placed, warning members of the public of the risk – signs in isolation are however not an adequate safety measure deemed.

2.6.10 Access to Site

Where any permits are necessary from the local authorities, this will be the Principal Contractor's responsibility. The road surface of all public and private roadways and pavements/pedestrian walkways must remain in a reasonably clean state, free of excessive sand, stone, water or other construction related materials. The access gate(s) must be controlled and visitors must sign in and report to the site office for further instruction.

2.6.11 Night Work (After Hours)

No night work will be allowed within the hazardous zone on this project.

2.6.12 Transport of Workers

The Principal Contractor and other Contractors may not transport: Persons together with goods or tools unless there is an appropriate area or section to store the tools or equipment; Contractors must adhere to the National Road Traffic Act.

2.6.13 Construction Health & Safety Officer

A full-time construction health and safety officer (in terms of Construction Regulation 8(6)) will be required on this project. This health and safety officer must be registered with the SACPCMP.

The construction health and safety officer will be required to carry out at least the following duties:

Health & safety audits and inspections on site including administrative and Physical audits of all Contractors' health & safety plans, files and activities, and record findings in the form of audit reports to be kept in the health & safety file; b) Assess, and finally approve contractor safety plans;

2.7 Physical Requirements

2.7.1 Earthworks (including Trenching and excavations)

The Principal Contractor must ensure when earthworks are being conducted that the specific area are proper barricaded to ensure that no unauthorised persons do enter this area.

All employees working in this area must wear reflective vest and this would include all visitors to the earthworks site.

Before any earthworks may start the Principal Contractor must familiarise himself of any services in the direct earthworks area.

All plant and machinery requirements have been specify in 2.8 of this specifications.

2.7.2 Deliveries, Waste Removal, Stacking/Storage of Materials

The Principal Contractor and other relevant contractors must ensure that there is an appointed stacking supervisor and all materials, formwork and all equipment is stacked and stored safely, on level, compact ground, out of access ways and no more than three times the minimum base width in height. Pallets of bricks may not be stacked more than two above each other and must be on timber pallets. No construction materials or equipment may be stacked or stored in public areas unless authorised by the Polokwane Municipality and fenced off as per the Polokwane Municipality's requirements. Waste materials must be kept within designated construction zones. The Principal Contractor will be responsible for co-ordinating and managing this function.

2.7.4 Fire Extinguishers and Fire Fighting Equipment

The Principal Contractor and relevant Contractors shall provide adequate, regularly serviced fire fighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted up as required. A minimum of four 9kg dry chemical powder fire extinguishers must be available in and around the site office establishment and stores. Fire extinguishers must also be placed at all work zones/areas, in strategic locations. Wherever 'hot work' is taking place, additional fire extinguishers must be on hand. Contractors are responsible for ensuring compliance with hot work procedures and must be

in possession of method statements detailing the safe working procedures.

*'Hot work' includes all work that generates a spark or flame and may therefore result in a fire.

Further, during the finishing stages of the construction phase when the finishing trades are on site, fire extinguishers will be required at strategic locations within the work areas – to be supplied and managed by the Principal Contractor.

2.7.5 Edge Protection and Penetrations

The Principal Contractor must ensure that all exposed edges and openings are guarded and demarcated at all times until permanent protection has been erected. The Principal Contractor must use hard barricading when contemplating the protection of openings, slabs and edges:

2.8 Plant, Machinery and Equipment

2.8.1 Construction Vehicles & Mobile Plant

"Construction Plant" includes all types of plant including but not limited to, cranes, piling rigs, excavators, construction vehicles, compaction plant, batch plants and lifting equipment.

The Principal Contractor must ensure that such plant complies with the requirements of the OHS Act, Construction Regulations (Feb 2014) and any manufacturers specifications. The Principal Contractor and all relevant contractors must inspect and keep records of inspections on construction vehicles and mobile plant used on site. Only authorised/competent persons in the possession of the necessary training certificates and in possession of a certificate of medical fitness may operate construction vehicles and mobile plant.

Appropriate PPE and clothing must be provided and maintained in good condition at all times.

Reverse alarms must be installed on construction vehicles i.e. trucks, digger loaders, etc.

Vehicles and pedestrian traffic must be safely separated, preventing any unnecessary interfacing.

Any vehicle or mobile plant using any public road must be roadworthy and carry a certificate proving this. Likewise any operator of such construction vehicle or mobile plant will have to carry the necessary driver's license.

2.8.2 Vessels under Pressure (VuP) and Gas Bottles

The Principal Contractor and all relevant Contractors must comply with the Pressure Equipment Regulations, including:

Providing competency and awareness training to the operators/users;
 Providing the relevant PPE and clothing;
 Inspecting equipment regularly (every 3 months) and keeping records of these inspections;
 Providing appropriate fire fighting equipment (Fire Extinguishers) on hand;
 Ensuring that oxygen and acetylene bottles are secured in an upright position, do not show signs of corrosion or damage and have flash back arrestors fitted on both torch & bottle ends of hoses.

2.8.3 Hired Plant and Machinery

The Principal Contractor must ensure that any hired plant and machinery used on site is safe for use and complies with the minimum legislated requirements. The necessary requirements as stipulated by the OHS Act and Construction Regulations (2014) shall apply. The Principal Contractor shall ensure that operators hired with machinery are competent and that competency and medical certificates are kept on site in the health & safety file. Any load test requirements and inspections in terms of legislation must be complied with and copies of load test certificates and inspections must be kept in the health & safety file. All relevant contractors

2.8.4 Traffic Control

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 minimise 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 road.

2.8.5 Fall Protection / Scaffolding or cherry picker / Working in elevated positions

Working at heights includes any work that takes place in an elevated position. The Principal Contractor must submit a risk-specific fall protection plan in accordance with the Construction Regulations (2014) before this work is undertaken.

All scaffolding must comply with the requirements of SANS 10085-2004. Scaffolding must be declared safe for use by a competent scaffold inspector who must complete the scaffold register. Inspections must then be carried out weekly, after bad weather, after any alterations, after an incident, and before dismantling. These scaffold inspections must be conducted by a trained certificated scaffold inspector. The Principal Contractor must keep all scaffold inspection registers on site. Full time scaffold erectors must be available on site to carry out any scaffold erections, alterations and dismantling. No such work may be carried out by untrained personnel.

Should a scaffold contractor be appointed, the agreement between the two parties must be clearly set out in writing in terms of Section 37(2) of the OHS Act. The Principal Contractor must also appoint one or more of its own supervisory members to supervise/co-ordinate scaffolding on site. Working in elevated positions requires the preparation of a fall protection plan. The plan must include all relevant fall related risk assessments and safe work procedures. All persons working in elevated positions must be evaluated for physical and psychological fitness. The Principal Contractor and Contractors must explain their methodology in this regard. The Fall

Protection Plan developer must be competent with a minimum qualification of NQF Level 4. These courses can be done through NOSA or any other accredited institution. All persons working in elevated positions must be informed of the risks and safety measures (in other words all workers must be trained on the fall protection plan, in the form of a toolbox safety talk) and records of this training/information session must be kept on site. See Regulation 8(2) of the Construction Regulations for further information to be included in the fall protection plan.

Work from elevated positions may only be conducted as if it were being conducted from a safe ladder or safe scaffold. All openings, edges, and the like must be adequately guarded (see 'edge protection and penetrations' above).

Where fall prevention or fall arrest devices are being used, the correct devices must be used for the intended purpose and they must be properly inspected and maintained. Workers must be trained in the use and maintenance of the fall prevention and arrest equipment/devices. Safety belts for fall arrest are prohibited. Full body harnesses must be worn. Where lifelines or other devices are required, such devices must be detailed in the fall protection plan of the Contractor concerned. Workers must have the opportunity to be secured from falling at all times – this is the

responsibility of the Contractor concerned, but must be enforced by the P/Contractor. It is advised that a fall protection permit system be initiated on site with the aim of keeping control of contractors working in elevated locations.

Mobile scaffolds may not exceed 3 X their minimum base width in height and must be adequately boarded as per their loading requirement. Mobile scaffolds frame towers must be erected as per the manufacturers' requirements (copies of these erection specifications/data sheets must be available to the scaffold erectors and scaffold supervisor on site). A copy of the scaffold code of practise must available on site (SANS 10085-2004) Temporary gangways/elevated access walkways must comprise of at least three scaffold boards (675mm wide) with guardrails on either side when such walkways are above 2m from the ground. Such gangways and other platforms must be supported from below, preventing excessive loading and platform collapse.

2.8.6 Formwork and Support Work (Temporary works)

The Principal Contractor must ensure that the provisions of regulation 12 of the Construction Regulations (2014) are adhered to. These provisions must include but not be limited to ensuring that all design drawings are available on site, that all formwork and support work equipment used is examined for suitability before use (by the supplier(s)) with proof of these inspections forwarded to the hirer/user. All formwork and support work must be inspected by a competent person appointed in writing, immediately before, during and after placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work has been removed. Records of all inspections must be kept in a register on site held by the Principal Contractor. The inspection records must suitably sequenced and filed for easy reference by the Safety Agent and other interested party.

2.8.7 Ladders and Ladder Work

The Principal Contractor must ensure that all ladders are: inspected daily with monthly records kept; in good safe working order; the correct height for the task; extend at least 1m above the landing; fastened and secured; and at a safe angle. Stepladders must be safe for use, must be the correct height for the task and the top two rungs may not be used. Records of inspections must be kept in a register on site. Contractors using their own ladders must ensure the same.

2.8.8 General Machinery

The Principal Contractor and relevant contractors must ensure compliance with the Driven Machinery Regulations, which includes carrying out risk assessments on the machines, inspecting machinery regularly, appointing

a competent person to inspect and ensure maintenance, issuing PPE and relevant clothing, and training those who use machinery.

2.8.9 Electrical Installations and Portable Electrical Tools

The Polokwane Municipality will ensure as far as possible that the Principal Contractor is made aware of the positions of all electrical power lines. The Principal Contractor must notify the Polokwane Municipality should it not be sure of the location of any electrical power lines.

The Principal Contractor must comply with the Electrical Installation Regulations, the Electrical Machinery Regulations and the Construction Regulations (CR 24).

The Principal Contractor must keep a copy of the Certificate of Compliance (CoC) for its temporary electrical power supply. A revised CoC is required whenever the installation is altered or changed in any way. All temporary electrical installations must be inspected at least weekly by a competent person appointed in writing with records kept. Portable electrical tools and equipment must be visually inspected daily with records kept. It is advised that the P/Contractor appoints the electrical contractor to inspect the temporary electrical installation on a weekly basis with feedback given in a report so that any maintenance and repairs can be undertaken. Such appointed inspector must 'stop' or isolate any distribution board that is unsafe for use.

2.9 Occupational Health and Hygiene

2.9.1 Medical Fitness

The Principal Contractor must ensure that all employees that will be working on this site have a valid medical certificate of fitness specific for this construction site, issued by an Occupational Health Practitioner in the form of Annexure 3 (Construction Regulations 2014) , before they start working on site.

2.9.2. Industrial Hygiene (exposure to physical and chemical stress factors)

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, and adsorption through the skin of hazardous chemical substances.

2.9.1.1 Noise induced hearing loss is a highly underrated occupational condition. Occupational noise emitted by construction machinery and power tools must be controlled as far as possible by implementing engineering solutions such as noise dampening, regular maintenance, servicing and inspection, screening off the

noise, and reducing the number of persons exposed. Personal protective equipment such as earmuffs and earplugs must also be used in conjunction with engineering controls so as to reduce noise exposure to below the acceptable levels.

- 2.9.1.2** Ergonomics is the study of how workers relate to their workstations. We advise the Principal Contractor and Contractors to take this into consideration when conducting risk assessments, thereby improving the worker-task relationship, which will in turn improve productivity and reduce chronic conditions such as back strains, joint problems and mental fatigue, amongst others.

2.9.2 Hazardous Chemical Substances (HCS)

The Principal Contractor and other relevant contractors must provide the necessary training and information as far as the use, transport, and storage of HCS. The Principal Contractor must ensure that the use, transport, and storage of HCS are carried out as prescribed in the HCS Regulations. The Principal Contractor and contractors must ensure that all hazardous chemicals on site have Material Safety Data Sheets (MSDS) on site and

the users are made aware of the hazards and precautions that need to be taken when using the chemicals. The First Aiders must be made aware of the MSDS's and how to treat HCS incidents appropriately. Copies of the MSDS's must be kept in the first aid box and in the store. All containers must be clearly labelled.

Flammable substances must be stored separately, away from other materials, and in a well-ventilated area (appropriate cross ventilation). A competent person should be appointed to be in control of this portfolio. Stores must be well ventilated, preventing the build-up of flammable and toxic gases/vapours. Should fuel storage containers be used, they must conform to the general environmental legislation and Environmental Management Plan (if a requirement on this site). The necessary safety signage must to be posted up – 'no naked flames', 'no smoking'. Two 9kg DCP fire extinguishers must be placed near to the fuel containers, but not within 5m of the containers. These extinguishers are over and above the minimum four required for the offices and stores.

2.9.3 Welfare Facilities

The Principal Contractor must supply sufficient toilets (1 toilet per 30 workers), clean, lockable changing facilities, hand washing facilities, soap, toilet paper, and hand drying material. Waste bins must be strategically placed around site and emptied regularly. Workers must not be exposed to hazardous materials/substances while eating and must be provided with adequate, sheltered eating areas complete with benches and tables. Stores may not double up a change rooms or mess areas.

2.9.4 Alcohol and other Drugs

No alcohol and/or other drugs will be allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription medication must inform his/her superior, who shall in turn report this to the Principal Contractor forthwith. Any person suffering from any illness/condition that may have a negative effect on his/her /anyone else's health or safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith. Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for its records.

2.9.5 Duties of Designers

A designer must ensure that he/she complies with the requirements of the Construction Regulation 6. Designers have a duty both to assist in health and safety during construction as well as post construction to ensure safe occupation of the structures concerned. This will include informing the Principal Contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and making available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered. Designers must ensure that the following information is included in a report and made available to the Principal Contractor:

PRIMARY HEALTH AND SAFETY COMPLIANCE

Project: **UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE**

ANNEXURE A

The Principal Contractor and Contractors must submit compliance with Annexure 'A' before commencing on work on site. **Compliance with Annexure 'A' must be maintained and proven to the Safety Agent at audits.**

HS Site	Requirement	Legal Reference	Compliance required:
A1	Health & Safety Plan (H & S Plan)	Constructions Regs.	Withing one weeks of receipt of these
A2	Notification of intention to commence	Complete schedule 1 (Construction	Before commencement on site

A3	Assignment of responsible persons to supervise construction work	OHS Act ~ Section 16(2) appointee ~ all written appointments under the construction regulations	Before commencement on site
A4	Competence of responsible persons in the form of CV's related work history of appointees	OHS Act ~ Section 16(2) appointee ~ all written appointments under the construction regulations 2014	Together with H & S Plan
A5	Compensation for occupational injuries and diseases – proof of registration and in good	COIDA or FEMA	Together with H & S Plan
A6	Health and safety organogram showing all safety management certification and positions	Polokwane Municipality requirement	Together with H & S Plan
A7	Initial hazard identification and risk assessment	Construction regulations	Together with H & S Plan
A8	Fall protection plan (first draft) as defined in the construction regulations	Construction regulations	Together with H & S Plan

HSS = health & safety specifications

OHS Act = occupational health & safety Act

CR = construction regulations

COIDA = compensation for occupational injuries and diseases Act

ASSIGNMENT OF PRINCIPAL CONTRACTOR'S AND CONTRACTORS' RESPONSIBLE PERSONS

Project: **UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE:**

ANNEXURE B

The Principal Contractor must make all the management appointments as set out below. Compliance with annexure 'B' to be maintained and proven to the safety agent at audits (Further appointments could become necessary as the project progresses).

Item	Appointment	Legal Reference	Requirement
B1	CEO Assignee	Section 16(2)	A competent person to assist the CEO in achieving compliance with the OHS Act – P/Contractor's / Contractor's Responsible
B2	Construction Work Manager	CR 8(1)	A full time competent person to supervise and be responsible for health & safety related issues on site. The person is appointed by the Section 16(2)

B3	Assistant Construction Work Manager	CR 8(2)	A full time competent person(s) to assist the CR 8(1) appointee with daily supervision of construction work safety. One of the CR8(2) appointees must be designated to fulfill the role of the CR6(1) when such person is not on site. Make this clear in the
B4	Health & Safety Representative(s)	Section 17	A competent person(S) to be appointed to represent the workforce in H & S matters. Reps may attend safety meetings, conduct monthly site audits, attend incident / injury
B5	Health & Safety Committee Member(s)	Sectin 19	H&S reps, site supervisors / foreman and the safety officer should make up the committee, with the CR8(1) appointee chairing the committee
B6	Incident Investigator	GAR 9	A competent person to head up the investigation team and co-ordinate incident / injury investigation ons site.
B7	Risk assessment co-ordinator	CR9	A competent person to co-ordinate the drafting / reviewing / distribution of risk assessments on behalf of the principal contractor. The same
B8	Fall protection plan co-ordinator	CR10	A competent person to co-ordinate the drafting / reviewing / distribution of Fall Protection Plan. The same applies to
B9	Emergency plan co- ordinator	Contractor Needs to be in line with service stationFRP	A competent person to co-ordinate the drafting / reviewing / distribution of the site emergency procedures / evacuation plan. Such person must be fulltime on site so as to take charge of emergency situations.
B10	First Aider(s)	GSR 3	A certified person to address first aid situations and take charge of injuries. Level 1 certificate
B11	Lifting machine and lifting tackle supervisor	DMR 18	A competent P/Contractor employee to co-ordinate the management of lifting machines and tackle, ensuring that such equipment is safe for use at all times, inspected when necessary and repaired when required. The operators, banks men and contractors to
B12	Scaffolding	SANS 10085 – 2004	A competent person to inspect scaffolding before use and every time after bad
B13	Scaffold supervisor (P/Contractor	SANS 10085 – 2004	A competent P/Contractor employee to supervise all scaffolding on site, ensuring that scaffolds are safe for use, inspected, extended / altered, repaired when required and that all trades are co-ordinated and
B14	Scaffolding erecting	SANS 10085 – 2004	A competent person(s) to erect scaffolding – leader of the scaffold team

B15	Formwork & support work supervisor (Temporary Works)	CR12	A competent person to supervise all formwork & support work erection & dismantling. This person must also ensure that the equipment is safe and that all the necessary inspections (pre, during, post & every day thereafter) are carried out & records kept by the competent inspectors. Design drawings must be available to this supervisor.
B16	Excavation supervisor	CR13	A competent person to supervise & inspect excavation work (daily) and ensure that excavations are safe. Records of inspections must be kept by this person.
B17	Ladder inspector	GSR13A	A competent person to inspect ladders daily and ensure they are safe for use, keeping monthly record.
B18	Stacking supervisor	CR28	A competent person to supervise all stacking and storage operations
B19	Explosive powered tools inspector / supervisor	CR21	A competent person to inspect & clean the tool daily, store the tool in a safe location, ensure that cartridges are signed out and in, and control all operations thereof.
B20	Temporary electrical installations	CR24	A competent person to inspect all temporary electrical installations. Including weekly inspections and record keeping.
B21	Portable Electrical Tool Inspection	CR 24	A competent person to co-ordinate / inspect portable electrical tools, leads and plugs.
B22	Fire-fighting equipment inspector	CR29	A competent person to co-ordinate & inspect fire fighting equipment. Including ad-hoc checks and monthly inspections with records kept.
B23	Construction vehicles & mobile plant supervisor	CR23	A competent person(s) to co-ordinate the safety of all construction vehicles & mobile plant. Ensuring that daily inspections are done and records kept, that safety measures are in place, that operators are certified and authorised to operate and that
B24	Construction safety officer	CR6(6)	A competent person to fulfill the functions as set out in these HSS

GENERAL COMPLIANCE REQUIREMENTS

Project: **UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE:**

ANNEXURE C

The Principal Contractor and Contractors must comply with but not be limited to the requirements tabled below: Prove compliance with annexure 'C' at audits conducted by the safety agent.

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE: POLOKWANE MUNICIPALITY

Item	What	When	Output	Reviewed by Polokwane
C1	Construction – phase Health & Safety	Monthly review	Principal Contractor to indicate the status of Contractors health & safety	
C2	Health & Safety File(s)	Open file when construction begins and maintain throughout	Have file on hand at audits. Contractors to report on their file at monthly health & safety audits by the Principal Contractor	
C3	OHS Act and relevant Regulations	Monthly review	To be kept in the health & safety file on site.	
C4	Health & Safety Induction training, PTW Procedures & SKM Passport System	Every worker before he/she starts work	Attendance registers to be kept	
C5	Awareness Training (Tool Box Talks)	At least once a week	Attendance registers to be kept	
C6	Health & Safety Meetings	Monthly	Meeting minutes to be kept	
C7	Health & Safety Reports & PI / NM	Monthly	Report covering: <ul style="list-style-type: none"> ▢ Incidents / injuries and investigations ▢ Non conformances by employees & Contractors – reports ▢ Internal H&S audit reports 	
C8	Audits on contractors	Monthly	Report covering: <ul style="list-style-type: none"> ▢ H&S File / Plan ▢ WCA status ▢ Appointment letters ▢ Section 37(2) agreements ▢ Risk assessment & safe work procedures ▢ Physical site inspection ▢ Any other contractor specific requirements 	
C9	Emergency procedures	Monthly evaluation of	Compile written procedure as well as tel. Numbers	
C10	Risk assessments & fall protection plan	Updated and signed off	Documented risk assessments to be available	
C11	Method statements	Drawn up and distributed before workers are	Documented set of method statements reviewed and signed off.	

C12	General Inspections	Daily	Report OHS Act compliance: <input type="checkbox"/> Excavations <input type="checkbox"/> Portable electrical tools <input type="checkbox"/> Formwork & support work <input type="checkbox"/> Explosive powered tools	
C13	General Inspections	Daily	<input type="checkbox"/> Scaffolding <input type="checkbox"/> Temporary Electrical Installations	
C14	General Inspections	Monthly	<input type="checkbox"/> Fire fighting equipment <input type="checkbox"/> Ladders	
C15	General Inspections	Monthly	<input type="checkbox"/> Lifting tackle <input type="checkbox"/> Oxy-acetylene cutting & welding sets <input type="checkbox"/> Fall prevention and arrest equipment	
C16	General Inspections	6-Monthly	<input type="checkbox"/> Lifting machines	
C17	Load tests / performance tests	Annually / once erected, before	<input type="checkbox"/> Lifting machines	
C18	List of Contractors	List to be updated weekly	Compile a list of contractors: Name, supervisor, company tel. Numbers and trade	
C19	Workman's Compensation	Ongoing	Compile a list of Contractors workman's Compensation proof of good standing.	
C20	Construction site rules & Section 37(2) Mandatory	Ongoing	Compile a list of all signed up Mandataries. Proof of agreement documents to be kept in H&S file	

OCCUPATIONAL HEALTH & SAFETY – HEALTH & SAFETY COSTS TO BE INCLUDED IN THE PRINCIPAL CONTRACTOR'S / CONTRACTORS' PRICE

Project: **UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE:**

ANNEXURE D

In terms of the Construction Regulations (2014), it is the Polokwane Municipality's duty to ensure that the cost for health & safety has been provided for by the Principal Contractor, before appointment. Acting on behalf of our Polokwane Municipality, we require the following health & safety costs to be included by the Principal Contractor. It must be made very clear that these are just some of the health & safety costs to be included in your tender price. It is the duty of the Principal Contractor and Contractors to ensure that all aspects of the Occupational Health & safety Act 85/1993 and Construction Regulations are catered for.

Pricing for Occupational Health and Safety measures should include the following if applicable:

ITEM	DESCRIPTION
1	Supply of all items of Personal Protective Clothing/Equipment & ensure use thereof for full compliance
1.1	Steel toe capped safety boots
1.2	Overalls
1.3	Reflective vests(high visibility)
1.4	Hard hats
1.5	Dust masks
1.6	Hearing protection
1.7	Hand gloves
1.8	Any other :Principal Contractor to specify
2	Supply and provision of Equipment for working at Heights & ensure use thereof for full compliance
2.1	Fall protection equipment (Safety Harness)
2.2	Double lanyard harness
2.3	Fall protection plan
2.4	Scaffolding access ladders/toe boards/hand rails
2.5	Portable Ladders
2.6	Any other: Principal Contractor to specify :
3	Barricading: Supply & install, including removal upon completion to ensure full compliance to legislation
3.1	Rigid type barricading
3.2	Temporary fence barricading along perimeter of excavated area
3.3	Danger tape pre-warning tape
3.4	Any other: Principal Contractor to specify :
4	Related Training
4.1	First Aid Training
4.2	Health and Safety Representative training
4.3	Emergency Rescue training(Height)
4.4	Hazard Identification Training
4.5	Training of Personnel working at heights
4.6	Construction Plant Training
4.7	Legal Liability(OHSACT) Training
4.8	COID ACT Training
4.9	Scaffold Erector and Inspector Training
4.10	Any other: Contractor to specify : Working at elevated
5	Occupational Health and Safety Administration
5.1	Develop of a Site Specific Health and Safety Plan and Hazard and Risk Assessment by Competent person.
5.2	Develop of Fall Protection and Rescue Plan by a Competent Fall Protection Plan Developer.
5.3	Competent Occupational Health and Safety Officer/Consultant.
6	Medical Surveillance
6.1	Medical Certificates of fitness for all Employees by an Occupational Health Practitioner.
6.2	Medical Certificates of fitness for all EPWP Employees by an Occupational Practitioner during the duration of the Construction Project.
7	Facilities and Equipment

7.1	Sanitary facility for each sex and for every 30 workers.
7.2	Changing facilities for each sex.
7.3	Sheltered eating areas
7.4	First aid boxes
7.5	Fire extinguishers
7.6	Waste bins
8	Safety Signage
8.1	Sufficient and adequate safety signage on constructions site and at all flammable stores.

ANNEXURE E

The Occupational health and Safety File must consist out of the following documentation:

INDEX

1	Appointment Letter from Twickenham Mine.
2	Notification of Construction work.
3	Letter of Good standing - COID
4	Copy of Public Liability Insurance Policy and UIF Registration
5	Health and Safety Specifications
6	Scope of Work
7	Tool and Machinery list
8	Method Statement of all work that will be conducted.
9	Risk Assessment Guide / Procedure
10	Baseline Risk Assessments
11	Safe Work Procedures for all Risks
12	Health and Safety Information from Designer
13	Medical Certificates
14	All Health and Safety Related Policies
15	Section 37.2 Agreements
16	Induction Training Information
17	Site Specific Emergency numbers and Emergency Plan
18	Site Specific Fall Protection and Rescue Plan
19	Site Specific Health and Safety Plan
20	Incident / Accident Management Control
21	Traffic Management Plan
22	Contractor Control Procedures
23	Environmental Management
24	Hazardous Chemical Substance Register and MSDS
25	Example of Monthly Health and Safety Report
26	Health and Safety Organogram
27	Occupational Health and Safety (Construction) Appointments – With Competencies
28	Certificates for all lifting equipment
29	Sample of all registers that will be used on site.
30	Borrow Pit Requirements
31	Copy of the Occupational Health and Safety Act and Construction Regulations 2014

ANNEXURE F**OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (Regulation 4 of the Construction Regulations. 2014)****NOTIFICATION OF CONSTRUCTION WORK**

1. (a) Name and postal address of principal contractor:

(b) Name and tel. No of principal contractor's contact person:

2. Principal contractor's compensation registration number:

3. (a) Name and postal address of Polokwane Municipality:

(b) Name and tel. No of Polokwane Municipality's contact person or agent:

4. (a) Name and postal address of designer(s) for the project:

(b) Name and tel. No of designer(s) contact person:

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 8(1).

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 8(2).

7. Exact physical address of the construction site or site office:

8. Nature of the construction work:

9. Expected commencement date: _____

10. Expected completion date: _____

11. Estimated maximum number of persons on the construction site.

Total: _____ Male: _____ Female: _____

12. Planned number of contractors on the construction site accountable to principal

Contractor: _____

13. Name(s) of contractors already selected.

Principal Contractor

Date

Polokwane Municipality's Agent (where applicable)

Date

Polokwane Municipality

Date

- ☐ THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR
PRIOR TO COMMENCEMENT OF WORK ON SITE.0
- ☐

Copies:

1. Original to **Department of Labour**

BASELINE RISK		HAZARD EFFECT / CONSEQUENCE				
Loss Type		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
Timeline		No impact on overall	May result in overall project	May result in overall project	May result in overall project	May result in overall project timeline overrun
Budget		No impact on the budget of the	May result in overall project budget	May result in overall project	May result in overall project	May result in overall project budget overrun
Investment Return – NPV loss		Less than R5m	R5m to less than R500m	R500m to less than R500m	R500m to R5b	R5b or more
Quality		No impact on quality	Minimal quality issues that can be addressed in a	Some quality issues that requires	Significant quality issues that requires senior	Significant quality issues that requires sponsorship intervention
Safety / Health		First aid case / Exposure to	Medical treatment case / Exposure to	Lost time injury / Reversible impact	Single fatality or loss of quality of	Multiple fatalities / Impact on health
Environment		Minimal environmental	Material environmental harm – L2	Serious environmental	Major environmental harm – L2	Extreme environmental harm – L3
Legal & Regulatory		No legal impact	Minor legal concerns with	Some legal concerns with	Serious legal concerns and	Legal non compliance with risk of shutdown of
Reputation / Social / Community		Slight impact - public awareness	Limited impact - local public	Considerable impact -	National impact - national public	International impact - international public
LIKELIHOOD		RISK				
5 Almost Certain	The unwanted event has occurred frequently; has a 90% probability of occurring	11 Medium	16 Significant	20 Significant	23 High	25 High
4 Likely	The unwanted event has a probability of between 66% and 90%	7 Medium	12 Medium	17 Significant	21 High	24 High
3 Possible	The unwanted event has a probability of between 33% and 66%	4 Low	8 Medium	13 Significant	18 Significant	22 High
2 Unlikely	The unwanted event has a probability of between 1% and 33%	2 Low	5 Low	9 Medium	14 Significant	19 Significant
1 Rare	The unwanted event has never occurred, has a probability of less than 1%	1 Low	3 Low	6 Medium	10 Medium	15 Significant

BASELINE RISK ASSESSMENT UPGRADING OF RAMONGOANA BUS ROUTE AND TAXI ROUTE

NO	HAZARD/ITEM	RISK ASSOCIATED	CONSEQUENCES	RR	HOW IS HAZARD TO BE	BY WHOM	BY WHEN
1.	SITE						
	<p>Incompetent persons</p> <p>Uncontrolled site establishment activities</p> <p>Incorrect stacking procedures</p>	<ul style="list-style-type: none"> ☐ Injuries during off loading ☐ Cuts and burns ☐ Rushed activities ☐ Incorrect supervision ☐ Management team not identifying existing services ☐ Trip and fall ☐ Cuts ☐ Collapsing of stacks ☐ Incorrect manual handling – back injuries 	<ul style="list-style-type: none"> ☐ Hand and back injuries ☐ Dropping of equipment ☐ Physical injuries ☐ Incorrect manual handling ☐ Potentially fatal accidents ☐ Loss of limbs ☐ Lost time injuries ☐ Medical treatment cases 	12	<ul style="list-style-type: none"> ☐ The contractor must ensure that site is established at the correct location as identified by the Client. ☐ Contractor OHS file must be approved prior to site establishment begins – aligned to New Construction Regulation 2014 ☐ All workers on site must be declared medically fit by a Occupational Health Practitioner.(Annexure 3) ☐ Site –induction must be given to all employees to make them aware of the specific hazards ☐ The contractor must declare all employees competent in writing. ☐ Before the commencement of this phase a site specific risk assessment must be conducted by an competent risk 	<p>– Construction Supervis or</p> <p>– Contractor Safety Officer</p> <p>– Construction Supervis or</p>	Before constructi on commenc es

					<p>followed during these activities.</p> <ul style="list-style-type: none"> Relevant toolbox talks must also be held with employees. The contractor must ensure that the correct serviceable tools are available during this phase. Employees must be issued with correct PPE before works begin 		
	<p>Offloading heavy equipment and containers with mobile cranes.</p>	<ul style="list-style-type: none"> Defective mobile crane can cause accidents Damage lifting tackle Unsecure offloading area could cause accidents 	<ul style="list-style-type: none"> Serious injury and fatalities Standing time Lost time injuries 1st Aid medical treatment cases 	13	<ul style="list-style-type: none"> All lifting equipment including the mobile crane must be checked before allowed on site. Ensure that the correct mobile crane to be used for the offloading process. Safe Working Load must be clearly displayed on the crane. Load test certificate will be submitted to the client. Rope and or sling certificates must be submitted to the client. Only competent operators will be allowed to operate the mobile crane. Daily checks as per checklist by operator 	<p>– Construction Supervis or – Lifting tackle Inspect or – Construction OHS officer</p>	<p>During site establishmen t</p>

					<ul style="list-style-type: none"> Stacking to be supervised by a competent supervisor. Adequate storage area to be provided All unstable stacks to be dismantled and stacked over, in 		
	Site security and fencing: <ul style="list-style-type: none"> Fence with lockable gates 24 security deployed Fire prevention All required OHS signage Accommodation 	<ul style="list-style-type: none"> Theft of property Fires Unsafe conduct by visitors 	<ul style="list-style-type: none"> Financial losses Loss of equipment / documentation Lost time due to theft Production time lost Injuries to visitors. 	5	<ul style="list-style-type: none"> All visitors must report to site office. All visitors must also be inducted. Checklist signed by supervisor and filed by safety officer 	<ul style="list-style-type: none"> Construction Supervisor. Security 	During Site Establishment
	Housekeeping:	<ul style="list-style-type: none"> Inadequate storing facilities. Damage to material and equipment. Accumulation of waste. Environment pollution. Facilities for employees. Electrical installations 	<ul style="list-style-type: none"> Serious injuries Electrocution Environmental impact Personal injuries Lost time in production Damage to equipment and material. 	9	<ul style="list-style-type: none"> Use site establishment checklist to ensure compliance with all items Toilet facilities & staff welfare as per Construction Reg 2014 Toilets 1:30(regular service) Correct storing facilities for hazardous chemicals. Correct signage for all storage of hazardous materials Proper storing facilities for tool and equipment 	<ul style="list-style-type: none"> Construction Supervisor or Staff Welfare Inspector or Safety Officer Qualified Electrician. 	During Site Establishment

					<ul style="list-style-type: none"> Waste recycling is encouraged. A COC certificate for temporary electrical installations by a register competent 		
ROAD TRAFFIC ACCOMMODATION:							
NO	HAZARD/ITEM	RISK ASSOCIATED	CONSEQUENCES	RR	HOW IS HAZARD TO BE	BY WHOM	BY WHEN
1.	TRAFFIC ACCOMMODATION	<ul style="list-style-type: none"> High volume of traffic Accidents while placing road signage Pedestrian injuries & fatalities Injury/fatality while setting out signs/measurements Workers fatality 	<ul style="list-style-type: none"> High speed vehicles could lead to fatalities Injury/fatality to flagmen Injury/fatality to workers measuring lay-out & placement of signs Road traffic accidents to poor visibility or wrong traffic signage Lost Time Injuries due to event of accident 1st Aid medical treatment cases Damage to road signage Incompetent flagmen could lead to major incidents or fatalities 	21	<ul style="list-style-type: none"> Approval of road traffic management plan Emergency procedures must be included in the traffic management plan. workers/personnel on road traffic management plan Induct all workers on R/A and SWP Appoint designated competent traffic control officer This appointment must be a full time employee. Toolbox Talk on traffic control Correct signage as per traffic management plan Correct setting out of traffic signage Training of flag 	<ul style="list-style-type: none"> Construction Supervisor or Traffic Control Officer Flagmen x4 Qualified Operators 	

					specification		
3.	REGULATING TRAFFIC – FLAGMEN OPERATIONS: PARTIAL LANE CLOSURE	<ul style="list-style-type: none"> ☐ Serious injuries/fatalities ☐ Heat exposure to workers ☐ Hit & run accidents ☐ Flying objects form loose stones ☐ Damage to construction vehicles ☐ Damage to traffic signage ☐ Working positions of flag personnel. ☐ Not proper communications between traffic officials. 	<ul style="list-style-type: none"> ☐ Poor visibility could lead to vehicles ignoring traffic signs ☐ Poor lay-out of signs could lead to traffic accidents (major) or fatalities ☐ Standing time ☐ Flagmen ran over by speeding traffic could lead to fatality ☐ Flag personnel not on designated positions due to tiredness. ☐ Lack of proper communications can lead to accidents. 	21	<ul style="list-style-type: none"> ☐ Installation of road traffic signs & regulating according to installation inventory ☐ Trained flagmen ☐ Flagmen working in shifts ☐ Insure good visibility at all times ☐ Radio communication between flagmen ☐ Implement: Advance warning are, transition area; buffer zone; work zone termination area ☐ Correct high visibility vests & PPE ☐ Correct symbolic signage ☐ Correct appointments of 	<ul style="list-style-type: none"> – Construction Supervisor or – Flagmen: Qualified x4 – Traffic control officer – 1st Aider – Emergency Coordinator or 	
4.	PLACEMENT OF KERBS/ INSTALL ROBOTS/ WORKING IN ROAD RESERVE	<ul style="list-style-type: none"> ☐ Serious accidents leading to fatality ☐ Poor visibility ☐ Slippery surfaces ☐ Deep trenches ☐ Construction material in road surface 	<ul style="list-style-type: none"> ☐ Inadequate signalling & flagmen operations could lead to serious injury ☐ Speeding traffic could lead to serious injury or fatality ☐ Damage to equipment/or material 	13	<ul style="list-style-type: none"> ☐ Placement of flagmen ☐ Correct warning signs as per traffic lay-out ☐ Correct barricading at deep excavations (robot installation) ☐ Trained flagmen ☐ Correct PPE for task ☐ Trained personnel & direct supervision 	<ul style="list-style-type: none"> – Construction Supervisor or – Traffic Control Safety Officer – Qualified Flagmen 	

			could lead to strains or serious back injuries		<ul style="list-style-type: none"> methods ▢ Prestart checks/controls before each shift ▢ That site specific risk assessment before the task begins. ▢ All employees involved must be inducted according to 		
--	--	--	--	--	---	--	--

EARTHWORKS (ROADS; SUBGRADE): CONSTRUCTION OF PAVEMENT LAYERS

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
ROAD LAYER WORKS:							
1.	SITE CLEARANCE WORK IN GENERAL	<ul style="list-style-type: none"> ▢ Possible trip & fall into open trenches ▢ Possible shock from old electrical cables ▢ Other potential land hazards ▢ Insect bites etc. 	<ul style="list-style-type: none"> ▢ 1st Aid treatment cases ▢ Incorrect PPE or Hand tools could lead to injuries ▢ Potential standing time if existing cables are damaged ▢ Possible LTI due to injuries to hands/eyes/fac e ▢ Electrical shock ▢ Damage to 	13	<ul style="list-style-type: none"> ▢ Existing services must be identified before the task can begin. ▢ Pre-site inspection ▢ Full time supervision ▢ Safety Rep & Construction Supervisor ▢ No work or clearing of site permitted during night time ▢ Proper survey of work area ▢ Potential hazards to be identified & Mitigated 	<ul style="list-style-type: none"> - Site Supervisor - SHE Rep - Workers / Labourers - Land Surveyor 	Prior to construction
2.	SITE LEVELLING/ EXCAVATION USING HEAVY EQUIPMENT	<ul style="list-style-type: none"> ▢ Man/Machine interface ▢ Machinery uncontrolled could injure bystanders ▢ Equipment toppling due to uneven 	<ul style="list-style-type: none"> ▢ Possible LTI ▢ Standing time due to serious injuries ▢ Project timeline could be 	18	<ul style="list-style-type: none"> ▢ All construction vehicles must comply with all legislation, including road traffic act. ▢ All construction 	<ul style="list-style-type: none"> - Heavy Plant Inspect or - SHE Rep - Construction Supervis 	

		<ul style="list-style-type: none"> Blind spots No supervision could cause uncontrolled activity 	<ul style="list-style-type: none"> services if not identified Unqualified operators could cause damage Medical treatment cases 		<ul style="list-style-type: none"> and competent. All operators must be appointed as per CR 2014 All vehicles to be pre inspected before they can start working. Medicals for operators Correct PPE to be issued for task Full time supervision Toolbox talk on potential machine/man interface 3 Point contact induction to plant operators Vehicles to have audible reverse horns & appoint signal man 	TLB/Grader Operator	
3.	LOCATION OF EXISTING SERVICES BEFORE BOX CUT OPERATIONS	<ul style="list-style-type: none"> Pre-approval excavations permit not obtained could lead to damage of property & machinery or loss of life 	<ul style="list-style-type: none"> Damage to property Possible electric shock due to excavation of services Damage to plant / equipment Loss of production 	13	<ul style="list-style-type: none"> Pre-authorisation for electronic location of services by Management RA/DSTI for task review Adhere to SWP to work system Adhere to emergency 	<ul style="list-style-type: none"> Appointed Site Manager Engineer 	
4.	EVALUATION OF STABILITY OF SURFACE	<ul style="list-style-type: none"> Inspections not conducted by Safety Officer could lead to damage of 	<ul style="list-style-type: none"> Damage to machinery Loss of production Unauthorised 	17	<ul style="list-style-type: none"> Site Manager to inspect surface/access stability: Communicate 	<ul style="list-style-type: none"> Appointed Site Manager 	
5.	ERECTING OF NECESSARY FIXED BARRICADING	<ul style="list-style-type: none"> No proper barricading could lead to accidents & workers not 	<ul style="list-style-type: none"> Damage to machinery LDV/Traffic/SME interface 	18	<ul style="list-style-type: none"> Adhere to barricading procedure as per Client Standards 	<ul style="list-style-type: none"> Appointed Site Manager Foreman 	

		<ul style="list-style-type: none"> Uncontrolled barricading practices 	<ul style="list-style-type: none"> workers Fatality Loss of production 		<ul style="list-style-type: none"> Identification barricading (signs) Proper traffic management when 		
6.	ROAD TRAFFIC ACCOMMODATION WHERE BOX CUT WILL TAKE PLACE (EARTH WORKS)	<ul style="list-style-type: none"> Untrained flagmen could cause accidents No proper road traffic management plan could lead to accidents 	<ul style="list-style-type: none"> Damage to vehicles if an accident occur Loss of life or injury to workers Damage to plant/equipme 	21	<ul style="list-style-type: none"> Traffic Management to be adhered to as per plan and Client Standards S.O.P for heavy equipment SWP Trained flagmen Toolbox Talk on Traffic 		
7.	MECHANICAL EXCAVATION OF CUT MATERIAL WITH EXCAVATOR TO A DEPTH OF 1M	<ul style="list-style-type: none"> No pre-start checks Un roadworthy machinery No lock-out & isolation procedures could lead to potential incidents No proper supervision could lead to fatalities 	<ul style="list-style-type: none"> No pre-start checks could lead to misuse of equipment Damage to plant In proper supervision could lead to injury or fatality 	21	<ul style="list-style-type: none"> PTW system Excavation permit S.O.P Procedures SWP/ DSTI before each task/operation Communicate / acknowledgement & sign documentation Qualified operators Inspection checklists 	<ul style="list-style-type: none"> Appointed Site Manager Excavation Supervisor Foreman Plant Operator 	
8.	LOAD MATERIAL WITH EXCAVATOR ON TIPPER TRUCKS TO SPOIL CUT TO FILL/SPOIL	<ul style="list-style-type: none"> No proper supervision could cause injury <ul style="list-style-type: none"> No pre-start checks or S.O.P Communicated No isolation & lock-out No 3 way contact 	<ul style="list-style-type: none"> Interface Tipper/SME Excavator Damage to plant Injury/Fatality Loss of production 	13	<ul style="list-style-type: none"> S.O.P for tipper trucks & excavator with RA – communicated to workers Operator competency/medical Competent Supervisor Supervision Correct PPE for task 	<ul style="list-style-type: none"> Appointed Site Manager Flagmen Foreman Plant Operator 	
9.	IMPORT OF MATERIAL FROM BORROW-PIT AREA	<ul style="list-style-type: none"> No authorization for haulage from borrow area No pre-start checks 	<ul style="list-style-type: none"> Truck/SME/MAN interface Fatality Physical injuries 	13	<ul style="list-style-type: none"> Required operators appointments as per Mine Health & Safety Act 	<ul style="list-style-type: none"> Appointed Site Manager Operators 	

	/ OR STOCK PILED AREA	<ul style="list-style-type: none"> □ In proper use of PPE □ Un-roadworthy machinery 	<ul style="list-style-type: none"> □ Loss of production □ LDV/SME Interface □ Unauthorised work in borrow-area/ work area 		<ul style="list-style-type: none"> □ SME pre-start checks DSTI for task □ S.O.P / RA / One pagers □ Method statement □ Emergency drills & procedures □ Ensure that all Mine Health and Safety 	- Constructio n Supervis or	
10.	MIXING OF LAYER MATERIAL WITH MOTOR GRADER	<ul style="list-style-type: none"> □ Improper traffic control □ SWP DSTI not completed □ No proper Supervision 	<ul style="list-style-type: none"> □ Uncontrolled SME operation. Interface/SME/MAN □ Fatality □ Damage to plant 	18	<ul style="list-style-type: none"> □ Proper lock-out/ isolation of machinery □ Only authorised operators for SME's □ Inspection pre-start in lay down area 	- Appointed Site Manager - Grader Operator - Foreman	
11.	ROAD BED PREPARATION, LAYER WORKS WITH COMPACTOR ROLLER AND WATER CART + MOTOR GRADER	<ul style="list-style-type: none"> □ Uncontrolled tipping of layer material □ No supervision □ No lock-out/isolation □ Static machinery should have stop blocks □ Uncontrolled movement of machinery 	<ul style="list-style-type: none"> □ Uncontrolled layer works: no proper supervision could lead to damage of property & injury □ In proper supervision could lead to injury/fatality of labourers (levels) □ Uncontrolled traffic control 	21	<ul style="list-style-type: none"> □ Road Traffic signage □ Flagmen/ Stop/ Go □ RA / Stop for machinery □ DSTI before task □ Road emergency drill □ Proper barricading procedure □ 3-point control rule implemented □ Barricading procedure 	- Appointed Site Manager - Foreman - Operators / Drivers	
12.	LEVELLING MATERIAL	<ul style="list-style-type: none"> □ No toolbox talks could lead to in proper communication 	<ul style="list-style-type: none"> □ Man/ machinery interface □ Fatality/injury 	9	<ul style="list-style-type: none"> □ SOP Machinery □ DSTI □ Road Traffic management plan 	Appointed Site Manager	
13.	STABILIZATION WITH CONCRETE CEMENT	<ul style="list-style-type: none"> □ No pre-determined area for cement to be stockpiled 	<ul style="list-style-type: none"> □ Loss time □ Injury ; fatality □ Uncontrolled dust control could cause 	9	<ul style="list-style-type: none"> □ SOP □ SWP □ DSTI □ Road Traffic Management 	Appointed Site Manager	

14.	LOADING OF CONCRETE KERBS IN LAYDOWN AREA (MANUALLY)	<ul style="list-style-type: none"> □ In proper PPE could lead to injury □ Hand loading could lead to back injuries to workers □ Kerbs weighing 108kg can cause injury, if workers trip □ Bending could cause back injuries □ Wrong clothing could lead to restricted reach, and cause trip & fall 	<ul style="list-style-type: none"> □ Injury to labourers could have an impact to overall project timeline □ Could lead to 1st aid cases □ Medical treatment case □ It could lead to issues that requires senior project management interaction □ The event of an injury has a probability of between 60-80% 	17	<ul style="list-style-type: none"> □ Hold proper pre task toolbox talk (PJO) □ Safe working procedure attached □ Proper method statement for this task. □ All workers to be inducted on PPE, and sufficient use & maintenance thereof □ Proper supervision in loading & offloading process □ A “grip-bar” could be used as kerbs are 	<ul style="list-style-type: none"> - Supervisor in lay-down loading area - Foreman - Construction Supervisor 	
15.	OFFLOADING OF CONCRETE KERBS & PLACEMENT	<ul style="list-style-type: none"> □ Unstable load could cause trip & fall □ Poor grip ability could cause trip hazard & injury to foot □ Handling of kerbs could cause crushing of feet & hands □ Damage to kerbs/ injury to people □ If load is too heavy could lead to manual handling injuries 	<ul style="list-style-type: none"> □ Fatigue could lead to kerbs being dropped □ Damage to material if no proper Supervision □ Trip & Fall – hand and foot injuries 	17	<ul style="list-style-type: none"> □ Pre-task assessment of manual handling risks related to: <ul style="list-style-type: none"> - Size (material) - Weight - Grip ability - Frequently - duration - Distance to be moved - Twisting - Turning – reach - Stability - Position changing - Fatigue issues □ Ensure that no tripping hazards exists while loading & offloading 	<ul style="list-style-type: none"> - Supervisor at offloading area - Construction Supervisor or - Foreman 	

					restrict reach, bending, walking, access <input type="checkbox"/> Correct PPE (Footwear) <input type="checkbox"/> Team lifting (± 4 workers) has the benefit of sharing the load between 2 or more people <input type="checkbox"/> Supervision to ensure co-ordinated		
ASPHALT CHIP & SPRAY (HOT WORK) CIVILS:							
1.	MECHANICAL APPLICATION OF ASPHALT – PREMIX AND PRIMING OF ROAD SURFACE	<input type="checkbox"/> No communication to labourers could lead to accident.	<input type="checkbox"/> Potential physical injuries to employees <input type="checkbox"/> Fatality <input type="checkbox"/> Burn injuries <input type="checkbox"/> Skin irritation	18	<input type="checkbox"/> Appointed Site manager & foreman must ensure compliance with Site specifications <input type="checkbox"/> Implement & communicate Risk Assessment	- Appointed Site Manager - Foreman - Safety officer	
2.	ACQUIRE COMPULSORY PRE-ACTIVITY DOCUMENTATION FROM MANAGEMENT	<input type="checkbox"/> No proper traffic management could lead to accidents/ and injury to personnel <input type="checkbox"/> Not wearing correct PPE could lead to burns as workers work with hot	<input type="checkbox"/> Damage to plant equipment & services <input type="checkbox"/> Loss of production	18	<input type="checkbox"/> Visible felt leadership <input type="checkbox"/> Planned Task Observation (PTO) <input type="checkbox"/> One pagers to be completed & communicated <input type="checkbox"/> Safety Procedures	- Appointed Site Manager - Hot Work Permit issuer & holder	
3.	APPLICATION OF PRIMER/ TACK COAT TO ROAD SURFACE	<input type="checkbox"/> Possibility of toxic fumes <input type="checkbox"/> LPG Burners could cause injuries <input type="checkbox"/> LPG flashback could cause	<input type="checkbox"/> Unauthorized access to working area <input type="checkbox"/> LDV/SME interface	21	<input type="checkbox"/> Proper method statement for this task <input type="checkbox"/> Fatal Risks Standards <input type="checkbox"/> Hot Works Permit to work system <input type="checkbox"/> Emergency Plan	- Appointed Site Manager - Foreman - First aider	

					<ul style="list-style-type: none"> □ SOP to be implemented □ Toolbox Talk on Hot work Application 		
4.	DELIVERY TRUCK – ASPHALT TO TIP INTO FEEDER BOX	<ul style="list-style-type: none"> □ Personnel could be caught between truck & feeder □ No proper isolation and 	<ul style="list-style-type: none"> □ LDV/MAN interface □ Physical injury to workers/ personnel □ Possible burn injuries 	21	<ul style="list-style-type: none"> □ SWP for operating SMME □ Pre-start checks to be done on all plant & machinery □ 3 point contact 	<ul style="list-style-type: none"> - Construction Supervis or - Truck drivers - Foreman 	
5.	APPLY HOT ASPHALT TO PRIME SURFACE	<ul style="list-style-type: none"> □ No proper traffic control – flagmen could cause accidents & injury to personnel □ Poor application waste of material 	<ul style="list-style-type: none"> □ Employee entering area between 2 units of plant may be struck down and driven over □ Tripping on road surface may lead to waste of material 	21	<ul style="list-style-type: none"> □ Hook-up of all plant to be coordinated by skilled staff □ Safety railings fitted □ Isolation & lock-out procedure process to be followed when machinery static (Isolation) 	<ul style="list-style-type: none"> - Construction Supervis or - Foreman 	
6.	ROLLING SURFACE WITH COMPACTOR ROLLER	<ul style="list-style-type: none"> □ In proper use of PPE could lead to injury as working with hot material 	<ul style="list-style-type: none"> □ Injury; burns, fatality □ Collision / pedestrians 	13	<ul style="list-style-type: none"> □ Road traffic management plant to be communicated □ Only trained flag-men to be used with proof of toolbox talk / Induction □ Man / Machine interface □ Toolbox Talk 	<ul style="list-style-type: none"> - Construction Supervis or - Roller operator 	
INSTALLATION OF STORM WATER:							
1.	EXCAVATE STORM WATER CANAL (USING TLB)	<ul style="list-style-type: none"> □ Man/Machine interface □ Hand labourers being injured if working in “blind spot area” □ Break down in 	<ul style="list-style-type: none"> □ Bystanders/ hand labours injuries if machinery used incorrectly □ Lost Time Injuries □ Standing time due 	13	<ul style="list-style-type: none"> □ PTW for all excavations work □ Pre start checklist □ Qualified operator with proof of medical □ Toolbox Talk on Man/Machine interface 	<ul style="list-style-type: none"> - Excavation Supervis or - Foreman - Safety Officer 	

		<ul style="list-style-type: none"> Incorrect handling of heavy equipment could cause injuries or damage to property 	<ul style="list-style-type: none"> Medical Treatment Injuries 		<ul style="list-style-type: none"> Stock pile material safely at least 1.5m from edge of excavation Barricading of excavated area as per Standards & Procedures Emergency 		
2.	OFFLOADING STORM WATER CULVERTS / OR PIPES NEXT TO TRENCHES (USING TRUCK MOUNTED CRANE)	<ul style="list-style-type: none"> Unsafe handling while offloading with Truck mounted Crane could cause injuries to personnel Uncontrolled singing load could cause damage to material Failure of slinging tackle or incorrect lifting tackle could 	<ul style="list-style-type: none"> Standing Time due to falling culverts/ pipes Incorrect placement could lead to project time lost Plant too close to excavation could lead to damage & standing time Injuries Incorrect manual handling 	17	<ul style="list-style-type: none"> Toolbox Talk on correct lifting operations Qualified Rigger Medical proof of operator Pre-start checks on equipment Supervision Correct placement stacking of storm water material Inspect 	<ul style="list-style-type: none"> - Offloading Supervis or - Foreman - "Spotter" - Hoist Mechanical Inspect or 	
3.	COMPACTION OF FOUNDATION FOR CULVERT BASE/FOOTING	<ul style="list-style-type: none"> Unsecure trench edges could lead to material falling onto worker doing compaction work Man/Machine interface Poor communication could lead to injuries Improper use of PPE 	<ul style="list-style-type: none"> Unsafe trenches could lead to stoppage time & production time lost Unsafe operation or incorrect PPE could lead to hearing loss Unnecessary down time Dust 	9	<ul style="list-style-type: none"> PTW (working in deep excavation) Dual layer barricade for deep excavation Toolbox Talk on unsafe use of Roller/Plate Compactor S.O.P Correct PPE for task Pre start excavation checks Placement of 	<ul style="list-style-type: none"> - Excavation Supervis or - Compactor Operato r - Foreman - Safety Rep 	
4.	PLACEMENT OF	<ul style="list-style-type: none"> Incorrect method of 	<ul style="list-style-type: none"> Injury/fatality 	13	<ul style="list-style-type: none"> No workers allowed 	<ul style="list-style-type: none"> - Offloading 	

	CULVERTS & BACK FILLING & COMPACTION (USE OF TLB WITH LIFTING TACKLE) INSTALLATION OF GUARD RAILS	<ul style="list-style-type: none"> handling could cause load to fall Incorrect placement Plant too close to edge of excavation Failure of lifting tackle Workers getting injured 	<ul style="list-style-type: none"> Damage to property Plant collapsing excavation edges Standing time due to investigation of incidents 		<ul style="list-style-type: none"> suspended load Qualified TLB Operator with proof of medicals SWP PTW Direct supervision Correct back filling & compaction method PPE for task Pre-start checks in lay down area Only tested (SWL) slings to be used Skills training Toolbox Talks on Safe Lifting 	Supervisor - Compactor Operator - Foreman - Safety Rep	
CONSTRUCTION OF OPEN DRAINS WITH STEEL REINFORCING WELDED MESH LINING:							
1.	INSTALL & CONSTRUCTION OF OPEN DRAINS Concrete works Steel reinforcing	<ul style="list-style-type: none"> Poor supervision could lead to work to be re- done Incorrect manual handling could lead to back injuries Incorrect tools could lead to hand injuries 	<ul style="list-style-type: none"> Loss time injuries 1st Aid medical treatment cases Loss in production 	10	<ul style="list-style-type: none"> Induct workers on MSDS for concrete product use Correct PPE for task Dust masks for mixing dry material Correct formwork to be used 	- Construction Supervisor - Foreman - Formwork Supervisor	All times

ANCILLARY ROAD WORKS: ROAD SIGNAGE/ROAD MARKINGS:

1.	ROAD MARKINGS & ERECTION OF SIGNAGE	<ul style="list-style-type: none"> ▢ Poor supervision could lead to poor job quality & lost time ▢ Manual handling injuries 	<ul style="list-style-type: none"> ▢ Medical treatment cases ▢ Loss time injuries 	15	<ul style="list-style-type: none"> ▢ Proper traffic management ▢ Flagmen to be appointed ▢ SWP ▢ Supervision at all times 	<ul style="list-style-type: none"> - Traffic Control Office - Supervisor 	At all times
-----------	--	---	---	-----------	---	--	---------------------

POLOKWANE MUNICIPALITY

C.1.2 Contract Data

CONTENTS

C.1.2.1 Part 1: Data provided by the Employer

C.1.2.1.1 Conditions of Contract

C.1.2.1.2 Contract-specific Data

C.1.2.1.2.1 Compulsory Data

C.1.2.1.2.2 Variations to the General Conditions of Contract

C.1.2.1.2.3 Additional clauses to the General Conditions of Contract

Article I. C.1.2.1 Part 1: .Data provided by the Employer

C.1.2.1.1 Conditions of Contract

The Conditions of Contract are:

- the “General Conditions of Contract” as they appear in the commercially-available publication “General Conditions of Contract for Construction Works, Second Edition, 2010”, hereinafter referred to as “GCC 2010”; and
- specific data as contained in this Contract Data.

Each party to the Contract shall purchase its own copy of the GCC 2010 that applies to this Contract, available from its publisher:

South African Institution of Civil Engineering
Private Bag X200
Halfway House
1685
South Africa

Tel +27 (0)11 805 5947

The following Notes apply:

Note 1

The GCC 2010 makes several references to the Contract Data.

Each item of data below is cross-referenced to the clause in the Conditions of Contract to which it applies. Notwithstanding anything specified to the contrary, the Contract Data shall take precedence in the interpretation of any ambiguity or inconsistency between it and the GCC 2010.

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 order of precedence:

- (a) the Form of Offer and Acceptance.
- (b) amendments to the General Conditions of Contract within the Contract Data.
- (c) additional conditions to the General Conditions of Contract within the Contract Data.
- (d) corrigenda to the General Conditions of Contract.
- (e) the General Conditions of Contract.
- (f) 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 needs to be contacted to issue any necessary clarification or instruction.

Note 2

Certain pro-forma forms and pro-forma agreements contained in the GCC 2010 have been adapted for this particular contract. Those pro-forma forms and pro-forma agreements contained in the GCC 2010 do not apply where replaced by similar pro-forma forms and pro-forma agreements in this document.

C.1.2.1.2 Contract-specific Data

The following contract-specific data, referring to the General Conditions of Contract, are applicable to this Contract:

C.1.2.1.2.1 Compulsory Data

Clause	Data
1.1.1.13	The Defects Liability Period is 12 months
1.1.1.14	The time for achieving Practical Completion is 8 months
1.1.1.15	The name of the Employer is Polokwane Municipality
1.1.1.26	The Pricing Strategy of a Re-measurement Contract shall apply
1.2.1.2	<p>The address of the Employer is:</p> <p>Physical address: Civic Centre Landdros Mare Street Polokwane City</p> <p>Postal address: PO Box 111 Polokwane 0700</p> <p>e-mail address: pilotr@polokwane.gov.za</p> <p>Contact numbers: Corporate: 015 290 2204 Direct: 015 290 2206</p>
1.1.1.16	<p>The name of the Engineer is:</p> <p>Morula Consulting Engineers and Project Managers</p>
1.2.1.2	<p>The address of the Engineer is:</p> <p>Physical address: Stand 54 Drop street Polokwane; 0699</p> <p>Postal address: P O Box 2740 Polokwane; 0700</p> <p>e-mail address: adim@morulaconsulting.co.za</p> <p>Contact numbers: Corporate: 015 291 1161 Mobile: 072 791 9934 Fax: 015 291 1344</p>
3.1.3	The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following table:

Clause	Data			
	GCC Clause No	Description	Requires EWA*	Delegated to ER*
	3.2.1	Engineer's Representative's appointment and termination	Y	
	3.2.4	Engineer's Representative acting on Engineer's behalf	Y	
	4.5.4	Payment for notices and fees	Y	
	4.7.1	Fossils, etc on Site	Y	
	5.7.2	Work at night	Y	
	5.7.3	Acceleration of rate of progress	Y	
	5.7.3	Payment for acceleration	Y	
	5.9.1	Instructions and drawings on Commencement Date		Y
	5.11.1	Suspension of the Works		Y
	5.11.3	Proceeding with Works after suspension	Y	
	5.12.4	Acceleration instead of extension of time	Y	
	5.13.2	Reduction in penalty		Y
	6.3.1	Variation orders	Y	
*The following abbreviations apply: ER Engineer's Representative EWA Engineer's Written Action N No NA Not Applicable Y Yes				
3.1.4	Delete this clause.			

Clause	Data
4.9.1	The Contractor shall deliver to the Engineer, on a monthly basis, a detailed inventory of Construction Equipment kept on Site, full particulars given for each day of the month. Distinction shall be made between Owned Equipment and Hired Equipment as well as Equipment in working order and Equipment out of order. Such inventory shall be submitted by the seventh day of the month following the month to be reported.
4.10.2	The Contractor shall deliver to the Engineer, on a monthly basis, a return in detail of supervisory staff and the number of categorized classes of labour employed each day for the said period by the Contractor for execution of the Contract. Such return shall be submitted by the seventh day of the month following the month to be reported.
5.3.1	<p>The documentation required before commencement with Works execution are:</p> <p>Health and Safety Plan (Refer to Clause 4.3)</p> <p>A signed Agreement between the Employer and the Contractor for the Works to be completed by the Contractor in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (Act No.85 of 1993) and the Construction Regulations promulgated thereunder (Refer to Clause 4.3).</p> <p>Proof of payment to the Employer, that the Contractor has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (Refer to Clause 4.3).</p> <p>Initial programme (Refer to Clause 5.6).</p> <p>Security (Refer to Clause 6.2).</p> <p>Insurance (Refer to Clause 8.6).</p>
5.3.2	The time to submit the documentation required before commencement with Works execution is 14 Days .
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but shall be as set out elsewhere in the Contract.
5.8.1	<p>The non-working Days are Sundays.</p> <p>The special non-working Days are:</p> <p>Statutory public holidays; and</p> <p>All annual year-end shutdown periods as recommended by the South African Federation of Civil Engineering Contractors (SAFCEC), and which commence after the Commencement Date and which commence before the Due Completion Date.</p>
5.13.1	The penalty for failing to complete the Works is 0,1 percent of contract price per calendar day.
5.16.3	The latent defect period is 10 years, commencing on the Day after the date of certification of Practical Completion.
6.5.1.2.3	The percentage allowance to cover overhead charges is: 50 per cent for labour; and 15 per cent for materials.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%. Proof of ownership is required.
6.10.3	<p>The limit of retention money is 10% of the value of the Contract Price.</p> <p>A Retention Money Guarantee is compulsory.</p> <p>A penalty will be applied for non-delivery of the Retention Money Guarantee as required. The penalty will be 10% of the value of the completion Retention Money Amount per calendar month for late delivery of the said Retention Money Guarantee.</p>

Clause	<i>Data</i>
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is a maximum of 10% (ten percent) of the Contract Sum.
8.6.1.3	The limit of indemnity for liability insurance is equal to the contract amount.
10.5.1	Dispute resolution shall be by standing adjudication, use GCC 2010, Appendix 5.
10.7.1	The determination of disputes shall be by arbitration.

C.1.2.1.2.2 Variations to the General Conditions of Contract

Clause	Data
2.5.1	<p>Cession</p> <p><i>Amend Clause 2.5.1 as follows:</i></p> <p><i>Delete the words "without the written consent of the other"</i></p>
5.14.5.1	<p>Consequences of Completion</p> <p><i>Amend Clause 5.14.5.1 as follows:</i></p> <p><i>In the second line, substitute the word 'Guarantor' with 'Contractor'.</i></p>
6.2	<p>Security</p> <p><i>Replace Sub-Clauses 6.2.1 and 6.2.2 with:</i></p> <p>"The Contractor shall deliver to the Employer within such time as may be stated in the Contract Data, a Demand Guarantee, of an Insurance Company registered in terms of the Short-term Insurance Act (Act 53 of 1998) or of a registered Commercial Bank, in a sum equal to the amount stated in the Contract Data. The Demand Guarantee shall be issued by an entity subject to the approved of the Employer, and shall conform in all respects to the format contained in the Contract Data.</p> <p>The security to be provided by the Contractor shall be a Demand Gurantee of 10% of the Contract Sum.</p> <p>Wherever a joint venture constitutes the contracting party, the Demand Guarantee shall be issued on behalf of the joint venture.</p> <p>Failure to produce an acceptable Demand Guarantee within the period stated in 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 as amended in the Contract Data."</p>
6.3.1	<p>Variations</p> <p><i>Amend Clause 6.3.1, as follows:</i></p> <p><i>In the first paragraph, third line, after the words "or for any reason appropriate", add the phrase</i> <i>" , including the limiting of contract expenditure so as not to exceed the Employer's budgeted project funding, "</i></p> <p><i>Add the following phrase to the last paragraph of Clause 6.3.1.6, after the words "ascertaining the amount of the Contract Price":</i></p> <p><i>" , and no such variation shall give reason for consideration of any claim in terms of Clause 6.11."</i></p>
6.3.2	<p>Orders for Variations to be in writing</p> <p>Omit the words "Provided that" under Clause 6.3.2 and omit Clause 6.3.2.1.</p>

Clause	Data
6.9.2	Definition of “materials” <i>Amend Clause 6.9.2, as follows:</i> <i>Substitute the word ‘plant’ with ‘Plant’.</i>
6.10.1	Interim Payments <i>Amend Clause 6.10.1.5 as follows:</i> <i>In the third line, add the words ‘not yet’ before the words ‘built into’</i>
6.10.5	Payment of retention money <i>Amend Clause 6.10.5 as follows:</i> <i>In the second line, add the words ‘, if any,’ after the words ‘Defects Liability Period’</i>
6.10.6	Set-off and delayed payments <i>Amend Clause 6.10.6.2 as follows:</i> <i>Delete the words ‘simple interest’ and substitute with the words ‘interest compounded monthly’.</i> <i>Delete the words ‘Contractor’s Bank’ and substitute with the words ‘Employer’s Bank’</i>
6.11	Variations exceeding 15 per cent <i>Replace the marginal heading with:</i> “Variations exceeding 20 per cent” <i>Replace “15 per cent” with “20 per cent” in the text of this Sub-Clause</i>
7.4.4	Cost of test specimens and tests <i>Amend Clause 7.4.4.2 as follows:</i> <i>In the <u>second</u> line of paragraph two, add the words ‘the requirements of’ before the words ‘the Contract’</i>
7.8.2	Cost of making good of defects <i>Amend Clause 7.8.2.1 as follows:</i> <i>In the first line, correct the spelling of ‘therefore’.</i>
8.1.3	Excessive loads and traffic <i>In the third line, add a comma after the word ‘Site’ as follows: ‘in the vicinity of the Site, from’.</i>
8.3.1	Excepted risks <i>Amend Clause 8.3.1.10 as follows:</i> <i>In the second line, delete the words ‘Employer or any of their’ and substitute with ‘or any of its’.</i>

Clause	Data
8.6.6	<p>Contractor to produce proof of payment</p> <p>"The Contractor shall before commencement of the Works produce to the Engineer:</p> <p>8.6.6.1 The policies by which the insurances are effected,</p> <p>8.6.6.2 Proof that due payment of all premiums there under, covering the full required period has been made, and</p> <p>8.6.6.3 Proof of continuity of the policies for the required period.</p>
	<p>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.</p> <p>The Engineer shall be empowered to withhold all payment certificates until the Contractor has complied with his obligations in terms of this Clause 8.6.6."</p>
8.6.7	<p>Remedy on Contractor's failure to insure</p> <p><i>Delete sub-clause 8.6.7 and substitute with:</i></p> <p>"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, as amended in the Contract Data."</p>
9.1.2	<p>State of emergency</p> <p><i>In the <u>fourth</u> line, delete the words 'supply of' and substitute with 'availability of'.</i></p>
9.2	<p>Termination by Employer</p> <p><i>Delete the contents of Clause 9.2 and substitute with:</i></p> <p>"9.2.1 The Employer may terminate the Contract by written notice to the Contractor if:</p> <p>9.2.1.1 Sequestration of the Contractor's estate is ordered by a Court with due jurisdiction, or</p>
	<p>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</p>
	<p>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</p>
	<p>9.2.1.4 The Contractor furnished materially inaccurate information in his Tender, which had a bearing on the award of the Contract, or</p>
	<p>9.2.1.5 The Contractor has abandoned the Contract.</p>

Clause	Data
	<p>9.2.2 If the Contractor:</p> <p>9.2.2.1 Has failed to commence the Works in terms of Clause 10 hereof, or has suspended the progress of the Works for fourteen (14) days after receiving from the Engineer written notice to proceed, or</p> <p>9.2.2.2 Has failed to provide the Guarantee in terms of Clause 7 within the time stipulated in the Contract Data, or</p> <p>9.2.2.3 Has failed to proceed with the Works with due diligence, or</p> <p>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</p> <p>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</p> <p>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</p> <p>9.2.2.7 Has assigned the Contract or any part thereof without the Employer's consent in writing,</p> <p>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.</p>
	<p>9.2.3 If the Contractor, having been given notice to rectify a default in terms of 9.2.2 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 9.2.2.7 above.</p>
	<p>9.2.4 Should the amounts that 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."</p>

C.1.2.1.2.3 Additional clauses to the General Conditions of Contract:

Clause	Data
1.1	Definitions <i>Add the following at the end of Sub-Clause 1.1.1:</i>
1.1.1.35	“Client”, as used in the Occupational Health and Safety Act - Construction Regulations, means Employer.
1.1.1.36	“Principal Contractor”, as used in the Occupational Health and Safety Act - Construction Regulations, means Contractor.
4.12	Contractor’s superintendence <i>Add the following sub-clause 4.12.4 to Clause 4.12:</i> “Where a form is included in the Contract Data for this purpose, the Tenderer 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 therefore. Previous experience of this person on work of a similar nature during the past five (5) years is to be entered on the form. The Contractor’s Site Agent shall be on Site at all times when work is being performed. The person shall be subject to approval of the Engineer in writing and shall not be replaced or removed from Site without the written approval of the Engineer.”
5.6	Programme <i>Add the following sub-clause 5.6.6 to Clause 5.6:</i> “Failure on the part of the Contractor to deliver to the Engineer, the <ul style="list-style-type: none"> • 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”.
5.9.7	Engineer to approve Contractor’s Designs and Drawings <i>Add the following sub-clause 5.6.6 to Clause 5.6:</i> “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”.

Clause	Data
5.11	<p>Suspension of the Works</p> <p><i>Add the following sub-clause 5.11.4 to Clause 5.11:</i></p> <p>“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.</p> <p>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.</p> <p>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.”</p>
5.12	<p>Extension of Time for Practical Completion</p> <p><i>Add the following at the end of Sub-Clause 5.12.2.2:</i></p> <p>“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:</p> $V = (Nw - Nn) + \frac{Rw - Rn}{x}$ <p>where</p> <p>V = Extension of time in calendar days for the calendar month under consideration</p> <p>Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded</p> <p>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</p> <p>Rw = Actual recorded rainfall for the calendar month</p> <p>Rn = Average rainfall for the calendar month, as derived from existing rainfall records</p> <p>x = 20</p>
	<p>The rainfall records which shall provisionally be accepted for calculation purposes are:</p> <p>Based on records taken at: Rainfall Station : Polokwane Years of record: 1977 – 2010</p>

Clause	<i>Data</i>		
	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	91	3
	February	72	2
	March	61	2
	April	3	1
	May	22	0
	June	4	0
	July	5	0
	August	4	0
	September	14	1
	October	41	1
	November	80	3
	December	91	3
	<p>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.</p> <p>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."</p> <p>For this project the rainfall formula will only apply as background information, or dispute resolution. Extension of time for rainfall will only be granted on Actual Delays experienced; noted and agreed upon by the engineer.</p>		
6.10	<p>Payments</p> <p><i>Add the following at the end of Sub-Clause 6.10.1:</i></p> <p>"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".</p>		
	<i>Add the following at the end of Sub-Clause 6.10.1.5:</i>		

Clause	<i>Data</i>
	<p>“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.</p> <p>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.”</p>
9.3	<p>Termination by the Contractor</p> <p><i>Add the following at the end of Sub-Clause 9.3:</i></p> <p>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.”</p>

C.1.2.2 Part 2: Data provided by the Contractor

Section 1.01 *The General Conditions*
of Contract, as specified in Part 1, shall be used as a basis for this Data which is required to be completed.

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

Clause	Data
1.1.1.9	The Name of the Contractor is:
1.2.1.2	The address of the Contractor is: Physical address:
1.2.1.2	Postal address: e-mail address: Contact numbers: Corporate: Direct: Mobile: Fax:

C1.4 OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

This agreement is mandatory for all contractors appointed by the Polokwane Municipality or any other institution that do work for or on behalf of Municipality.

This agreement is between:

THE CONTRACTOR:

Herein represented by

In his capacity as Being duly authorized hereto hereinafter referred to as "contractor".

Compensation Commissioner Number:

(Attach a copy of the Registration

Certificate to this agreement)

Company : Name:

Registration Number:

CEO : Name:

ID Number:

Physical Address:

.....

**And the POLOKWANE MUNICIPALITY
(Hereinafter referred to as "the Council")**

1. DEFINITIONS

- 1.1 **CONTRACTOR** Means the “Contractor” as defined in the “Principal Contract”.
Annexed hereto in his capacity as mandatory.
- 1.2 **MANDATORY** Includes an agent, contractor or subcontractor for work to be done or service rendered, but without derogating from his status in his own right as an employer of people or user of equipment, machinery, tools or materials.
- 1.3 **THE PRINCIPAL CONTRACT** Means the contract annexed hereto as annexure “A”.
- 1.4 **COUNCIL** Means the Polokwane Municipality
- 1.5 **RISK CONTROL OFFICER** A person appointed in writing by Council.
- 1.6 Any definitions contained in any Statute hereinafter mentioned shall have the meaning allocated to it by the specific statute.

2. OBJECTIVE

- 2.1 Whereas Council and the Contractor have entered into a contract for service (work) as fully indicated in the “Principle Contract” and whereas the “Contractor” agreed to indemnify Council against the risks stated hereunder whether foreseeable or not, and, whereas it is agreed between the parties that it is of cardinal importance to safeguard both Council and the Contractor’s obligation in terms of relevant legislation as well as to extend the obligation as a company and/or legal person and/or person as an entity concerned with health, safety and the environment.
- 2.2 These rules are applicable to all contractors performing work for Council within the jurisdictional area of the Council and on any premises, which are owned, rented or developed by the Council.
- 2.3 The Council acts through those officials or persons who are generally or specifically charged with the responsibility, in terms of legislation, as well as any other official or person who is generally or specifically charged with the control and supervision of the project.

IT IS HEREBY AGREED AS FOLLOWS:

3. INDEMNITIES

- 3.1 The “Contractor” hereby indemnifies the “Council” against any loss in respect of all claims, proceeding, damages, costs and expenses arising out of any claim or proceeding pertaining to the non compliance by the “Contractor” of any statutory requirements and/or requirements regarding the following Acts in particular pertaining to the provisions of:
- 3.1.1 The Occupational Health and Safety Act 85 of 1993 (as amended), including the Construction Regulations, 2003 as promulgated on 18 July 2003, in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), in Government Gazette No. 25207 and Regulation Gazette No. 7721. See Annexure B.
 - 3.1.2 The Health Act 63 of 1977.
 - 3.1.3 Road Traffic Act 29 of 1989 (as amended).
 - 3.1.4 Environment Conservation Act 73 of 1989.
 - 3.1.5 The National Water Act 36 of 1998.
 - 3.1.6 The Criminal Procedure Act 51 of 1977.
 - 3.1.7 The Explosives Act 26 of 1956.
 - 3.1.8 The Arms and Ammunition Act 75 of 1969.
 - 3.1.9 Compensation for Occupational Injuries and Diseases Act 130 of 1993.
 - 3.1.10 The Labour Relations Act 66 of 1995.

- 3.1.11 The Unemployment Insurance Act 30 of 1966 (as amended).
 - 3.1.12 The Basic Conditions of Employment Act 75 of 1997 (as amended).
 - 3.1.13 Standards Act 29 of 1993.
 - 3.1.14 any statutory provisions in any act and/or any law or bylaw of any local government and/or any published official standard incorporated into any statute or bylaw relating to the completion of the work set out in the "Principal Contract".
 - 3.1.15 Any other health and safety standard prescribed by the "Council".
- 3.2 The "Contractor" shall ensure that he familiarizes himself with the requirements of the above legislation and that he, his employees and any subcontractor will comply with all the statutory provisions contained in them.
 - 3.3 The "Contractor" shall indemnify the "Council" in respect of any physical loss or damage to any plant, equipment or other property belonging to the "Contractor" or for which he is responsible and he hereby indemnifies the "Council" against any loss in respect of all claims, proceedings, damages, costs and expenses consequent upon the loss of or damage to any plant, equipment or other property belonging to, or which is the responsibility of, any subcontractor, agent or employee of the subcontractor.
 - 3.4 The "Contractor" shall and hereby indemnifies the "Council" against any liability, loss, claim or proceedings whatsoever, whether arising in common law or by statute, consequent on personal injuries to or the loss of health or death of any person whosoever arising out of or in the course of or caused by the execution of the "Principal Contract".
 - 3.5 The "Contractor" shall and hereby indemnifies the "Council" against any liability, loss, claim or proceedings consequent on loss of or damage to any movable or immovable property arising out of or in the course of or caused by the execution of the "Principal Contract" and due to any act or omission of the "Contractor", his agents, servants or subcontractors.

4. PERFORMANCE SAFE WORKING PRACTICE

- 4.1 The "Council" requires a high standard of safe work performance from all employees and expects that the standard be maintained by the "Contractor" within the "Council's" jurisdictional area or on its premises.
- 4.2 Irrespective of human considerations, the maintaining of these health and safety rules shall be the execution of the prescribed legal requirements. These rules are not to hinder the "Contractor" in rendering services or indemnify the "Contractor" from any legal responsibility to ensure healthy and safe work circumstances.
- 4.3 The "Council" shall assist the "Contractor" in any practical considerations to accommodate the healthy and safe execution of work and therefore require co-operation in the execution of these safety rules.

5. LOCK OUT PROCEDURE

- 5.1 When power or air driven machines or equipment, electrical apparatus or pipe lines are examined, repaired, adjusted, cleaned, lubricated or serviced in any other way than normal servicing, then all isolating switches, -levers, valves or appliances must be put in the "off" or "closed" position and locked.
- 5.2 Should more than one team work on a machine, then each person in control of a team, must put a separate lock on the switch, lever, valve or appliance.

6. CRANES, VEHICLES AND HOISTING

- 6.1 For each crane or hoisting equipment used, the “Contractor” must submit a valid and recent test certificate or other form of the last examination of the machine or equipment, to the “Council”.
- 6.2.1 Only trained personnel with written permission and where determined by Law, with a valid driver’s license, may be allowed to operate any electrical diesel or petrol driver overhead crane, hydraulic or electrical hoisting equipment, self driven forklift, tractor or any other crane or vehicle. No employee of the “Contractor” may perform any overhead work or work on an overhead crane or hoisting equipment or work near cranes or crane rail, before:
- i) An agreement was concluded with the “Council”.
 - ii) Approval has been obtained from the “Council” to perform the work.
 - iii) All applicable danger – and warning symbolic signs are put into position, or exemption, if applied for, is in operation.
- 6.3 The “Contractor” shall be wholly responsible for any loss or damage to cranes, hoisting equipment, plant, machines or equipment brought onto the work site by the “Contractor”

7. MACHINE VALANCES, PROTECTION AND FENDING

- 7.1 No machine valances, protection or fending may be removed from machines, manholes, etc without the written permission of “Council” if applicable exemption procedures were not appropriated.

8. SCAFFOLD, LADDERS, TOOLS AND EQUIPMENT

- 8.1 No equipment or appliance belonging to “Council” may be used without written permission from “Council”.
- 8.2 Unless prior arranged, “Contractors” must bring sufficient tools and equipment to the site to finish the contract, including offices and storerooms. The mentioned equipment remains the responsibility of the “Contractor” with respect to loss, damage and theft.
- 8.3 In exceptional cases, where tools and equipment belonging to “Council” are used to finish the contract, the said equipment and tools are used on own risk and the “Contractor” indemnifies “Council” from any claims that may arise. The said indemnity must be in writing, as well as information regarding the loan period, identification and condition of tools and equipment. The “Contractor” is responsible for the returning of said tools and equipment in the same condition or better. The “Contractor” is responsible to “Council” for any damage or excessive wear of such tools or equipment and material.

9. EXCAVATIONS

- 9.1 Before any excavations commence, written permission must be obtained from “Council” to confirm the location of existing electrical cables, water pipes, etc.
- 9.2 All excavations and obstructions in floor, tar and dirt surfaces must be fenced effectively and safeguarded between sundown and sunup with a sufficient amount of red/yellow warning lights and symbolic signs.
- 9.3 The surrounding area must be kept clean, safe and tidy during excavation. Excess material may not obstruct unnecessarily.
- 9.4 If any property is in danger during excavation, it must be supported and the proposed support work must be submitted to the Department of Labour (OHS) and “Council” for approval.
- 9.5 Written permission must be obtained from “Council” to grant admittance to restricted areas as well as areas where dangerous or poisonous gases are present.

10. FIRST AID

- 10.1 The "Contractor" must provide and maintain a first aid box equipped according to legal requirement where more than (5) five persons are employed. The first aid box must be in the care of a person with a competency certificate from one of the following organizations:
- (i) SA Red Cross Association;
 - (ii) St Johns Ambulance;
 - (iii) SA First Aid League; or
 - (iv) A person or organization approved by the Chief inspector for this purpose.
- 10.2 A visible notice must be put up on any work premises with the name of the person responsible for first aid. In an emergency "Council's" Ambulance / Fire Department or emergency services may be contacted at (015) 290 2000.

11. FLAMMABLE LIQUIDS

- 11.1 The "Contractor" shall be held responsible for the necessary precautionary fire prevention measures. No smoking signs must be put up where applicable. The "Contractor's" employees must be informed of "Council's" fire prevention measures and evacuation procedures.

12. COMPENSATION BY CONTRACTOR

- 12.1 The "Contractor" shall be held responsible for all loss of and damage to property, the death or injury of persons, the resultant loss or damage suffered as well as all law suits, claims, costs, charges, fines and expenses due to negligence, violation of statutory liability or neglect of the "Contractor" or the "Contractor's" employees.

13. TRANSGRESSION OF RULES AND MISBEHAVIOUR

- 13.1 The "Contractor" is warned that any act(s) leading to damage or loss of employees of the "Contractor" or the "Council" shall not be tolerated. The "Council" may (without any reason) demand that any employee of the "Contractor" be withdrawn from the principal "Contract" or site.

14. INCIDENT REPORTING

- 14.1 All incidents referred to in Section 24 of the Occupational Health and Safety Act and or other incidents shall be reported, by the "Contractor", to the Department of Labour, as well as to the "Council" and should such an incident take place outside normal working hours, on a Saturday, Sunday or Public holiday provided with a written report relating to any incident.
- 14.2 The "Council" will obtain an interest in the issue of any formal inquiry conducted in terms of the Occupational Health and Safety Act in any incident involving the "Contractor" and/or his employees and/or his subcontractors.
- 14.3 The "Contractor" undertakes to report to "Council" anything deemed to be unhealthy and/or unsafe and that he undertakes to verse his employees and/or subcontractors in this regard.

15. LIAISON AND SUPERVISION

15.1 The "Contractor" hereby undertakes to liaise on a regular basis with the designated Risk Control Officer and "Council" representative regarding any hazards or incidents that may be identified or encountered during the performance of the "Principal Contract".

16. SERVICE INTERRUPTION

16.1 Should any work done by the "Contractor" cause a possible interruption, written permission must be obtained from "Council", before such work commences. The "Contractor" may not switch on or off any compressed air, steam, oxygen, vacuum supply or electrical supply without written permission from the "Council".

17. CONFIDENTIALITY

17.1 The "Contractor" and his employees shall regard all data, documentation and information of the contract and related documentation as confidential.

17.2 Lost documentation/plans or related documentation shall immediately be reported in writing to the "Council".

17.3 The "Contractor" shall not put up any advertisements or billboard at the site without permission.

17.4 The "Contractor" shall not take photographs of the contract site or part thereof or any work process or part thereof, without written permission from the "Council", or have photographs taken, published or let it be published.

18. CONTRACT SITE AND PRESERVATION

18.1 Employees of the "Contractor" shall not be allowed entrance to the site unless a valid identity document, issued by "Council", is displayed. The mentioned documents shall only be valid for a limited period, where after it must be renewed.

19. COMPLETION OF WORK

19.1 The "Contractor" or his employees shall not leave the contract site before the "Council" is satisfied that the contract is completed according to the requirements and standards set out in the contract and that the working site is left in a satisfactory and safe condition.

20. LIQUOR, DRUGS, DANGEROUS WEAPONS AND FIREARMS

20.1 The "Contractor" shall ensure that no liquor, drugs, dangerous weapons or firearms be brought onto the premises.

21. SEARCHES

21.1 The "Contractor" and any person engaged in the contract work may at any time be searched by "Council" appointed security personnel and all packages, suitcases, etc. must be presented to the access control point for examination prior to them being brought onto the property or leaving the property.

22. GENERAL CONDITIONS

22.1 Notwithstanding anything to the contrary in this agreement, it is hereby specifically determined that the "Contractor-"

22.1.1 shall have acquainted himself and be conversant with the contents of all statutory provisions applicable to the health and safety of workers and other persons on the site including the execution of the work, and in particular the conditions contained in the Occupational Health and Safety Act, 1993 (Act 85/1993), and the regulations promulgated in terms thereof, and shall comply therewith meticulously and in all aspects and/or take care that it is complied with;

22.1.2 shall be obliged to immediately execute all instructions given to him by an authorized representative of "Council" in order to ensure and uphold the implementation and enforcement of the provisions referred to in sub-paragraph 1, to the satisfaction of the said representative;

22.1.3 shall indemnify the "Council" against any or all liability which may be incurred by the "Council" as a result of the omission of the "Contractor", his employees, sub-contractors and/or representatives to comply with the provisions referred to in sub-paragraph 1, or to ensure that it shall be complied with;

22.1.4 shall undertake to pay upon demand any and/or all legal costs and other expenses which "Council" may have incurred as a consequence of any criminal charges or other proceedings pending against, or involving the "Council" as a result of the contravention or non-compliance by the "Contractor", his employees, sub-contractors and/or representative of any of the statutory provisions referred to in sub-paragraph 1.

22.1.5 Should the "Contractor" neglect to immediately execute any health and safety written orders issued to him, or to his employee in charge of the works, in terms of the stipulations of sub-paragraph 2, the "Council" shall be entitled to suspend the execution of the works and take the necessary steps to execute or have such order executed. Under these circumstances the contractor shall be obliged to pay "Council", upon demand, all costs and expenses incurred by "Council", in order to execute or have the said orders executed.

22.1.6 Should the abovementioned steps not establish a healthy and safe work environment the "Council" will be entitled to terminate the contract without incurring any further costs or claims from the contractor?

23. "CONTRACTOR" IDENTIFICATION BOARD

23.1 The "Contractor" shall provide on any work premises a temporary identification board containing at all worksites the following information:

- Company name on behalf of which division/department the work is being done.
- The contact number and name of the person representing the "Contractor".
- The contact number and name of the person representing "Council"

24. ACKNOWLEDGEMENT

24.1 The "Contractor" hereby acknowledges that he has read and received a copy of the "Principal Contract" and agrees to be bound by and undertakes to observe all the terms and conditions of the "Principal Contract". This appointment is made in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993.

25. EXCEPTIONS AND OMISSIONS

26. REMARKS

THE CONTRACTOR

SIGNED AT ON THIS DAY OF

WITNESSES:

..... 1.
THE CONTRACTOR

2.

THE COUNCIL

SIGNED AT ON THIS DAY OF

WITNESSES:..... 1.

THE COUNCIL
2.

b) INDEMNITY CERTIFICATE

Contractor:

Employer: Polokwane Municipality

Contract:

I/we

Hereafter the "Contractor"

"Contractor" hereby indemnifies the Polokwane Municipality (Council) against any claim of whatever sort which may arise directly or indirectly from the execution by me/us of the above-mentioned contract and which may be instituted against "Council", as well as of any loss or damage which the "Council" suffers or expenditure the "Council" incurs to prevent responsibility for such claim, loss or damage, whatever the cause of such claim may be or whatever loss or damage the "Council" suffers.

THUS done and signed at on this day of

..... 20.....

WITNESSES:

1. **CONTRACTOR**

2. **COUNCIL**

c) ACKNOWLEDGEMENT CERTIFICATE

I, in my capacity as.....

Duly authorized hereto representing

..... Contractors, acknowledge receipt of a copy of the Polokwane Municipality's safety manual for contractors and the under mentioned person as my supervisor regarding all works and services which must be executed by the Contractor. The appointment is done in terms of the Occupational Health and Safety Act, 1993 (Act 85/1993).

SIGNED AT ON 200...

I, accept the abovementioned appointment, and declare that I am familiar with the contents of the Polokwane Municipality's Safety Manual for contractors

CASUALTIES REGISTRATION NUMBER

SIGNED AT ON 200....

SIGNATURE:

WITNESSES: 1.

2.

A copy of this certificate shall be submitted to the "Council" before any work commences.

C1.5: 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:
who warrants that he/ she is
duly authorised to sign for and
on behalf of the **First Party** in
the presence of

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

Name:
the **Adjudicator** in the
presence of

Witness: (Signature).....	Witness: (Signature).....	Witness: (Signature).....
Name:	Name:	Name:
Address:	Address:	Address:
.....
Date:	Date:	Date:

PART C2: PRICING DATA

C2.1: PRICING INSTRUCTIONS

C2.2: BILL OF QUANTITIES

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE

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 Bidder offer and the Employer's undertakings in the checking and correction of arithmetical errors are dealt with in the Standard Conditions of Bidder contained in Annexure F of SANS 294, as amended in and read in conjunction with the Bidder 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 Bidder 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 Scope of Work and Site Information.
Quantity	:	The number of units of work for each item.
Rate	:	The payment per unit of measurement at which the Contractor Contracts to do the work.
Amount	:	The product of the quantity and the rate Biddered for an item.
Sum	:	An amount contracted for an item, the extent of which is described in the Bill of Quantities, the specifications or elsewhere but the quantity of work of which is not measured in any units.

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 clauses in a specification in which further information regarding the schedule item can be obtained appear under "Reference clause" in the Bill. The reference clauses indicated are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the contract documents. Standardised Specifications are identified by the letter or letters which follow SABS in the SABS 1200 series of specifications, eg. G for SABS 1200 G.

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	=	meganeutron
MN-m	=	meganeutron-metre
MPa	=	megapascal
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)

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.

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 Bidder 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 Bidder 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.

11.4 Labour Intensive work

Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column or as a prefix or suffix against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of works, is a deviation from the contract. The items marked with the letters 'LI' are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.

Where minimum labour intensity is specified by the design the contractor is expected to use their initiative to identify additional activities that can be done labour-intensively in order to comply with the set minimum labour intensity target.

Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

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.

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE: PHASE 2 AND 3

C2.2 BILL OF QUANTITIES

POLOKWANE MUNICIPALITY
CONTRACT NO.: PM47/2017
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1200

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1200	<u>GENERAL REQUIREMENTS AND PROVISIONS</u>				
B12.01	(i) Payment of community liason at R 4500 per month	-	Prov	Sum	R 36 000,00
	(ii) Payment for PSC sittings at 100 per member per sitting	-	Prov	Sum	R 4 800,00
	(iii) Payment for Student Training	-	Prov	Sum	R 72 000,00
	(ii) Handling costs and profit in respect of B12.01(i) above	%	R 112 800,00		
B12.02	Structured Training (as specified in part D of the project specification)				
	(a) Generic Skills and Entreprenueral Skills	-	Prov	Sum	R 100 000,00
	(c) Handling costs and profit in respect of sub-items (a) and (b) above	%	R 100 000,00		
	(d) Provision of training venue (only if required)	-	Lump	Sum	R 2 000,00
PS12.05	Protection, removal,relocation and replacement of Utility services.				
	(a) Utility services				
	(i) Protection, removal,relocation and replacement of utility services.		Prov	Sum	193 000,00
	(ii) Handling costs and profit in respect of sub-items (a) (i) above	%	R 193 000,00		
B12/C1.1	Contractor's initial obligation in respect of the OHS Act and Construction Regulations	L/Sum	1,00		
B12/C1.2	Contractor's Time related Obligations in respect of the OHS Act and Construction Regulations	Month	8,00		
B12/C1.3	Submission of Health and Safety File	L/Sum	1,00		
B12/C1.4	Compesation to Land Owners				
	(a) Payment to affected land owners or to Subcontractors	L/Sum	R 1,00	20 000,00	R 20 000,00
	Handling cost and profit in respect of sub item (i) above	%	R 20 000,00		
B12/C1.5	Provision of Safety Clothing	L/Sum	1,00	14 000,00	R 14 000,00
	Handling cost and profit in respect of sub item (i) above	%	R 14 000,00		
1200	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1300

ITEM NO	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	
	(b) Value-related obligations	-	lump	sum	
	(c) Time-related obligations	month	8		
1300	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

ITEM NO	DESCRIPTION	UNIT	QUANTITY	SECTION 1400	
				RATE	AMOUNT
1400	<u>HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL</u>				
14.01	Office and laboratory accommodation:				
	(a) Offices (interior floor space only)	m ²	40		
	(e) Ablution units x 2	m ²	10		
14.02	Office and laboratory furniture:				
	(a) Chairs	number	10		
	(d) Desks, complete with drawers and locks	number	2		
	(f) Conference tables	number	1		
14.03	Office and laboratory fittings, installations and equipment:				
	(a) Items measured by number:				
	(i) 220/250 volt power points	number	2		
	(iii) Double 80 watt fluorescent-light fittings complete with ballast and tubes	number	4		
	(v) Single incandescent-light fittings complete with 100 watt globes	number	4		
	(vi) Wash-hand basins complete with taps and drains	number	1		
	(x) Fire extinguishers, 9,0kg all purpose dry powder type, complete, mounted on wall with brackets	number	2		
	(xi) Air-conditioning units with, 2,2 kW minimum capacity, mounted and with own power connection	number	1		
	(xiv) General-purpose steel cupboards with shelves	number	2		
	(xv) Steel filing cabinets with drawers	number	2		
1400	TOTAL CARRIED FORWARD				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
14.04	Car-ports	number	2		
14,08	Services				
	(a) Services at offices and laboratories:				
	(i) Fixed costs	-	Lump	Sum	R 20 000,00
	(ii) Running costs	month	8,00		
1400	TOTAL CARRIED TO SUMMARY				

C2.2.5

C2.2.4

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1500

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1500	ACCOMMODATION OF TRAFFIC				
15,01	Accommodating traffic and maintaining temporary deviations	km	4,00		
15,02	Earthworks for temporary deviations:				
	(a) Shaping of temporary deviations	km	4,00		
	(b) Cut and borrow to fill	m ³	60,00		
	(c) Cut to spoil	m ³	60,00		
B15.03	Temporary traffic-control facilities:				
	(a) Flagmen	man-day	240,00		
	(b) Portable STOP and GO-RY signs	number	2,00		
	(e) Road signs, R- and TR-series, (size indicated)	number	2,00		
	(f) Road signs, TW-series, (size indicated)	number	2,00		
	(g) Road signs, STW-, DTG-, TGS- and TG-series (excluding delineators and barricades)	m ²	4,00		
	(h) Delineators (DTG50J):				
	(i) Single	number	10,00		
	(ii) Mounted back to back	number	5,00		
	(j) Traffic cones 600mm	number	10,00		
	(l) Movable barriers (type indicated)	No	2,00		
	(n) Safety jackets and hats	No	4,00		
15.05	Gravelling and repair of temporary deviations and existing gravel shoulders used as temporary deviations:				
	(a) Temporary deviations	m ³	100,00		
15.06	Watering of temporary deviations	kilolitre	2 000,00		
1500	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1500

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
15.07	Blading by road grader of:				
	(a) Temporary deviations	km-pass	6,0		
	(b) Existing roads used as temporary deviations	km-pass	6,0		
15.08	Repairs, alterations and/or additions to existing roads used as temporary deviations	-	Prov	Sum	Rate Only
B15.14	Allow providsional sum for:				
	(a) Repair of damaged temporary road signs and delineators	-	Prov	Sum	
	(b) Replacement of damaged temporary road signs and delineators	-	Prov	Sum	
1500	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1700

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1700	<u>CLEARING AND GRUBBING</u>				
17,01	Clearing and grubbing	ha	2,0		
17,02	Removal and grubbing of large trees and tree stumps				
	(a) Girth exceeding 1 m up to and including 2m	No	2		
1700	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 1800

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1800	<u>DAYWORKS</u>				
B18.01	Labourers:				
	(i) Unskilled	h	50		Rate Only
	(ii) Semi-skilled	h	50		Rate Only
	(iii) Skilled	h	50		Rate Only
B18.02	Foreman	h	50		Rate Only
B18.03	Tipper trucks:				
	(i) 3 - 5 ton	h	50		Rate Only
	(ii) 5.1 - 10 ton	h	50		Rate Only
B18.04	Loader (0,5m³)	h	50		Rate Only
B18.05	Grader (CAT 140G or similar)	h	50		Rate Only
B18.06	LDV	km	50		Rate Only
B18.07	Compaction rollers:				
	(i) Vibratory roller	h	50		Rate Only
	(ii) Tamping roller	h	50		Rate Only
	(iii) Grid roller	h	50		Rate Only
B18.08	Hand controlled compactors				
	(i) Pedestrian roller (Bomag BW90)	h	50		Rate Only
	(ii) Vibratory plate	h	50		Rate Only
	(iii) Rammers	h	50		Rate Only
B18.09	Water truck (min. 10000litre)	h	50		Rate Only
B18.10	Dozer (D7 or similar)	h	20		Rate Only
1800	TOTAL CARRIED TO SUMMARY				Rate Only

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 2100

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2100	<u>DRAINS</u>				
LI 21.01	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	1 215		
	(b) Extra over subitem 21.01(a) for excavation in hard material, irrespective of depth	m³	365		
LI 21.02	Clearing and shaping existing open drains	m³	2 160		
21,05	Banks and dykes	m³	100		
21,19	Selected backfill material under concrete-lined side drains compacted to 93% of modified AASHTO density.	m³	120		
2100	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 2200

ITEM NO	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	m ³	45		
	(b) Extra over subitem 22.01(a) for excavation in hard material, irrespective of depth	m ³	36		
22,02	Backfilling:				
	(a) Using the excavated material	m ³	80		
	(c) Extra over subitems 22.02(a) and (b) for soil cement backfilling containing 2% cement	m ³	10		
22.05	Portal and rectangular culverts:				
	(b) Without prefabricated floor slabs:				
	(ii) 1 200 mm x 1 200 mm, class 75S	m	10		
B22.07	Cast in situ concrete and formwork:				
	(b) (i) In floor slabs for portal or rectangular culverts including formwork, joints and class U2 surface finish (class 25/19)	m ³	2		
	(ii) Between culvert units (class 15/19)	m ³	2		
	(c) In inlet and outlet structures, skewed ends, catchpits, manholes, trust and anchor blocks, including formwork and including class U2 surface finish.				
	(i) Class 30/19 concrete	m ³	5		
	(d) formwork of concrete under subitem 22,07(c) above				
	(i) Class F1 surface finish	m ²	15		
2200	TOTAL CARRIED FORWARD				

POLOKWANE MUNICIPALITY

CONTRACT NO: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 2200

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
22,17	Steel reinforcement				
	(a) Mild steel bars	t	Rate Only		Rate Only
	(b) High-tensile steel bars	t	0,20		
	(c) Welded steel fabric ref 195	kg	50,00		
22,18	Brickwork				
	(a) 115 mm thick	m ²	2		
	(b) 230 mm thick	m ²	2		
22,19	Plaster	m ²	2		
22,20	Benching	m ²	2		
22,23	Service ducts				
	(a) Ordinary pipes				
	(b) Unplasticised PVC Pipes				
	(i) 110mm diameter	m	20		
	(ii) 150mm diameter	m	20		
PS22.23	(c) Encasing of service duct in 1:12 cement soil mixture (75mm min. all round)	m	20		
PS22.25	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.	m ³ -km	50		
22,26	Hand excavation to determine the positions of existing services.	m ³	20		
2200	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 2300

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2300	<u>CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS</u>				
23.01	Concrete kerbing:				
	(a)(i) Prefabricated mountable kerb, SABS 927 fig 8c, as shown on the Drawings	m	2 080,00		
	(ii) Prefabricated mountable kerb, SABS 927 fig 12, as shown on the Drawings	m	18,0		
	(iii) Prefabricated mountable kerb, SABS 927 fig 3, as shown on the Drawings	m	18,0		
	(ii) Edge beam (200mm deep x 200 wide mm)	m ³	20,0		
23.04	Cast in situ concrete chutes (measured by components):				
	(a) Concrete				
	(1) Class 20/19	m ³	4,0		
	(b) Formwork				
	(1) F1 Surface finish	m ²	20		
	(2) F2 Surface finish	m ²	20		
23.07	Trimming of excavations for concrete-lined opened drains:				
	(a) In soft material	m ²	3 150		
	(b) In hard material	m ²	630		
23.08	Concrete lining for open drains:				
	(a) Cast insitu concrete lining (V and trapezoidal drain) includ formwork.	m ³	250		
	(b) Class U2 surface finish to cast in situ concrete (trapezoidal drain)	m ²	2 506		
23.10	Sealed joints in concrete linings of open drains (Polysulphide sealants)	m	50,00		
23.12	Steel reinforcement				
	(c) Welded steel fabric ref 195	kg	4251,00		
2300	TOTAL CARRIED FORWARD TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 3100

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3100	<u>BORROW MATERIALS</u>				
31.01	Excess overburden	m ³	1 000		
31.03	Finishing-off borrow areas in:				
	(b) Intermediate material	ha	1,0		
	(c) Soft material	ha	1,0		
3100	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 3300

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
33.01	<u>MASS EARTHWORKS</u>				
	Cut and borrow to fill, including all haul :				
	(a) Material in compacted layer thicknesses of 200 mm and less:				
	(i) Compacted to 90% of modified AASHTO density	m ³	4 997		
	(c) Rock fill (as specified in Subclause 3209(c))	m ³	350		
33.04	Cut to spoil, including all haul :				
	Material obtained from:				
	(a) Soft excavation	m ³	8 028		
	(b) Intermediate excavation	m ³	803		
	(c) Hard excavation	m ³	1 044		
33.07	Removal of unsuitable material (including free-haul of 0,5 km):				
	(a) In layer thicknesses of 200 mm and less:				
	(i) Stable material	m ³	350		
	(ii) Unstable material	m ³	350		
	(b) In layer thicknesses exceeding 200 mm:				
	(i) Stable material	m ³	350		
	(ii) Unstable material	m ³	350		
33.10	Roadbed preparation and the compaction of material:				
	(a) Compaction to 90% of modified AASHTO density	m ³	2 583		
3300	Carried forward				

SCHEDULE B : ROAD CONSTRUCTION

SECTION 3300

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
33.13	Finishing-off cut and fill slopes, medians and interchange areas:				
	(a) Cut slopes	m ²	200		
	(b) Fill slopes	m ²	200		
	<u>OVERHAUL</u> (Section 1600)				
33/16.01	Overhaul on material hauled in excess of a free-haul distance of 0,5 km, for haul up to or through 1,0 km (restricted overhaul)	m ³	10 708		
33/16.02	Overhaul on material hauled in excess of 1,0 km (ordinary overhaul)	m ³ -km	27 680		
3300	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 3400

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
34.01	<u>PAVEMENT LAYERS OF GRAVEL MATERIAL</u>				
	Pavement layers constructed from gravel taken from cut or borrow, including free-haul up to 1,0 km:				
	(a) Gravel selected layers compacted to:				
	(i) 93% of modified AASHTO density for a compacted layer thickness of 150 mm (G7)	m³	2 363		
34/16.02	(c) Gravel subbase (stabilized gravel) compacted to:				
	(i) 97% of modified AASHTO density for a compacted layer thickness of 150 mm (C4)	m³	2 268		
34/16.02	Overhaul on material hauled in excess of 1,0 km (ordinary overhaul)	m³-km	12 600		
34/32.04	Removal of oversize pavement material	m³	1 000		
3400	Carried forward				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 3500

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3500	<u>STABILIZATION</u>				
35.01	Chemical stabilization extra over unstabilized compacted layers:				
	(c) Gravel subbase, 150 mm thick*	m ³	2 268		
35.02	Chemical stabilizing agent:				
	(a) Ordinary Portland cement	t	124		
35,04	Provision and application of water for curing	kl	1 500		
3500	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 3400

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
36.01	<p><u>CRUSHED-STONE BASE</u></p> <p>Crushed-stone base:</p> <p>(c) Constructed from type G3 material obtained from commercial sources and compacted to 98% of bulk relative density, 150 mm thick layer (nominal 37,5mm size)</p>	m ³	2 153		
3600	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 4100

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4100	<u>PRIME COAT</u>				
41.01	Prime coat:				
	(c) MC-30 cut-back bitumen at 0,8L/m2	litre	11 592		
	(d) MC-70 cut-back bitumen	litre	-		rate only
	(e) Invert bituminous emulsion	litre	-		rate only
41.02	Binder Variation				
	(a) 60/70 pen.grade bitumen	t	1		
4100	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 4200

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4200	ASPHALT BASE AND SURFACING				
42,02	Asphalt surfacing (a) Continuously medium graded using 60/70 penetration grade bitumen: (30mm thick).	m²	14 960		
42,04	Tack coat of 30% stable-graded emulsion at 0,5L/m²	litre	1,00		rate only
42.05	Binder Variation				
	(a) 60/70 pen.grade bitumen	t	2		
PS42.08	100mm cores in asphalt paving	No.	6		
42,21	Construction of speed humps including markings as per per drawing no: MC/CP/RBR/SD/02	No.	4		
4200	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5100

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5100	<u>PITCHING, STONework AND PROTECTION AGAINST EROSION</u>				
LI 51.01	Stone pitching: (b) Grouted stone pitching 150 mm thickness	m ²	50		
5100	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5300

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5300	<u>PITCHING, STONework AND PROTECTION AGAINST EROSION</u>				
53,01	Giude Blocks	number	4		
5100	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5500

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<u>FENCING</u>				
55.01	Clearing the fence line, 2 m wide strip	km	0,1		
B55.02	Supply and erect new fencing material for new fences and for supplementing material in existing fences which are being repaired or removed:				
	(a) Zinc-coated barbed wire, high-tensile-grade single-strand 3,15 mm x 2,50 mm oval-shaped wire, 2,81 mm equivalent dia, fully galvanized	km	0,1		
	(d) Wire netting, 75 mm x 75 mm x 1,8 mm dia wire	m ²	100		
	(g) Standards, timber, 2,1 m long, 100 mm dia minimum grooved and creosoted	number	10		
	(h) Droppers:				
	(i) Steel, 1,4 m long, 0,56 kg/m ridgeback-pattern	number	10		
	(ii) Timber, 1,4 m long, 36 mm dia minimum, grooved and creosoted	number	10		
	(i) Straining posts, corner posts, stays and anchors:				
	(i) Vertical:				
	(2) Timber straining posts and corner posts, 2,5 m long, 125 mm dia minimum, grooved and creosoted	number	5		
	(ii) Inclined:				
	(2) Timber stays and anchors, 2,5 m long 100 mm dia minimum	number	4		
	(3) Wire stays and anchors, 4,0 mm dia, 6 chord	number	4		
5500	Carried forward				

SCHEDULE B : ROAD CONSTRUCTION

SECTION 5500

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
55,05	Dismantling existing fences:				
	(a) Fences:				
	(i) Stock-proof fences	km	0,1		
B55.08	Supply and erection of security fencing at offices and laboratories as per Drawing No.: (motor gate excluded)	m	100		
B55.09	Supply and erection of standard fencing, six strands, 1.2m high at each borrow pit	m	100		
5500	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5600

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<u>ROAD SIGNS</u>				
56.01	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or Class I 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 (ii) Area exceeding 2 m ² but not 10 m ² (iii) Area exceeding 10 m ²	m ² m ² m ²	10 4 -		rate only
56.02	Extra over item 56.01 for using: (a) Background of retro-reflective material: (i) Class III	m ²	8		
56.03	Road sign supports (overhead road sign structures excluded): (a) Steel Galvenised tubing (diameter and wall thickness indicated) (D75 2mm thick)	t	0,3		
56.05	Excavation and backfilling for road sign supports (not applicable to kilometre posts)	m ³	8		
56.06	Extra over item 56.05 for cement-treated soil backfill	m ³	8		
56.07	Extra over item 56.05 for rock excavation	m ³	3		
5600	Carried forward				

SCHEDULE B : ROAD CONSTRUCTION

SECTION 5600

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
B56.11	Gravel drainage layer below road sign footings	m ³	8		
B56.12	Hazard plates:				
	(a) 800 mm x 200 mm	number	8		
	(b) 1 000 mm x 250 mm	number	8		
5600	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY
 CONTRACT NO.: PM47/2017
 UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5700

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5700	ROAD MARKINGS				
57,02	Retro-reflective road-marking paint:				
	(a) White line (100mm wide broken or unbroken)	km	2,10		R 0,00
	(d) White lettering and symbols	m²	40,0		R 0,00
57.04	Variations in rate of application:				
	(a) White paint	litre	1,00		rate only
	(b) Yellow paint	litre	1,00		rate only
	(c) Red paint	litre	1,00		rate only
	(d) Retro-reflective beads	kg	1,00		rate only
B57.06	Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)	km	2,3		
5700	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5900

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5900	<u>FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS</u>				
59,01	Finishing the road and road reserve: (b) Single-carriageway road	km	6,00		
5900	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 5900

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<u>CONCRETE BLOCK PAVING FOR ROADS</u>				
73,01	Concrete block paving:				
	(a) 80 mm thick, Class 35	m²	150		
	(b) 60 mm thick, Class 25	m²	100		
73,03	Provision of approved herbicide and ant poison:				
	(a) Provision of materials	-	-	PC Sum	15 000,00
	(b) Contractor's charges and profit added to the Prime Cost Sum	%	15 000,00		
5900	TOTAL CARRIED TO SUMMARY				

POLOKWANE MUNICIPALITY

CONTRACT NO.: PM47/2017

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS PHASE 2

SECTION 8100

ITEM NO	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	R 50 000,00
	(b) Charge on Prime Cost Sum	%	50 000		
8100	TOTAL CARRIED TO SUMMARY				

SUMMARY OF SCHEDULE OF QUANTITIES

1200	GENERAL REQUIREMENTS AND PROVISIONS.....	R	
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS.....	R	
1400	HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL.....	R	
1500	ACCOMMODATION OF TRAFFIC.....	R	
1700	CLEARING AND GRUBBING.....	R	
1800	DAYWORKS.....	R	<u>Rates Only</u>
2100	DRAINS.....	R	
2200	PREFABRICATED CULVERTS.....	R	
2300	CONCRETE KERBING, CONCRETE CHANNELING, CHUTES AND DOWNPIPES AND CONCRETE LINING FOR OPEN DRAINS.....	R	
3100	BORROW MATERIALS.....	R	
3300	MASS EARTHWORKS.....	R	
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL.....	R	
3500	STABILIZATION.....	R	
3600	CRUSHED STONE BASE.....	R	
4100	PRIME COAT.....	R	
4200	ASPHALT LAYER SURFACING.....	R	
5100	PITCHING, STONWORK AND PROTECTION AGAINST EROSION.....	R	
5300	GUIDE BLOCKS.....	R	
5500	FENCING.....	R	
5600	ROAD SIGNS.....	R	
5700	ROAD MARKING.....	R	
5900	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS.....	R	
7300	CONCRETE BLOCK PAVING FOR ROADS.....	R	
8100	TESTING MATERIAL AND WORKMANSHIP TREATING OLD ROADS	R	

TOTAL R

CALCULATION OF TENDER SUM

SUMMARY OF SCHEDULE OF QUANTITIES TOTAL.....	R	
ADD 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 5% of the total of schedule of quantities)	R	
SUBTOTAL R		
ADD VALUE-ADDED TAX (VAT) The tenderer shall add 14% of subtotal for VAT	R	
TOTAL CARRIED TO FORM OF OFFER	R	

SIGNED ON BEHALF OF TENDERER :

PART C3: SCOPE OF WORK

C3.1: STANDARD SPECIFICATIONS

C3.2: PROJECT SPECIFICATIONS

C3.3: PARTICULAR SPECIFICATIONS

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

C3: SCOPE OF WORK

C3.1 STANDARD SPECIFICATIONS

C3.2 PROJECT SPECIFICATIONS

PART A: GENERAL

PS-1	Project Description
PS-2	Description of the Site and Access
PS-3	Details of the Works
PS-4	Construction Management Requirements
PS-5	Security Clearance of Personnel
PS-6	Subcontractors
PS-7	Supply of Materials
PS-8	Execution of Works

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS

PSA	SABS 1200 A: General
PSC	SABS 1200 D: Earthworks

C3.3 PARTICULAR SPECIFICATIONS

SECTION PC	Trimming Of Site
SECTION PC	Maintenance
SECTION PE	Contingencies
SECTION PG	Generic Labour-Intensive Specification
SECTION POHS OHSA 1993	Safety Specification

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

C3 Scope of Work

As much as is economically feasible all work shall be implemented by employing Labour Intensive Construction methods. Over and above the normal Building and Allied works to be implemented by employing skilled and unskilled labour the works specified in the “Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)” shall be undertaken using Labour Intensive Construction methods

1 DESCRIPTION OF THE WORKS

1.1 Employer's objectives

The employer's objectives are to deliver public infrastructure using labour intensive methods in accordance with EPWP Guidelines

Labour-intensive works

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of this Scope of Work.

Labour-intensive competencies of supervisory and management staff

Contractors shall engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/Supervisors at NQF “National Certificate: Supervision of Civil Engineering Construction Processes” and Site Agent/Manager at NQF level 5 “Manage labour-intensive Construction Processes” or equivalent QCTO qualifications.

1.2 Overview of the works

The work will be carried using Labour- Intensive approach as much as possible. Labour-intensive works Comprise the activities described in SANS 1921-5, Earthworks activities which are to be performed by hand, and its associated specification data. Such works shall be Constructed using local workers who are Temporarily employed in terms of this Scope of Work.

1.3 Extent of the works

The construction of Upgrading of Ramongoana Bus and Taxi route Phase 2 which includes the following:

- Establishment of the Contractor's Camp Site
- Setting out of works
- Construction of 2.08 km bus route (Roadbed, Selected layer, Subbase, Base)
- Construction of kerbs
- Construction of a pipe culvert
- Construction of a concrete v-drain (concrete channel).
- Sealing using 30mm continuously graded asphalt.
- To install the road signs.
- Road marking.
- To finish the road after completion of works

1.4 Location of the Works

The settlement area varies between 20km to 30 km from Polokwane on the R521 tar road to Mogwadi

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

1.5 General Information

Labour Regulations

C3.1.7.1 Payment for the labour-intensive component of the works

Payment for works identified in clause 2.3 “the Extent of the Project” in the Project Specifications as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

C3.1.7.2 Applicable labour laws

The Ministerial Determination for Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in **Government Notice N° R949 in Government Gazette 33665 of 22 October 2010**, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

C3.1.7.3 Introduction

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

In this document –

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

C3.1.7.4 Terms of Work

- (a) Workers on a SPWP are employed on a temporary basis.
- (b) A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.
- (c) Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

C3.1.7.5 Normal Hours of Work

An employer may not set tasks or hours of work that require a worker to work–

- (a) more than forty hours in any week
- (b) on more than five days in any week; and
- (c) for more than eight hours on any day.
- (d) An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
- (e) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

C3.1.7.6 Meal Breaks

- (f) A worker may not work for more than five hours without taking a meal break of at least thirty

minutes duration.

- (g) An employer and worker may agree on longer meal breaks.
- (h) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.
- (i) A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

C3.1.7.7 Special Conditions for Security Guards

- (a) A security guard may work up to 55 hours per week and up to eleven hours per day.
- (b) A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

C3.1.7.8 Daily Rest Period

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

C3.1.7.9 Weekly Rest Period

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

C3.1.7.10 Work on Sundays and Public Holidays

- (a) A worker may only work on a Sunday or public holiday to perform emergency or security work.
- (b) Work on Sundays is paid at the ordinary rate of pay.
- (c) A task-rated worker who works on a public holiday must be paid –
 - i. the worker's daily task rate, if the worker works for less than four hours;
 - ii. double the worker's daily task rate, if the worker works for more than four hours.
- (d) A time-rated worker who works on a public holiday must be paid –
 - i. the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
 - ii. double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

C3.1.7.11 Sick Leave

- (a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- (b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- (c) A worker may accumulate a maximum of twelve days' sick leave in a year.
- (d) Accumulated sick-leave may not be transferred from one contract to another contract.

- (e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- (f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- (g) An employer must pay a worker sick pay on the worker's usual payday.
- (h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
 - i.absent from work for more than two consecutive days; or
 - ii.absent from work on more than two occasions in any eight-week period.
- (i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- (j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

C3.1.7.12 Maternity Leave

- (a) A worker may take up to four consecutive months' unpaid maternity leave.
- (b) A worker is not entitled to any payment or employment-related benefits during maternity leave.
- (c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- (d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- (e) A worker may begin maternity leave –
 - (f) four weeks before the expected date of birth; or
 - (g) on an earlier date –
 - (i)if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (ii) if agreed to between employer and worker; or
 - (iii) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- (h) A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
- (i) A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the SPWP on which she was employed has ended.

C3.1.7.12 Family responsibility leave

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

- (a)when the employee's child is born;
- (b) when the employee's child is sick;
- (c) in the event of a death of –
 - (i) the employee's spouse or life partner;
 - (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

C3.1.7.13 Statement of Conditions

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

- (a) the employer's name and address and the name of the SPWP;
- (b) the tasks or job that the worker is to perform; and
- (c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
- (d) the worker's rate of pay and how this is to be calculated;
- (e) the training that the worker will receive during the SPWP.
- (f) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- (g) An employer must supply each worker with a copy of these conditions of employment.

C3.1.7.14 Keeping Records

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

- (a) the worker's name and position;
- (b) in the case of a task-rated worker, the number of tasks completed by the worker;
- (c) in the case of a time-rated worker, the time worked by the worker;
- (d) payments made to each worker.
- (e) The employer must keep this record for a period of at least three years after the completion of the SPWP.

C3.1.7.15 Payment

- (a) An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- (b) A task-rated worker will only be paid for tasks that have been completed.
- (c) An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.
- (d) A time-rated worker will be paid at the end of each month.
- (e) Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- (f) Payment in cash or by cheque must take place –
 - i. at the workplace or at a place agreed to by the worker;
 - ii. during the worker's working hours or within fifteen minutes of the start or finish of work;
 - iii. in a sealed envelope which becomes the property of the worker.

C3.1.7.16 An employer must give a worker the following information in writing –

- (a) the period for which payment is made;
- (b) the numbers of tasks completed or hours worked;
- (c) the worker's earnings;
- (d) any money deducted from the payment;
- (e) the actual amount paid to the worker.
- (f) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it
- (g) If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

C3.1.7.17 Deductions

- (a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- (b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

- (c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.
- (d) An employer may not require or allow a worker to –
 - i. repay any payment except an overpayment previously made by the employer by mistake;
 - ii. state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - iii. pay the employer or any other person for having been employed.

C3.1.7.18 Health and Safety

- (a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- (b) A worker must –
 - i. work in a way that does not endanger his/her health and safety or that of any other person;
 - ii. obey any health and safety instruction;
 - iii. obey all health and safety rules of the SPWP;
 - iv. use any personal protective equipment or clothing issued by the employer;
 - v. report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

C3.1.7.19 Compensation for Injuries and Diseases

- (a) It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- (b) A worker must report any work-related injury or occupational disease to their employer or manager.
- (c) The employer must report the accident or disease to the Compensation Commissioner.
- (d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

C3.1.7.20 Termination

- (a) The employer may terminate the employment of a worker for good cause after following a fair procedure.
- (b) A worker will not receive severance pay on termination.
- (c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- (d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- (e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

C3.1.7.21 Certificate of Service

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

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

C3.1.7.22 Contractor's default in payment to Labourers and Employees

- (a) Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.
- (b) The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

C3.1.7.23 Provision of Handtools

- (a) The Contractor shall provide his labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions

C3.1.7.23 Reporting

The Contractor shall submit monthly returns/reports as specified below:

- (a) Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.
- (b) Copies of identity documents of workers
- (c) Number of persons who have attended training including nature and duration of training provided
- (d) Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M&E framework
- (e) Plant utilization returns
- (f) Progress report detailing production output compared to the programme of works

C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are:

SABS 1200 A 1986	:	General
SABS 1200 C 1980 (Amended 1982)	:	Site Clearance
SABS 1200 D 1989	:	Earthworks
SABS 1200 GA 1982	:	Concrete (Small Works)

(Note: "SABS" has been changed to "SANS"; the SABS 1200 specifications are due to be replaced in the foreseeable future by SANS 1200)

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria:

SANS 1921 – 1 (2004)	:	Construction and Management Requirements for Works Contracts Part 1: <i>General Engineering and Construction Works</i>
----------------------	---	--

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

C3.2: PROJECT SPECIFICATIONS

STATUS

The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

Part A contains a general description of the works, the site and the requirements to be met.

Part B contains variations, amendments and additions to the Standardized Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

The standard specifications which form part of this contract have been written to cover all phases of work normally required for civil contracts, and they may therefore cover items not applicable to this particular contract.

C3.2 PROJECT SPECIFICATIONS

PART A: GENERAL

PS1 PROJECT DESCRIPTION

All Roads and Storm water needs to adhere to the COLTO regulations. The Polokwane Municipality who act as the agent for the areas as mentioned above, did define the minimum level of road and stormwater towards these villages according to the COLTO regulations taking into consideration the following:

- To improve the health and quality of life of the population.
- To integrate the development of a community in the provision of streets infrastructure
- To protect the environment.

The Polokwane Municipality through its IDP therefore would like to implement a sanitation system that is:

- *reliable*
- *acceptable*
- *appropriate*
- *affordable*
- *and sustainable*

PS2 DESCRIPTION OF THE SITE AND ACCESS

2.1 Access to site

Access to the site can be obtained via the public streets within the perimeter of the site of works.

The contractor shall be responsible for the maintenance and reinstatement of damage caused by him or his agents/deliveries to any property (Private or State Owned), fauna and flora and rights of way.

The contractor shall take cognisance of the aforementioned items and should allow in his rates tendered for any costs that could be incurred due to damages by the contractor.

PS3 DETAILS OF THE WORKS

A brief detail of the works for which this specification is applicable is as follows:

3.1 Road Construction

The Polokwane Municipality through its past experience of implementing similar types of projects would like to implement the minimum standards of roads towards these communities with the following criteria:

- *The project must be implemented taking into consideration Labour Intensive methods.*

3.2 Traffic

The work will be undertaken inside an existing established residential area. Haulage of materials will be done on public roads within Polokwane town.

3.3 Nature of ground conditions and subsoil conditions

The soil conditions are expected to be the same or less favourable as that of Polokwane. A lot of hard rock material and intermediate material can be expected.

Rock boulders were encountered at certain test pits and can thus be expected with deeper excavations (deeper than $\pm 1\text{m}$).

3.4 Available selected fill materials

Due to the poor in-situ soil property quality of materials in and around the Polokwane region, the contractor will be required to procure materials from a nearby municipal borrow pit. The material from this borrow pit is suitable as selected fill material.

3.5 Climatic conditions

The site is located in a summer rainfall region with an average annual precipitation of 521mm.

3.6 Labour recruitment conditions

A Project Steering Committee (PSC) will be established and is a vital means of communication between all parties involved with the project. The composition of the PSC comprises representation by the Employer, the Engineer and formal structures within the municipality/community.

The contractor shall make use of these communication channels, and shall appoint from amongst his site personnel a responsible person to participate in the affairs of the PSC, and this representative may also be required to attend the monthly PSC meetings.

It is mandatory that the Contractor shall interact with the community via proactive project liaison and project participation by its leaders and constituted organisations and forums, as well as through the employment of its people, and these activities shall constitute essential facets of the project.

Local labour is to be used and the employment of such labour is to be done in conjunction with the PSC.

The PSC shall appoint a Community Liaison Officer (C.L.O.) (which shall be remunerated under the contract) who shall be in full time employ of the contract. The duties of the C.L.O. shall consist inter alia of the following:

- To be available on site daily between the hour of 07:00 and 16:00 and at other times as the need arises. His normal working day will extend from 07:00 in the morning until 16:00 in the afternoon.
- To communicate daily with regard to number and skills availability.
- To facilitate in labour disputes and to assist in their resolution.
- To attend all meetings in which the community and/or labour are present or are required to be represented.
- To attend all PSC meetings to report on labour.
- To assist in the identification and screening of labourers from the community in accordance with the contractor's requirements.
- To advise and inform temporary labourers of their conditions of employment and to inform temporary labourers as early as possible when their period of employment will be terminated.

- To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- To keep a daily written record of his interviews and community liaison, labour force etc.
- To attend monthly site meetings and report in writing on labour and contract matters.
- Keeping a data base of available labour.
- All such other duties as agreed upon between all parties concerned.
- Compile a list of available skills in the area (skills audit).

PS4 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

4.1 General

The Contractor is referred to **SANS 1921: 2004 parts 1, 2 and 3: Construction and Management Requirements for Works Contracts**. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

4.2 Drawings (*Read with SANS 1921 – 1: 2004 clauses 4.1.7; 4.1.11 and 4.1.12*)

The reduced drawings form part of the tender documents as mentioned under Part T1 and shall be used for tendering purposes only.

The contractor shall be supplied with three complete paper copies of the construction drawings free of charge. The Contractor shall at his own expense re-produce further paper prints required for the construction of the work.

At the completion of the Contract, the Contractor shall return to the Engineer all drawings, provided or made, during the contract period.

Any information which the Contractor has control over and which is required by the Resident Engineer to complete the as built drawings shall be made available to the Resident Engineer before the Certificate of Completion is issued.

Only written dimensions may be used. Dimensions are not to be scaled from drawings unless ordered by the Engineer. The Engineer will supply all figures / dimensions which are not shown on the drawings. The levels or dimensions given on the drawings are subject to confirmation on site. The Contractor shall submit all levels and dimensions to the Engineer for confirmation before he commences with any structural construction work. The Contractor shall also check all dimensions which are given on the drawings and inform the Engineer of any conflicting dimensions.

4.3 Responsibilities for design and construction (*Read with SANS 1921 – 1:2004 Clause 4.2*)

4.3.1 The responsibility strategy followed in this contract shall be A.

4.3.2 The structural and civil engineer responsible for the design in accordance with the specification is: Morula Consulting Engineers

4.4 Planning, Programme and Method Statements (*Read with SANS1921-1:2004 clause 4.3*)

4.4.1 Preliminary programme

The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the initial tendered Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works, and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

4.4.2 Programme in terms of Clause 12 of the General Conditions of Contract

It is essential that the construction programme, which shall conform in all respects to Clause 12 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the tender shall be used as basis for this programme.

The following must be stated on the programme:

- (a) The quantity of work applicable to each bar item as well as the rate at which the work will be completed.
- (b) A budget of the value of completed work, month by month, for the full contract period.
- (c) The critical path.
- (d) Work to be undertaken by Local Contractor (if applicable)
- (e) Training Courses
- (f) Schedule of plant and resources to be utilized

The Contractor's attention is also drawn to clause 40.3 of the General Conditions of Contract 2004.

4.4.3 Time for Completion

The tenderer shall indicate under section C1.2.2: **Data provided by Contractor** the time within which the contract shall be completed.

4.4.4 Delay in Completion

The Contractor shall organise the Works in such a manner that no delays occur. Delays due to faulty organisation or lack or shortage of materials or labour or co-operation with other parties or to any other cause within the control of the Contractor will not be countenanced and full power is reserved by the Engineer to order the Contractor to expedite the work should the work, in the opinion of the Engineer, not progress in a satisfactory way.

4.5 Quality Assurance (QA) *(Read with SANS 1921 – 1: 2004 clause 4.4)*

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

4.6 Management and disposal of water *(Read with SANS 1921 - 1: 2004 clause 4.6)*

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

4.7 Earthworks *(Read with SANS 1921 - 1: 2004 clause 4.10)*

4.7.1 Borrow pits and spoil areas

The borrow pits to be used for this contract shall be pointed out at the Site Inspection. The Contractor shall be permitted to use only those borrow pits approved by the Engineer.

The spoil sites shall be determined on site in conjunction with the Engineer and the Employer. The

Contractor shall be permitted to use only those spoil areas approved by the Engineer.

Should the Contractor wish to use any other spoil area for the disposal of soil, rubble, vegetation, etc, its use shall be subject to the approval of the Engineer and the landowner.

4.8 Testing *(Read with SANS 1921 – 1: 2004 clause 4.11)*

4.8.1 Process control

The Contractor shall arrange for his own process control tests. The Contractor will be expected of to employ the services of the existing established laboratory on site. T Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

4.8.2 Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer shall have his own acceptance control tests carried out by the laboratory. The cost of acceptance testing shall be to the account of the client.

4.9 Site Establishment *(Read with SANS 1921 - 1: 2004 clause 4.14)*

4.9.1 Contractor's camp site and depot

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel, labourers, clerk of works and contracts manager. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

The chosen site shall be subject to the approval of the Engineer and Employer. Possible locations for a campsite shall be pointed out at the Site Inspection. The Contractor shall conform to all local authority, environmental and industrial regulations.

4.9.2 Power Supply

The Contractor shall make his own arrangements concerning the supply of electrical power at the contractor's campsite. No direct payment shall be made for the provision of electrical services. Electrical power cannot be guaranteed by the service provider. During power failures and shortages, the Contractor must make his own arrangements for the provision of electricity.

The rates tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of a power supply to the works.

4.9.3 Water Supply and Sewer

The Contractor shall erect and maintain on the site proper ablution facilities. The Contractor shall service and maintain the facilities in a clean and hygienic state for the duration of the contract period and on completion of the works from the site.

The Contractor shall make his own arrangements concerning the supply of water and sewer disposal at the contractor's campsite. No direct payment shall be made for the provision of water or sewer disposal.

The Contractor must supply all necessary materials for the water connection at a position pointed out by the Engineer. The availability of water cannot be guaranteed by the Municipality and in the event of water no longer being freely available, the Contractor must make his own arrangements to acquire it.

The rates tendered for the relevant items in the Preliminary and General Section of the schedule shall include all costs for the establishment and maintenance of water supply to the works and the Contractor shall make his own arrangements for the possible conveyance and storage of water if necessary. The Contractor will be held responsible for any wastage of water due to negligence.

4.9.4 Accommodation of Employees

No employees except for security guards will be allowed to sleep or be accommodated on the site.

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.
No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets will only be allowed where temporary facilities have to be provided.

4.9.5 Water for construction

The Contractor shall make his own arrangements concerning the supply of water for construction. No direct payment shall be made for the provision of water.

The availability of water cannot be guaranteed by the Municipality and in the event of water no longer being freely available, the Contractor must make his own arrangements to acquire it.

The rates tendered for the relevant items in the schedule of quantities shall include all costs for the establishment and maintenance of water supply for the works and the Contractor shall make his own arrangements for the possible conveyance and storage of water if necessary. The Contractor will be held responsible for any wastage of water due to negligence.

4.9.6 Facilities for the Engineer

A site office for the Engineer is not required.

No housing is required for the Engineer or his Representative. A sum will be allowed for in the bill of quantities in order to maintain the existing offices.

4.9.7 Telephone Facilities

Telephone and facsimile facilities are needed on the site.

4.9.8 Survey beacons *(Read with SANS 1921 - 1 : 2004 clause 4.15)*

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

4.10 Existing Services *(Read with SANS 1921 - 1: 2004 clause 4.17)*

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.

The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

Services belonging to the following service owners will be encountered:

SERVICE OWNER	TYPE OF SERVICE
Eskom	Electrical/Power lines
Telkom	Telephone lines
Polokwane Municipality	Sewer, water and electrical infrastructure

4.11 Health and Safety *(Read with SANS 1921 - 1: 2004 clause 4.18)*

4.11.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act (OHSA) No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2003 issued on 18 July 2003 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in section C1.4.

4.11.2 Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

A Health and Safety Specification is included in Section C3.3, Part PE of the tender documents as part of the Particular Specifications.

(b) Tenderer's Health and Safety Plan

The Tenderer shall submit with the tender his own documented Health and Safety Plan proposed to be implemented for the execution of the work under the contract. The Health and Safety Plan must at least cover the following:

- (i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 7 to 28;
- (ii) pro-active identification of potential hazards and unsafe working conditions;
- (iii) provision of a safe working environment and equipment;
- (iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 5*);
- (v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
- (vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
- (vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2003.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

4.11.3 Cost of compliance with the OHS Act Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

4.12 Management of the environment (Read with SANS 1921 - 1 : 2004 clause 4.19)

Respect for the environment is an important aspect of this contract and the Contractor shall pay special attention to the following:

4.12.1 Natural Vegetation

The Contractor shall confine his operation to the limits of the pipeline reserve (4m wide) for the purpose of constructing the works and where applicable detours, shall be sited in consultation with the Engineer and the local communities.

Only those trees and shrubs directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

4.12.2 Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

4.12.3 Environmental Management Plan

In addition to the above all requirements according to the Environmental Management Plan will be adhered to.

4.13 Contract Name board

One official contract name board, as per C4.2 *Site Information: Construction Notice Board*, is required for this contract.

4.14 Railway Facilities

The nearest railway siding is Polokwane Railway Station.

PS 5 SECURITY CLEARANCE OF PERSONNEL

Tenderers should note that the Polokwane Municipality may require that Security Clearance investigations be conducted on any number of the Tenderer's personnel.

If so required, by the Polokwane Municipality, the Tenderer must remove personnel as indicated immediately and ensure that they have no access to the works or documentation or any other information pertaining the site.

The Employer shall not be liable for any cost concerning the removal of personnel or the effect thereof on the execution of the work.

PS 6 SUPPLY OF MATERIALS

All material to be used in the Works is to be supplied by the Contractor.

The Contractor shall ensure that the work is not delayed due to the lack of materials on Site, by placing orders for material required under this Contract as soon as possible. No extension of time will be allowed for any delay due to the supply of materials.

Although the quantities have been carefully calculated, it must be considered as approximate only and the Contractor, before ordering any materials, should check the quantities required. The bill of quantities is provisional.

PS 7 EXECUTION OF THE WORKS

7.1 Inspection by the Engineer

No portion of the work shall be proceeded with until the Engineer or his representative has examined and approved the previous stage. If any work is covered or hidden from view before the Engineer or his representative has inspected the work, the Contractor shall at his own cost expose the covered or hidden work for inspection. The Contractor shall also be responsible for making good any work damaged during the uncovering.

7.2 Certificate of Completion

When all the work under the Contract have been completed to the entire satisfaction of the Engineer, he will issue a certificate of completion to the Contractor informing the Contractor of the date the date at which the works are deemed to be completed and accepted by the Employer.

The sureties provided by the Contractor for the fulfilment and completion of the Contract in terms of the Form of Agreement will be released upon the issue of the Certificate of Completion.

PS 8 EXPANDED PUBLIC WORKS PROGRAMME (EPWP) LABOUR INTENSIVE SPECIFICATION (*Read with SANS 1914 -5 2002 and Guidelines for the implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP) second edition 2005*)

8.1 Labour intensive competencies of supervisory and management staff

Contractors having a CIDB Contractor grading designation of 5CE and higher only shall engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2006, are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the Contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a Contractor grading designation of 1CE, 2CE, 3CE and 4CE shall have personally completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for the NQF level 2. All other site supervisory staff in the employ of such Contractors must have completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

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 Stormwater 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 Stormwater 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

8.2 Employment of unskilled and semi-skilled workers in labour-intensive works

8.2.1 Requirements for the sourcing and engagement of labour.

- 8.2.1.1 Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.
- 8.2.1.2 The rate of pay set for the SPWP is R 162 per day.
- 8.2.1.3 Tasks established by the Contractor must be such that:
- the average worker completes 5 tasks per week in 40 hours or less; and
 - the weakest worker completes 5 tasks per week in 55 hours or less.
- 8.2.1.4 The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 5.2.1.3.
- 8.2.1.5 The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:
- where the head of the household has less than a primary school education;
 - that have less than one full time person earning an income;
 - where subsistence agriculture is the source of income;
 - those who are not in receipt of any social security pension income
- 8.2.1.6 The Contractor shall endeavor to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- a) 60% women;
- b) 20% youth who are between the ages of 18 and 25; and
- c) 2% on persons with disabilities.

8.2.2 Specific provisions pertaining to SANS 1914-5

8.2.2.1 Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

8.2.2.2 Contract participation goals

There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

8.2.2.3 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

8.2.2.4 Variations to SANS 1914-5

The definition for net amount shall be amended as follows:

Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the Contractor.

The schedule referred to in 5.2.2.3 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

8.2.2.5 Training of targeted labour

- a) The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
- b) The cost of the formal training of targeted labour, will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The Contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.
- c) A copy of this training request made by the Contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works– Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za Tel: 083 677 4026.
- d) The Contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.
- e) The Contractor shall do nothing to dissuade targeted labour from participating in training

programmes.

- f) An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of d above.
- g) Proof of compliance with the requirements of b to f must be provided

8.3 Typical construction work to be executed applying labour intensive principles

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS**SABS 1200 A: CIVIL ENGINEERING CONSTRUCTION: GENERAL****PSA GENERAL (SABS 1200 A)****PSA 1 MATERIALS (Clause 3)****PSA 1.1 Standardisation mark (Clause 3.1)**

Add the following to the Clause:

All material delivered to the site shall bear the Official Standardisation Mark.

PSA 2 PLANT (Clause 4)**PSA 2.1 Restrictions on employee accommodation (Sub-clause 4.2)**

No housing is available for the Contractor's employees. The Contractor shall make his own arrangements to house his employees.

The Employer shall place an area at the disposal of the Contractor to enable him to erect his site offices, workshops and stores. Any facilities shall comply with the requirements of the local authority. The Contractor shall provide his own fencing and site security.

PSA 3 CONSTRUCTION (Clause 5)**PSA 3.1 Dealing with water (Sub-clause 5.5)**

In addition to the items as set out in Subclause 5.5, the Contractor shall also provide pumping equipment, pipes and other equipment as may be necessary.

PSA 4 MEASUREMENT AND PAYMENT (Clause 8)**PSA 4.1 Fixed charge and Value Related Items (Sub-clause 8.2.1)**

Replace the sub-clause with the following:

"Payment shall be a lump sum to provide for the Contractor's expenses in connection with:

- (a) setting up and maintaining his organisation, camps and plant on the site;
- (b) effecting the insurance's and indemnities required in terms of the General Conditions of Contract
- (c) meeting all other general obligations and liabilities which are not specifically measured for payment in these contract documents.

The lump sum total of items (a), (b) and (c) as measured and Fixed Charge Items and time Related Items shall not exceed 15% of the nett total Tender Amount. If the Tenderer should tender a higher amount for this item it shall be reduced to the amount allowed above and all other tendered prices increased in the proportion required to retain the same Nett Total Tender Amount.

The tendered lump sum shall not be subject to any variation if the actual value of work done under the Contract exceeds, or falls short of, the Tender Amount, or as a result of an extension of time for completion in terms of Clause 42 of the General Conditions of Contract.

Any payment made under this item shall not be taken into account when determining whether the value of a certificate complies with the "minimum amount of monthly certificate" laid down in the Appendix.

Before any payment is made under this item the Contractor shall satisfy the Engineer that he has provided on site an establishment and plant of good quality and in value exceeding that of the first instalment. The Contractor may be asked to furnish documented proof that he owns the offices and plant on site, the value of which should exceed the amount claimed in the first certificate. In the event that the Contractor cannot satisfy the Engineer as to the value or ownership, the Engineer shall have the right to withhold part of any payments to be made under this item, until the Works have been completed.

Payment of the lump sum shall be made in three separate instalments as follows:

- (a) The first instalment, 50% of the lump sum, will be paid in the first payment certificate after the Contractor has met all his obligations under this sub-clause and has made a substantial start on construction in accordance with the approved programme.
- (b) The second instalment, 35% of the lump sum, will be paid when the value of the work done reaches one half of the Nett Total Tender Amount.
- (c) The third and final instalment, 15% of the lump sum, will be paid when the works have been completed and the Contractor has fulfilled all requirements of this sub-clause. No payment for the scheduled Fixed Charge Items for this contract will not be made until the requirements regarding and the erection of name boards have been met."

PSA 4.2 Time-Related Items (Sub-clause 8.2.2)

Replace this sub-clause with the following:

Subject to the provisions of 8.2.3 and 8.2.4, payment of item 8.4 (time-related item) will take place in equal monthly amounts, calculated on the tendered amount for the item, divided by the contract period in months, with the understanding that the total of the monthly payments which was paid for this specific item does not exceed the proportion that the progress of the works to date bears in relation to the works as a whole.

Should the Engineer grant an extension of time, the Contractor is entitled to an increase in the amount tendered for time related items, and this increase must be kept in the same proportion to the original tender amount as the extension of time is to the original time of the completion of the works.

Payment for such increased amounts will be considered as full compensation for all time related, provisional and general costs which arise as a result of the extension of time.

PSA 4.3 Exposing of existing services (add the following Sub-clause 8.9)

Add the following new pay item:

Item:

Excavation by hand in all materials to expose existing services

Unit: m³

The tendered sum must include full compensation for all hand excavation as per the dimension approved by the Engineer for the locating, exposing and moving of existing services. Excavation outside of approved dimensions will not be paid. The rate must also include for backfill and compaction to 90% of mod AASHTO density and, if applicable, the removal of excess material not used for backfill, the securing of excavations, for handling surface and subsurface water, for protection of existing services and for any other activity necessary to complete the work. Free haul of 1,0 km will be applicable on the transport of excess material.

No distinction will be made between classes of material or types of services.

Note: The Contractor must provide sufficient supervision over labourers when services are exposed.

PSA 4.4 Occupational Health and Safety (add the following Sub-clause 8.10)

Add the following new pay items:

Item:

Provision for the cost related to the Occupational Health and Safety Act, 85 of 1993, and the relevant Regulations:

a)	Preparation of a Health & Safety Plan	Unit: Sum
b)	Compilation of a Risk Assessment prior to Construction	Unit: Sum
c)	Health & Safety induction Training of employees	Unit: Sum
d)	Compilation and keeping up to date the Health & Safety file which shall include all documentation required in terms of the act	Unit: Sum
e)	Implementation of the Health and Safety Plan over the entire construction period	Unit: Sum

The tendered sum shall include full compensation for providing the above services as required from the Occupational Health & Safety Act. The rate shall include all related costs incurred by the Act, remuneration of personnel, trainers, etc. and equipment required for the execution of the required services as depicted by the Act. The tendered amount for items a, b, c and d shall only be paid on the successful completion of the task as approved by the client. The tendered amount for item e shall be paid on a monthly basis.

PSA 4.5 Facilities for Engineer (Fixed Charge) (Sub-clause 8.3.2.1)

PSA 4.5.1 Furnished office (Sub-clause 8.3.2.1 a)

Add the following to the pay item:

No office will be required for the Engineer.

PSA 4.6 Facilities for Engineer (Time Related) (Sub-clause 8.4.2.1)

PSA 4.6.1 Furnished office (Sub-clause 8.4.2.1 a)

Add the following to the pay item:

No office will be required for the Engineer.

PSA 4.6.2 Survey assistant and materials (Sub-clause 8.4.2.1 d)

Add the following to the pay item:

The Contractor shall make available for the duration of the contract period, when required by the Engineer, one skilled and one unskilled survey labourers.

SABS 1200 D : CIVIL ENGINEERING CONSTRUCTION : EARTHWORKS

PSD 1 SPECIFICATION FOR BORROW PITS

5.2.2.2.2 PSD 1.1 SCOPE

This section shall include all work in obtaining materials for work under this contract, negotiation with owners of the ground on which borrow pits are situated, clearing the site, stripping excess or unsuitable overburden, excavating selected material for use on the works, and finishing off the borrow area to the satisfaction of both the owners and the Engineer, all in accordance with these Specifications or as directed.

PSD 1.2 GENERAL

The Contractor shall be solely responsible for the locating and supply of all materials required from borrow pits for the due and proper construction of the works embodied in this contract.

Before commencing operations at any borrow pit the Contractor shall consult the property owner concerned and the Engineer regarding his proposals for operating the quarry or borrow pit and obtaining access thereto.

The Contractor shall take all measures for the protection and control of livestock, etc., which is made necessary by his operations, such as providing of gates in the existing fences and ensuring that all gates are closed during the whole of the time that they are not actually in use by his traffic.

Where access to the Contractor's quarries is not obtainable by existing roads he shall after consultation with the property owner concerned construct such access roads and provide such gates as he requires and as the authorities concerned may agree to, but the cost of construction of such access roads and the provision of gates shall be deemed to be covered by the prices tendered for the construction of those parts of the works in which the materials from the quarries concerned are being used. The provision of gates and subsequent removal of the gates when no longer required as well as restoration of the fence to its former standard will be at the Contractor's expense.

Whenever required by the owner of the land on which the borrow pit is situated or when it appears necessary in the interest of public health, or the prevention of soil erosion, adequate provision for draining the borrow pit must be made.

PSD 1.3 **USE OF IMPORTED MATERIAL**

The onus shall rest on the Contractor to ensure that the materials used in each stage of the work comply with the requirements for materials as specified for that stage before proceeding with the processing of the next stage and the Contractor is required to ensure that his organisation is at all times properly and adequately equipped to fulfil the above requirements.

All materials which do not conform to the requirements of these Specifications, shall be considered as defective and all such material, whether in place or not, shall be removed from the site of the works by the Contractor at his own expense.

No payment will be made for the shifting of the Contractor's equipment from one borrow pit position to the next.

PSD 1.4 **TAKING AND TESTING OF SAMPLES**

The Contractor must supply the Engineer with comprehensive test results regarding the proposed borrow material 14 days before any borrowing starts. The results must contain enough information to enable the Engineer to assess the quality and quantity of material available from the borrow site. The total cost of these tests must be borne by the Contractor. The exploitation of the pit must be planned in such a way that material of varying quality may be planned in such a way that material of varying quality may be selected and loaded directly or otherwise stockpiled temporarily without contamination.

If, after trial, it is found that any sources of supply, which have previously been approved, do not furnish a uniform product, or if the product from any source proved unsatisfactory in any way, the Contractor shall furnish materials from other approved sources.

The Engineer may from time to time instruct the Contractor to submit samples from approved sources of supply in order to ensure that the quality of materials remains satisfactory.

The cost of taking and testing of samples shall be borne by the Contractor.

PSD 1.5 **MEASUREMENT AND PAYMENT**

The rate for importing material from borrow pits selected by the Contractor or other commercial sources (item 8.3.4(a)2) shall cover the cost of acquiring suitable material, handling and transportation regardless of distance, and placing. No separate payment will be made for location of borrow pits, the taking of samples, the testing of samples, the construction and maintenance of access roads, the clearing of the borrow pit site, the removal and replacement of overburden, the shaping and drainage of borrow pits, the scarifying of access roads, and paying of any royalties.

PSD 1.6 FREEHAUL

Replace clause 5.2.5.2 with:

All haul will be regarded as freehaul.

PSD 1.7 CLASSIFICATION OF EXCAVATIONS

Notwithstanding anything to the contrary as may be contained elsewhere in the specifications, excavations shall be classified according to the specified method of excavation as follows :

(i) Excavations which are :

- *not specified in as being required to be executed utilising labour intensive construction methods : and*
- specified as being required to be executed utilising labour intensive construction methods but which notwithstanding, are executed by the Contractor using mechanical plant and equipment which is prohibited in terms of the project specifications, either with the prior authorisation of the Engineer or in breach of the provisions of the specifications :

shall be classified in accordance with the provisions of the SABS 1200 standard specification.

- (ii) Excavations which are specified as being required to be executed utilising labour intensive construction methods and which are so executed, shall be classified in accordance with TABLE 1.
- (iii) Where only softer classes of excavation are required in terms of part 1 to be executed utilising labour intensive methods, the classification for the purposes of determining the cut-off point for labour intensive excavation shall be made in terms of subsubclause (ii) above, and the excavation beyond the cut-off point shall be in terms of subsubclause (i) above. (i.e. a material classified as "intermediate" in terms of subsubclause (ii) may, when not excavated by labour intensive methods, be classified as "soft" in terms of subsubclause (i).
- (iv) Where materials which are specified to be excavated utilising labour intensive construction methods are not in fact excavated by such methods, whether in compliance of an instruction from the Engineer, or in accordance with a concession granted by the Engineer or through default of the Contractor, classification of the material shall be in terms of subsubclause (i) above.

TABLE 1

	NUMBER OF BLOWS REQUIRED FOR A DCP PENETRATION OF 100mm	
	GRANULAR SOIL	COHESIVE SOIL
SOFT - Class 1	≤ 2	≤ 1
SOFT - Class 2	$> 2, \leq 6$	$> 1, \leq 5$
SOFT - Class 3	$> 7, \leq 5$	$> 5, \leq 8$
INTERMEDIATE	$> 15, \leq 50$	$> 8,$
HARD	> 50	-

In all cases where soft founding materials is classified as suitable for culvert bedding construction, the in situ material shall be ripped, moistened and compacted to 90% or 93% modified AASHTO density. The depth of preparation and compaction of founding material shall be as indicated on the drawings or as specified by the engineer. Allowance for measurement and payment for this work is made in the bill of quantities under this section."

The Generic Labour-intensive specification below is the same as SANS 1921-5, Construction and management requirement for works contracts- Part 5: Earthworks activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

Article I. 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) stormwater drainage
- c) low-volume roads and sidewalks

Article II. 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.

Article III. Hand excavateable material

Hand excavateable 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 a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;
- b) cohesive materials:
 - i) 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 a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note:

- 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.
- 2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum

diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

17

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 upto 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 thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 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 100mm. Each layer shall be compacted using hand stampers

- to 90% Proctor density;
- 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
- such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

Measurement and payment

Separate items will be listed in the schedule of quantities for works which are required to be executed utilising labour intensive construction methods and for works to which such requirement does not apply :

Items which apply in respect of Works which in terms of part 1 are required to be executed utilising labour intensive construction methods, are identified in the schedule of quantities by way of the upper case letter "L" suffixed to the item number. Item numbers not suffixed with the letter "L" shall, unless the context implies otherwise, be deemed to apply in respect of Works not required to be executed by labour intensive methods.

Where any item in the SABS 1200 standard specifications or in part 2 refers to the measurement and payment of excavations in terms of increments in the depth of the excavation, the depth increment for excavations required in terms of part 1 to be executed by labour intensive methods shall be taken as 1,0 metre.

The measurement and payment clauses as set out in the SABS 1200 standard specification and in part 2 shall, unless specifically stated to the contrary, apply generally whether or not the Works to which they relate are required to be executed utilising labour intensive construction methods; provided always that where the Works is required to be executed by labour intensive construction methods, each particular clause shall be interpreted and constructed mutatis mutandis in accordance with the provisions of this clause 2.

PARTICULAR SPECIFICATIONS AND VARIATIONS AND ADDITIONS TO THE STANDARD SPECIFICATIONS

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 PC	TRIMMING OF SITE
SECTION PD	MAINTENANCE
SECTION PE	CONTINGENCIES
SECTION PF	MASONRY BRICKWORK
SECTION POHS	OHS 1993 SAFETY SPECIFICATION

PC TRIMMING OF SITE

PC1 SCOPE

This work shall consist of the finishing of the entire site affected by the Contractor's operations before the issue of the Completion Certificate.

PC2 REQUIREMENTS

After completion of the work covered by this Contract, the entire area affected by the Contractor's operations shall be finished off and cleared up and all loose rock shall be removed, if required, and disposed of as directed by the Engineer.

Under no circumstances shall the Contractor use machines for trimming.

All loose stones, roots or other waste matter exposed on fill or excavation slopes, which are liable to become loosened shall be removed and all debris and muck from clearing operations shall be disposed of and the area affected by the Contractor's operations and all camp sites left in a neat and presentable manner.

All false work, temporary supports and structures, casting yards or platforms and equipment shall be removed from the site and from all ground occupied by the Contractor in connection with the work. All parts of the work and adjacent ground shall be left in a neat and presentable condition, all to the satisfaction of the Engineer.

PC3 MEASUREMENT AND PAYMENT

Measurement and payment for complying with the above requirements will not be made separately, and would be regarded as being provided for in full by relevant payment items under 1200 A - General.

PD MAINTENANCE

PD1 MAINTENANCE DURING CONSTRUCTION

From the time of taking over the site by the Contractor, as set out in the Special Conditions of Contract until the acceptance of the work and the issue of the Completion Certificate, the Contractor shall be responsible for the maintenance of the work and shall rebuild, repair, restore and make good at his own expense all injuries or damages to any portion thereof whether occasioned by the action of the elements or any other cause.

PD2 MAINTENANCE OF COMPLETED WORK

Periods of Maintenance

The periods of maintenance for each completed section of work shall extend for twelve months from the time of acceptance of the work and the issue of the relevant Completion Certificate for that section of the work as the case may be as set out in Clause 53 of the General Conditions of Contract.

PD2.1 Work during Period of Maintenance

The Contractor shall be responsible for the repair at his own expense, of all defects in any of the works constructed by him, or affected by him during construction, all in terms of Clause 53 of the General Conditions of Contract.

PD3 MEASUREMENT AND PAYMENT

Measurement and payment for maintenance as described above shall be deemed to be included in the prices tendered and paid for the various items for which payment is made in terms of this Contract and such prices shall be full compensation for the supply of all supervision, labour, materials, equipment, plant and work necessary for the maintenance thereof.

The retention monies as set out in the General Conditions of Contract, Clause 49 (3) shall be released only upon Final Settlement of the Contract as set out in Clause 52 of the General Conditions of Contract

PE CONTINGENCIES

PE1 CONTINGENCIES

An amount to be spent in part or in whole at the complete discretion of the Engineer. This amount shall not form part of the 15% as is defined in Clause 50 of the General Conditions of Contract.

PF 01 SCOPE

This is a SPECIAL SPECIFICATION which covers road construction work which are not covered in the standard specifications

PF 02 GENERAL STANDARD SPECIFICATIONS

The latest edition, including all amendments up to date of tender of the following specifications, publications and codes of practice shall be read in conjunction with this specification and shall be deemed to form part thereof. All other relevant and applicable SABS regulations are also to be considered as minimum requirements, and in particular SABS 0400: The Application of the National Building Regulations.

OW 371 - Specification of materials and methods to be used
(Fourth revision, October 1993)

SECTION POHS: OHS 1993 HEALTH AND SAFETY SPECIFICATION**POHS.1 SCOPE**

This specification covers the health and safety requirements to be met by the Contractor to ensure a continued safe and healthy environment for all workers, employees and subcontractors under his control and for all other persons entering the site of works.

This specification shall be read with the Occupational Health and Safety Act (Act No 85 and amendment Act No 181) 1993, and the corresponding Construction Regulations 2003, and all other safety codes and specifications referred to in the said Construction Regulations.

In terms of the OHS 1993 Agreement in Section C1.2.4 of the Contract document, the status of the Contractor as mandatory to the Employer (client) is that of an employer in his own right, responsible to comply with all provisions of OHS 1993 and the Construction Regulations 2003.

This safety specification and the Contractor's own Safety Plan as well as the Construction Regulations 2003, shall be displayed on site or made available for inspection by all workers, employees, inspectors and any other persons entering the site of works.

The following are possible risks associated with this project:

- Lifting and lowering of materials and equipment from the ground onto the pipe pedestals (sewer)
- Deep excavations in soils requiring shoring or reducing of slopes
- Blasting of hard rock or demolition of concrete
- Movement of construction vehicles on site, taking into consideration steep slopes, other traffic and existing services
- Exposure to possible injuries due to mishandling or failure of power and hand tools
- Falling debris, tools and materials from bridge
- Non-conformance to specifications with regards to fasteners and materials
- Risks related to general safety and security on site

Additional risks may arise from specific methods of construction selected by the Contractor which are not necessary covered in the above.

POHS.2 DEFINITIONS

For the purpose of this contract the following shall apply:

- (a) **Employer**” where used in the contract documents and in this specification, means the Employer as defined in the General Conditions of Contract and it shall have the exact same meaning as **“client”** as defined in the Construction Regulations 2003. **“Employer”** and **“client”** is therefore interchangeable and shall be read in the context of the relevant document.
- (b) **“Contractor”** wherever used in the contract documents and in this specification, shall have the same meaning as **“Contractor”** as defined in the General Conditions of Contract.

In this specification the terms **“principal contractor”** and **“contractor”** are replaced with **“Contractor”** and **“subcontractor”** respectively.

For the purpose of this contract the **Contractor** will, in terms of OHS 1993, be the mandatory, without derogating from his status as an employer in his own right.

- (c) **“Engineer”** where used in this specification, means the Engineer as defined in the General Conditions of Contract. In terms of the Construction Regulations the Engineer may act as agent on behalf of the Employer (the client as defined in the Construction Regulations).

POHS.3 TENDERS

The Contractor shall submit the following with his tender:

- (a) a draft Health and Safety Plan as stipulated in Regulation 5 of the Construction Regulations. The Safety Plan must be based on the Construction Regulations 2003 and will be subject to approval by the Employer;
- (b) a declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Construction Regulations 2003;
- (c) a declaration to the effect that he made provision in his tender for the cost of the health and safety measures envisaged in the Construction Regulations.
- (d) Failure to submit the foregoing with his tender, will lead to the conclusion that the Contractor will not be able to carry out the work under the contract safely in accordance with the Construction Regulations.

POHS.4 NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK

After award of the contract, but before commencement of construction work, the Contractor shall, in terms of Regulation 3, notify the Provincial Director of the Department of Labour in writing if the following work is involved:

- (a) the demolition of structures and dismantling of fixed plant of height of 3,0m or more;
- (b) the use of explosives;
- (c) construction work that will exceed 30 days or 300 person-days;
- (e) excavation work deeper than 1,0m; or
- (f) working at a height greater than 3,0m above ground or landings.

The notification must be done in the form of the pro forma included under Section 9 (Forms to be completed by Successful Tenderer) of the tender document.

A copy of the notification form must be kept on site, available for inspection by inspectors, Employer, Engineer, employees and persons on site.

POHS.5 RISK ASSESSMENT and SAFETY PLAN

5.1 Risk assessment

Before commencement of any construction work during the construction period, the Contractor shall have a risk assessment performed and recorded in writing by a competent person. (Refer Regulation 7 of the Construction Regulations 2003).

The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the work under the contract, and it shall include a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The risk assessment shall be available on site for inspection by inspectors, Employer, Engineer, subcontractors, employees, trade unions and health and safety committee members, and must be monitored and reviewed periodically by the Contractor.

6.1 Safety Plan

The Safety Plan will be compiled in order to amongst others address the finding made during the Risk Assessment phase. The Safety plan will be compiled and submitted to the Engineer and Client for Approval. Construction work can only commence upon written approval of the Safety Plan by the Client.

POHS.6 APPOINTMENT OF EMPLOYEES AND SUBCONTRACTORS

6.1 Health and Safety plan

The Contractor shall appoint his employees and any subcontractors to be employed on the contract, in writing, and he shall provide them with a copy of his documented Health and Safety Plan, or relevant sections thereof. The Contractor shall ensure that all subcontractors and employees are committed to the implementation of his Safety Plan.

6.2 Health and safety induction training

The Contractor shall ensure that all employees under his control, including subcontractors and their employees, undergo a health and safety induction training course by a competent person before commencement of construction work. No visitor or other person shall be allowed or permitted to enter the site of the works unless such person has undergone health and safety training pertaining to hazards prevalent on site.

The Contractor shall ensure that every employee on site shall at all times be in possession of proof of the health and safety induction training issued by a competent person prior to commencement of construction work.

POHS.7 APPOINTMENT OF SAFETY PERSONNEL

7.1 Construction Supervisor

The Contractor shall appoint a full-time **Construction Supervisor** with the duty of supervising the performance of the construction work.

He may also have to appoint one or more competent employees to assist the construction supervisor where justified by the scope and complexity of the works.

7.2 Construction safety officer

Taking into consideration the size of the project and the hazards or dangers that can be expected, the Contractor shall appoint in writing a full-time or part-time **Construction Safety Officer** if so decided by the Inspector of the Department of Labour. The Safety Officer shall have the necessary competence and resources to perform his duties diligently.

Provision shall be made by the Contractor in his rates, to cover the cost of this dedicated construction safety officer appointed after award of the contract.

7.3 Health and safety representatives

In terms of **Section 17 and 18 of the Act (OHSA 1993)** the Contractor, being the employer in terms of the Act for the execution of the contract, shall appoint a **health and safety representative** whenever he has more than 20 employees in his employment on the site of the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 100 employees.

The function of health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery etc. on a regular base, to participate in consultations with inspectors and to attend meetings of the health and safety committee.

7.4 Health and safety committee

In terms of Sections **17 and 18 of the Act (OHSA 1993)** the Contractor (as employer), shall establish one or more **health and safety committee(s)** where there are two or more health and safety representatives at a workplace. The persons selected by the Contractor to serve on the committee shall be designated in writing.

The function of the health and safety committee shall be to hold meetings at regular intervals, but at least once every three months, to review the health and safety measures on the contract, to discuss incidents related to health and safety with the Contractor and the inspector, and to make recommendations regarding health and safety to the Contractor and to keep record of recommendations and reports made by the committee.

7.5 Competent persons

In accordance with the Construction Regulations the Contractor has to appoint in writing **competent persons** responsible for supervising construction work on each of the following work situations that may be expected on the site of the works.

- (a) Risk assessment and induction training as described in Regulation 7 of the Construction Regulations;
- (b) Fall protection as described in Regulation 8;
- (c) Formwork and support work as described in Regulation 10;
- (f) Excavation work as described in Regulation 11;
- (g) Demolition work as described in Regulation 12;
- (h) Scaffolding work as described in Regulation 14;
- (i) Suspended platform operations as described in Regulation 15;
- (j) Material hoists as described in Regulation 17;
- (k) Batch plant operations as described in Regulation 18;
- (l) Explosive powered tools as described in Regulation 19;
- (m) Cranes as described in Regulation 20;
- (n) Construction vehicle and mobile plant inspections on a daily basis by a competent person as described in Regulation 21(1);
- (o) Control of all temporary electrical installation on the construction site as described in Regulation 22;
- (p) Stacking and storage on construction sites as described in Regulation 26; and
- (q) Inspections of fire equipment as described in Regulation 27.

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to supervise at the same time the construction work on all the work situations for which he has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Contractor from any of his responsibilities to comply with **all** requirements of the Construction Regulations.

POHS.8 RECORDS AND REGISTERS

In accordance with the Construction Regulations the Contractor is bound to keep records and registers related to health and safety on site for periodic inspection by inspectors, the Engineer, the Employer, trade union officials and subcontractors and employees. The following records and registers must be kept on site and shall be available for inspection at all times.

- (a) A copy of the OHS 1993 Construction Regulations 2003;
- (b) A copy of this Health and Safety Specification;
- (c) A copy of the Contractor's Health and Safety Plan (Regulation 4);
- (d) A copy of the Notification of Construction Work (Regulation 3);
- (e) A health and safety file in terms of Regulation 5(7) with inputs by the Construction Safety Officer (Regulation 6(7));
- (f) A copy of the risk assessment described in Regulation 7;
- (g) A full protection plan and the corresponding records of evaluation and training of employees working from elevated positions as described in Regulation 8;
- (h) Drawings pertaining to the design of structures (Regulation 9(3)) and formwork and support work structures (Regulation 10(d)) must be kept on site;
- (i) Pronouncement of the safety of excavations must be recorded in a register to be kept on site (Regulation 11(3)(h));
- (j) A copy of the certificate of the system design for suspended platforms (Regulation 15(3));
- (k) A notice must be affixed around the base towers of material hoists to indicate the maximum mass load, which may be carried at any one time by material hoists (Regulation 7(5));
- (l) Maintenance records of material hoists and inspection results must be kept in a record book to be kept on site (Regulation 17(8));
- (m) A record of any repairs to or maintenance of a batch plant must be kept on site (Regulations 18(9));
- (n) A warning notice must be displayed in a conspicuous manner when and wherever an explosive powered tool is used (Regulation 19(2));
- (o) A register for recording of findings by the competent person appointed to inspect construction vehicles and mobile plant (Regulation 21(1)(j)).

POHS.9 CONTRACTORS RESPONSIBILITIES

For this contract the Contractor will be the mandatory of the Employer (Client), as defined in the Act (OHS 1993), which means that the Contractor has the status of employer in his own right in respect of the contract. The Contractor is therefore responsible for all the duties and obligations of an employer as set out in the Act (OHS 1993) and the Construction Regulations 2003.

Before commencement of work under the contract, the Contractor shall enter into an agreement with the Employer (Client) to confirm his status as mandatory (employer) for the contract under consideration.

The Contractor's duties and responsibilities are clearly set out in the Construction Regulations 2003, and are not repeated in detail but some important aspects are highlighted hereafter, without relieving the Contractor of any of his duties and responsibilities in terms of the Construction Regulations.

(a) Contractor's position in relation to the Employer (Client) (Regulation 4)

In accordance with Section 4 of the Regulations, the Contractor shall liaise closely with the Employer or the Engineer on behalf of the Employer, to ensure that all requirements of the Act and the Regulations are met and complied with.

(b) The Principal Contractor and Contractor (Regulation 5)

The Contractor is in terms of the definition in Regulation 2(b) the equivalent of Principle Contractor as defined in the Construction Regulations, and he shall comply with all the provisions of Regulation 5.

Any subcontractors employed by the Contractor must be appointed in writing, setting out the terms of the appointment in respect of health and safety. An independent subcontractor shall however provide and demonstrate to the Contractor a suitable, acceptable and sufficiently documented health and safety plan before commencement of the subcontract. In the absence of such a health and safety plan the subcontractor shall undertake in writing that he will comply with the

Contractor's safety plan, the health and safety specifications of the Employer and the Construction Regulations 2003.

(c) Supervision of construction work (Regulation 6)

The Contractor shall appoint the safety and other personnel and employees as required in terms of Regulation 6 and as set out in paragraph 7 above. Appointment of those personnel and employees does not relieve the Contractor from any of the obligations under Regulation 6.

(d) Risk assessment (Regulation 7)

The Contractor shall have the risk assessment made as set out in paragraph 7 above before commencement of the work and it must be available on site for inspection at all times. The Contractor shall consult with the health and safety committee or health and safety representative(s) etc. on a regular basis to ensure that all employees, including subcontractors under his control, are informed and trained by a competent person regarding health hazards and related work procedures.

No subcontractor, employee or visitor shall be allowed to enter the site of works without prior health and safety induction training, all as specified in Regulation 7.

(e) Fall protection (Regulation 8)

Fall protection, if applicable to this contract shall comply in all respects with Regulation 8 of the Construction Regulations.

(f) Structures (Regulation 9)

The Contractor will be liable for all claims arising from collapse or failure of structures if he failed to comply with all the specifications, project specifications and drawings related to the structures, unless it can be proved that such collapse or failure can be attributed to faulty design or insufficient design standards on which the specifications and the drawings are based.

In addition the Contractor shall comply with all aspects of Regulation 9 of the Construction Regulations.

(g) Formwork and support work (Regulation 10)

The Contractor will be responsible for the adequate design of all formwork and support structures by a competent person.

All drawings pertaining to formwork shall be kept on site and all equipment and materials used in formwork, shall be carefully examined and checked for suitability by a competent person.

The provisions of Regulation 10 of the Construction Regulations shall be followed in every detail.

(h) Excavation work (Regulation 11)

It is essential that the Contractor shall follow the instructions and precautions in the Standard Specifications and Project Specifications as well as the provisions of the Construction Regulations to the letter as unsafe excavations can be a major hazard on any construction site. The Contractor shall therefore ensure that all excavation work is carried out under the supervision of a competent person, that inspections are carried out by a Professional Engineer or Technologist, and that all work is done in such a manner that no hazards are created by unsafe excavations and working conditions.

Supervision by a competent person will not relieve the Contractor from any of his duties and responsibilities under Regulation 11 of the Construction Regulations.

(i) Demolition work (Regulation 12)

Whenever demolition work is included in a contract, the Contractor shall comply with all the requirements of Regulation 12 of the Construction Regulations. The fact that a competent person has to be appointed by the Contractor does not relieve the Contractor from any of his

responsibilities in respect of safety of demolition work.

(j) Tunneling (Regulation 13)

The Contractor shall comply with Regulation 13 wherever tunneling of any kind is involved.

(k) Scaffolding (Regulation 14)

The Contractor shall ensure that all the provisions of Regulation 14 of the Construction Regulations are complied with. [Note: Reference in the Regulations to "Section 44 of the Act" should read "Section 43 of the Act"].

(l) Suspended platforms (Regulation 15)

Wherever suspended platforms will be necessary on any contract, the Contractor shall ensure that copies of the system design issued by a Professional Engineer are submitted to the Engineer for inspection and approval. The Contractor shall appoint competent persons as supervisors and competent scaffold erectors, operators and inspectors and ensure that all work related to suspended platforms are done in accordance with Regulation 15 of the Construction Regulations.

(m) Boatswain's chains (Regulation 16)

Where boatswain's chains are required on the construction site, the Contractor shall comply with Regulation 16.

(n) Material Hoists (Regulation 17)

Wherever applicable, the Contractor shall comply with the provisions of Regulation 17 to the letter.

(o) Batch plants (Regulation 18)

Wherever applicable, the Contractor shall ensure that all lifting machines, lifting tackle, conveyors, etc. used in the operation of a batch plant shall comply with, and that all operators, supervisors and employees are strictly held to the provisions of Regulation 18. The Contractor shall ensure that the General Safety Regulations (Government Notice R1031 of 30 May 1986), the Driven Machinery Regulations (Government Notice R295 of 26/2/1988) and the Electrical Installation Regulations (Government Notice R2271 of 11/10/1995) are adhered to by all involved.

In terms of the Regulations, records of repairs and maintenance shall be kept on site.

(p) Explosive powered tools (Regulation 19)

The Contractor shall ensure that, wherever explosive-powered tools are required to be used, all safety provisions of Regulation 19 are complied with.

It is especially important that warning notices are displayed and that the issue and return of cartridges and spent cartridges be recorded in a register to be kept on site.

(q) Cranes (Regulation 20)

Wherever the use of tower cranes becomes necessary, the provisions of Regulation 20 shall be complied with.

(r) Construction vehicles And mobile plant (Regulation 21)

The Contractor shall ensure that all construction vehicles and plant are in good working condition and safe for use, and that they are used in accordance with their design and intended use. The vehicles and plant shall only be operated by workers or operators who have received appropriate training, all in accordance with all the requirements of Regulation 21.

All vehicles and plant must be inspected on a daily basis, prior to use, by a competent person and the findings must be recorded in a register to be kept on site.

(s) Electrical installation and machinery on construction sites (Regulation 22)

The Contractor shall comply with the Electrical Installation Regulations (Government Notice R2920 of 23 October 1992) and the Electrical Machinery Regulations (Government Notice R1953 of 12 August 1993). Before commencement of construction, the Contractor shall take adequate steps to ascertain the presence of, and guard against dangers and hazards due to electrical cables and apparatus under, over or on the site.

All temporary electrical installations on the site shall be under the control of a competent person, without relieving the Contractor of his responsibility for the health and safety of all workers and persons on site in terms of Regulation 22.

(t) Use of temporary storage of flammable liquids on construction sites (Regulation 23)

The Contractor shall comply with the provisions of the General Safety Regulations (Government Notice R1031 of 30 May 1986) and all the provisions of Regulation 23 of the Construction Regulations to ensure a safe and hazard-free environment to all workers and other persons on site.

(u) Water environments (Regulation 24)

Where construction work is done over or in close proximity to water, the provisions of Regulation 24 shall apply.

(v) Housekeeping on Construction sites (Regulation 25)

Housekeeping on all construction sites shall be in accordance with the provisions of the environment Regulations for workplaces (Government Notice R2281 of 16 October 1987) and all the provisions of Regulation 25 of the Construction Regulations.

(w) Stacking and storage on construction sites (Regulation 26)

The provisions for the stacking of articles contained in the General Safety Regulations (Government Notice R1031 of 30 May 1986) as well as all the provisions Regulation 26 of the Construction Regulations shall apply.

(x) Fire precautions on construction sites (Regulation 27)

The provisions of the Environmental Regulations for Workplaces (Government Notice R2281 of 16 October 1987) shall apply.

In addition the necessary precautions shall be taken to prevent the incidence of fires, to provide adequate and sufficient fire protection equipment, sirens, escape routes etc. all in accordance with Regulation 27 of the Construction Regulations.

(y) Construction welfare facilities (Regulation 28)

The Contractor shall comply with the construction site provisions as in the Facilities Regulations (Government Notice R1593 of 12 August 1988) and the provisions of Regulation 28 of the Construction Regulations.

(z) Non-compliance with the Construction Regulations 2003

The foregoing is a summary of parts of the Construction Regulations applicable to all construction projects.

The Contractor, as employer for the execution of the contract, shall ensure that all provisions of the Construction Regulations applicable to the contract under consideration are complied with to the letter.

Should the Contractor fail to comply with the provisions of the Regulations 3 to 28 as listed in Regulation 30, he will be guilty of an offence and will be liable, upon conviction, to the fines or imprisonment as set out in Regulation 30.

The Contractor is advised in his own interest to make a careful study of the Act and the Construction Regulations as ignorance of the Act and the Regulations will not be accepted in any proceedings related to non-conformance to the Act and the Regulations.

POHS.10 MEASUREMENT AND PAYMENT

10.1 Principles

It is a condition of this contract that Contractors, who submit tenders for this contract, shall make provision in their tenders for the cost of all health and safety measures during the construction process. All associated activities and expenditure are deemed to be included in the Contractor's tendered rates and prices.

(a) Safety personnel

The Construction Supervisor, the Construction Safety Officer, Health and Safety Representatives, Health and Safety Committee and Competent Persons referred to in clauses 7.1 to 7.5 shall be members of the Contractor's personnel, and no additional payment will be made for the appointment of such safety personnel.

(b) Records and Registers

The keeping of health and safety-related records and registers as described in 8 is regarded as a normal duty of the Contractor for which no additional payment will be considered, and which is deemed to be included in the Contractor's tendered rates and prices.

PG GENERIC LABOUR-INTENSIVE SPECIFICATION

The Generic Labour-intensive specification below is the same as SANS 1921-5, Construction and management requirement for works contracts- Part 5: Earthworks activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

PG1 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) stormwater drainage
- c) low-volume roads and sidewalks

PG2 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.

PG3 HAND EXCAVATEABLE MATERIAL

Hand excavateable 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 a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

- i) 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 a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note:

- 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.
- 2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (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 molded 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 pick point into soil; cannot be molded 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.

PG4 TRENCH EXCAVATION

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

PG5 COMPACTION OF BACKFILLING TO TRENCHES (AREAS NOT SUBJECT TO TRAFFIC)

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

- a) to 90% Proctor density;
- b) such that in excess of 5 blows of a dynamic come 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.

PG6 EXCAVATION

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

PG7 CLEARING AND GRUBBING

Grass and small bushes shall be cleared by hand.

PG8 SHAPING

All shaping shall be undertaken by hand.

PG9 LOADING

All loading shall be done by hand, regardless of the method of haulage.

PG10 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.

PG11 OFFLOADING

All material, however transported, is to be off- loaded by hand, unless tipper-trucks are utilised for haulage

PG12 SPREADING

All material shall be spread by hand.

PG13 COMPACTION

Small areas may be compacted by hand provided that the specified compaction is achieved.

PG14 GRASSING

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

PG15 STONE PITCHING AND RUBBLE CONCRETE MASONRY

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

PG16 MANUFACTURED ELEMENTS

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

POLOKWANE MUNICIPALITY

C4 Site Information

C4.1 LOCALITY MAP

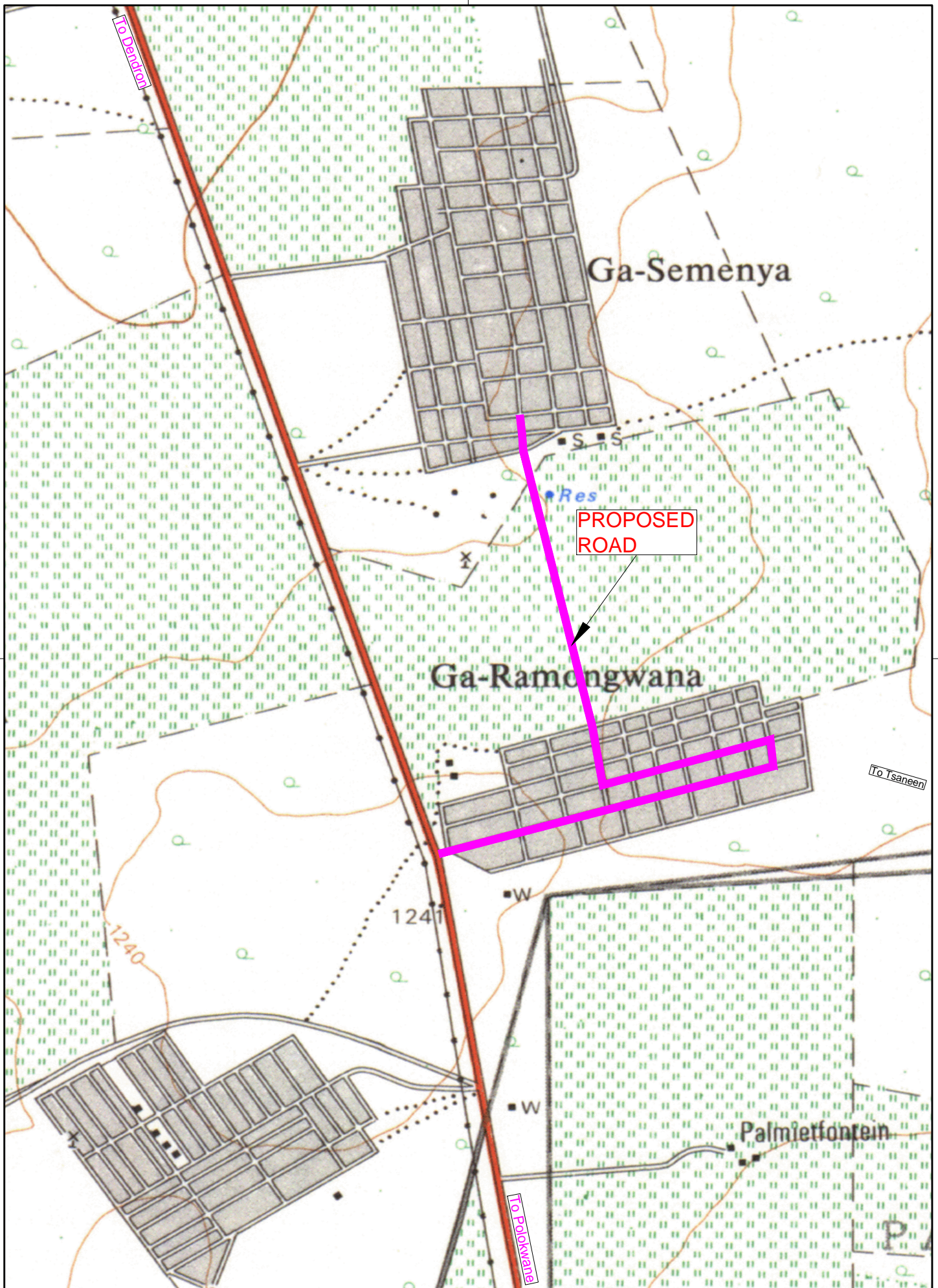
C4.2 BID DRAWING

POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

C4 Site Information

C4.1 LOCALITY MAP



POLOKWANE MUNICIPALITY



P.O. Box 111
POLOKWANE
0700
TEL: (015) 290-2077
FAX: (086) 613-9626

CONTRACT No. 30/2015

SCALE: 1:50 000

MAP No. 2329CB

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

LOCALITY PLAN



morula

CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"

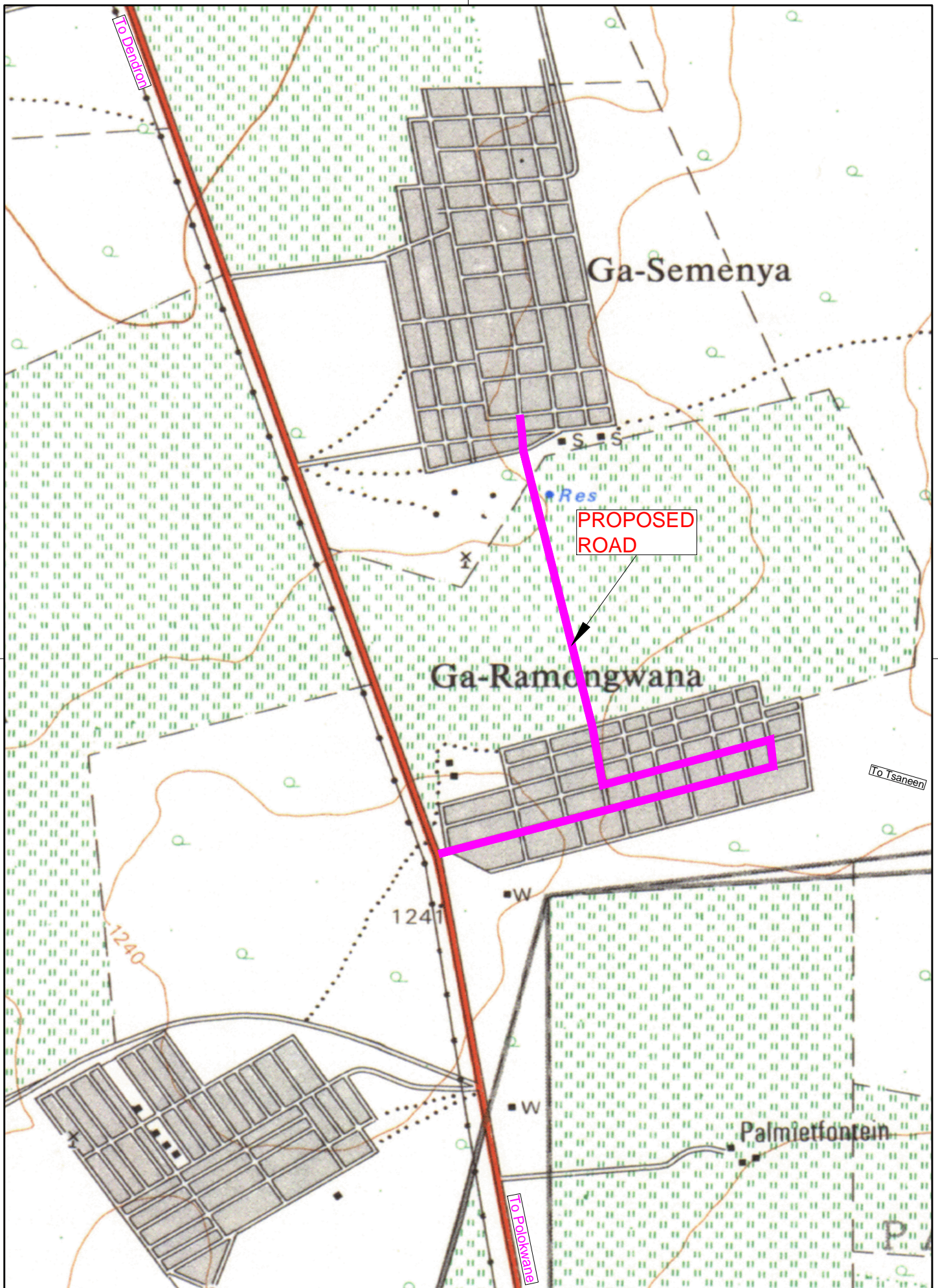
POLOKWANE MUNICIPALITY

UPGRADING OF RAMONGOANA BUS AND TAXI ROUTE PHASE 2

C4 Site Information

C4.2 DRAWINGS

Dwg No Drawings
Cover Layout
Locality Plan – Layout
MC_CP_RBR_DD_01
MC_CP_RBR_DD_02
MC_CP_RBR_DD_03
MC_CP_RBR_DD_04
MC_CP_RBR_DD_05
MC_CP_RBR_DD_06
MC_CP_RBR_LS_01 with Photo
MC_CP_RBR_LS_01
MC_CP_RBR_LS_02 with Photo
MC_CP_RBR_LS_02
MC_CP_RBR_LS_03 with Photo
MC_CP_RBR_LS_03
MC_CP_RBR_LS_04 with Photo
MC_CP_RBR_LS_04
MC_CP_RBR_LS_05 with Photo
MC_CP_RBR_LS_05
MC_CP_RBR_LS_06 with Photo
MC_CP_RBR_LS_06
MC_CP_RBR_SD_01
MC_CP_RBR_SD_02
MC_CP_RBR_SD_03
MC_CP_RBR_SD_04
MC_CP_RBR_SD_05
MC_CP_RBR_SD_06
MC_CP_RBR_SD_07
MC_CP_RBR_XS_01
MC_CP_RBR_XS_02
MC_CP_RBR_XS_03
MC_CP_RBR_XS_04
MC_CP_RBR_XS_05
MC_CP_RBR_XS_06
MC_CP_RBR_XS_07



POLOKWANE MUNICIPALITY



P.O. Box 111
POLOKWANE
0700
TEL: (015) 290-2077
FAX: (086) 613-9626

CONTRACT No. 30/2015

SCALE: 1:50 000

MAP No. 2329CB

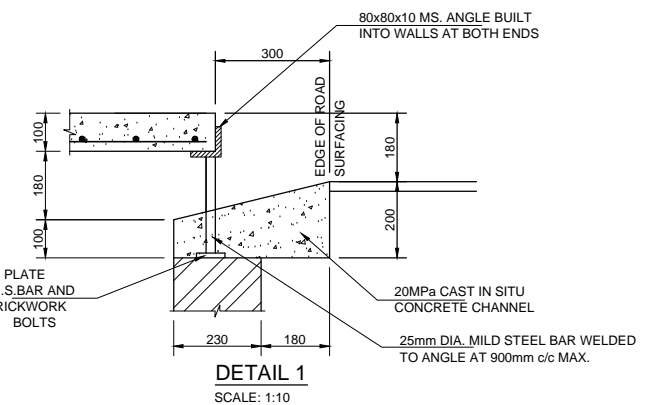
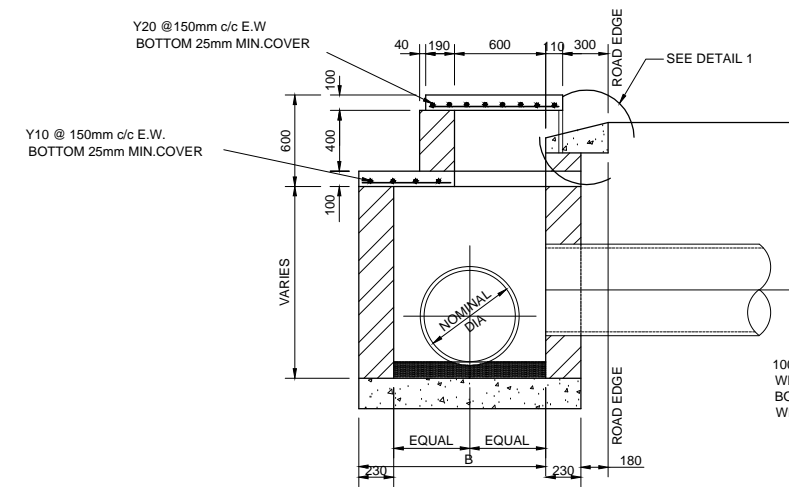
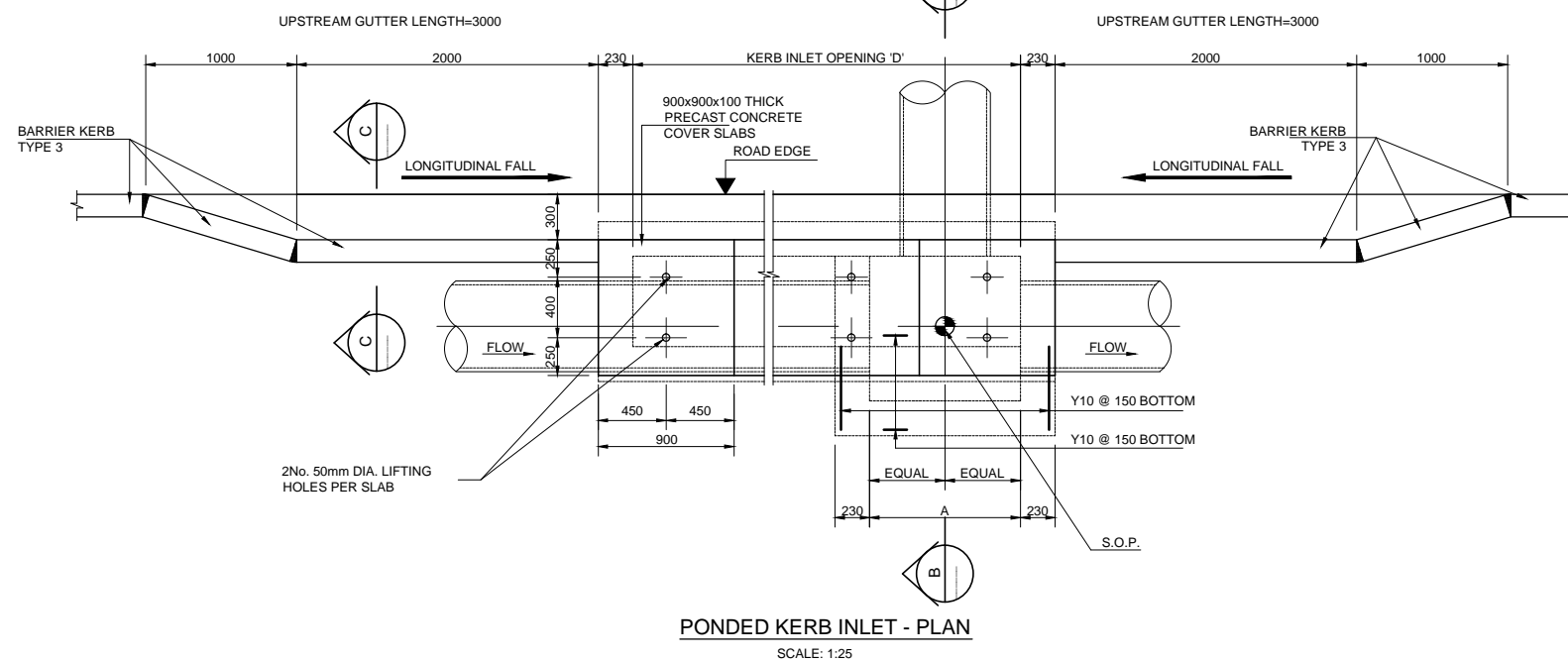
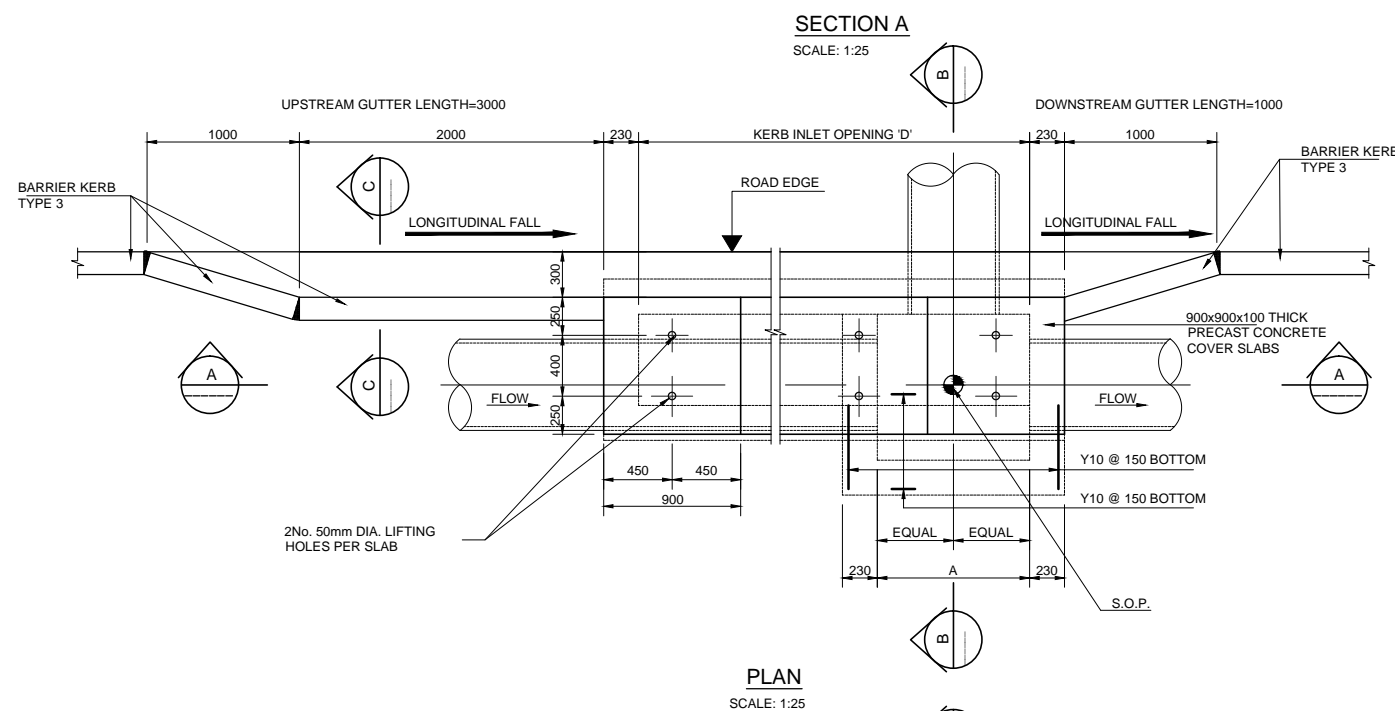
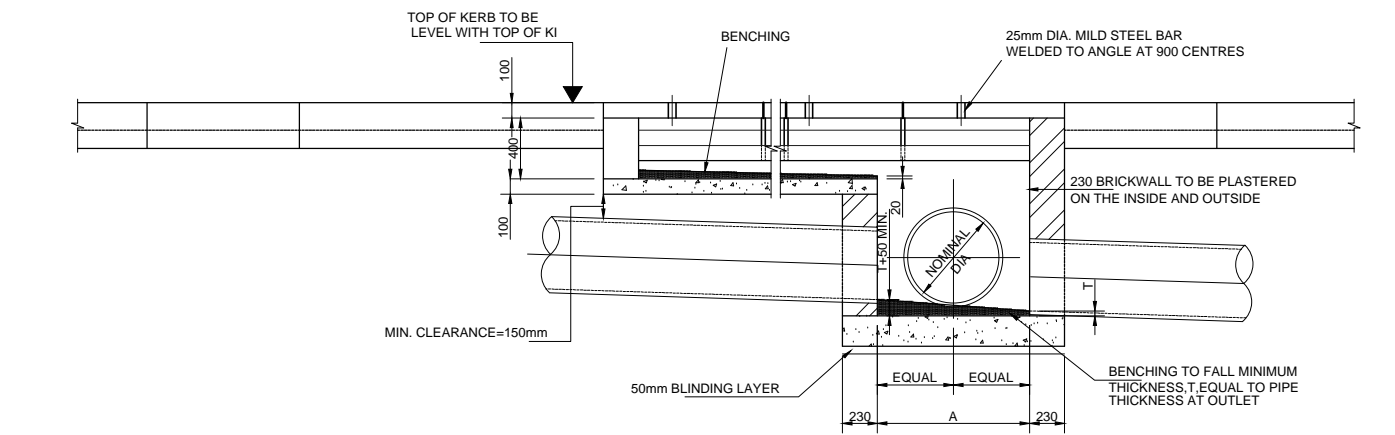
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

LOCALITY PLAN



morula

CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"



NOTES

1. ALL EXPOSED STEELWORK TO RECEIVE TWO COATS OF EPOXY TAR.
2. TOP OF PRECAST CONCRETE COVER SLABS TO BE CLEARLY MARKED.
3. FINISHES a TOP OF PRECAST CONCRETE COVER SLAB WOOD FLOAT.
b BENCHING - GRANOLITHIC FINISH.
c CEMENT PLASTER TO INSIDE WALLS 10mm THICK.
4. CONCRETE TO BE CLASS 25MPa FOR BASE AND COVER SLABS.
5. COVER TO REINFORCEMENT = 40mm
6. ALL BRICKWORK TO BE CONSTRUCTED FROM BEST QUALITY ENGINEERING BRICKS TD S.A.B.S.227.

KERB INLET			
SIZE	ACTUAL OPENING 'D'	COVER SLAB DIMENSIONS	No OFF
1 m	1340 mm	900 mm x 900 mm	2
2 m	2240 mm	900 mm x 900 mm	3
3 m	3140 mm	900 mm x 900 mm	4
4 m	4040 mm	900 mm x 900 mm	5
5 m	4940 mm	900 mm x 900 mm	6
6 m	5840 mm	900 mm x 900 mm	7

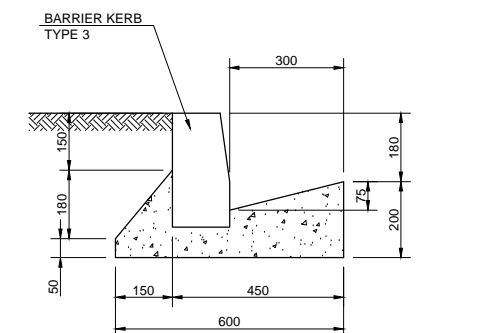
TABLE I

PIPE DIAMETER				
DIM.	MINIMUM	450-750	900-1050	1200-1350
A	1000 mm	1000 mm	1200 mm	1650 mm
B	1000 mm	1000 mm	1200 mm	1650 mm
C	910 mm	910 mm	1010 mm	1235 mm

TABLE II

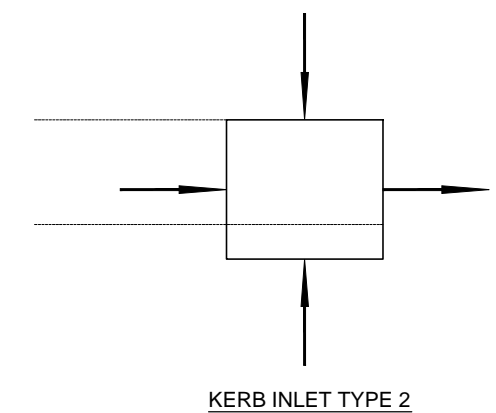
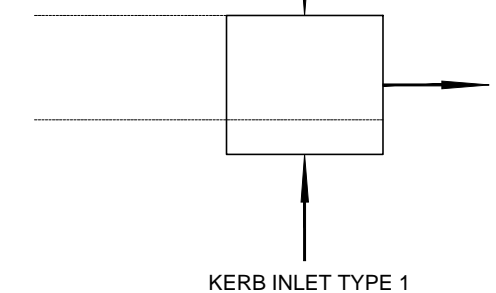
MINIMUM DEPTHS OF CHAMBERS FOR TYPE 2 KERB INLETS						
PIPE Ø	1m K.I.	2m K.I.	3m K.I.	4m K.I.	5m K.I.	6m K.I.
300 NB	1165 mm	1170 mm	1175 mm	1180 mm	1185 mm	1190 mm
450 NB	1335 mm	1340 mm	1345 mm	1350 mm	1355 mm	1360 mm
600 NB	1500 mm	1505 mm	1510 mm	1515 mm	1520 mm	1525 mm
750 NB	1675 mm	1677 mm	1680 mm	1690 mm	1690 mm	1695 mm
900 NB	1830 mm	1835 mm	1840 mm	1845 mm	1850 mm	1855 mm
1050 NB	2000 mm	2000 mm	2005 mm	2010 mm	2015 mm	2020 mm

TABLE III



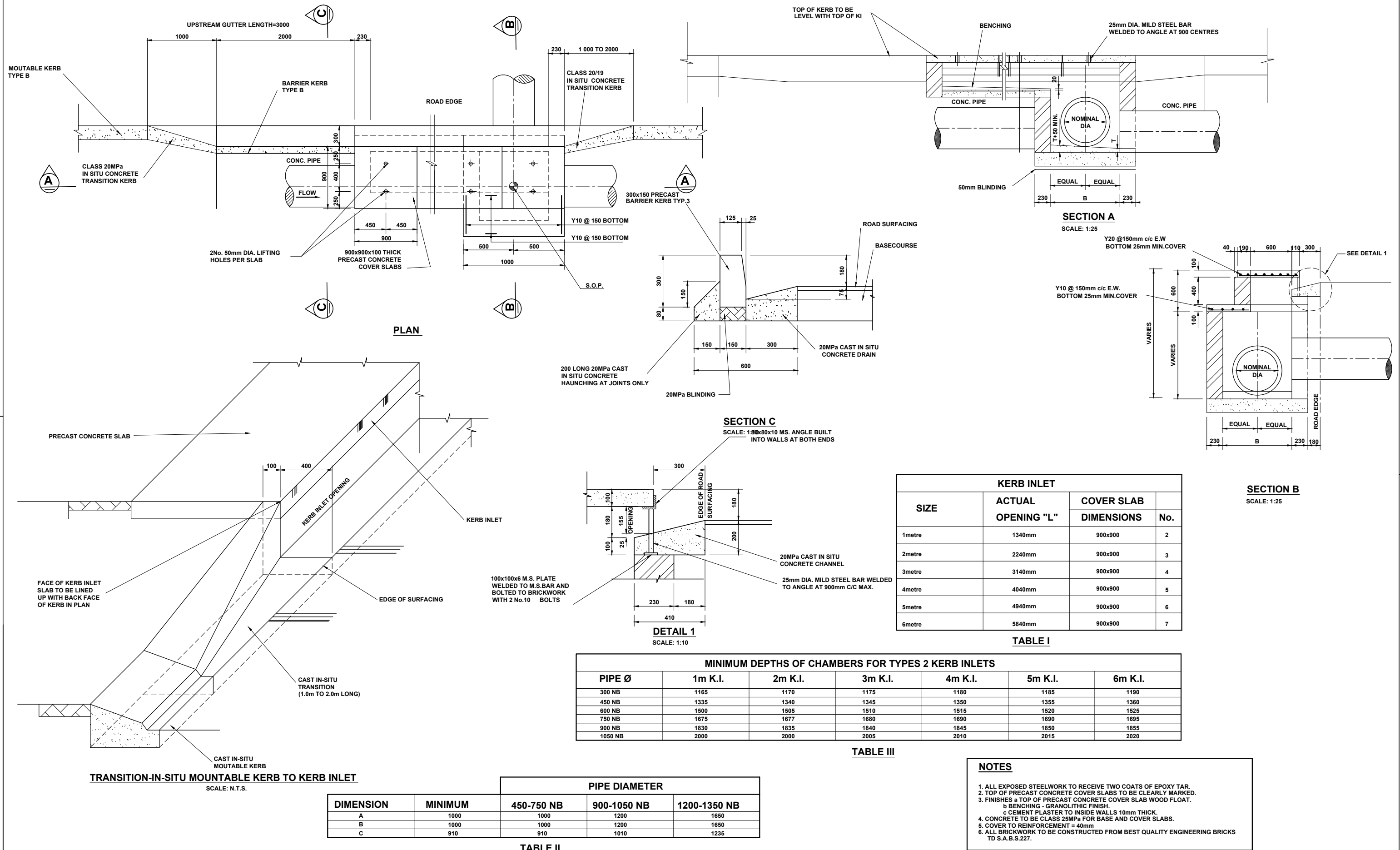
SECTION C

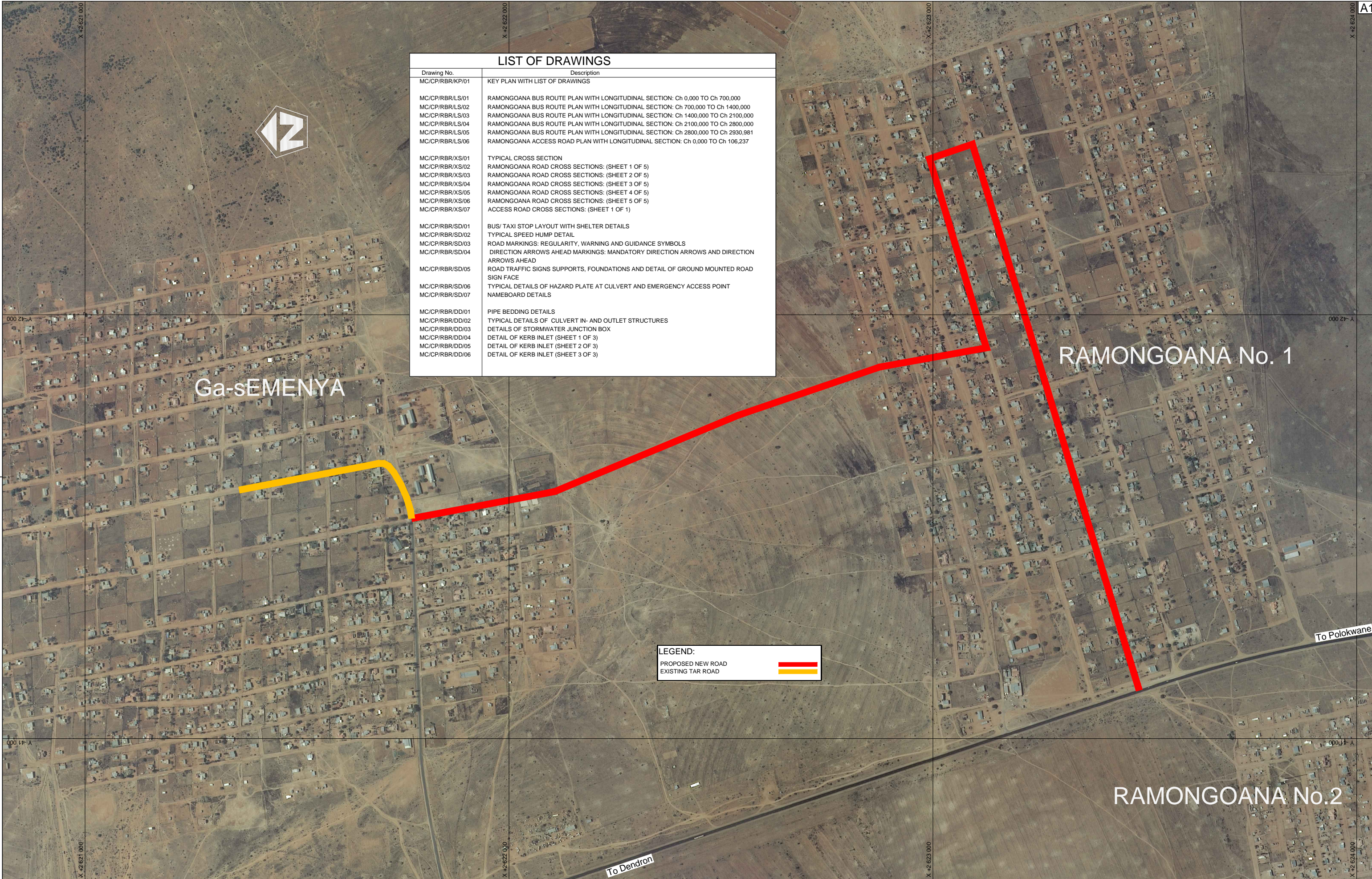
SCALE: 1:10



KERB INLET TYPE 2


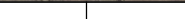
DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 2 OF 3
CHECKED BY	H.T.	P.O. Box 111 POLOKWANE 0700	P.O. Box 2740 POLOKWANE 0700	UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		TM	SCALE AS SHOWN
DRAWN BY	F.M.	TEL: (015)296-2077 FAX: (086) 613-9626	CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"	DETAIL OF KERB INLET (SHEET 2 OF 3)		For Consulting Engineer	REVISION 0
CHECKED BY	H.T.		Tel: (015)296-3631 Fax: (086) 558-6446			DRAWING NUMBER MC/CP/RBR/DD/05	
No	DATE	REVISION	CONSULT	DIR			

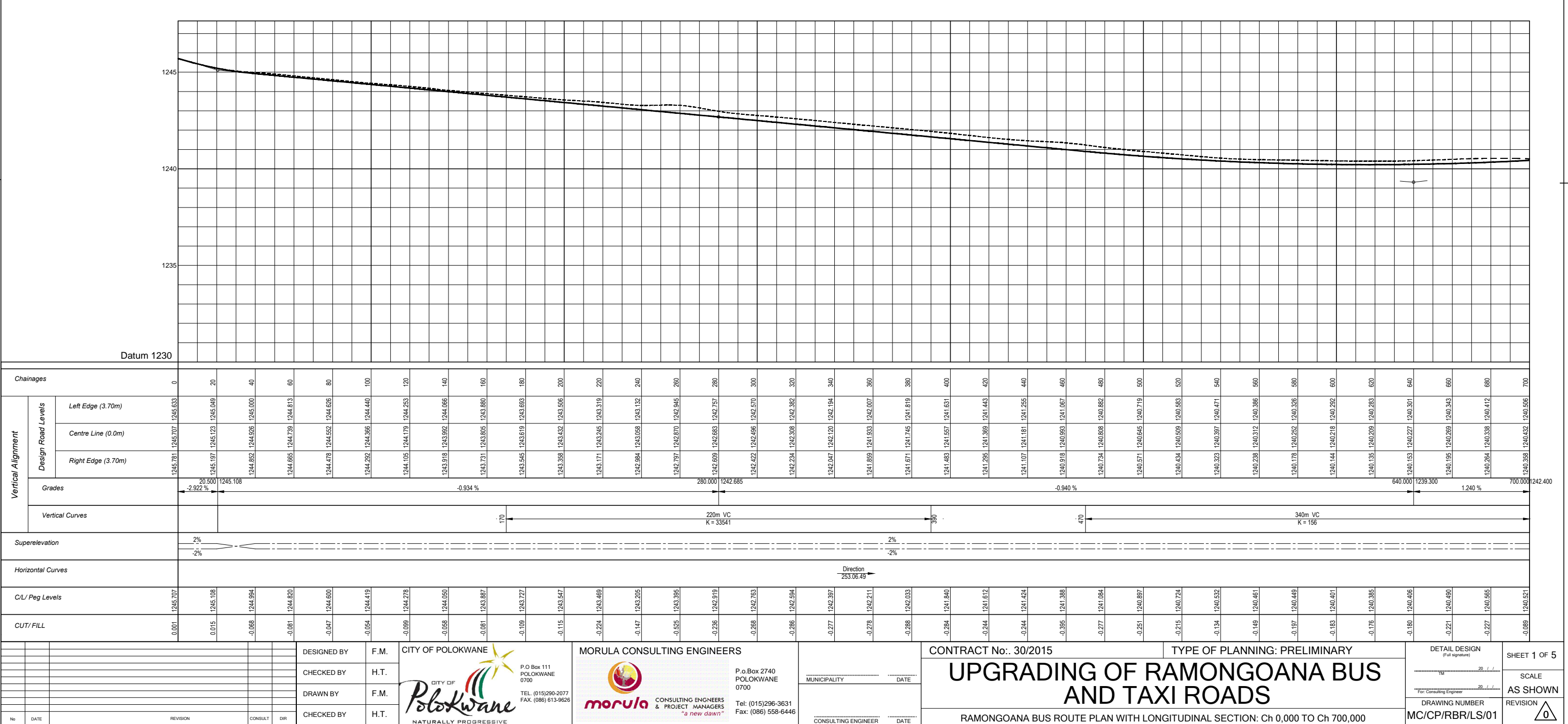


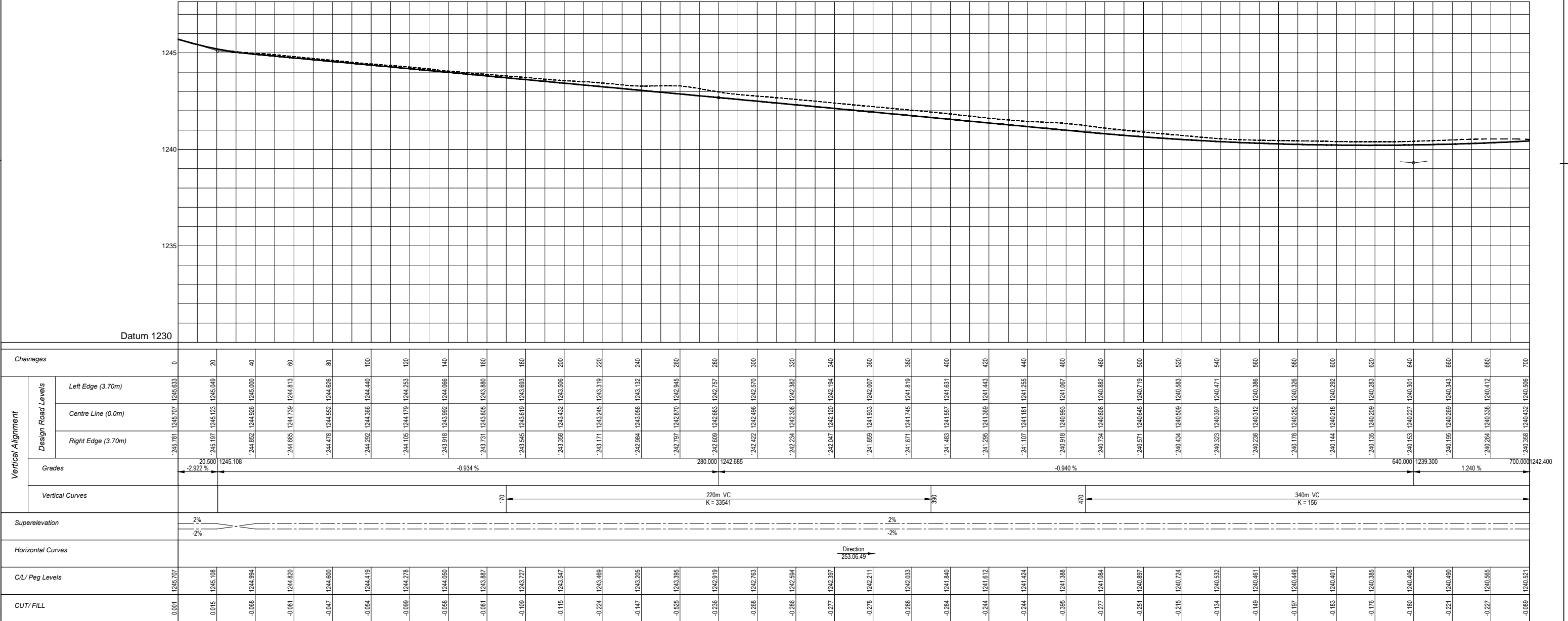
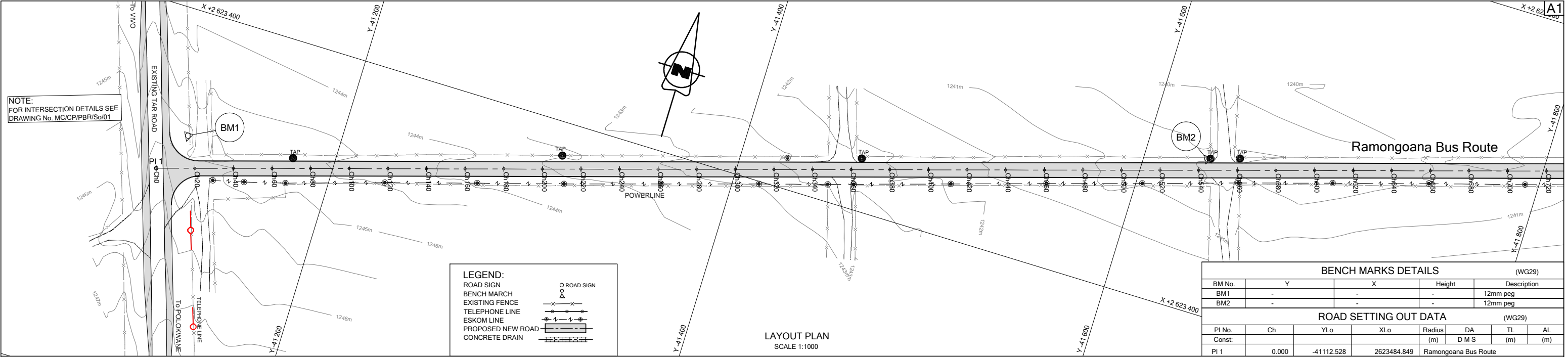


LIST OF DRAWINGS	
Drawing No.	Description
MC/CP/RBR/KP/01	KEY PLAN WITH LIST OF DRAWINGS
MC/CP/RBR/LS/01	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 700,000
MC/CP/RBR/LS/02	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 700,000 TO Ch 1400,000
MC/CP/RBR/LS/03	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 1400,000 TO Ch 2100,000
MC/CP/RBR/LS/04	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2100,000 TO Ch 2800,000
MC/CP/RBR/LS/05	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2800,000 TO Ch 2930,981
MC/CP/RBR/LS/06	RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237
MC/CP/RBR/XS/01	TYPICAL CROSS SECTION
MC/CP/RBR/XS/02	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 1 OF 5)
MC/CP/RBR/XS/03	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 2 OF 5)
MC/CP/RBR/XS/04	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 3 OF 5)
MC/CP/RBR/XS/05	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 4 OF 5)
MC/CP/RBR/XS/06	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 5 OF 5)
MC/CP/RBR/XS/07	ACCESS ROAD CROSS SECTIONS: (SHEET 1 OF 1)
MC/CP/RBR/SD/01	BUS/ TAXI STOP LAYOUT WITH SHELTER DETAILS
MC/CP/RBR/SD/02	TYPICAL SPEED HUMP DETAIL
MC/CP/RBR/SD/03	ROAD MARKINGS: REGULARITY, WARNING AND GUIDANCE SYMBOLS
MC/CP/RBR/SD/04	DIRECTION ARROWS AHEAD MARKINGS: MANDATORY DIRECTION ARROWS AND DIRECTION ARROWS AHEAD
MC/CP/RBR/SD/05	ROAD TRAFFIC SIGNS SUPPORTS, FOUNDATIONS AND DETAIL OF GROUND MOUNTED ROAD SIGN FACE
MC/CP/RBR/SD/06	TYPICAL DETAILS OF HAZARD PLATE AT CULVERT AND EMERGENCY ACCESS POINT
MC/CP/RBR/SD/07	NAMEBOARD DETAILS
MC/CP/RBR/DD/01	PIPE BEDDING DETAILS
MC/CP/RBR/DD/02	TYPICAL DETAILS OF CULVERT IN- AND OUTLET STRUCTURES
MC/CP/RBR/DD/03	DETAILS OF STORMWATER JUNCTION BOX
MC/CP/RBR/DD/04	DETAIL OF KERB INLET (SHEET 1 OF 3)
MC/CP/RBR/DD/05	DETAIL OF KERB INLET (SHEET 2 OF 3)
MC/CP/RBR/DD/06	DETAIL OF KERB INLET (SHEET 3 OF 3)

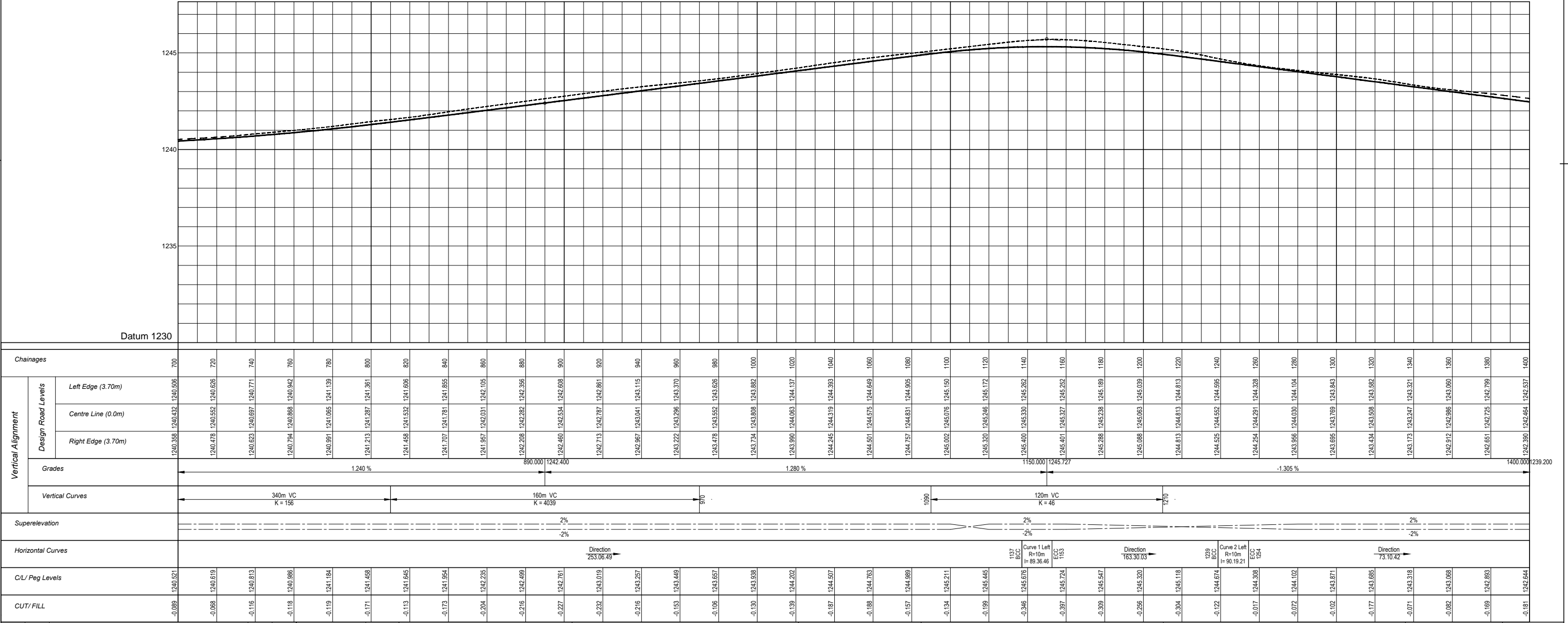
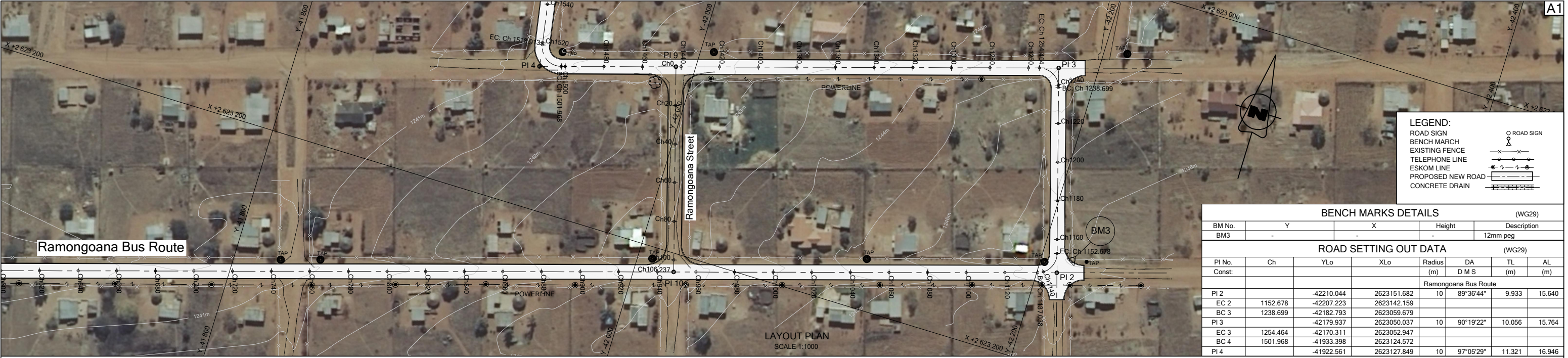
LEGEND:	
PROPOSED NEW ROAD	
EXISTING TAR ROAD	

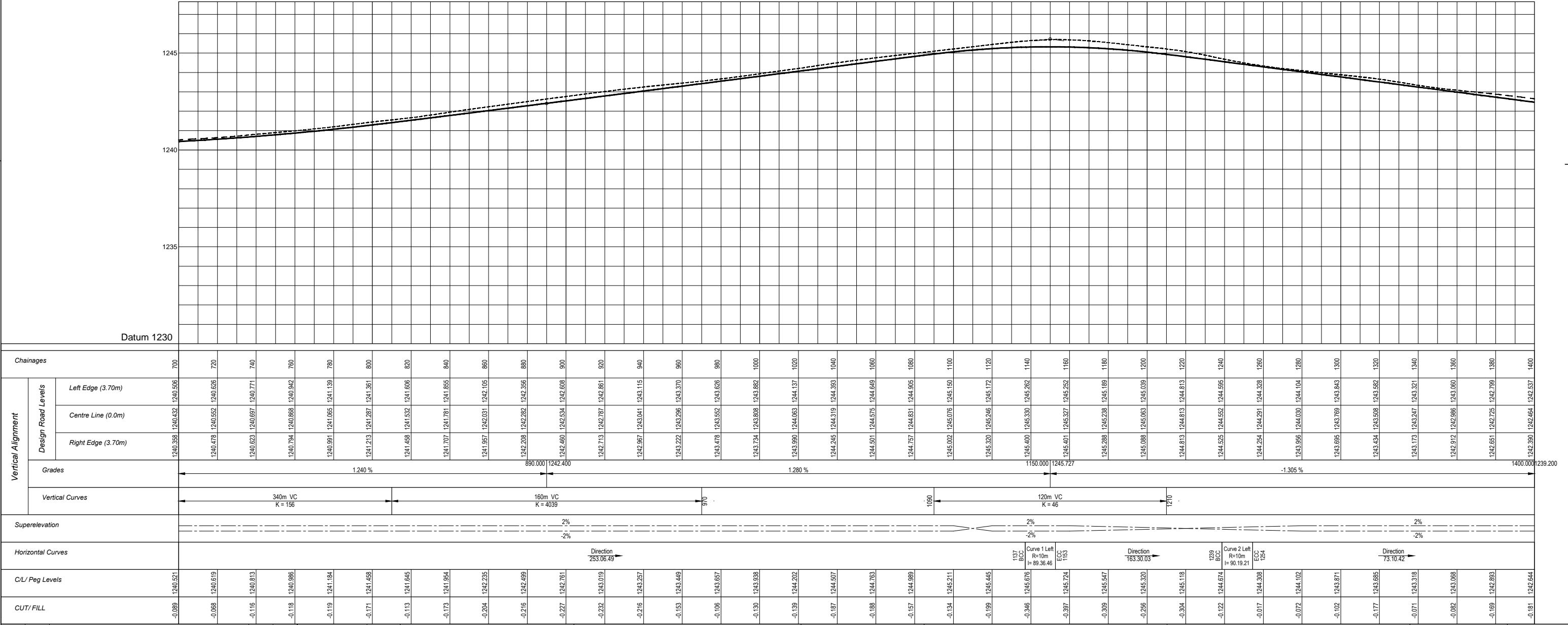
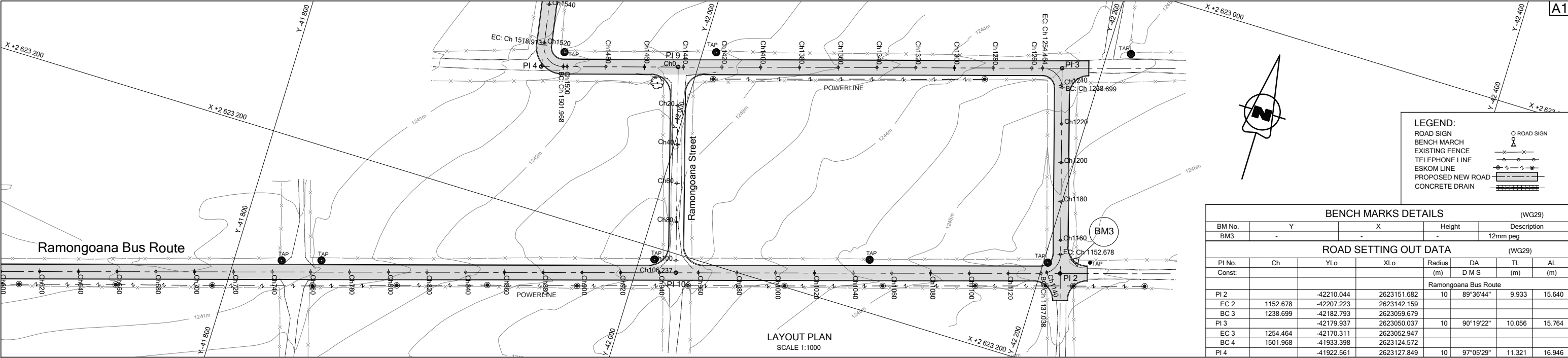
				DESIGNED BY	F.M.	 <div>CITY OF Polokwane NATURALLY PROGRESSIVE</div> <div>P.O Box 111 POLOKWANE 0700 TEL: (015)290-2077 FAX: (086) 613-9626</div>	MORULA CONSULTING ENGINEERS		 <div>P.O.Box 2740 POLOKWANE 0700 Tel: (015) 296-3631 Fax: (086) 558-6446</div>	CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full signature)		SHEET 1 OF 1	
				CHECKED BY	H.T.		<div>UPGRADING OF RAMONGOANA BUS AND TAXI ROADS</div>						20 / /		SCALE		
				DRAWN BY	F.M.								20 / /		1:4000		
				CHECKED BY	H.T.		<div>KEY PLAN WITH LIST OF DRAWINGS</div>						For: Consulting Engineer		DRAWING NUMBER		
No	DATE	REVISION	CONSULT	DIR	MUNICIPALITY								DATE	CONSULTING ENGINEER		DATE	MC/CP/RBR/KP/01

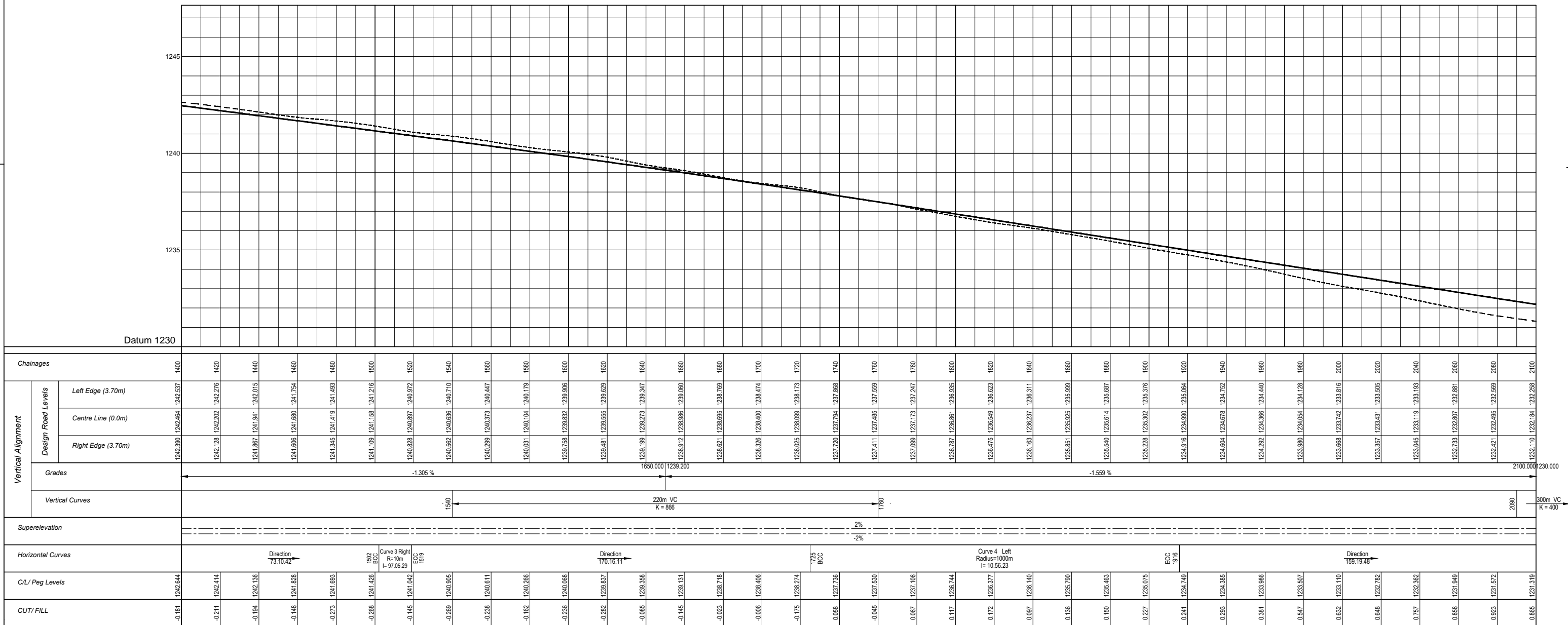
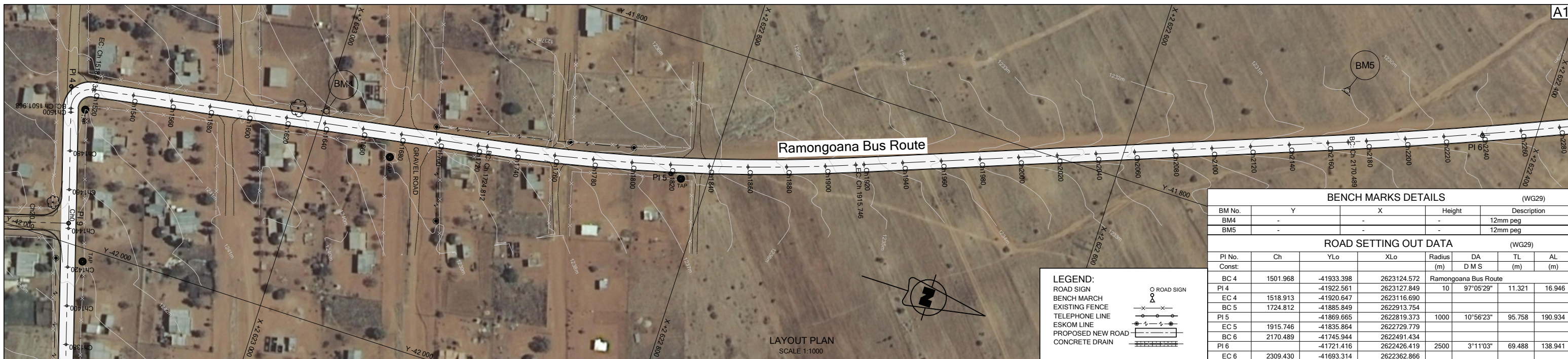









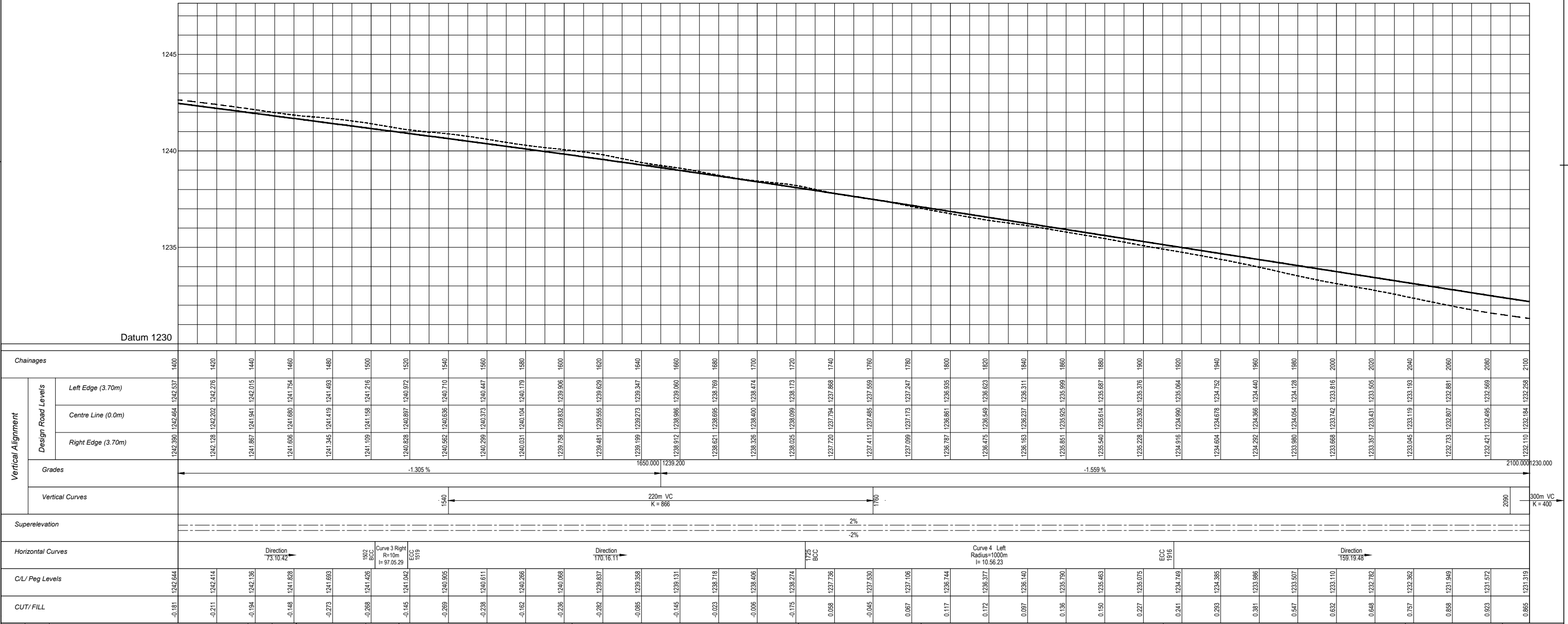
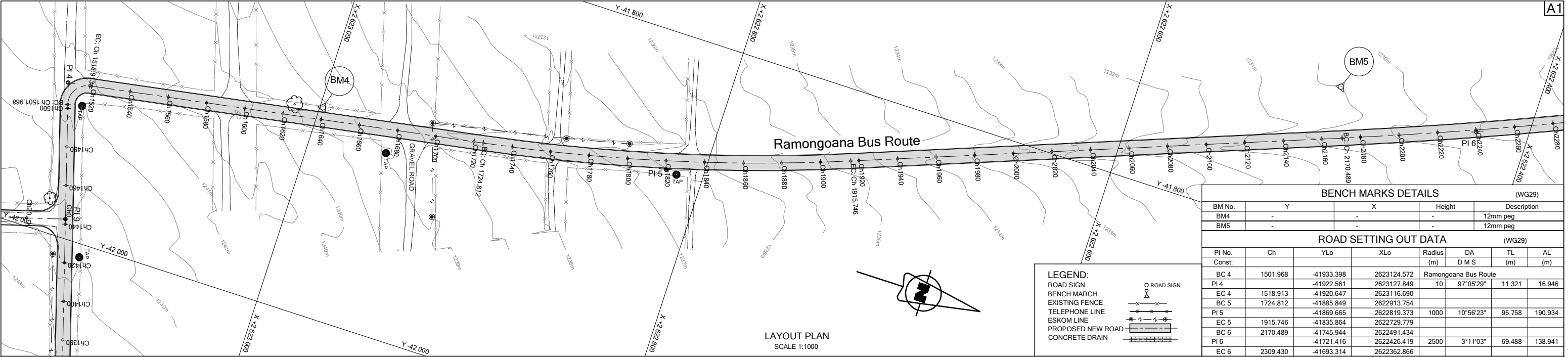
DESIGNED BY F.M. CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015				TYPE OF PLANNING: PRELIMINARY				DETAIL DESIGN (Full signature)				SHEET 1 OF 5	
CHECKED BY H.T.				P.O. Box 111 POLOKWANE 0700				P.O. Box 2740 POLOKWANE 0700				MUNICIPALITY DATE				DRAWING NUMBER				SCALE	
DRAWN BY F.M.				TEL: (015)290-2077 FAX: (086) 613-9626				Tel: (015)296-3631 Fax: (086) 558-6446				CONSULTING ENGINEER DATE				MC/CP/RBR/LS/01				AS SHOWN	
CHECKED BY H.T.				NATURALLY PROGRESSIVE				CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"				RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 700,000				REVISION				0	

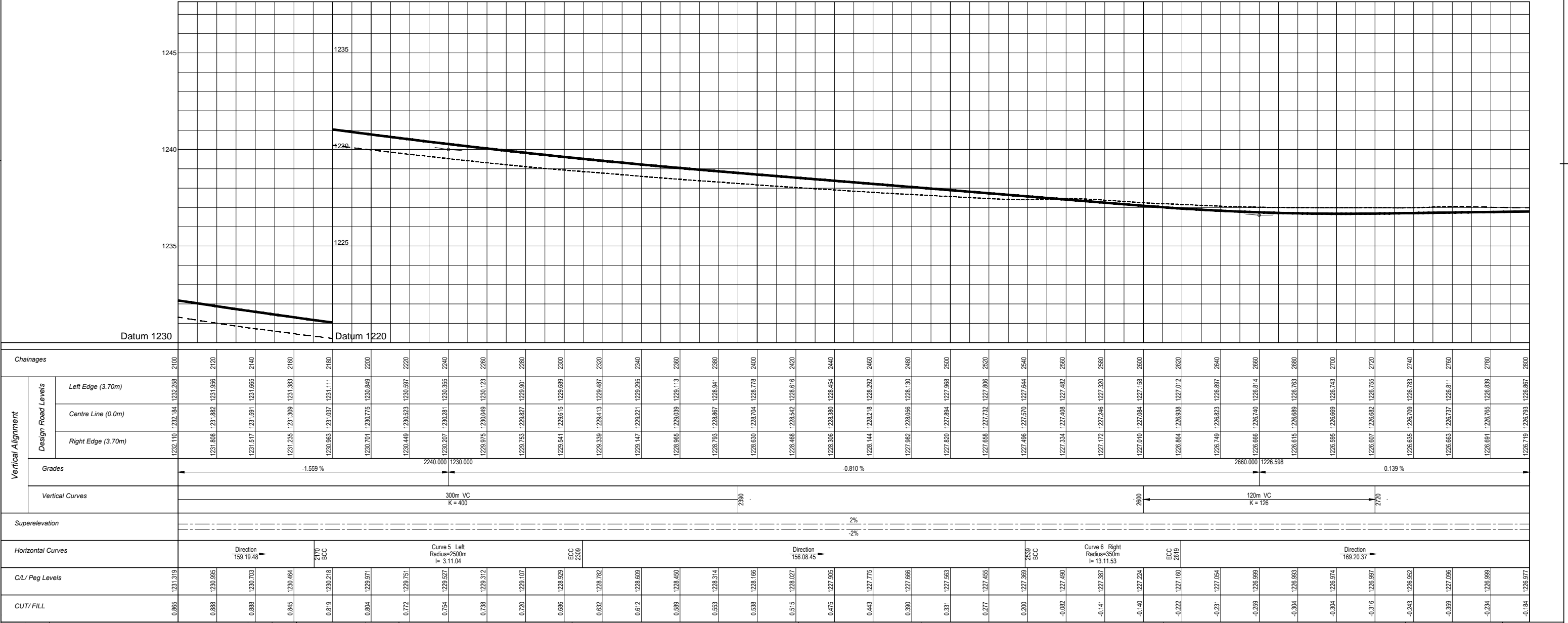
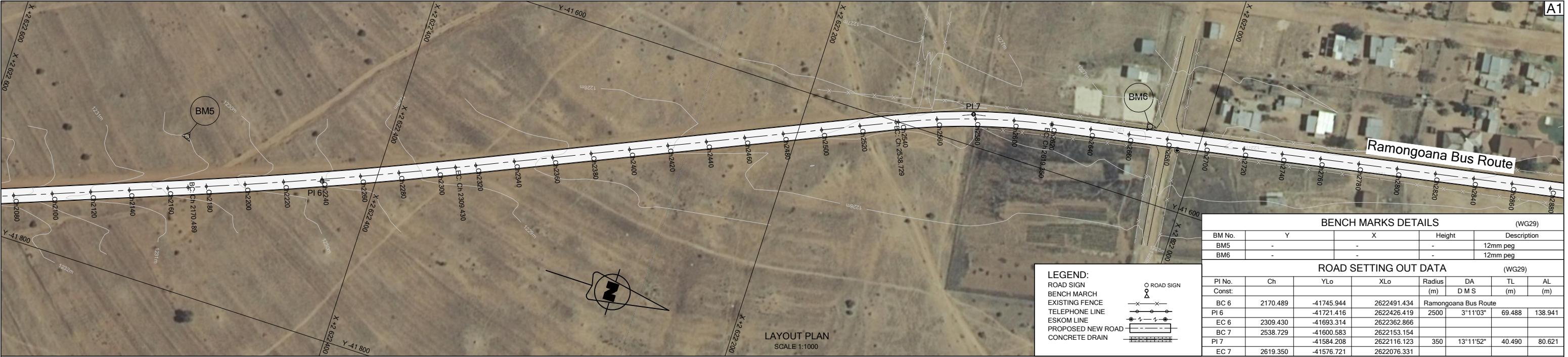




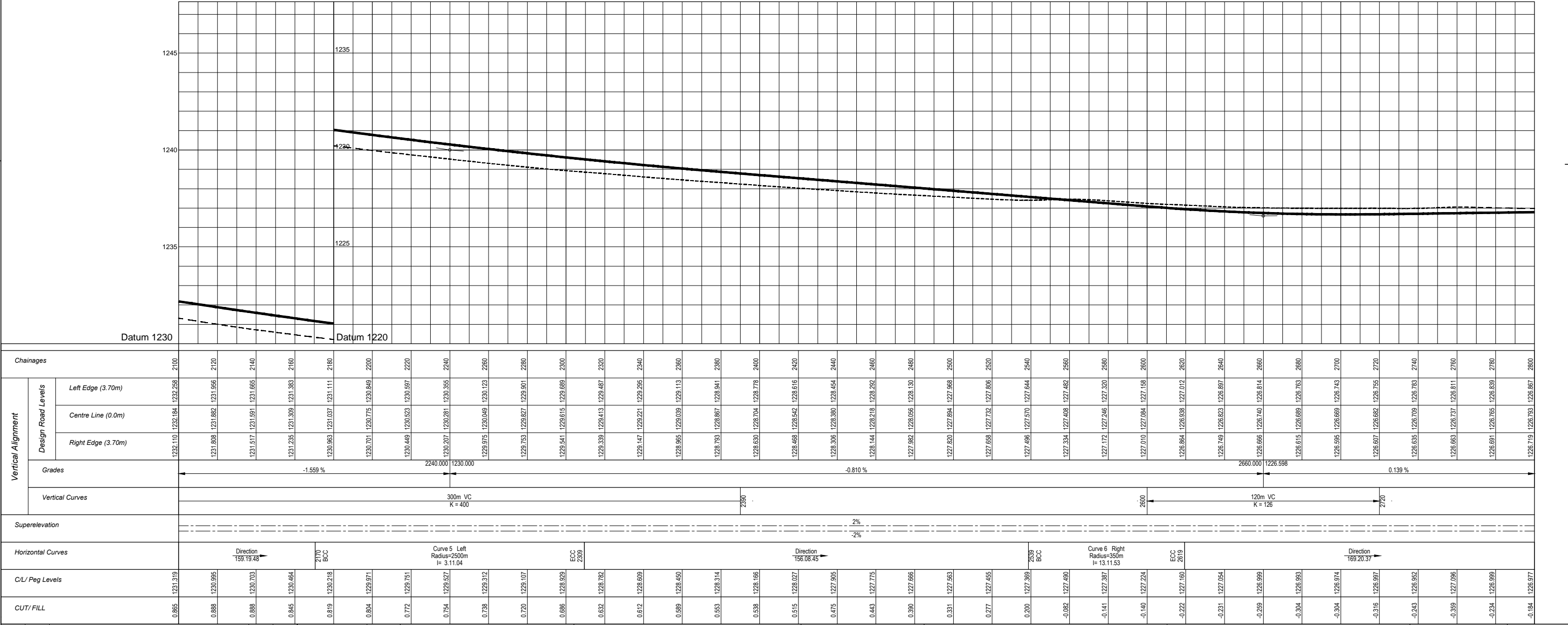
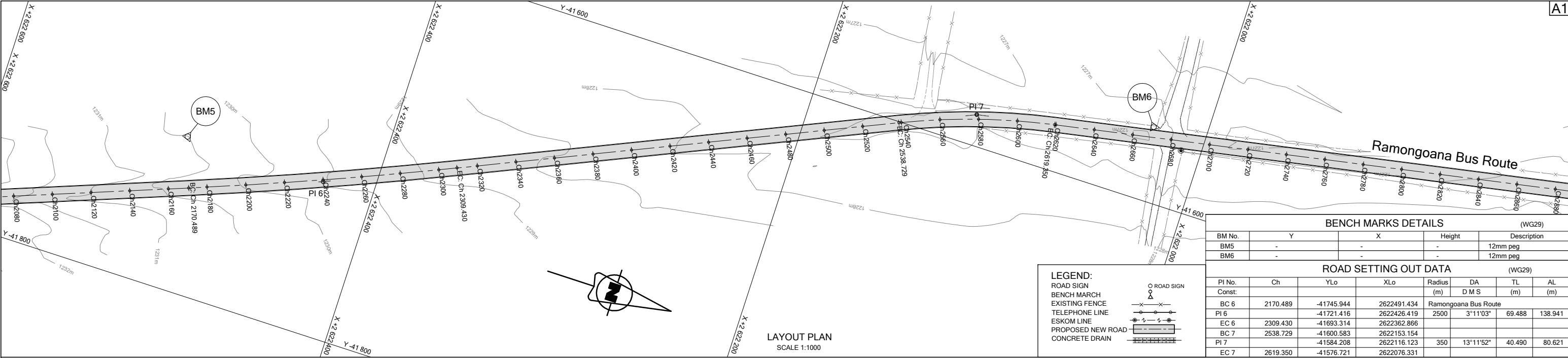


			DESIGNED BY	F.M.	 <p>CITY OF POLOKWANE</p> <p>P.O Box 111 POLOKWANE 0700</p> <p>TEL: (015)290-2077 FAX: (086) 613-9626</p>	 <p>MORULA CONSULTING ENGINEERS</p> <p>P.o.Box 2740 POLOKWANE 0700</p> <p>Tel: (015)296-3631 Fax: (086) 558-6446</p>	CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full signature)	SHEET 3 of 5
			CHECKED BY	H.T.								SCALE
			DRAWN BY	F.M.							MUNICIPALITY	
			CHECKED BY	H.T.							DRAWING NUMBER	REVISION
No	DATE	REVISION	CONSULT	DIR			CONSULTING ENGINEER	DATE	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 1400,000 to Ch 2100,000		MC/CP/RBR/LS/03	

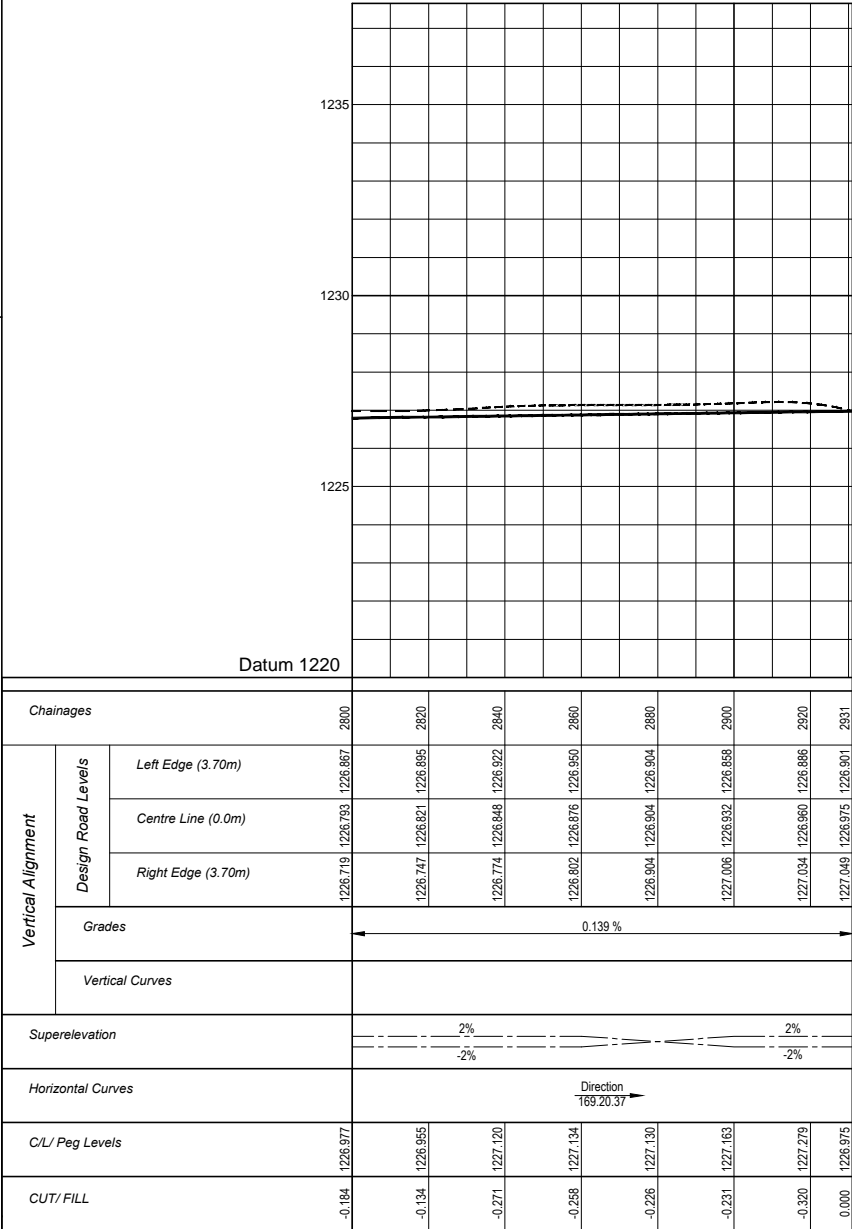




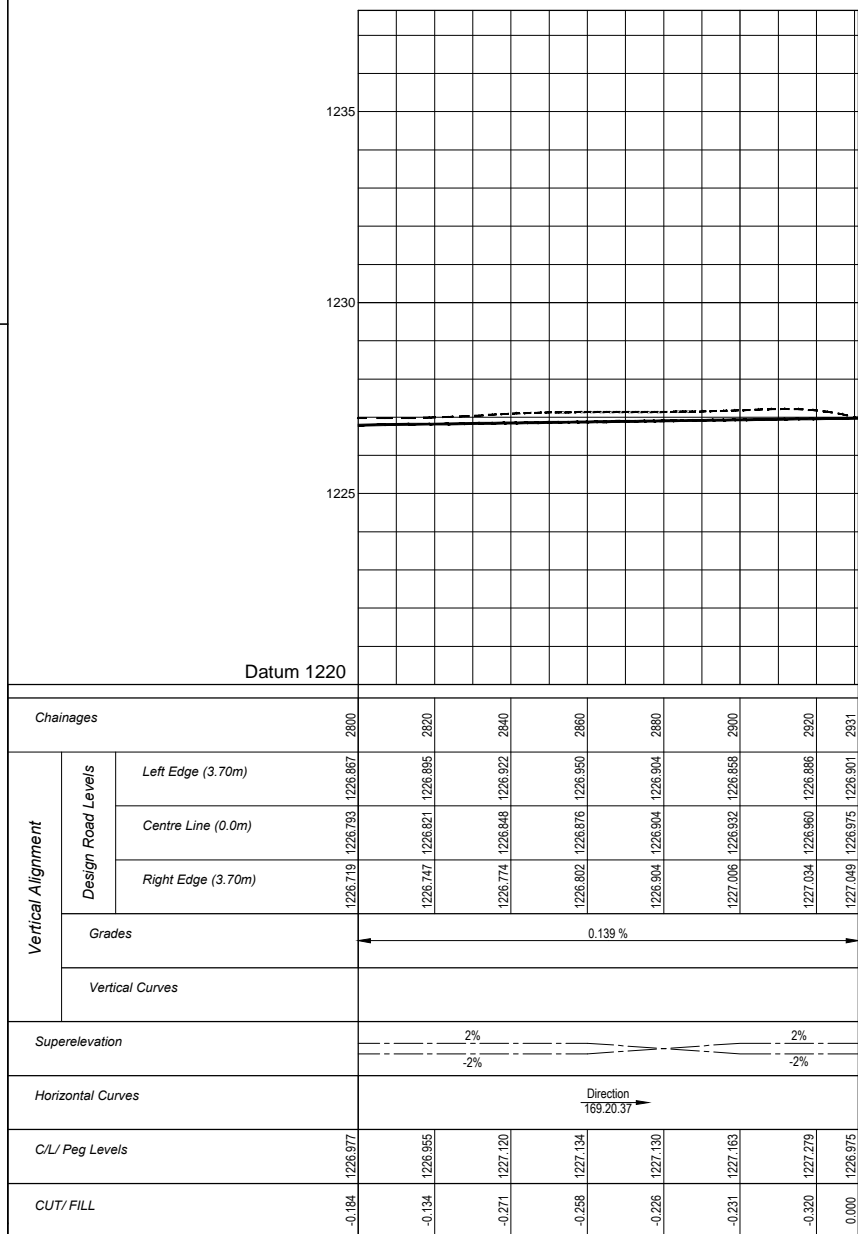
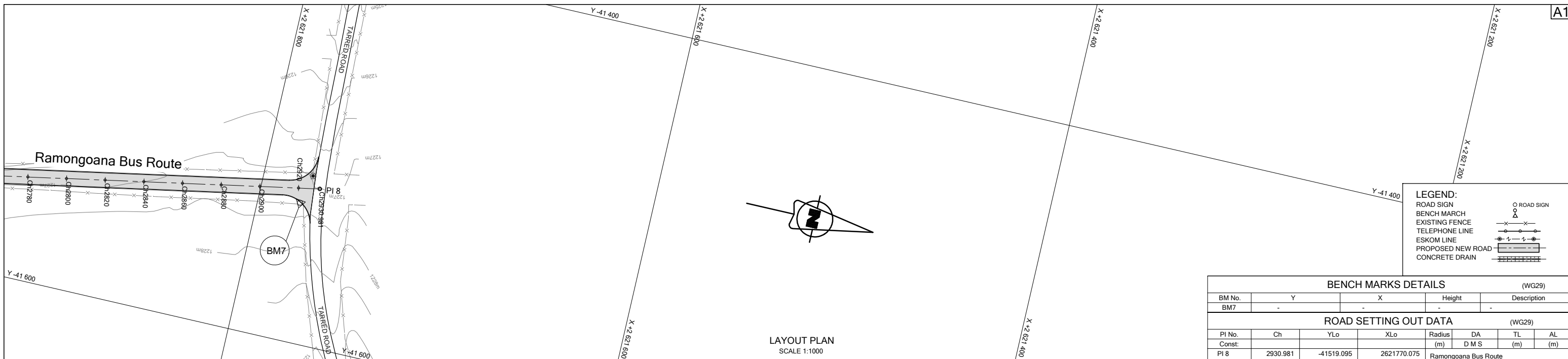
DESIGNED BY				F.M.	CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015				TYPE OF PLANNING: PRELIMINARY				DETAIL DESIGN (Full signature)				SHEET 4 OF 5	
CHECKED BY				H.T.	P.O Box 111 POLOKWANE 0700 TEL: (015)290-2077 FAX: (086) 613-9626				CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn" Tel: (015)296-3631 Fax: (086) 558-6446				MUNICIPALITY DATE CONSULTING ENGINEER DATE				UPGRADING OF RAMONGOANA BUS AND TAXI ROADS RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2100,000 TO Ch 2800,000				DRAWING NUMBER				SCALE	
DRAWN BY				F.M.																	MC/CP/RBR/LS/04				AS SHOWN	
CHECKED BY				H.T.																					REVISION	
No	DATE	REVISION	CONSULT	DIR																						



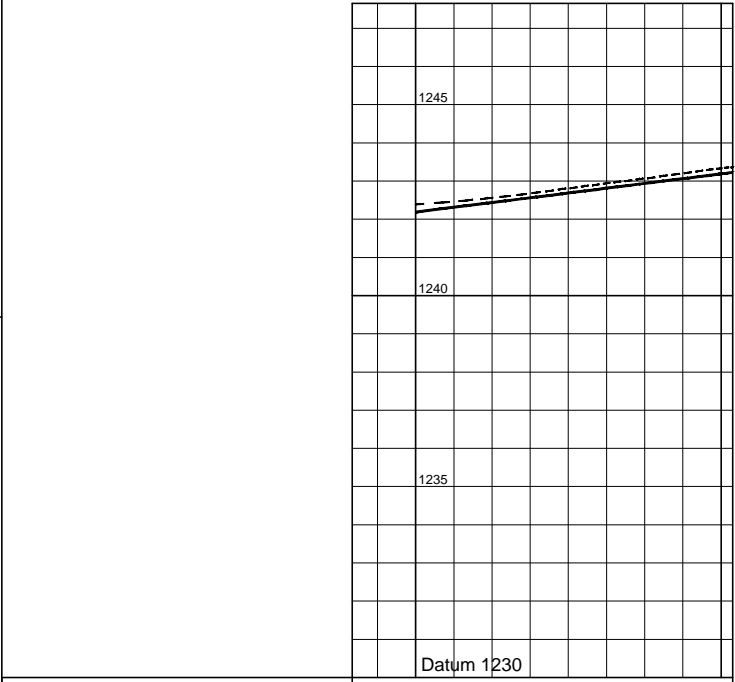
DESIGNED BY F.M. CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015				TYPE OF PLANNING: PRELIMINARY				DETAIL DESIGN (Full signature)				SHEET 4 OF 5	
CHECKED BY H.T.				P.O. Box 2740 POLOKWANE 0700				MUNICIPALITY DATE				UPGRADING OF RAMONGOANA BUS AND TAXI ROADS				For Consulting Engineer				SCALE AS SHOWN	
DRAWN BY F.M.				TEL: (015)290-2077 FAX: (086) 613-9626				CONSULTING ENGINEER DATE				RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2100,000 TO Ch 2800,000				DRAWING NUMBER MC/CP/RBR/LS/04				REVISION	
CHECKED BY H.T.				NATURALLY PROGRESSIVE				"a new dawn"												0	



DESIGNED BY		F.M.	<div>CITY OF POLOKWANE</div> <div> </div> <div> P.O.Box 111 POLOKWANE 0700 TEL: (015)290-2077 FAX: (086) 613-9626 </div>	MUNICIPALITY		DATE		CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN <small>(Full signature)</small>		SHEET 4 OF 5	
CHECKED BY		H.T.		CONSULTING ENGINEER		DATE		<div>UPGRADING OF RAMONGOANA BUS AND TAXI ROADS</div>		DRAWING NUMBER MC/CP/RBR/LS/04		SCALE AS SHOWN REVISION			
DRAWN BY		F.M.													
CHECKED BY		H.T.						RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2800,000 TO Ch 2930,981							



--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Chainages											
Vertical Alignment	Design Road Levels	Left Edge (3.0m)		1242.128		1242.378		1242.628		1242.878	1243.184
		Centre Line (0.0m)		1242.188		1242.438		1242.688		1242.938	1243.188
		Right Edge (3.0m)		1242.248		1242.498		1242.748		1242.998	1243.248
	Grades	1250 %									102.837
	Vertical Curves										103
Superelevation			<div>2% ----- -2% -----</div>								
Horizontal Curves			<div>Direction 343.38.56</div>								1243.223
C/L/ Peg Levels				1242.390		1242.525		1242.824		1243.053	1243.347
CUT/ FILL				-0.202		-0.087		-0.136		-0.115	-0.159

						DESIGNED BY	
						CHECKED BY	
						DRAWN BY	
No	DATE	REVISION			CONSULT	DIR	CHECKED BY

CITY OF POLOKWANE




CITY OF
Polokwane
NATURALLY PROGRESSIVE

P.O Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

MORULA CONSULTING ENGINEERS



CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"

P.o.Box 2740
POLOKWANE
0700

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

TYPE OF PLANNING: PRELIMINARY

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237

DETAIL DESIGN
(Full signature)

20/1/17

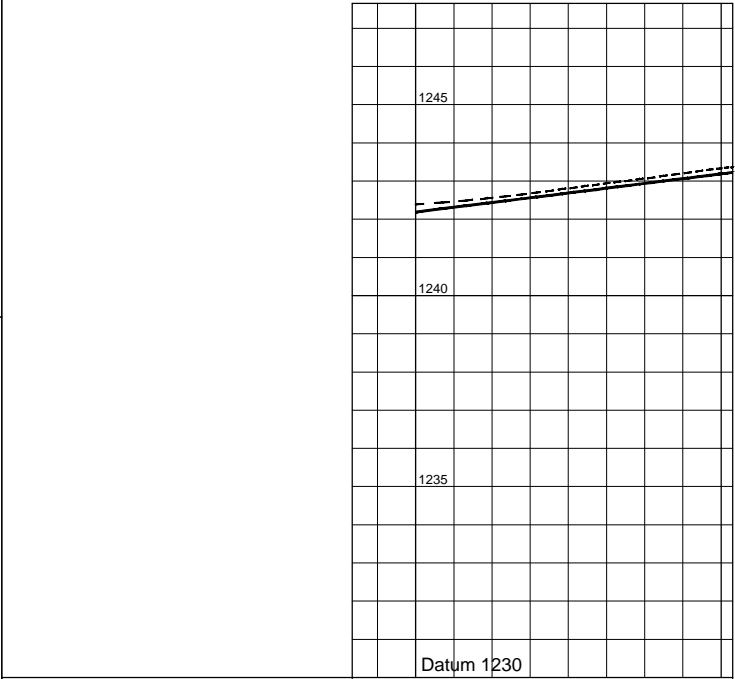
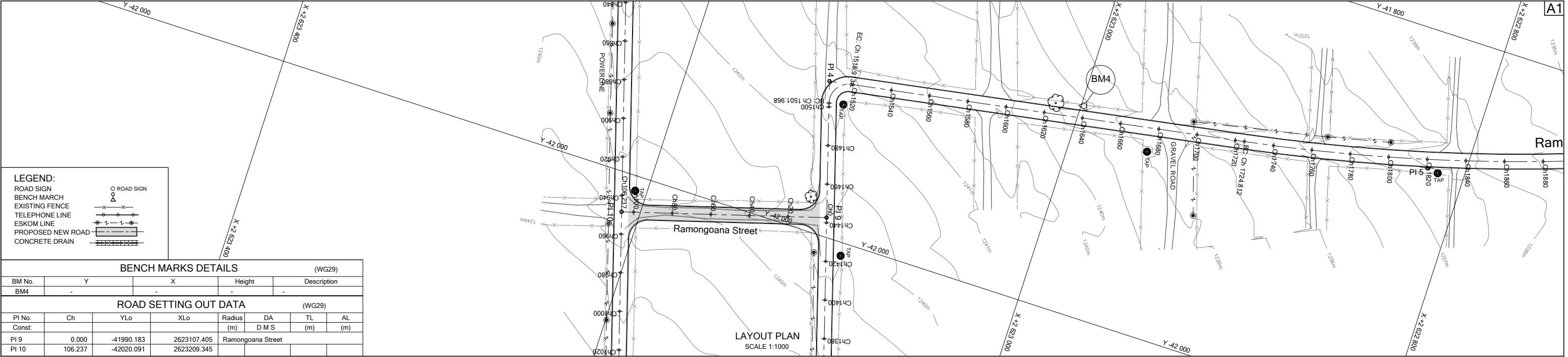
For: Consulting Engineer

DRAWING NUMBER
MC/CP/RBR/LS/06

SHEET 1 of 1

SCALE
AS SHOWN

REVISION
0



Chainages									
Vertical Alignment	Design Road Levels	Left Edge (3.0m)	1242.128	20	40	60	80	100	
		Centre Line (0.0m)	1242.188	1242.438	1242.688	1242.938	1243.188	1243.438	103
		Right Edge (3.0m)	1242.248	1242.498	1242.748	1242.998	1243.248	1243.498	
	Grades	1250 %							102.837
	Vertical Curves								103
	Superelevation	<div><div></div><div>2%</div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>							

						DESIGNED BY	
						CHECKED BY	
						DRAWN BY	
No	DATE	REVISION			CONSULT	DIR	CHECKED BY

CITY OF POLOKWANE

P.O. Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

Polokwane

NATURALLY PROGRESSIVE

MORULA CONSULTING ENGINEERS

CONSULTING ENGINEERS
& PROJECT MANAGERS

"a new dawn"

P.O.Box 2740
POLOKWANE
0700

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

TYPE OF PLANNING: PRELIMINARY

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237

DETAIL DESIGN
(Full signature)

1:100

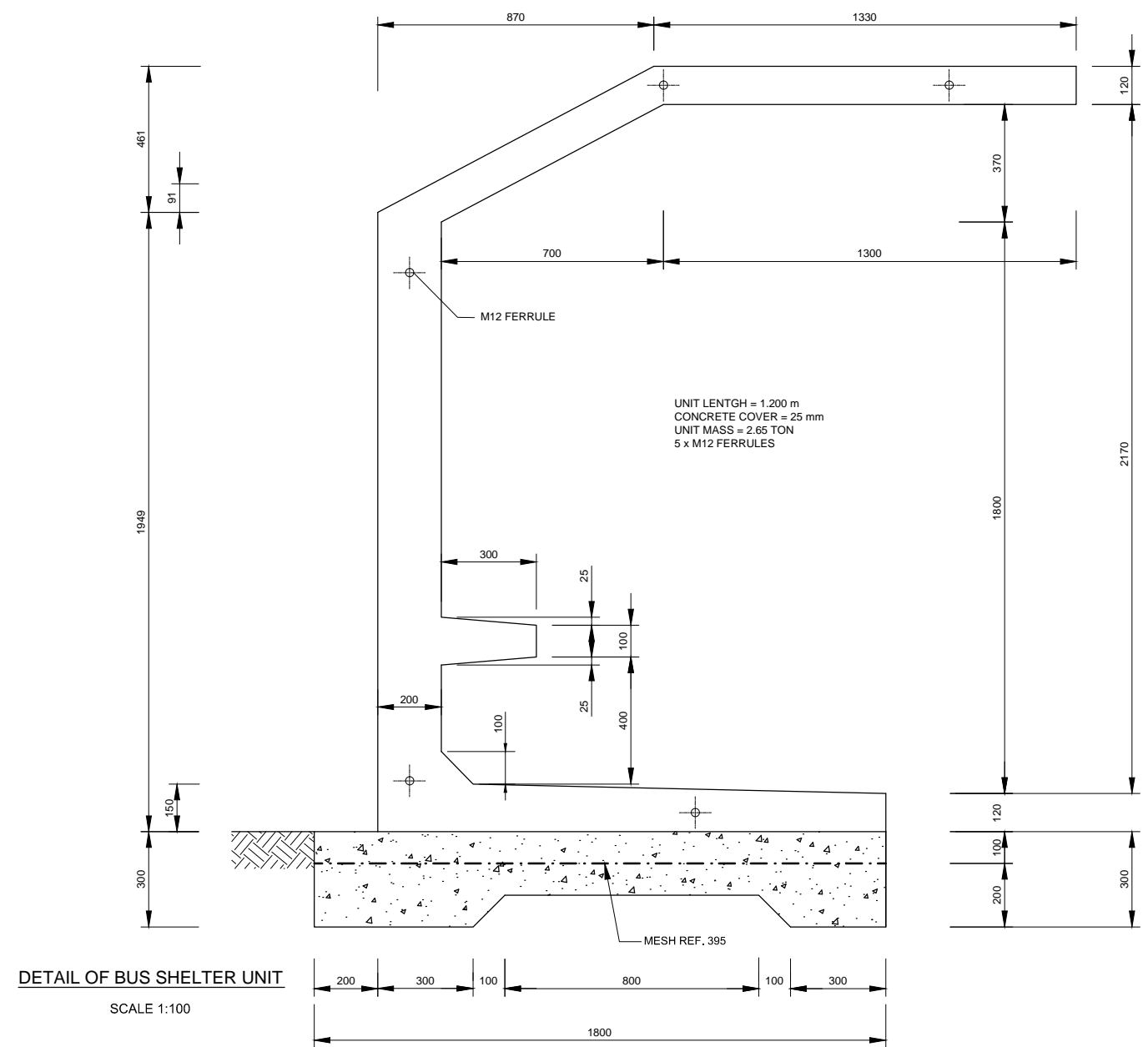
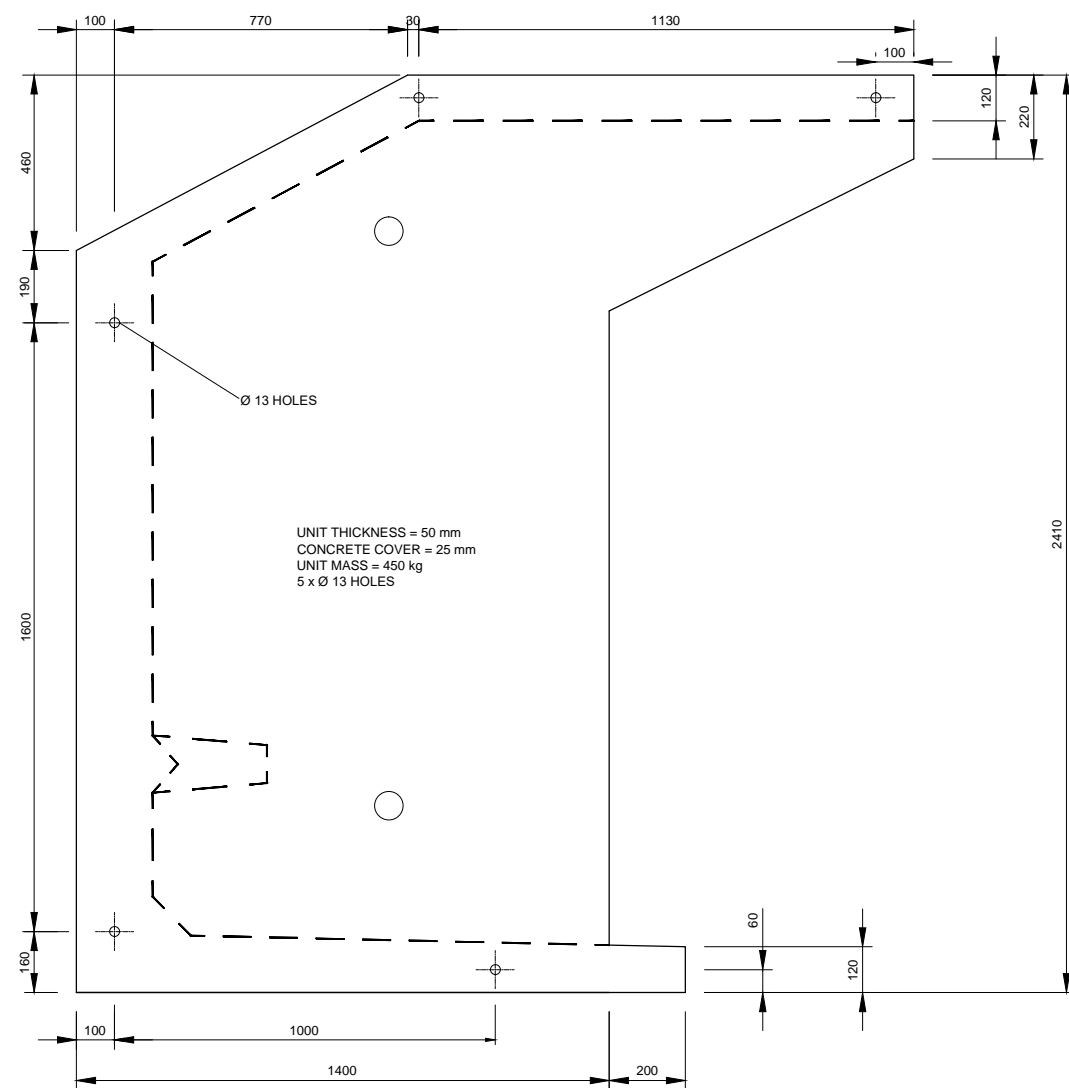
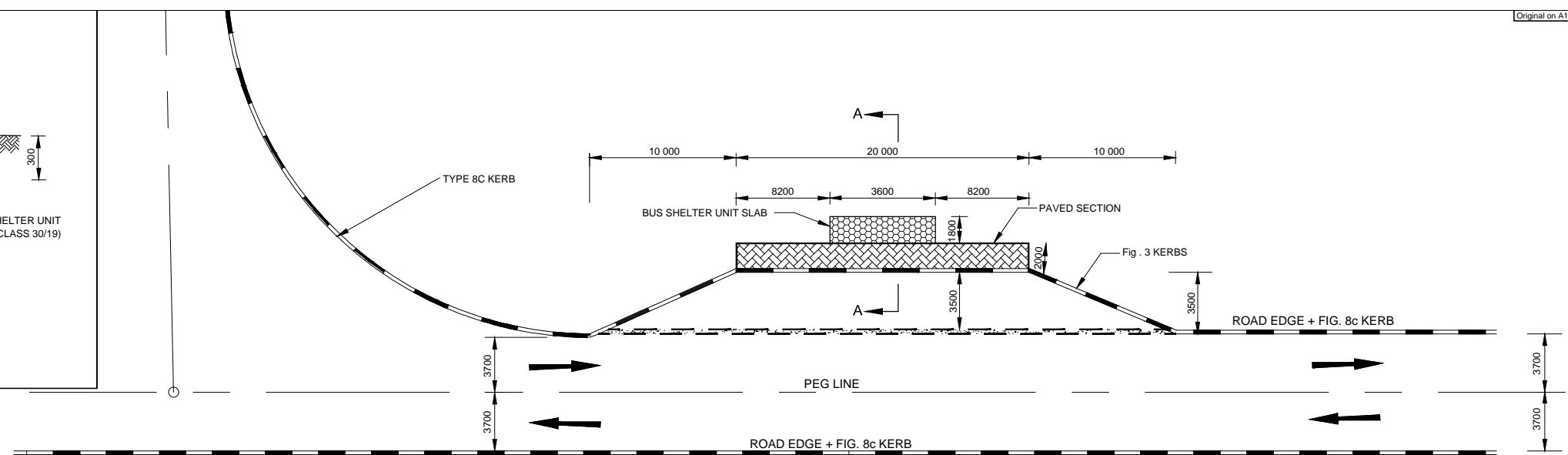
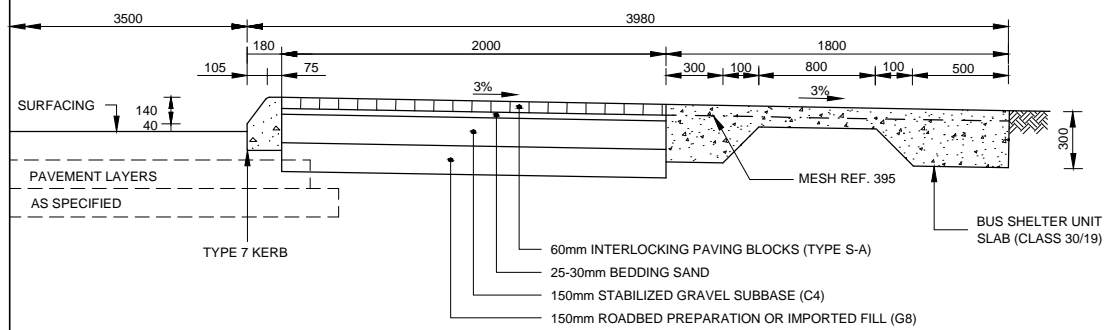
For Consulting Engineer

DRAWING NUMBER
MC/CP/RBR/LS/06

SHEET 1 of 1

SCALE
AS SHOWN

REVISION
0



No	DATE	REVISION	CONSULT	DIR

DESIGNED BY	F.M.
CHECKED BY	H.T.
DRAWN BY	F.M.
CHECKED BY	H.T.

CITY OF POLOKWANE

P.O.Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

City of Polokwane
NATURALLY PROGRESSIVE

MORULA CONSULTING ENGINEERS

morula

CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"

P.O.Box 2740
POLOKWANE
0700

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

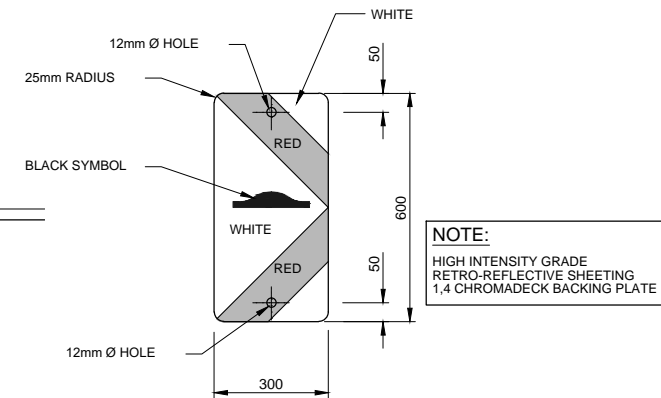
CONTRACT No.: 30/2015

TYPE OF PLANNING: PRELIMINARY

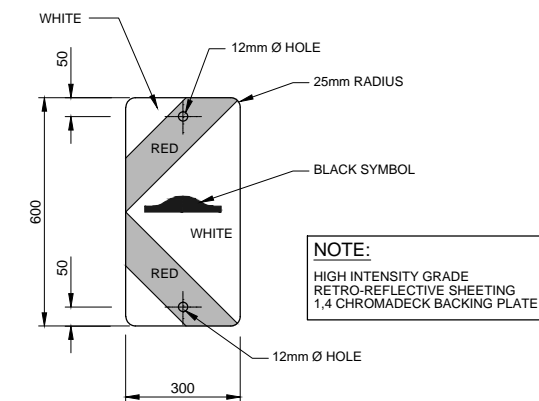
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

BUS/ TAXI STOP LAYOUT WITH SHELTER DETAILS

DETAIL DESIGN (Full signature)	SHEET 1 OF 1
For Consulting Engineer	SCALE AS SHOWN
DRAWING NUMBER MC/CP/RBR/SD/01	REVISION 0

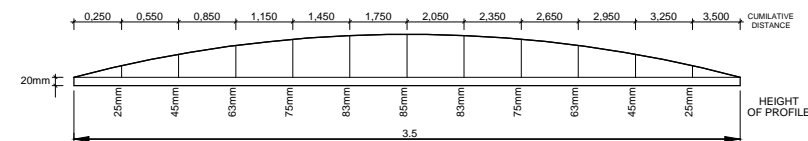
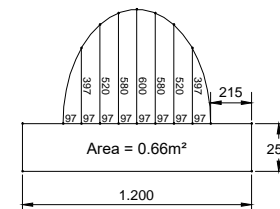
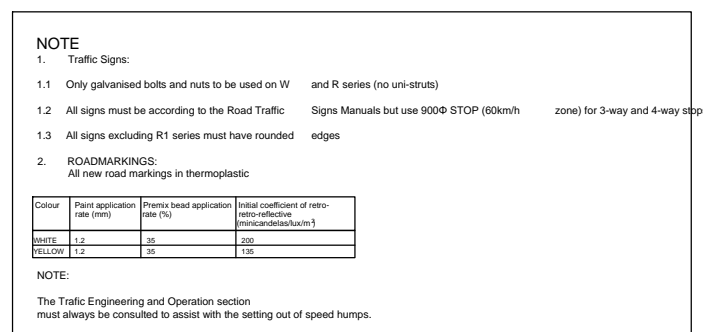
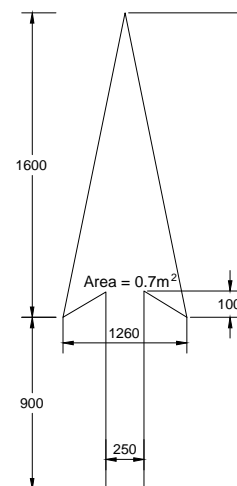


SCALE 1:10

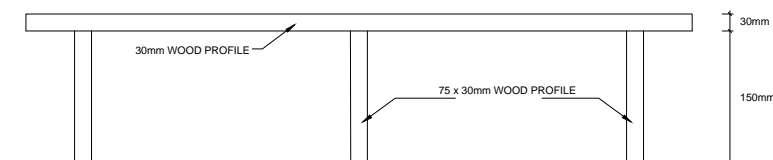
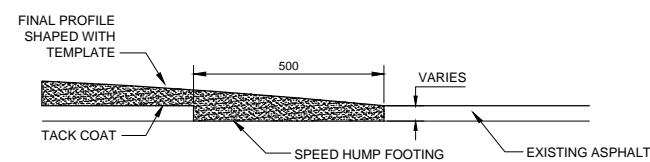


SCALE 1:10

SCALE 1:100





SIDE ELEVATION



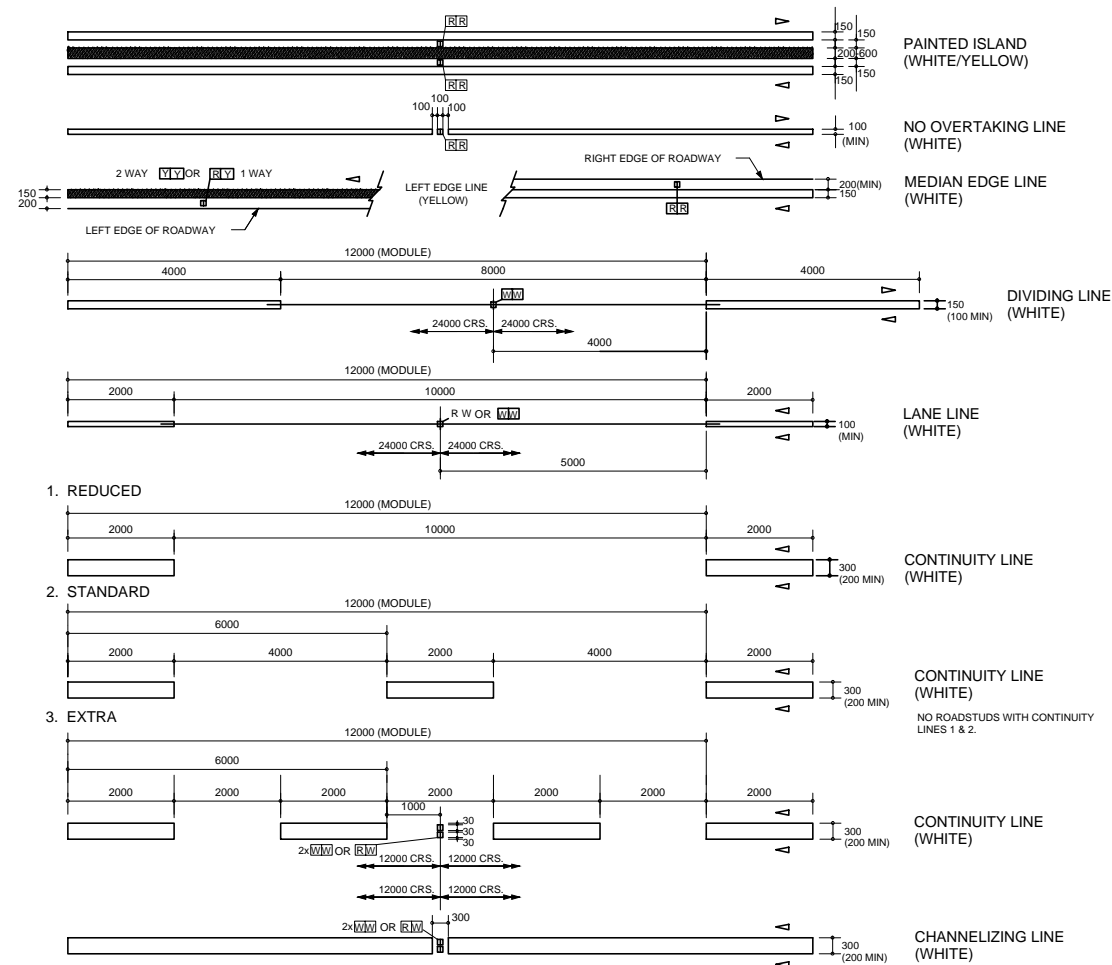
PLAN

- | Colour | Paint application rate (mm) | Premix bead application rate (%) | Initial coefficient of retro-reflective (micandelas/lux/m ²) |
|--------|-----------------------------|----------------------------------|--|
| WHITE | 1.2 | 35 | 200 |
| YELLOW | 1.2 | 35 | 135 |

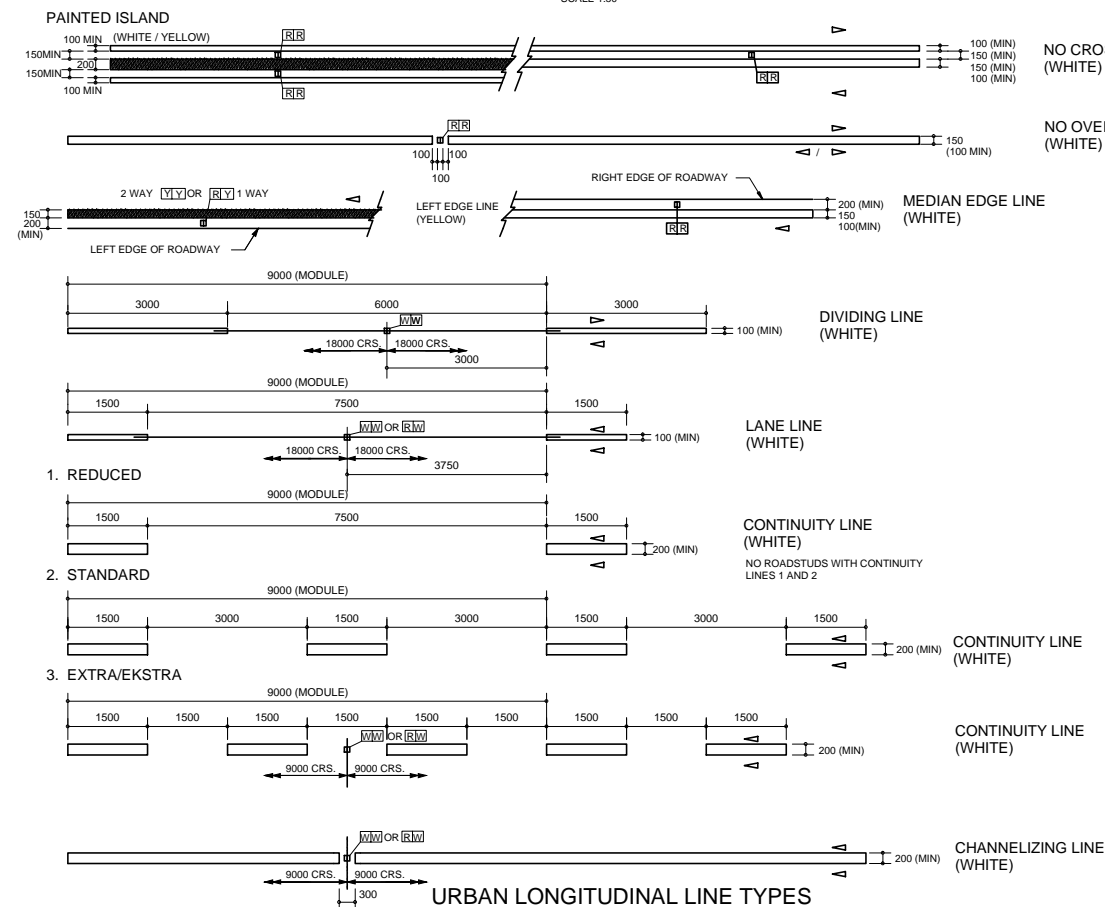
				DESIGNED BY	F.M.	<div><div>CITY OF POLOKWANE</div><div><div>P.O.Box 111 POLOKWANE 0700</div><div>TEL: (015)290-2077 FAX: (086) 613-9626</div></div><div><div>CITY OF</div><div>Polokwane</div><div>NATURALLY PROGRESSIVE</div></div></div>	MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full Signature)		SHEET 1 OF 1	
				CHECKED BY	H.T.		<div><div><div>morula CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"</div></div><div>P.o.Box 2740 POLOKWANE 0700</div><div>Tel: (015)296-3631 Fax: (086) 558-6446</div></div>		MUNICIPALITY _____ DATE _____		UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		For Consulting Engineer		SCALE		AS SHOWN	
				DRAWN BY	F.M.		CONSULTING ENGINEER _____ DATE _____		DRAWING NUMBER						REVISION			
				CHECKED BY	H.T.						TYPICAL SPEED HUMP DETAIL		MC/CP/RBR/SD/02		<div><div>0</div></div>			
No	DATE	REVISION	CONSULT	DIR														

ROAD MARKING DETAILS

SHEET 1 OF 2



RURAL LONGITUDINAL LINE TYPES



NOTES: (RURAL LONGITUDINAL LINE TYPES)

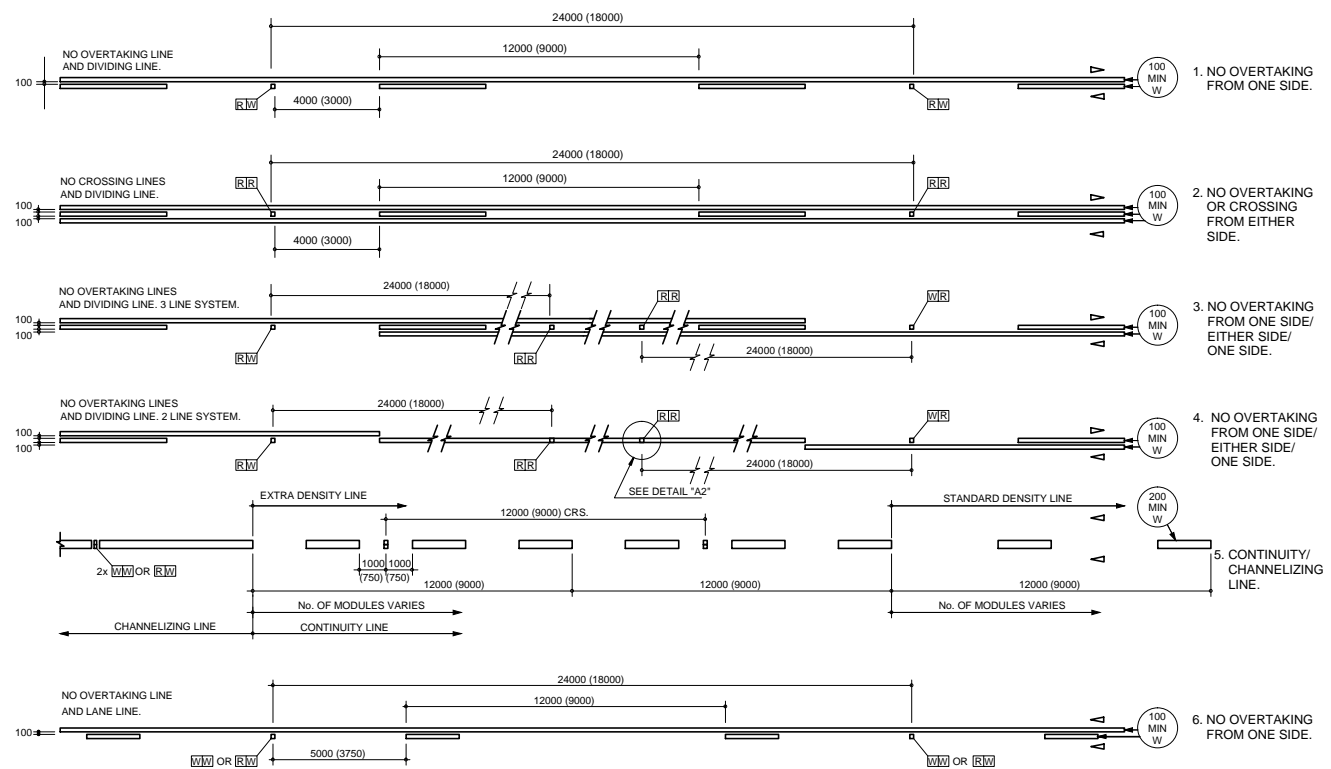
- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO LINE MARKING INDICATED THUS \rightarrow OR \leftarrow
- PAINTED ISLAND MARKINGS SHALL BE USED AS A STANDARD DIVIDING MARKING ON ALL 4-LANE 2-WAY ROADWAYS. (SEE URBAN LONGITUDINAL LINE TYPES)
- A NO OVERTAKING LINE MAY BE USED TO REPLACE A DIVIDING LINE MARKING ON MINOR ROADS OR TO MATCH PROVINCIAL ROAD MARKING POLICY ON AN INTERSECTING ROADWAY AS APPROPRIATE. A NO OVERTAKING LINE MAY BE USED IN COMBINATION WITH A LANE LINE. (NORMALLY ON A FREEWAY CARRIAGEWAY.)
- A LEFT EDGE LINE MARKING SHALL NOT EXTEND ACROSS THE POINT OF DEPARTURE FROM A THROUGH PORTION OF ROADWAY.
- A RIGHT EDGE LINE MARKING IS ONLY REQUIRED TO DEMARCAT AN UNKERBED MEDIAN (A MEDIAN GUARDRAIL OR CONCRETE SEPARATOR BARRIER DOES NOT CONSTITUTE A KERBED MEDIAN.)
- THE DIVIDING LINE MARKING REPLACES THE PREVIOUS "CENTRE LINE" MARKING AND SHALL ONLY BE USED BETWEEN LANES CARRYING OPPOSING TRAFFIC FLOWS WHERE OVERTAKING IS PERMITTED.
- A CONTINUITY LINE MAY BE SPECIFIED IN ONE OF THREE DENSITIES - 1. REDUCED 2. STANDARD OR 3. EXTRA. A CONTINUITY LINE MAY BE USED TO DEFINE THE LIMIT OF THE THROUGH PORTION OF A ROADWAY, EITHER AT A HIGH SPEED EXIT (OFF-RAMP OR SLIP ROAD), A DEDICATED EXIT LANE ON FREEWAY, OR AT-GRADE ROAD (RIGHT OR LEFT TURN.)
- A CHANNELIZING LINE MAY BE USED AS AN EXTENSION OF A CONTINUITY LINE FOR CERTAIN APPLICATIONS ON THE APPROACH TO AN AT-GRADE SLIP ROAD GORE AREA.
- A LANE LINE, CONTINUITY LINE OR CHANNELIZING LINE SHALL NOT BE USED BETWEEN OPPOSING TRAFFIC MOVEMENTS.
- THE WIDTHS OF LINES SHOWN ARE RECOMMENDATIONS ONLY. (SEE LONGITUDINAL LINE COMBINATIONS.)

LEGEND:

R = RED
W = WHITE
Y = YELLOW

DETAIL "A2"

SCALE: 1:25



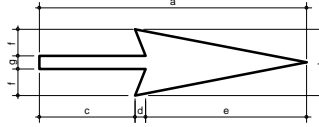
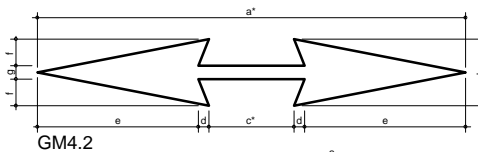
NOTES: (LONGITUDINAL LINE COMBINATIONS)

- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO THE MARKING INDICATED THUS \rightarrow OR \leftarrow
- FOR FULL LONGITUDINAL DIMENSIONS OF COMPONENT MARKINGS SEE RURAL AND URBAN LONGITUDINAL LINE TYPES.
- COMBINATION MARKING 1 TO 4 ARE FOR TWO WAY TRAFFIC AND ARE APPLICABLE TO NATIONAL NON-FREEWAY ROUTES WHICH INTERSECT FREEWAYS.
- COMBINATION MARKING 5 SHALL BE USED TO INDICATE THE DIVISIONS BETWEEN THE THROUGH ROADWAY AND ANY EXCLUSIVE EXIT/TURN LANES. WHEREVER POSSIBLE A CONTINUITY LINE SHOULD LEAD TO, OR TERMINATE IN A CHANNELIZING LINE WHICH MAY BE SHORT. RECOMMENDED MINIMUM LENGTH IS 12m FOR RURAL AND 9m FOR URBAN APPLICATIONS.
- FOR MARKINGS 1 TO 4 ROADSTUDS SHOULD BE LOCATED ON CENTRE LINE OF THE DIVIDING LINE (OR SINGLE NO OVERTAKING LINE MARKING 4)
- WHERE POSSIBLE THE LENGTH OF CHANNELIZING MARKING SHOULD BE ADJUSTED SO THAT THE CONTINUITY LINE ROADSTUDS MATCH OTHER ROADSTUDS ON CROSS-SECTION AND FALL IN THE CENTRE OF A GAP IN THE CONTINUITY LINE.
- DIMENSIONS FOR URBAN APPLICATIONS ARE INDICATED IN BRACKETS.
- ROADSTUDS ON THE SINGLE NO OVERTAKING LINE IN MARKING 4 MAY BE COVERED DURING LINE MARKING OR PLACED AS INDICATED IN DETAIL "A2".

LONGITUDINAL LINE COMBINATIONS

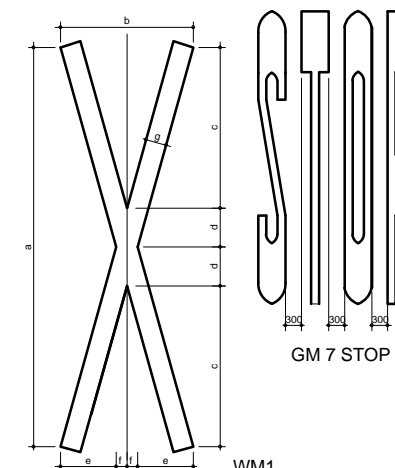
GM4.2 REVERSIBLE FLOW ARROW / GM4.1 INFORMATION ARROW

Operating Speed km/h	Typical Applications	a	a*	b	c	c*	d	e	f	g
30 - 40	City Centre	1250	2000	1250	450	400	50	750	500	250
50 - 60	Urban	2500	4000	1250	900	800	100	1500	500	250
70 - 90	Urban Arterial/Rural Expressway	4000	6400	1250	1440	1280	160	2400	500	250
100 - 120	Rural and Freeways	5000	8000	1250	1800	1600	200	3000	500	250



Marking	a	Area	a*	Area
WM1	4000	1.84		
	7500	6.00		
	1250	0.59	2000	1.05
GM4.1/ GM4.2(a*)	2500	1.17	4000	2.10
	4000	1.88	6400	3.36
	5000	2.35	8000	4.20
WM5	450	0.20		
	850	0.83		
	1350	2.15		
GM7	5500	6.90		

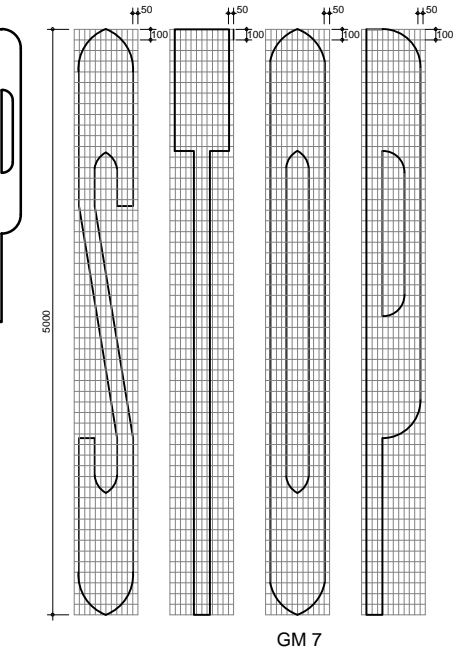
- NOTES:**
- THIS DRAWING DETAILS A RANGE OF GENERAL WARNING OR GUIDANCE SYMBOLS. APPLICATION SHALL BE IN ACCORDANCE WITH THE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL.
 - MARKING WM5 - YIELD CONTROL AHEAD MAY BE REPEATED 1m FROM THE YIELD LINE MARKING.



WM1 RAILWAY LEVEL CROSSING AHEAD

Typical Applications	a	b	c	d	e	f	g
Urban	4000	2500	1797	203	1135	115	200
Rural	7500	2500	3303	747	1842	238	400

REGULATORY/WARNING /GUIDANCE SYMBOLS



WM5 YIELD CONTROL AHEAD

Operating Speed km/h	Typical Applications	Distance from Yield line	a	b	c	d
30 - 40	City Centre	90m	450	250	100	1250
50 - 60	Urban	120m	850	450	150	2500
70 - 90	Rural	150m	1350	750	250	4000

DESIGNED BY	F.M.
CHECKED BY	H.T.
DRAWN BY	F.M.
CHECKED BY	H.T.

CITY OF POLOKWANE

P.O Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

Polokwane

NATURALLY PROGRESSIVE

MORULA CONSULTING ENGINEERS

P.O.Box 2740
POLOKWANE
0700

CONSULTING ENGINEERS & PROJECT MANAGERS
"a new dawn"

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

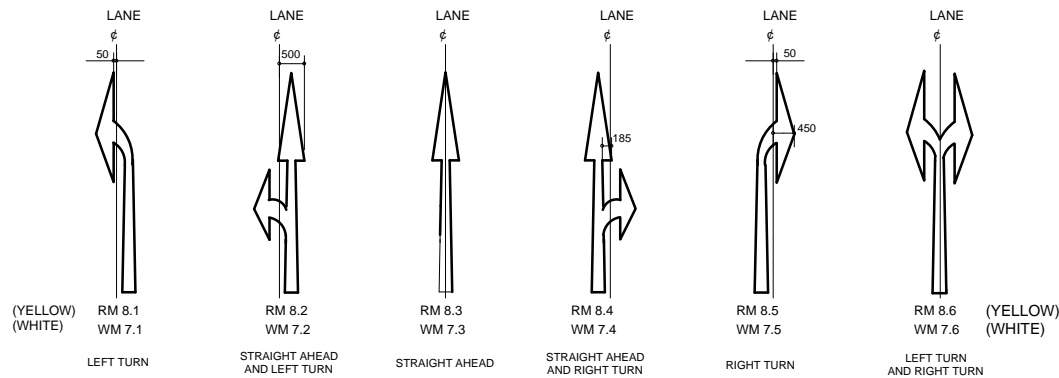
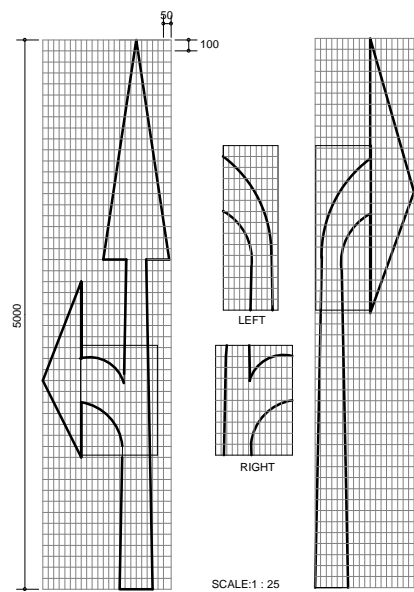
TYPE OF PLANNING: PRELIMINARY

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

ROAD MARKINGS: REGULARITY, WARNING AND GUIDANCE SYMBOLS

DETAIL DESIGN (Full signature)	SHEET 1 OF 1
For Consulting Engineer	SCALE 1:1000
DRAWING NUMBER MC/CP/RBR/SD/03	REVISION 0

ROAD MARKING DETAILS



APPLICATIONS

SCALE: 1:50

DIMENSIONS (mm)

Operating Speed km/h	Typical Applications	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
30 - 40	City Centre	2500	600	350	450	884	200	417	1000	1700	250	550	1250	700	380	1450	58	30	29
50 - 90	Urban/Rural Expressway	4000	960	560	720	1406	320	666	1600	2720	400	880	2000	1120	608	2320	93	48	46
100 - 120	Rural and Freeways	5000	1200	700	900	1767	400	833	2000	3400	500	1100	2500	1400	760	2900	116	60	58
ALL	Special Applications	7500	1800	1050	1350	2651	600	1250	3000	5100	750	1650	3750	2100	1140	4350	174	90	87

All Operating Speeds and Applications	N	O	P	Q	R	S	T
	210	180	350	300	500	400	600

ARROW AREA / (m²)				
a	RM8.1/RM8.5 WM7.1/WM7.5	RM8.2/RM8.4 WM7.2/WM7.4	RM8.3 WM7.3	RM8.6 WM7.6
2500	0.67	0.89	0.66	1.03
4000	1.14	1.43	1.06	1.68
5000	1.45	1.78	1.32	2.12
7500	2.23	2.66	1.98	3.20

NOTES: (MANDATORY DIRECTION ARROWS)

1. THESE ARROWS MAY BE USED IN LANES TO INDICATE THAT DRIVERS SHALL PROCEED ONLY IN THE DIRECTION OR DIRECTIONS SHOWN. THEY SHOULD ONLY BE USED IF THE JUNCTION CONCERNED REQUIRED TURNING MOVEMENT CONTROL BY LANE.

2. THE FINAL ARROW NEAREST THE POINT OF TURN OR STRAIGHT ON MOVEMENT SHALL BE YELLOW; ANY ARROWS MARKED IN ADVANCE OF THIS POINT TO WARN DRIVERS OF THE MANDATORY MOVEMENT AHEAD SHALL BE WHITE.

3. A MANDATORY OR WARNING DIRECTION ARROW SHALL NOT BE USED IN ADVANCE OF A WIDENING OF THE ROADWAY TO A GREATER NUMBER OF LANES. THIS SHALL BE INDICATED IF NECESSARY, BY USING FURCATION ARROWS.

LEGEND:

R = RED

W = WHITE

Y = YELLOW

DIMENSIONS (mm)

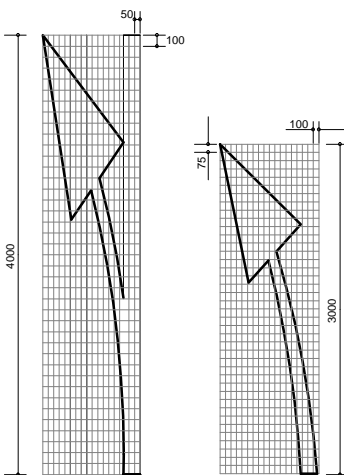
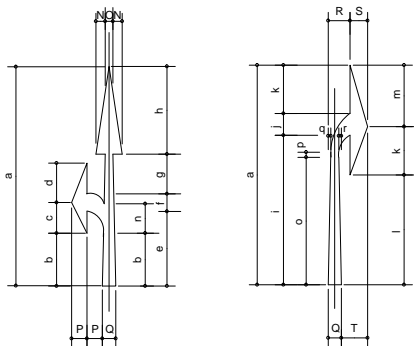
Typical Applications	a	b	c	d	e	f	g	h	r	r*
Urban	3000	1941	83	976	1741	528	731	1206	5620	5820

All Applications	H	I	J	K	L	M
	735	260	181	219	75	100 or 150

MARKING SPACING

ARROW AREA / (m²)	
a	Per Arrow
3000	0.62
4000	0.82

MANDATORY DIRECTION ARROWS



APPLICATIONS

SCALE: 1:50

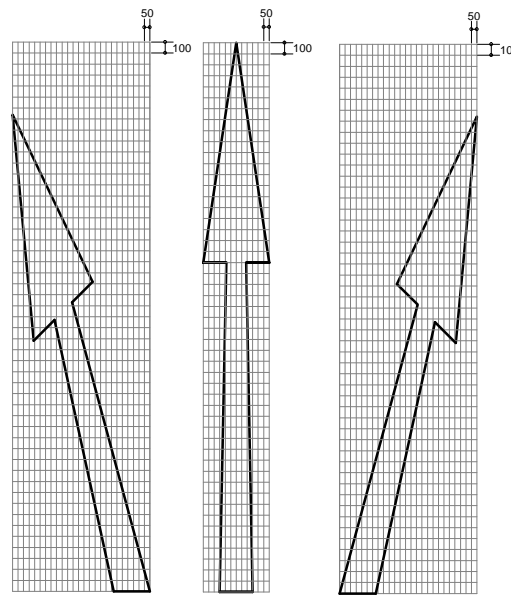
NOTES: (BARRIER LINE AHEAD ARROWS)

1. THESE ARROWS SHOULD BE USED IN MULTIPLES OF THREE (AT LEAST) IN ADVANCE OF THE START OF A SECTION OF NO OVERTAKING LINE, NO CROSSING LINE OR PAINTED ISLAND WHEN SUCH BARRIER LINES REPLACE A DIVIDING LINE.

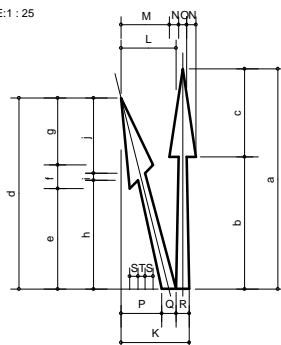
2. THE ARROWS MAY BE MARKED ON TOP OF EXISTING DIVIDING LINE MARKINGS (IF THE EXISTING LINE IS A CENTRE LINE TO A 12m OR 7.2m MODULE THE POINT OF THE ARROW SHOULD BE LINED UP WITH THE FORWARD END OF THE LINE).

3. WHEN OVERTAKING SECTIONS ARE REGULARLY INTERSPERSED WITH NO OVERTAKING SECTIONS AND ARE SHORT IN LENGTH MARKING WM 8.2 MAY BE USED AT THE CENTRE OF THE OVERTAKING SECTION.

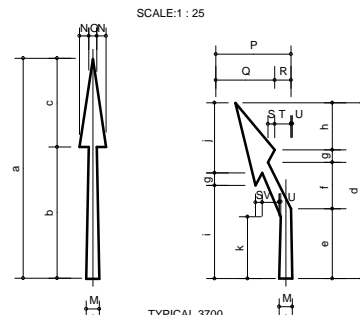
BARRIER LINE AHEAD ARROWS



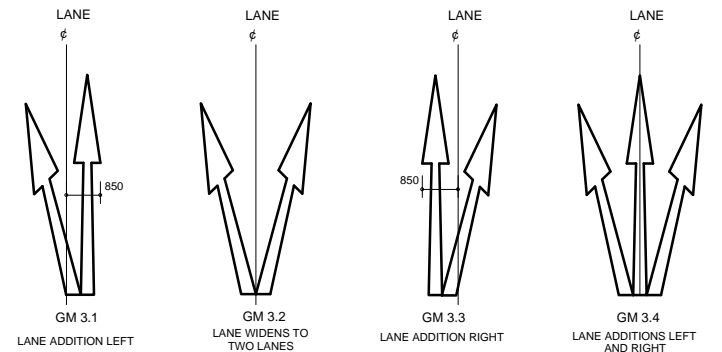
SCALE: 1:25



SCALE: 1:25



TYPICAL 3700



APPLICATIONS

SCALE: 1:50

DIMENSIONS (mm)

Operating Speed km/h	Typical Applications	a	b	c	d	e	f	g	h	i	j
30 - 40	City Centre	2500	1500	1000	2170	1141	268	761	1235	81	855
50 - 60	Urban Roads	4000	2400	1600	3472	1826	429	1218	1976	129	1367
70 - 90	Urban Arterial Roads/ Rural Expressways	5000	3000	2000	4340	2282	536	1522	2470	161	1709
100 - 120	Rural Roads and Freeways	7500	4500	3000	6510	3423	804	2283	3705	242	2564

All Operating Speeds and Applications	K	L	M	N	O	P	Q	R	S	T
	1700	1250	1100	210	180	921	329	300	188	161

NOTES: (FURCATION ARROWS)

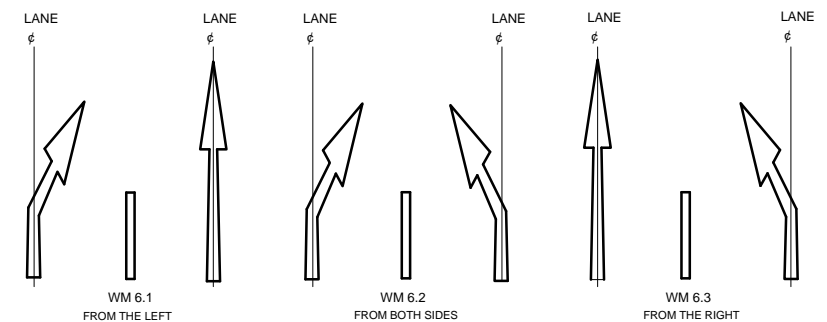
1. THESE ARROWS MAY BE USED TO INDICATE THAT THE NUMBER OF LANES IS INCREASING AHEAD. ONLY ONE SET OF ARROWS SHOULD BE USED UNLESS A LEFT AND RIGHT TURN LANE ARE ADDED TO A MULTI-LANE ROADWAY AT THE SAME POINT WHERE TWO SETS MAY BE USED.

2. DIRECTION ARROWS AHEAD SHALL NOT BE USED TO INDICATE THE ADDITION OF LANES AHEAD.

3. AS A GENERAL RULE BIFURCATION ARROWS SHOULD BE LOCATED TWO TO THREE MARKING MODULES BEFORE THE START OF THE LANE GENERATING TAPER OR CURVE.

ARROW AREA / (m²)			
a	GM3.1/GM3.3	GM3.2	GM3.4
2500	1.30	1.27	1.93
4000	2.07	2.04	3.09
5000	2.59	2.55	3.87
7500	3.89	3.82	5.80

FURCATION ARROWS



APPLICATIONS

SCALE: 1:50

DIMENSIONS (mm)

Operating Speed km/h	Typical Applications	a	b	c	d	e	f	g	h	i	j	k
30 - 40	City Centre	4000	2400	1600	3200	1271	847	227	855	1696	1277	1126
50 - 60	Urban Roads	5000	3000	2000	4000	1589	1058	284	1069	2120	1596	1407
70 - 90	Urban Arterial Roads/ Rural Expressways	7500	4500	3000	6000	2384	1587	426	1603	3180	2394	2111
100 - 120	Rural Roads and Freeways	12000	7200	4800	9600	3916	2587	668	2587	5160	3916	3467

All Operating Speeds and Applications	M	N	O	P	Q	R	S	T	U	V
	300	210	180	1300	898	402	155	370	32	390

NOTES: (LANE REDUCTION ARROWS)

1. IT IS RECOMMENDED THAT THREE SETS OF ARROWS BE USED ON HIGH SPEED ROADS, SPACED AT FOUR MODULE INTERVALS BEFORE THE END OF THE LANE LINE. SINGLE ARROWS SETS MAY BE USED ON LOWER SPEED ROADS.

2. THE BENT ARROWS MAY BE USED IN ADDITION TO THE THREE-ARROW SETS ALONG THE LENGTH OF THE LANE REDUCTION TAPER.

ARROW AREA / (m²)		
a	WM6.1/WM6.3	WM6.2
4000	2.08	2.06
5000	2.61	2.58
7500	3.92	3.88
12000	6.56	6.20

LANE REDUCTION ARROWS

DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
CHECKED BY	H.T.	P.O. Box 111 POLOKWANE 0700	P.O. Box 2740 POLOKWANE 0700	UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		TM	SCALE
DRAWN BY	F.M.	TEL: (015)290-2077 FAX: (086) 613-9626	CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"			For Consulting Engineer	1:1000
CHECKED BY	H.T.		Tel: (015)296-3631 Fax: (086) 558-6446			DRAWING NUMBER	REVISION
						MC/CP/RBR/SD/04	0
No	DATE	REVISION	CONSULT	DIR			

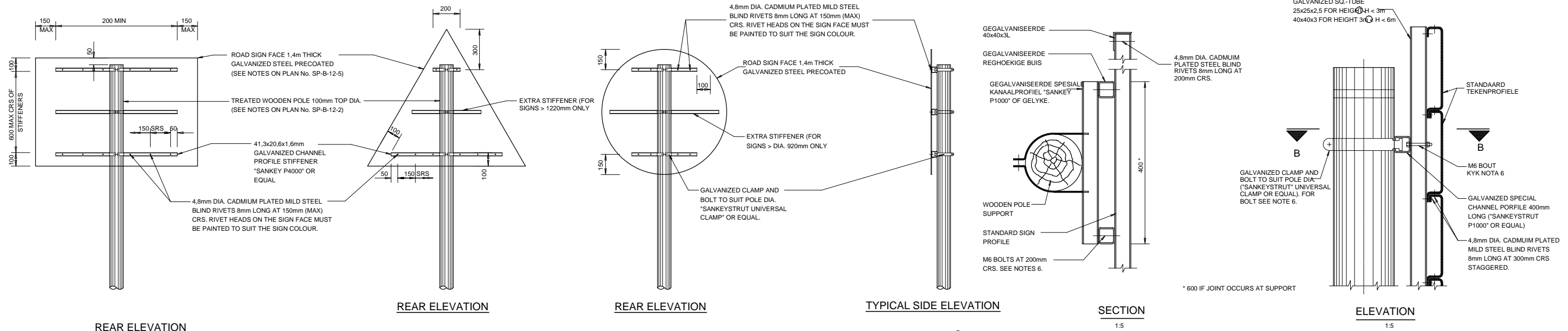
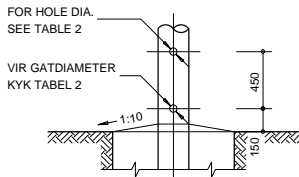
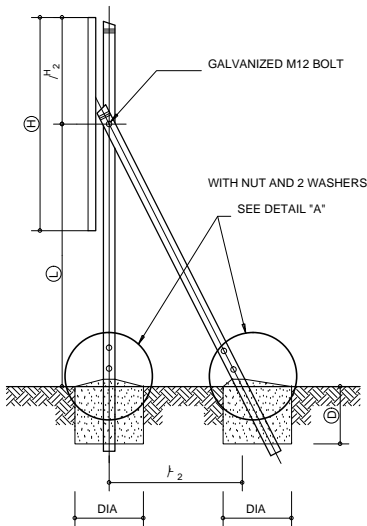


TABLE 1

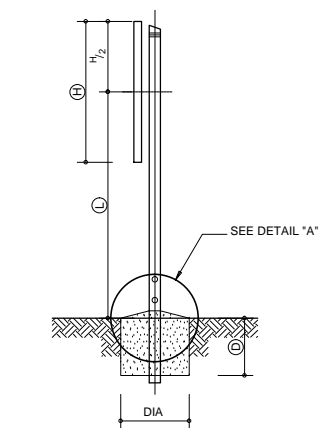
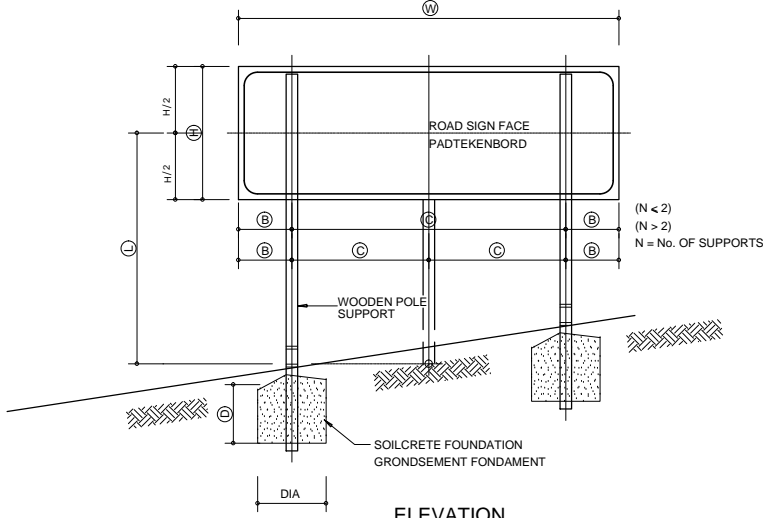
WIDTH OF SIGN W	No. OF SUPPORTS N	DIMENSIONS	
		B	C
1,2m	1	w/z	-
1,2m - 4,0m	2	w/5	3w/5
4,0m - 7,2m	3	w/2N	w/N
7,2m - 9,6m	4		
9,6 - 12,0m	5		



DETAIL "A"



TYPICAL SECTION
BRACED SUPPORT

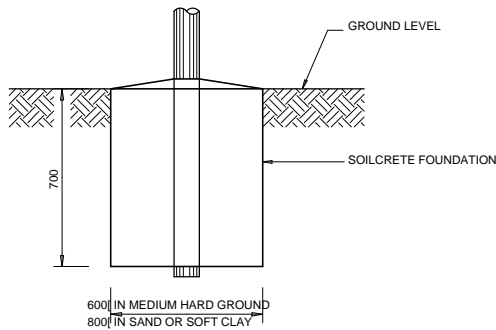


TYPICAL SECTION
FREE STANDING SUPPORT

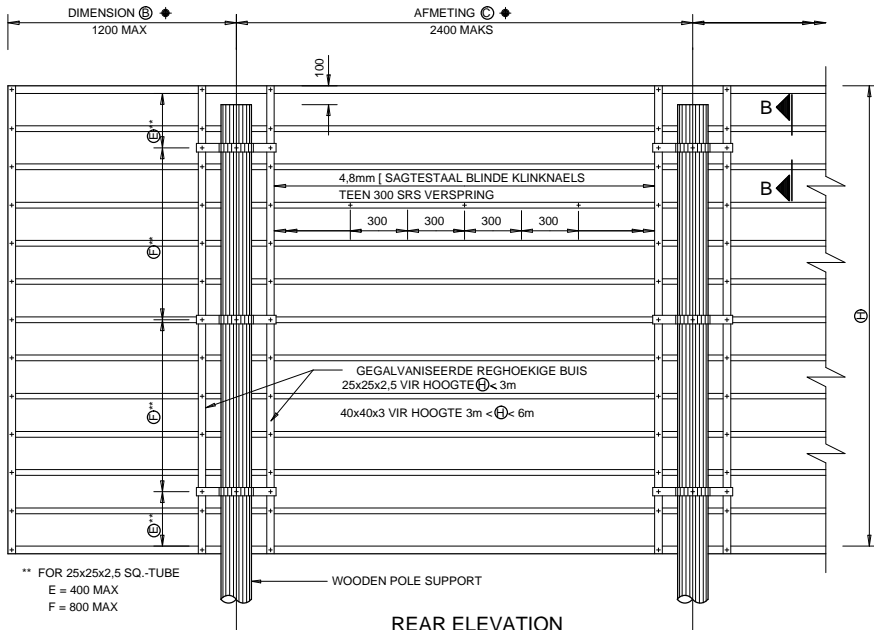
* AT GROUND LEVEL

TABEL 2

POLE DIA * (mm)	HOLE DIA (mm)
< 140	NONE
141 - 170	40
171 - 200	50
201 - 225	65



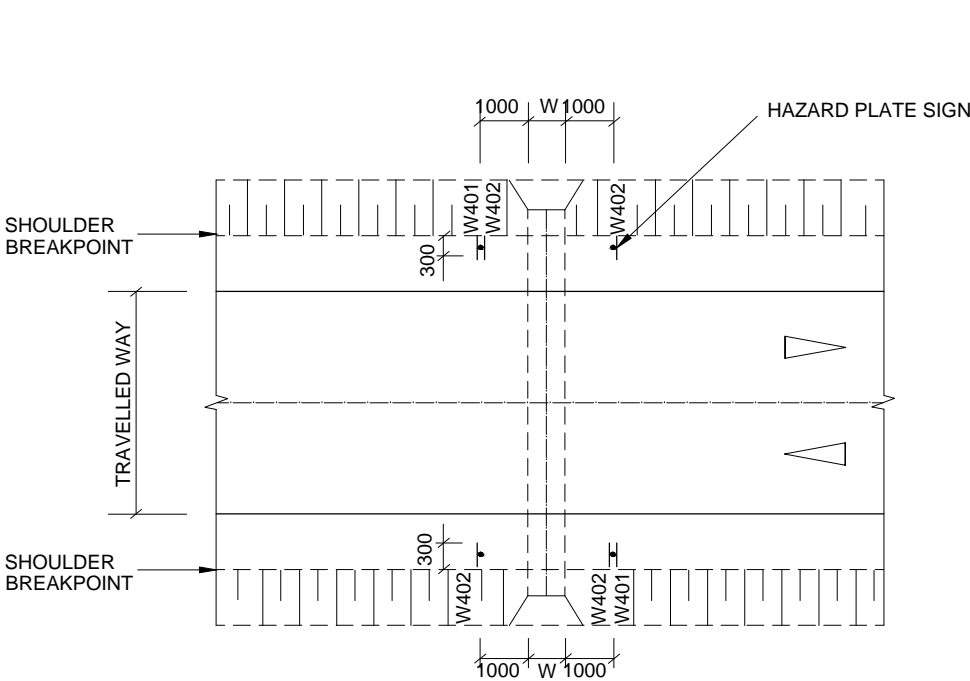
TYPICAL FOUNDATION



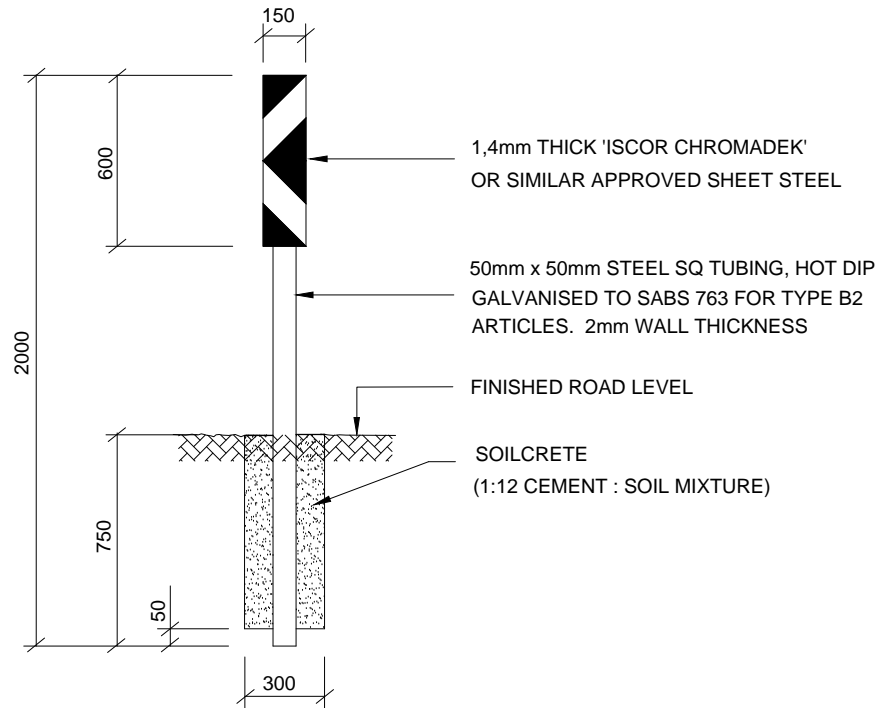
REAR ELEVATION
1:20

NOTES

- THE ROAD SIGN FACES SHALL BE MANUFACTURED AND ERECTED IN ACCORDANCE WITH THE REVISIONS AS WELL AS THE FOLLOWING REQUIREMENTS:-
- SIGN FACES SHALL BE FOR TYPE "A" OR "B" EXPOSURE AS INDICATED ON THE ROAD SIGN DETAIL DRAWINGS OR AS DIRECTED BY THE ENGINEER-ANALYST CLAUSES OF SECTION 5600 OF STANDARD SPECIFICATIONS.
 - TYPE "A": ALL CASES OTHER THAN TYPE "B".
 - TYPE "B": SIGN FACES FOR USE IN MARINE OR CHEMICALLY POLLUTED CORROSIVE ENVIRONMENTS.
 - THE COATING SYSTEMS FOR SIGN FACES TYPE "A" AND "B" ARE SPECIFIED ON PLAN No. SP-B-12-5.
 - THE STANDARD SIGN PROFILE SHALL BE MADE IN ACCORDANCE WITH THE DETAILS SHOWN ON PLAN No. SP-B-12-5.
 - A SIGN FACE WHICH EXCEEDS 6m IN LENGTH MAY BE MANUFACTURED IN TWO SECTIONS. THE JOINT SHALL BE MADE IN ACCORDANCE WITH DETAILS OF SECTION 7100 OF THE STANDARD SPECIFICATIONS. OF COMMERCIAL QUALITY MILD STEEL.
 - STRUCTURAL STEEL SECTIONS SHALL BE OF MILD STEEL CONFORMING TO THE REQUIREMENTS OF SECTION 5602(b) OF THE STANDARD SPECIFICATIONS.
 - BOLTS, WASHERS AND NUTS SHALL BE AS FOLLOWS:-
 - TYPE "A" SIGN FACES: GALVANIZED STEEL BOLTS COMPLYING WITH THE REQUIREMENTS OF CLAUSE 5602(b) OF THE STANDARD SPECIFICATIONS.
 - TYPE "B" SIGN FACES: STAINLESS STEEL BOLTS GRADE 304 MANUFACTURED TO SABS 1 NUTS FOR BOTH TYPE "A" AND "B" SIGN FACES SHALL BE SELF-LOCKING "NYLOC" OR EQUIVALENT.
 - BLIND RIVETS SHALL BE 4,8mm DIA CADMIUM PLATED MILD STEEL.
 - ALL STEEL SECTIONS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH CLAUSE 7100 OF THE STANDARD SPECIFICATIONS AFTER MANUFACTURE.
 - REFERENCE MUST BE MADE TO THE RELEVANT ROAD SIGN DETAIL DRAWINGS FOR DETAILS OF THE SYMBOLS AND LEGEND FOR EACH INDIVIDUAL SIGN.
 - MEASUREMENT AND PAYMENT OF THE SIGN FACES SHALL BE IN ACCORDANCE WITH CLAUSE 5609 OF THE STANDARD SPECIFICATIONS. AN "EXTRA OVER" RATE SHALL BE APPLICABLE FOR TYPE "B" SIGN FACES.



POSITION OF HAZARD PLATES
AT CULVERTS
N.T.S.



TYPICAL DETAIL OF HAZARD PLATE
(W402 SHOWN)
SCALE 1:20

NOTES:

- A. HAZARD PLATES
- HAZARD PLATE SHALL BE 300mm FROM THE SHOULDER BREAKPOINT.
 - FOR WIDE CULVERT ($W > 2\text{m}$ WIDTH) SINGLE-SIDED HAZARD PLATES SHALL BE PLACED ON EACH SIDE OF CULVERT.
 - FOR NARROW CULVERTS ($W < 2\text{m}$) PLACE ONE DOUBLE-SIDED HAZARD PLATE PER DIRECTION, ON UPSTREAM SIDE OF TRAFFIC FLOW.
 - W401 AND W402 SIGNS SHALL COMPLY WITH THE LATEST EDITION OF THE SA ROAD TRAFFIC SIGNS MANUAL.
- B. EMERGENCY ACCESS
- TO BE PLACED AT SAFE LOCATIONS WHERE THERE IS NO INTERFERENCE WITH DRAINAGE.
 - ENSURE 300m SIGHT DISTANCE TO BOTH SIDES.

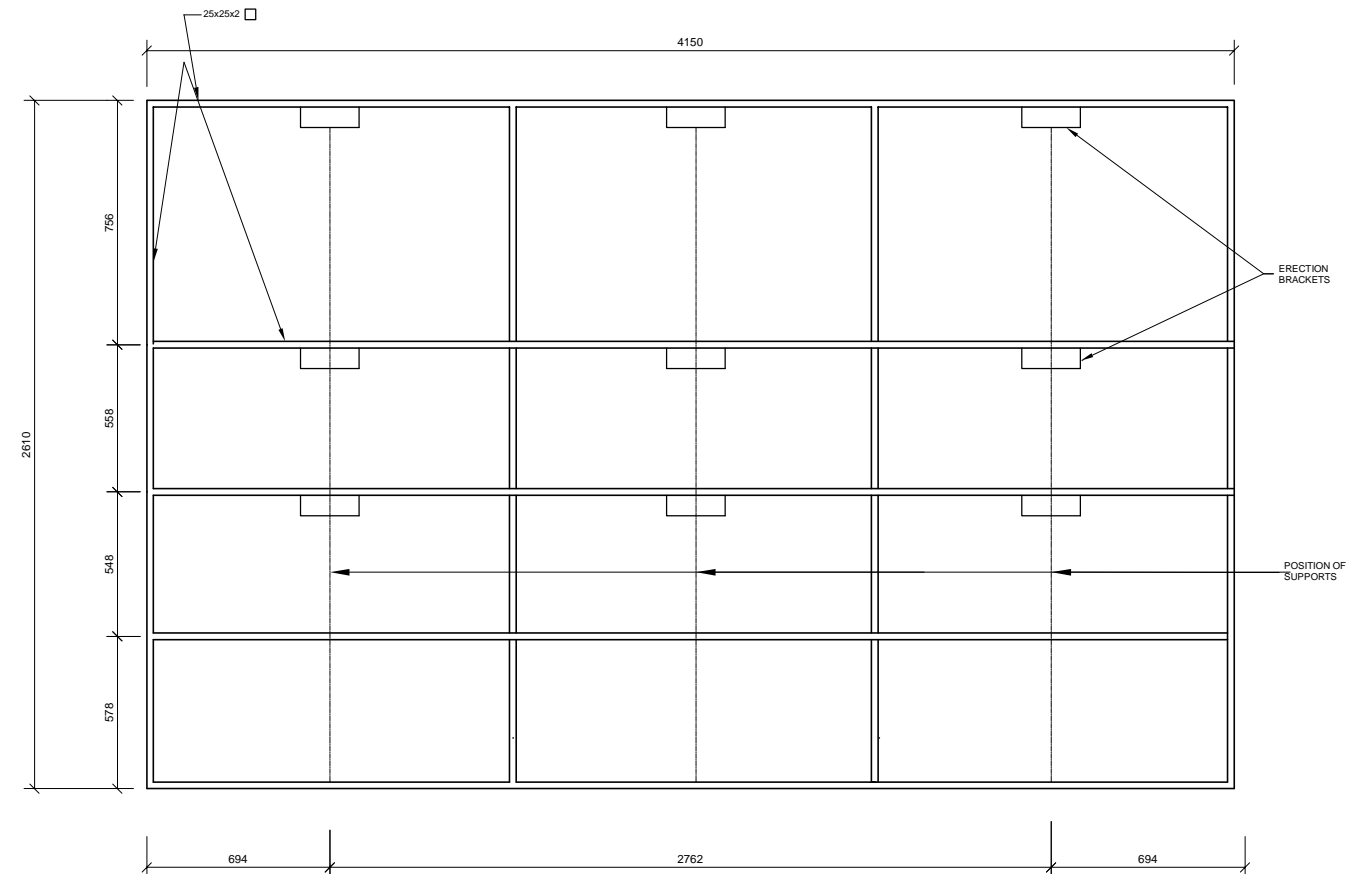
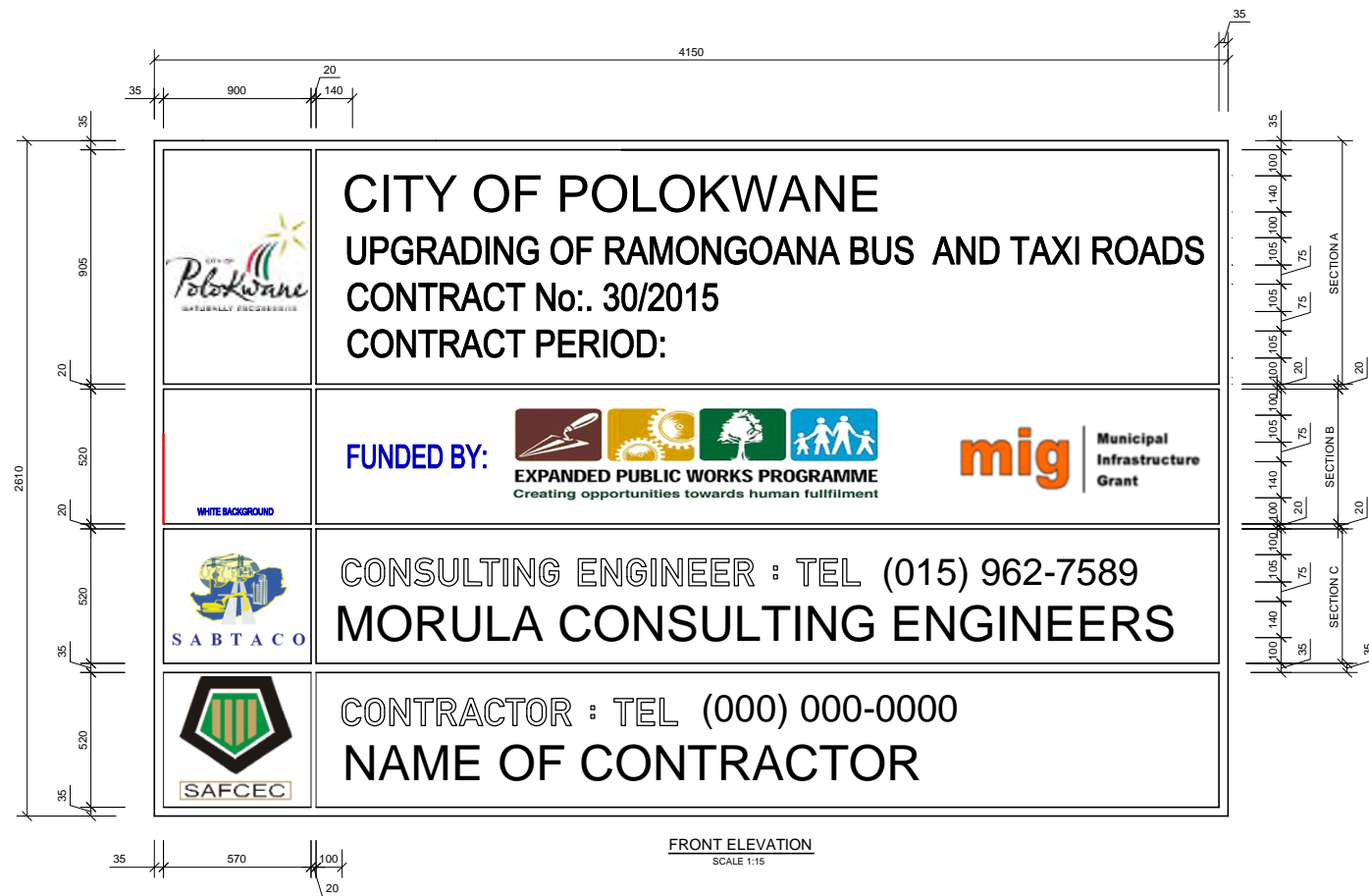
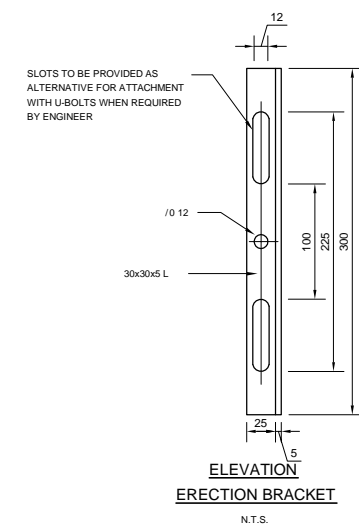
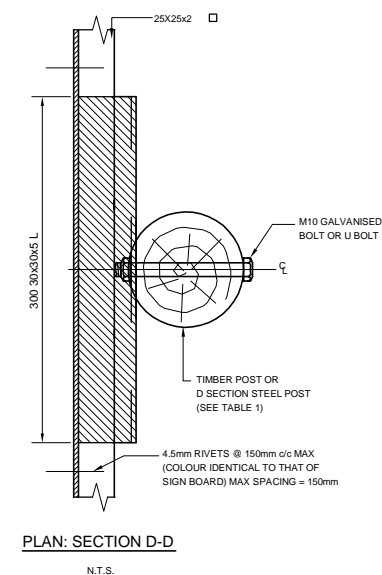
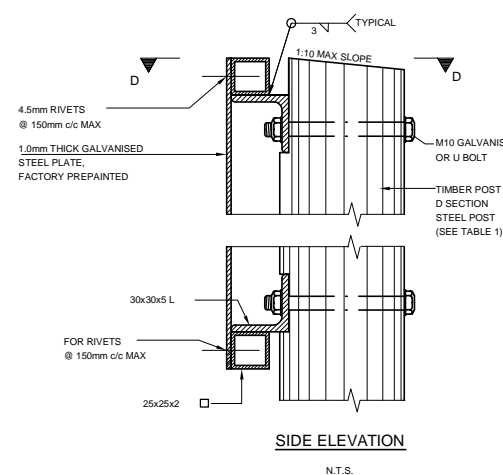
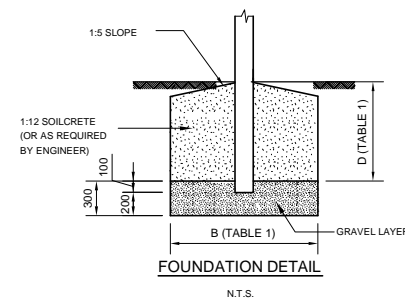


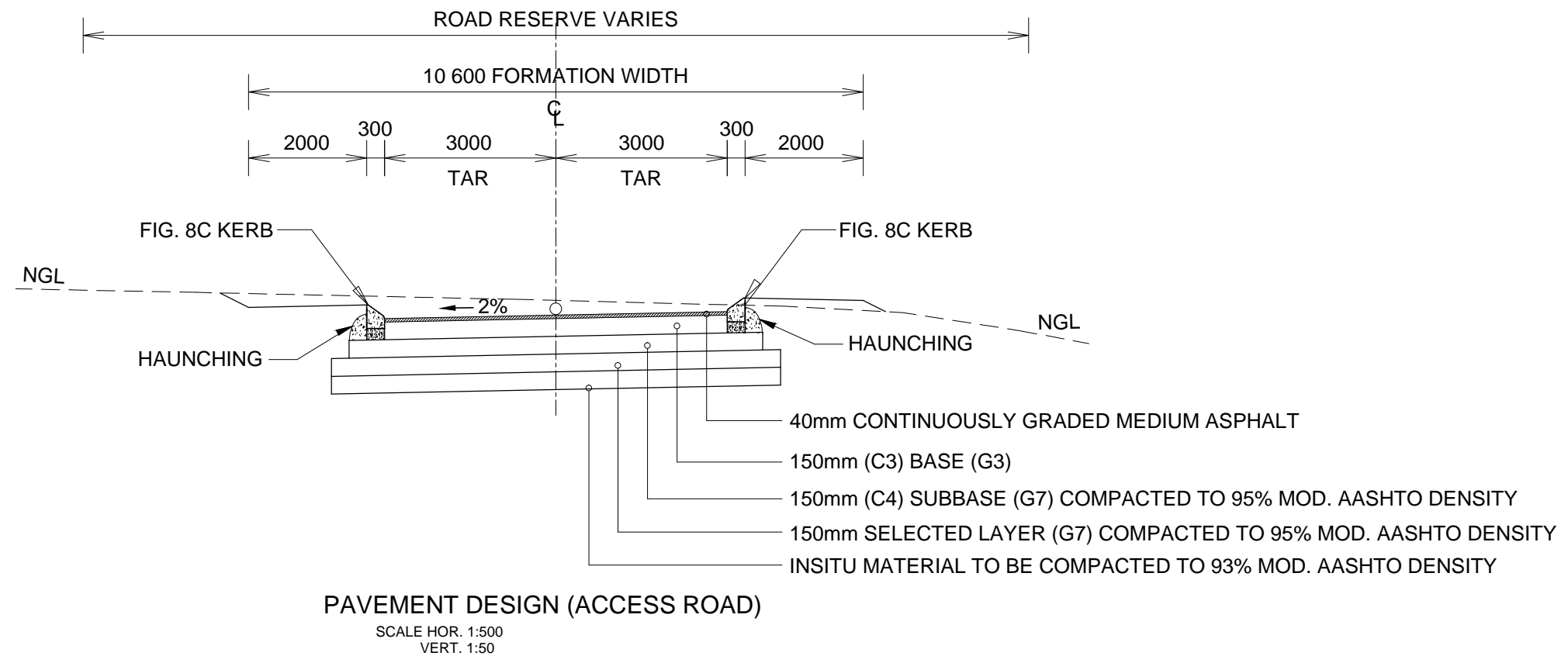
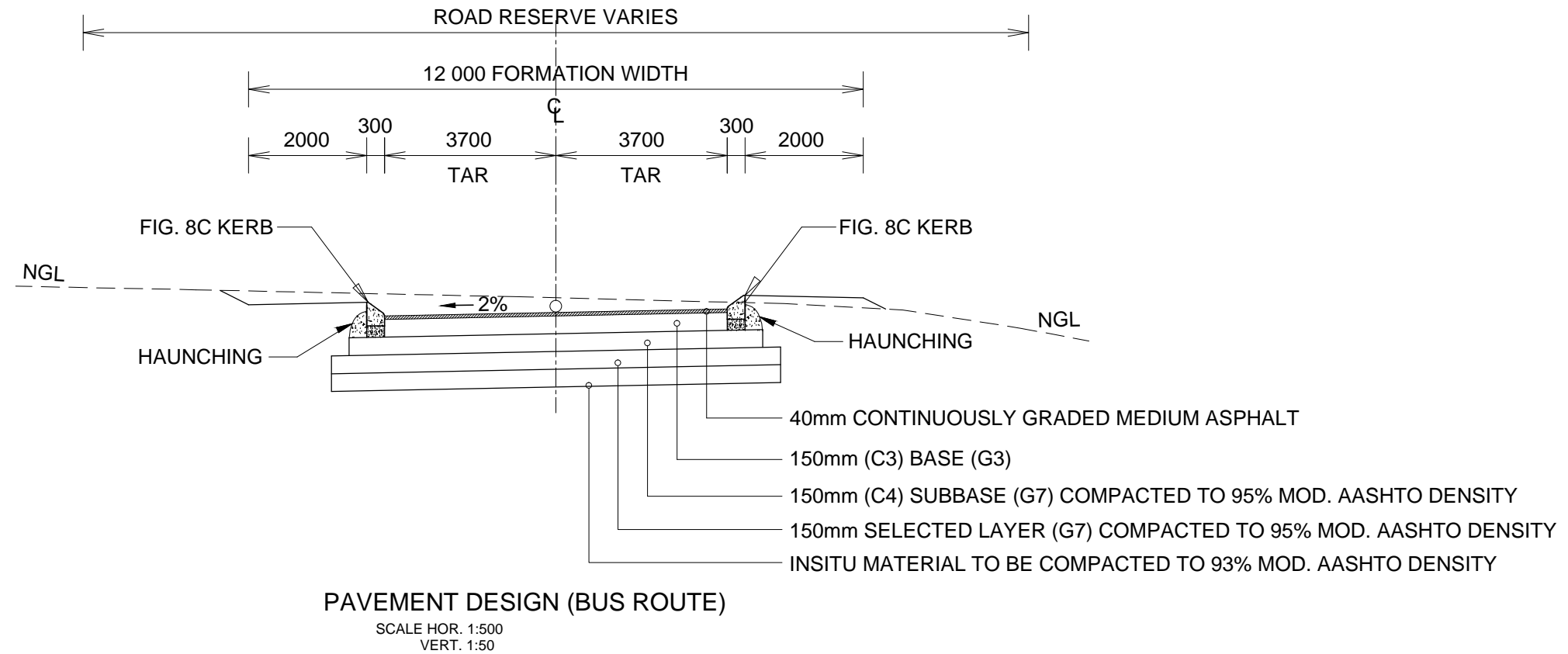
TABLE 1				
ERECTION DETAILS				
TYPE POST	UPRIGHT	STAY	D	B
TIMBER POST AND STAY	80mm	80mm	600mm	750mm
TIMBER POST	160mm	-	900mm	1350mm
D SECTION STEEL POST	100mm x 4mm	-	900mm	1350mm



NOTE:

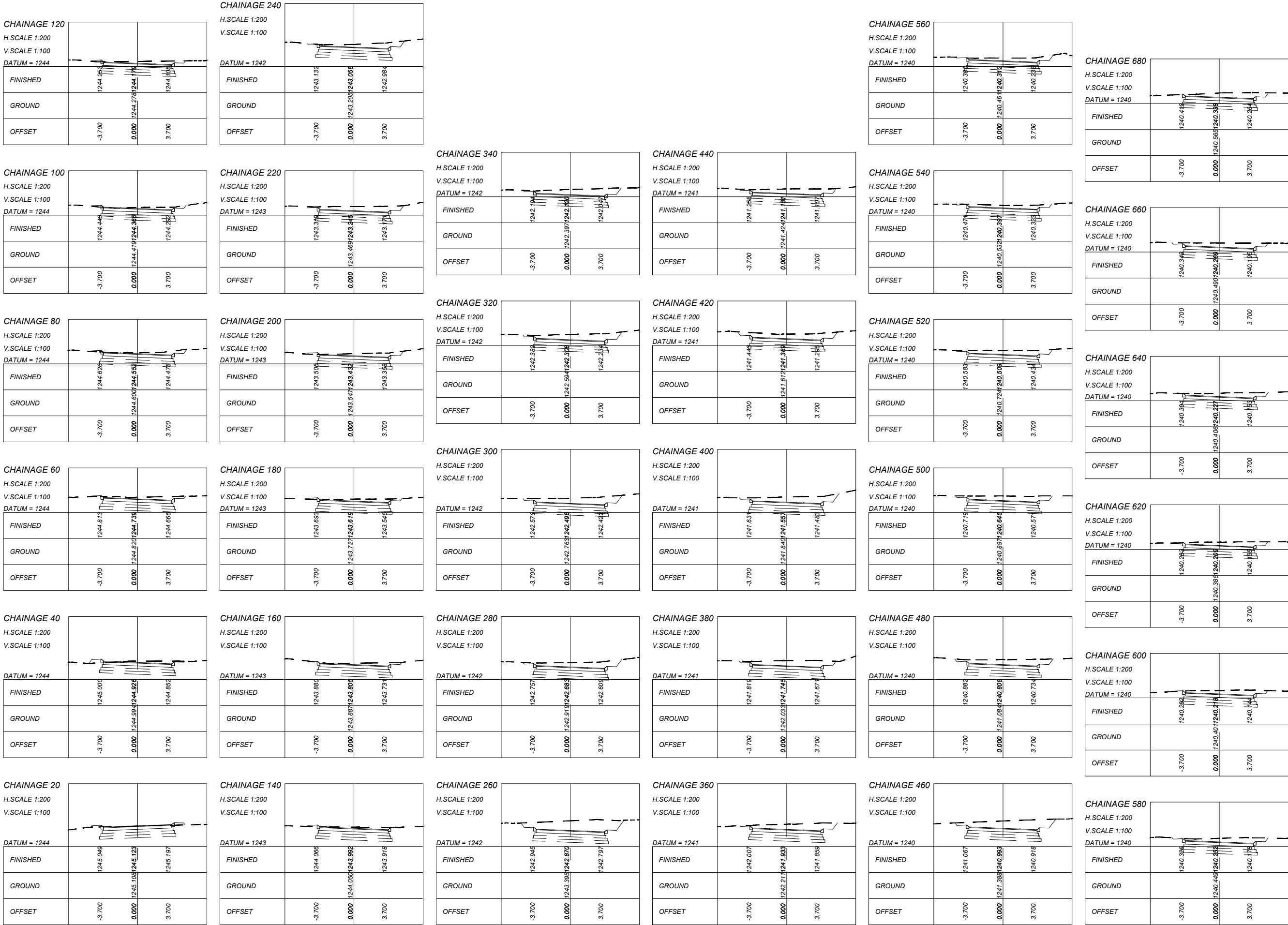
- ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEMI-MATT BACKGROUND.
- DESCRIPTION: MATT-BLACK, SERIES DIN B LETTERS AND NUMBERS ON A SEMI-MATT SMOKE-GREY BACKGROUND (PANTONE 429U).
- BORDER : GREEN NON-REFLECTORIZED.
- TWO SIGN BOARDS SHALL BE ERECTED AS DETERMINED BY THE ENGINEER.
- DESCRIPTION OF WORK (NUMBER OF KILOMETRES AND TYPE OF WORK, eg "13.5 km RE= CONSTRUCTION OF ROAD 1974"). DESCRIPTION STARTS CENTERED ON THE LEFT-HAND SIDE AND IN THE FIRST 105mm-DIMENSION BELOW "MAKHADO LOCAL MUNICIPALITY".
- (a) SAFCEC EMBLEM ONLY, IF CONTRACTOR IS A MEMBER, ALL OTHER CASES, INCLUDING DEPARTMENTAL CONSTRUCTION, REMAIN BLANK.
 (b) IF DEPARTMENTAL CONSTRUCTION, THE CONTRACTOR AND TELEPHONE ARE REPLACED WITH ROAD AGENCY LIMPOPO (PTY) LTD CONSTRUCTION UNIT : TEL : 7. SABTACO LOGO TO BE OBTAINED FROM SABTACO, JOHANNESBURG.

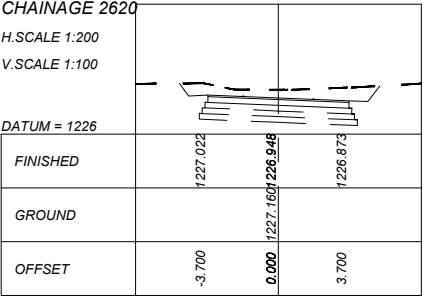
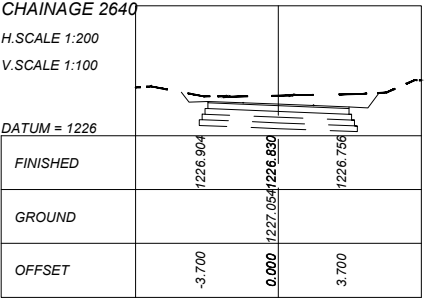
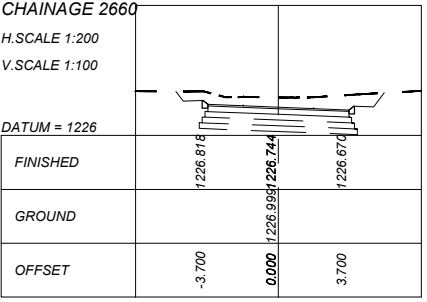
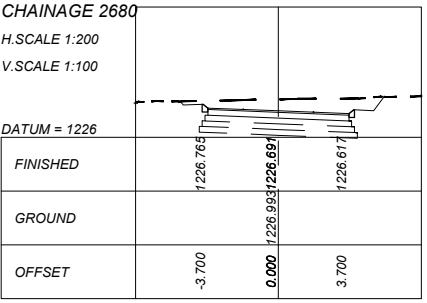
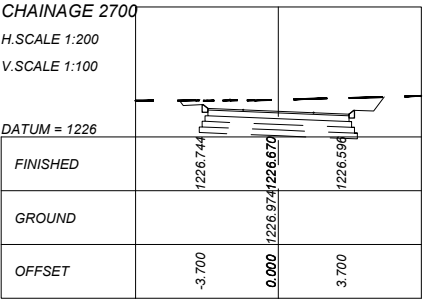
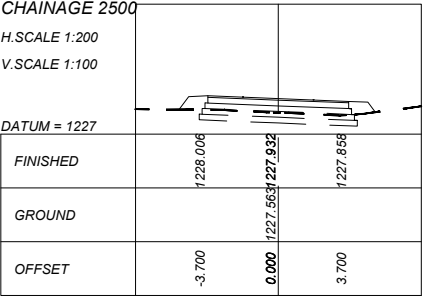
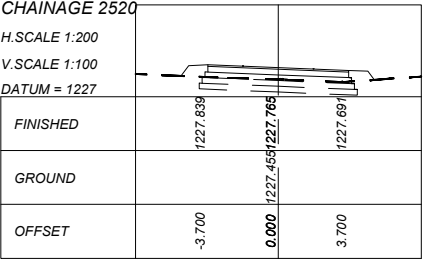
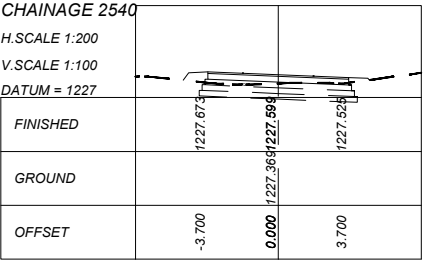
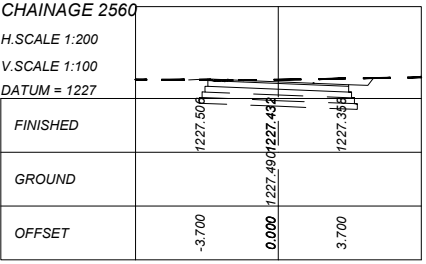
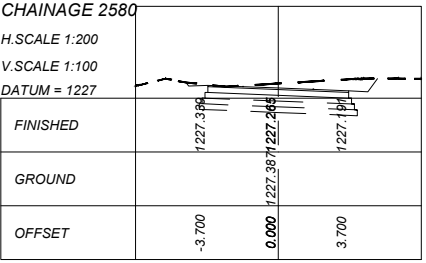
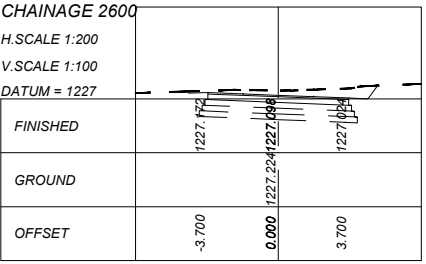
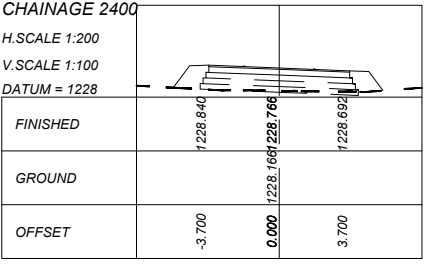
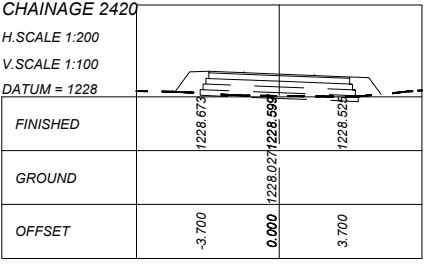
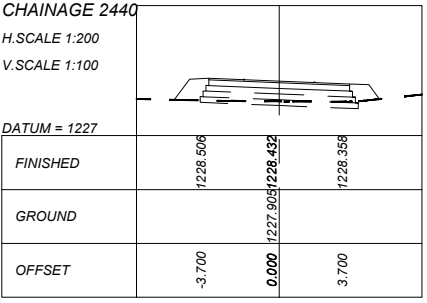
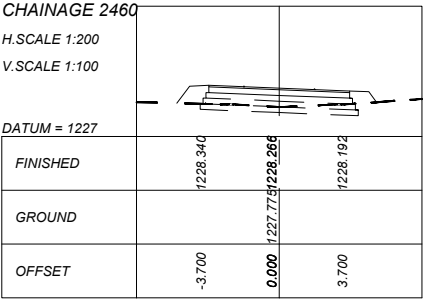
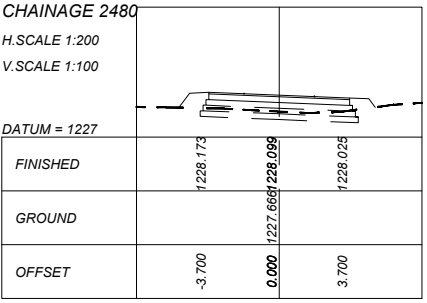
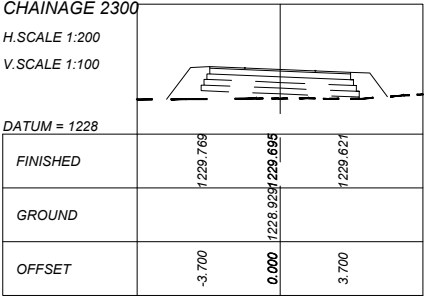
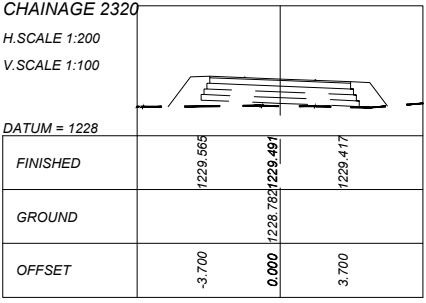
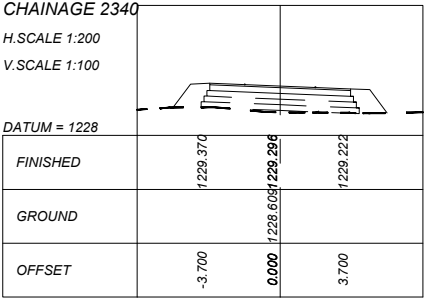
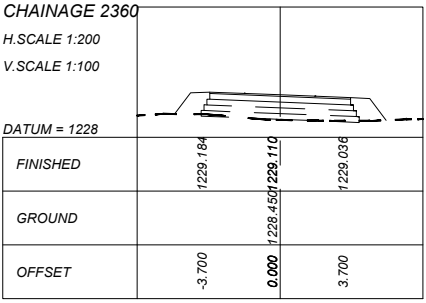
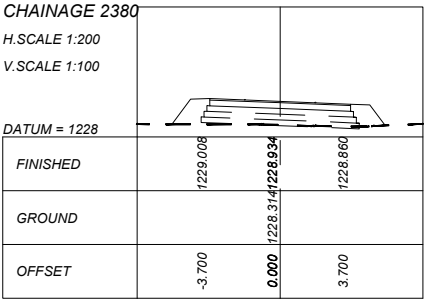
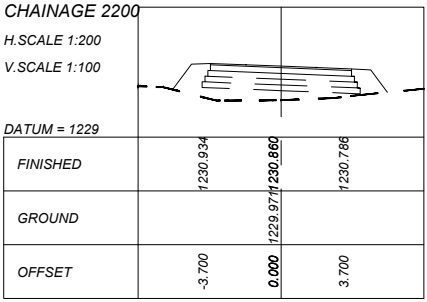
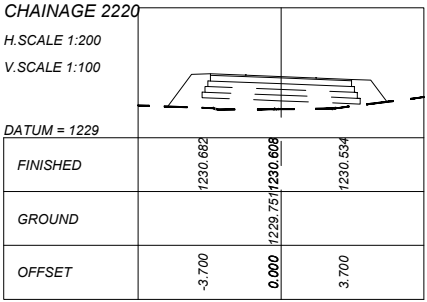
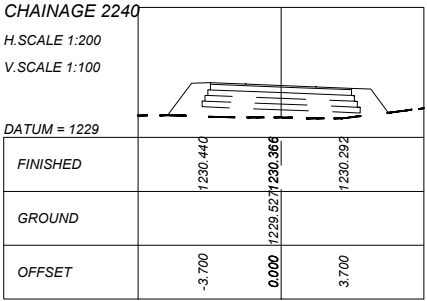
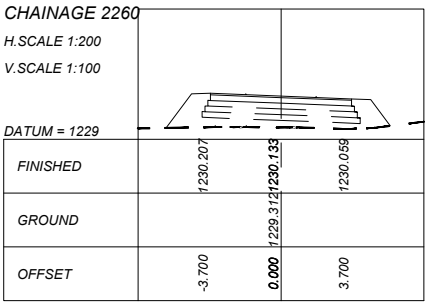
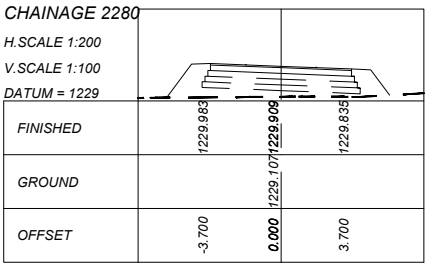
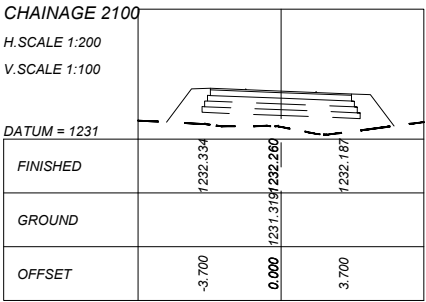
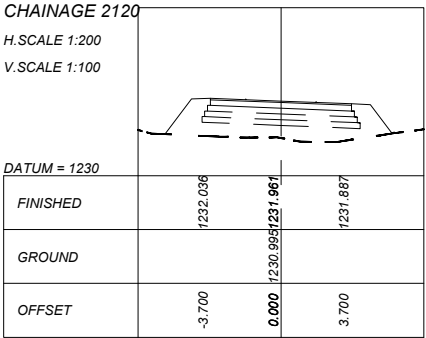
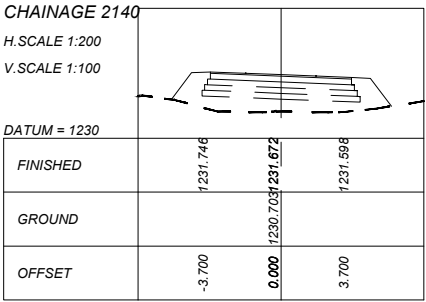
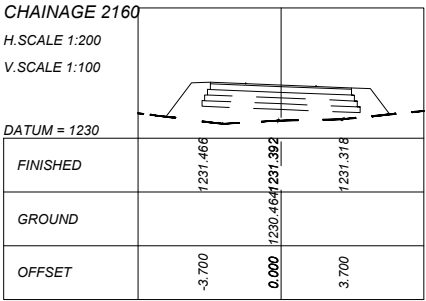
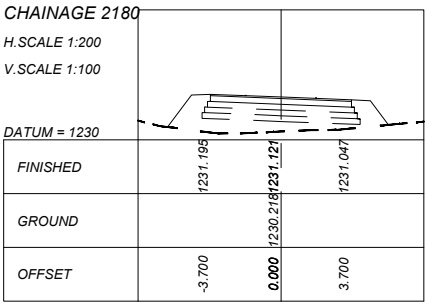


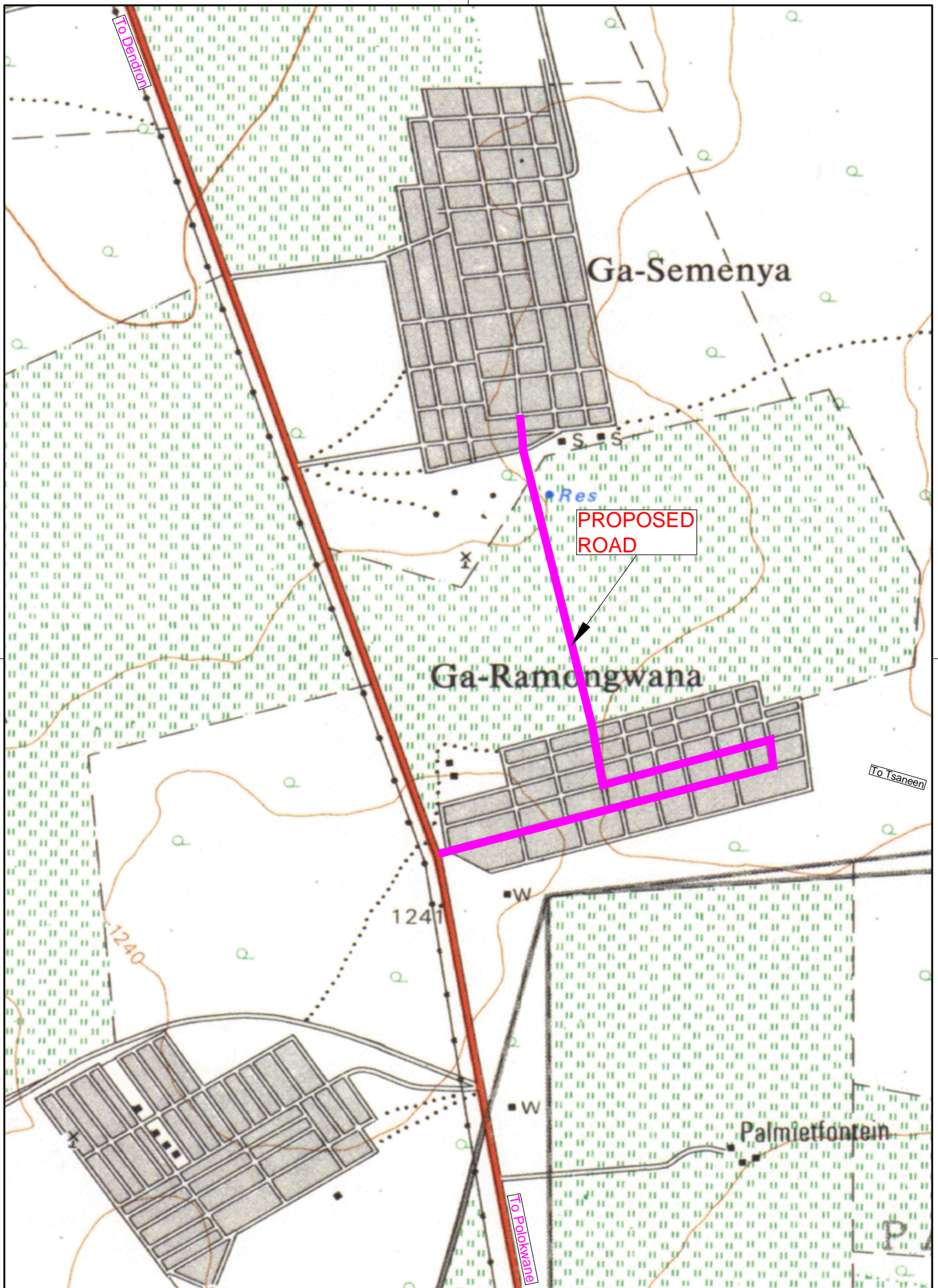
DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
CHECKED BY	H.T.			UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		TM	SCALE
DRAWN BY	F.M.	P.O. Box 111 POLOKWANE 0700 TEL: (015) 290-2077 FAX: (086) 613-9626	P.O. Box 2740 POLOKWANE 0700 Tel: (015) 296-3631 Fax: (086) 613-9626			For Consulting Engineer	AS SHOWN
CHECKED BY	H.T.					DRAWING NUMBER	REVISION



					DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
					CHECKED BY	H.T.	P.O.Box 111 POLOKWANE 0700	 P.O.Box 2740 POLOKWANE 0700	UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		20 / /	SCALE
					DRAWN BY	F.M.	TEL: (015)290-2077 FAX: (086) 613-9626	CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"			20 / /	AS SHOWN
					CHECKED BY	H.T.	 NATURALLY PROGRESSIVE	TEL: (015) 296-3631 FAX: (086) 558-6446	TYPICAL CROSS SECTION		DRAWING NUMBER MC/CP/RBR/XS/01	REVISION 0
No	DATE	REVISION	CONSULT	DIR								







POLOKWANE MUNICIPALITY



P.O. Box 111
POLOKWANE
0700
TEL: (015) 290-2077
FAX: (086) 613-9626

CONTRACT No. 30/2015

SCALE: 1:50 000

MAP No. 2329CB

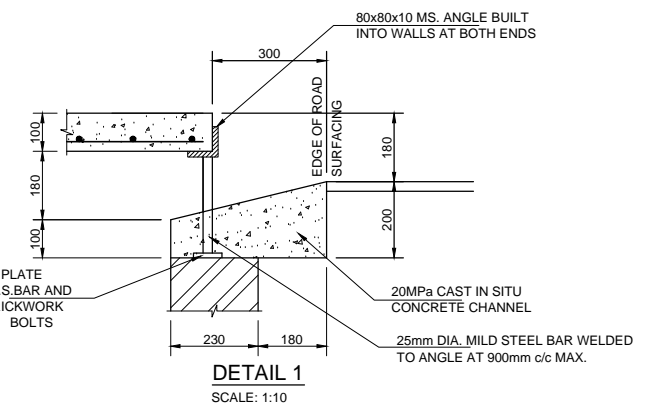
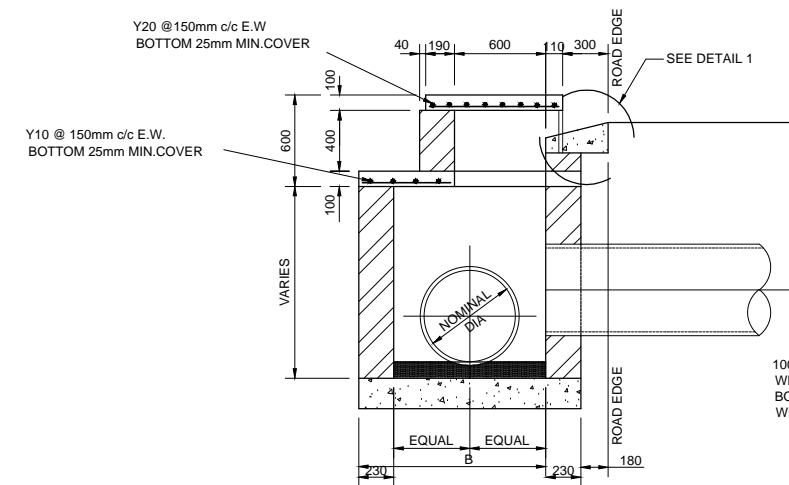
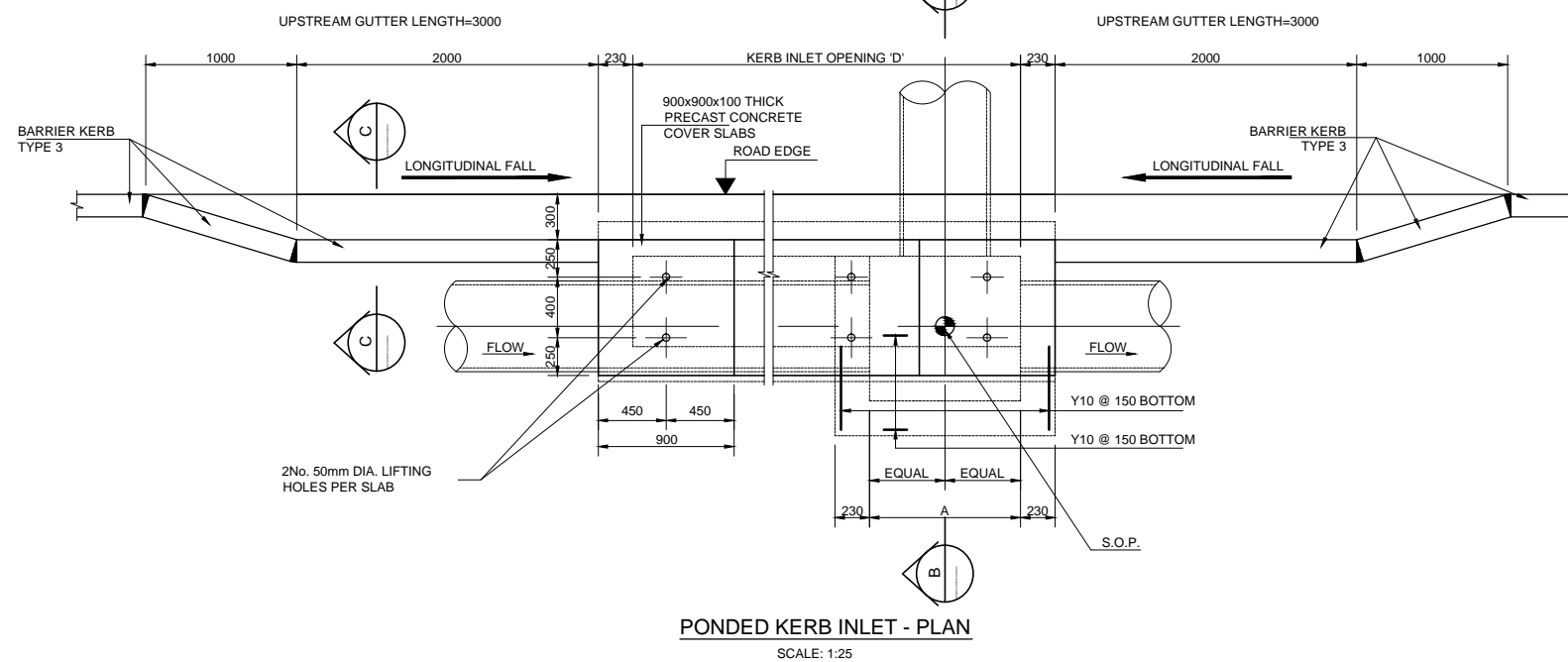
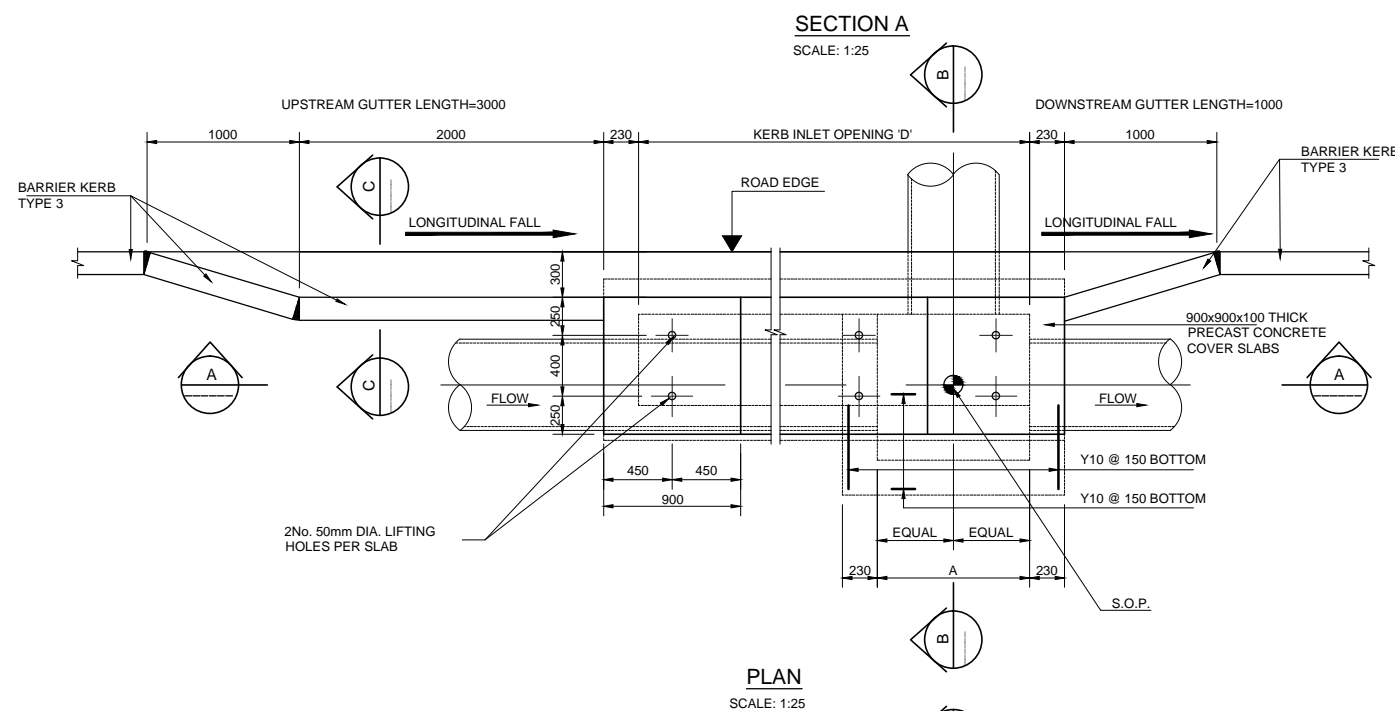
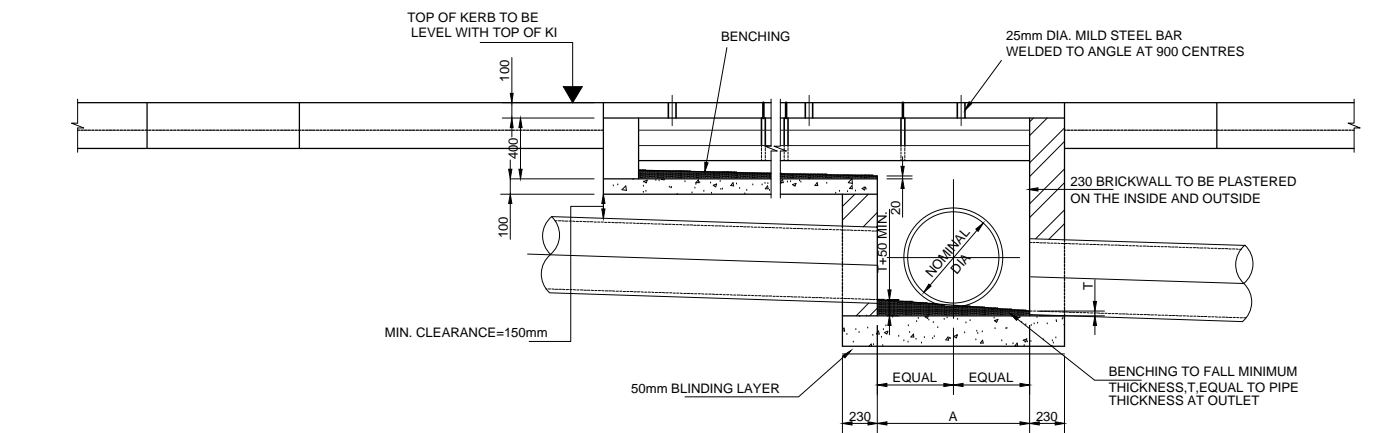
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

LOCALITY PLAN



morula

CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"



- NOTES**
1. ALL EXPOSED STEELWORK TO RECEIVE TWO COATS OF EPOXY TAR.
 2. TOP OF PRECAST CONCRETE COVER SLABS TO BE CLEARLY MARKED.
 3. FINISHES a TOP OF PRECAST CONCRETE COVER SLAB WOOD FLOAT.
b BENCHING - GRANOLITHIC FINISH.
c CEMENT PLASTER TO INSIDE WALLS 10mm THICK.
 4. CONCRETE TO BE CLASS 25MPa FOR BASE AND COVER SLABS.
 5. COVER TO REINFORCEMENT = 40mm
 6. ALL BRICKWORK TO BE CONSTRUCTED FROM BEST QUALITY ENGINEERING BRICKS TD S.A.B.S.227.

KERB INLET			
SIZE	ACTUAL OPENING 'D'	COVER SLAB DIMENSIONS	No OFF
1 m	1340 mm	900 mm x 900 mm	2
2 m	2240 mm	900 mm x 900 mm	3
3 m	3140 mm	900 mm x 900 mm	4
4 m	4040 mm	900 mm x 900 mm	5
5 m	4940 mm	900 mm x 900 mm	6
6 m	5840 mm	900 mm x 900 mm	7

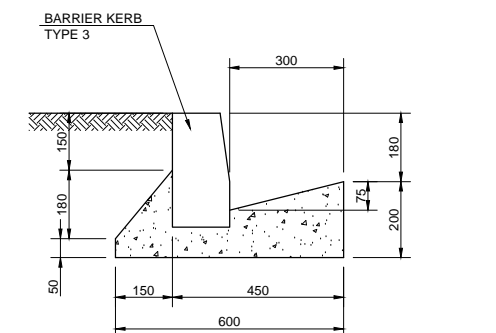
TABLE I

PIPE DIAMETER				
DIM.	MINIMUM	450-750	900-1050	1200-1350
A	1000 mm	1000 mm	1200 mm	1650 mm
B	1000 mm	1000 mm	1200 mm	1650 mm
C	910 mm	910 mm	1010 mm	1235 mm

TABLE II

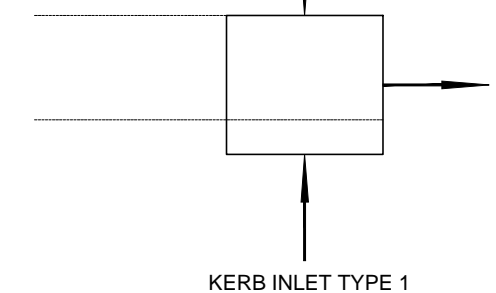
MINIMUM DEPTHS OF CHAMBERS FOR TYPE 2 KERB INLETS						
PIPE Ø	1m K.I.	2m K.I.	3m K.I.	4m K.I.	5m K.I.	6m K.I.
300 NB	1165 mm	1170 mm	1175 mm	1180 mm	1185 mm	1190 mm
450 NB	1335 mm	1340 mm	1345 mm	1350 mm	1355 mm	1360 mm
600 NB	1500 mm	1505 mm	1510 mm	1515 mm	1520 mm	1525 mm
750 NB	1675 mm	1677 mm	1680 mm	1690 mm	1690 mm	1695 mm
900 NB	1830 mm	1835 mm	1840 mm	1845 mm	1850 mm	1855 mm
1050 NB	2000 mm	2000 mm	2005 mm	2010 mm	2015 mm	2020 mm

TABLE III

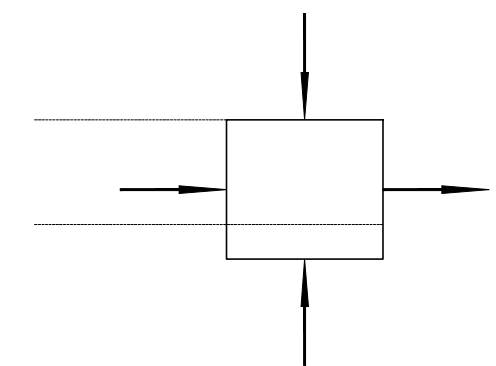


SECTION C

SCALE: 1:10

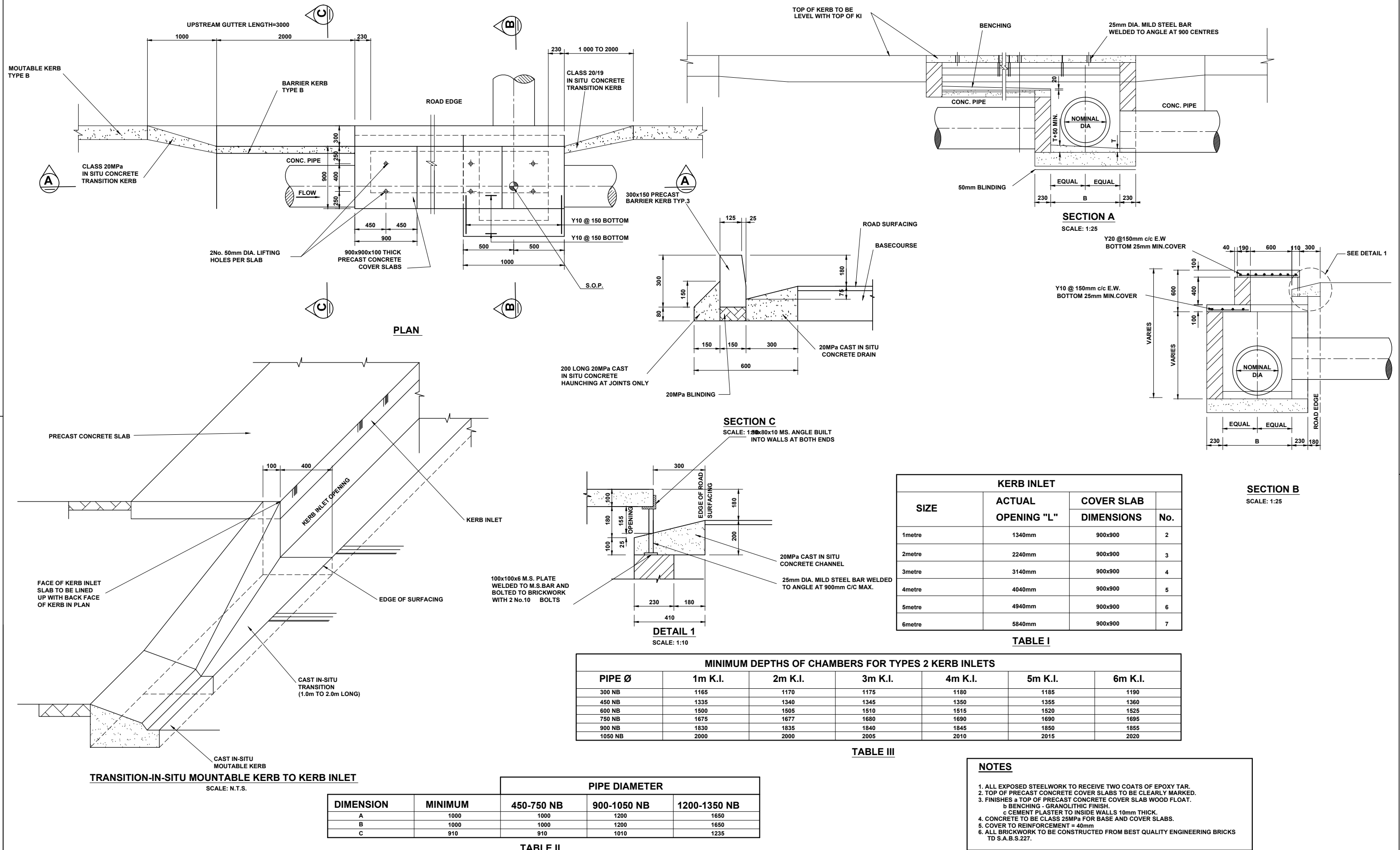


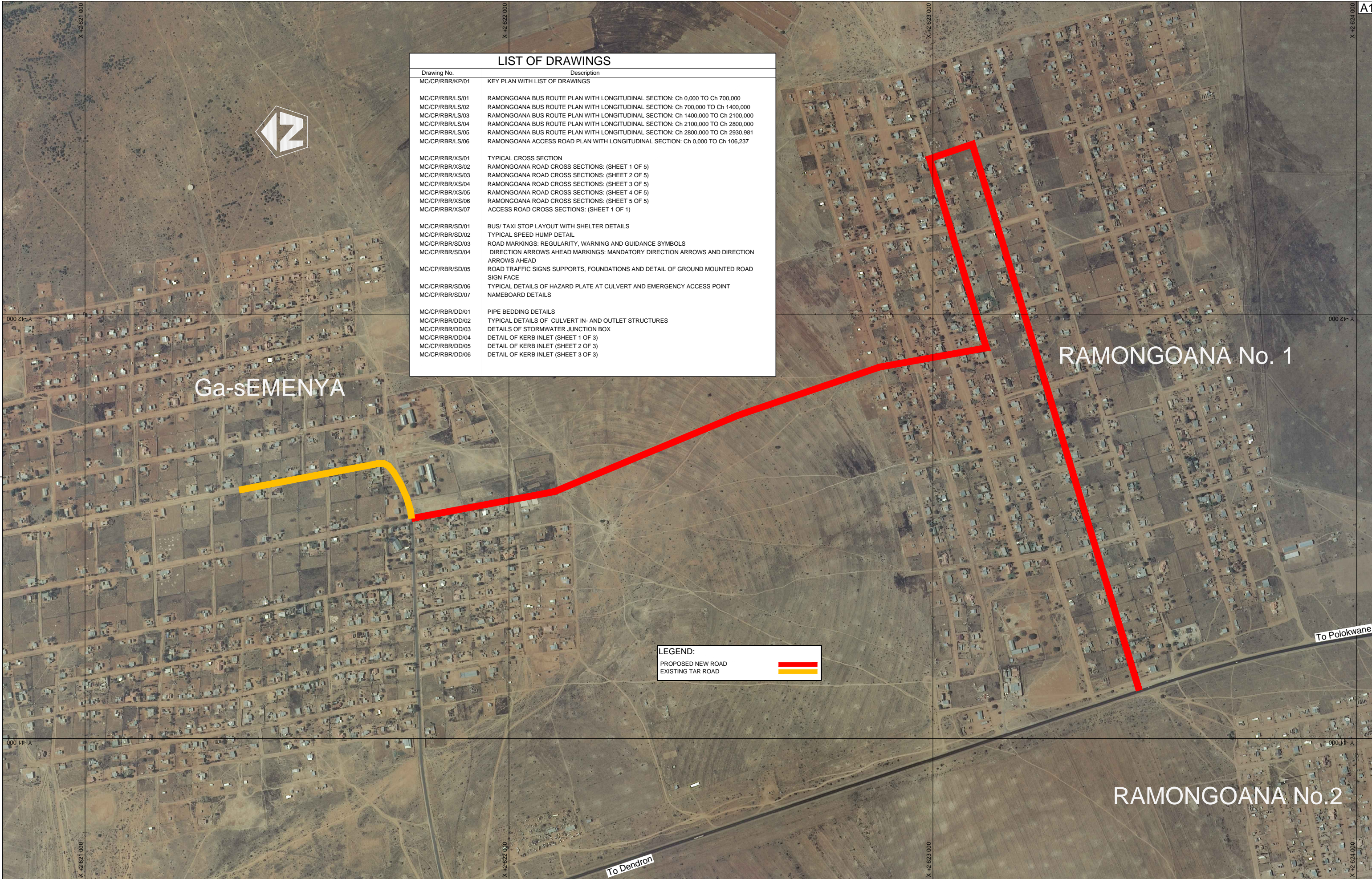
KERB INLET TYPE 1



KERB INLET TYPE 2




DESIGNED BY		F.M.	CITY OF POLOKWANE		MORULA CONSULTING ENGINEERS		CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full signature)		SHEET 2 OF 3	
CHECKED BY		H.T.	CITY OF POLOKWANE		MORULA CONSULTING ENGINEERS		UPGRADING OF RAMONGOANA BUS AND TAXI ROADS				TM		SCALE	
DRAWN BY		F.M.	CITY OF POLOKWANE		MORULA CONSULTING ENGINEERS						For Consulting Engineer		AS SHOWN	
CHECKED BY		H.T.	CITY OF POLOKWANE		MORULA CONSULTING ENGINEERS						DRAWING NUMBER		REVISION	
			CITY OF POLOKWANE		MORULA CONSULTING ENGINEERS						MC/CP/RBR/DD/05		0	

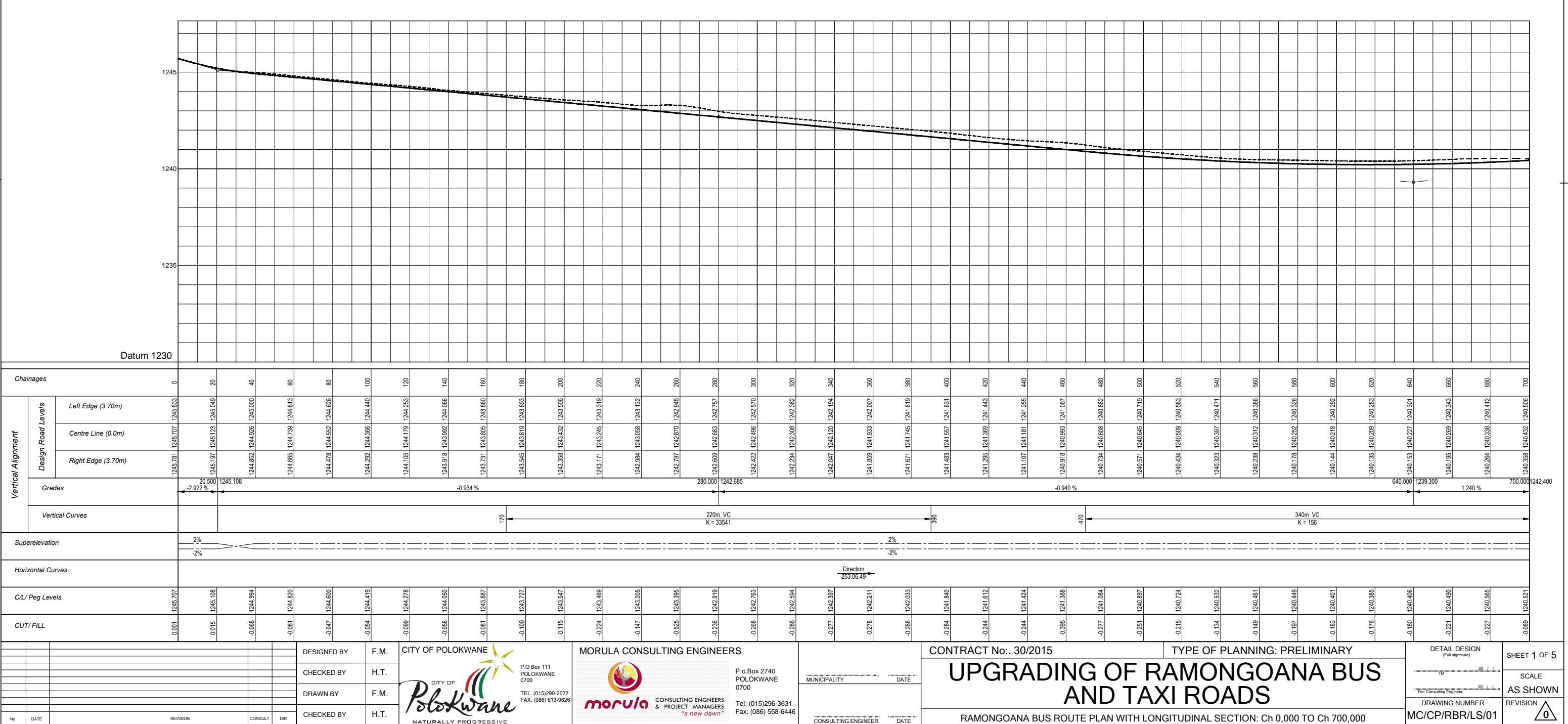


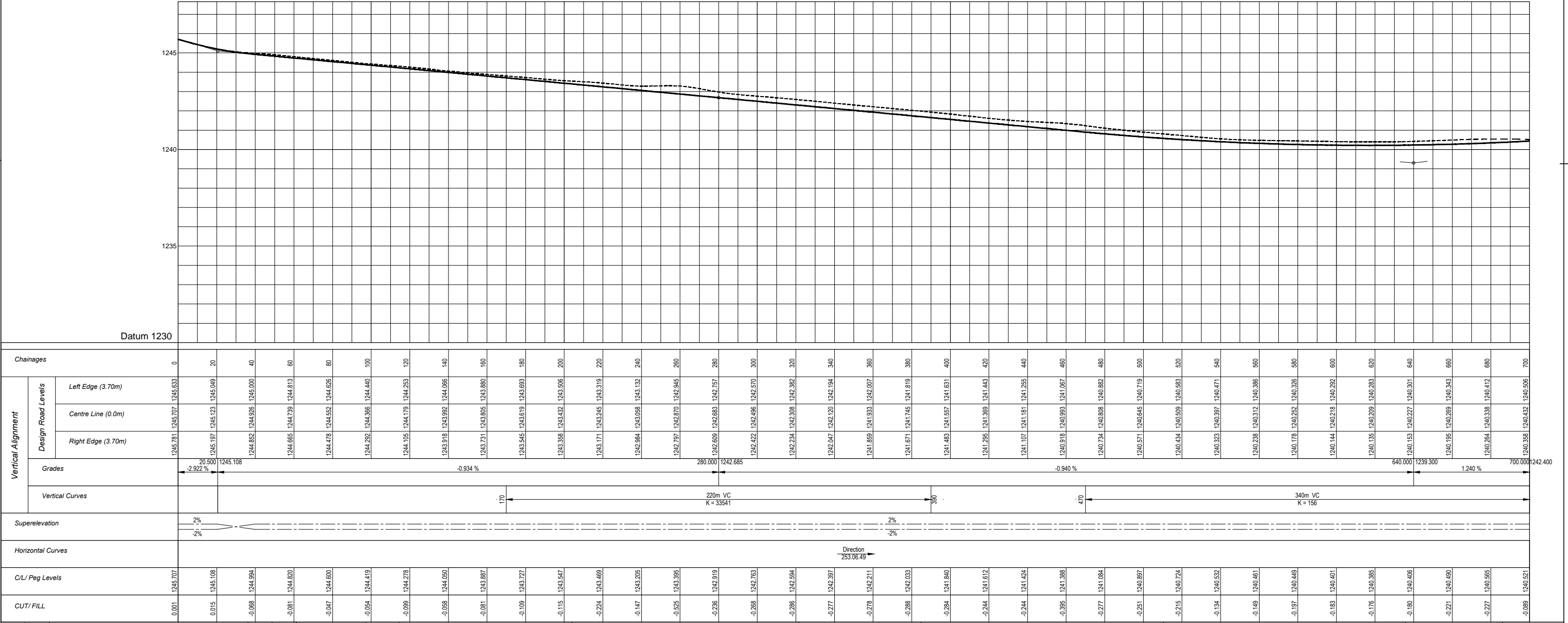
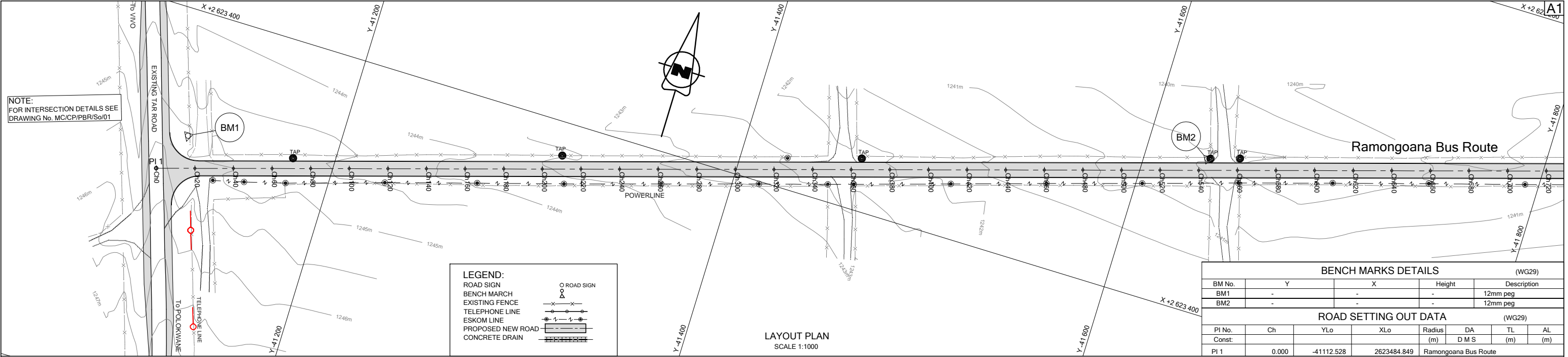


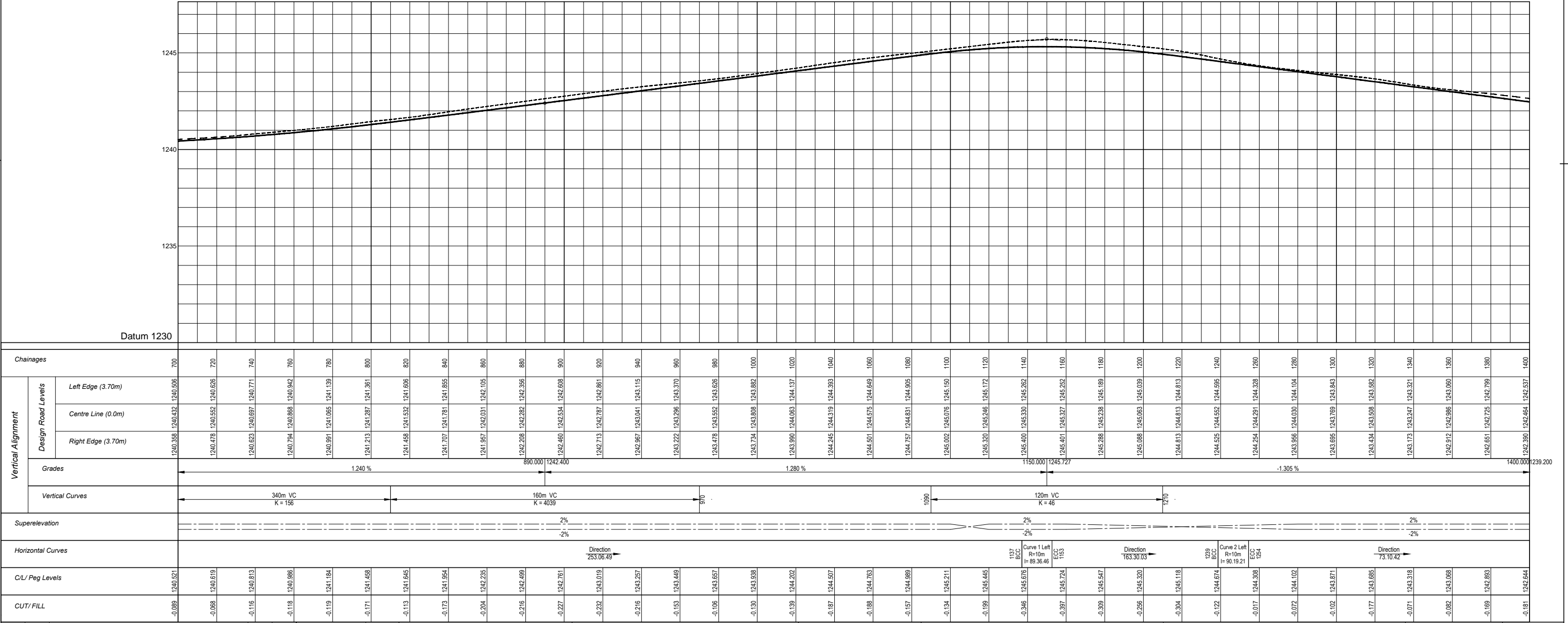
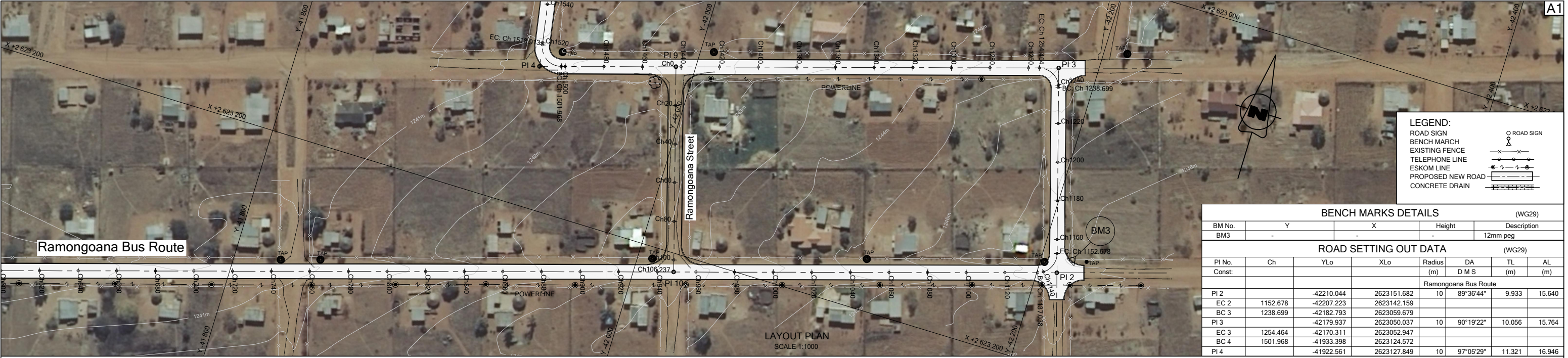
LIST OF DRAWINGS	
Drawing No.	Description
MC/CP/RBR/KP/01	KEY PLAN WITH LIST OF DRAWINGS
MC/CP/RBR/LS/01	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 700,000
MC/CP/RBR/LS/02	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 700,000 TO Ch 1400,000
MC/CP/RBR/LS/03	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 1400,000 TO Ch 2100,000
MC/CP/RBR/LS/04	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2100,000 TO Ch 2800,000
MC/CP/RBR/LS/05	RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2800,000 TO Ch 2930,981
MC/CP/RBR/LS/06	RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237
MC/CP/RBR/XS/01	TYPICAL CROSS SECTION
MC/CP/RBR/XS/02	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 1 OF 5)
MC/CP/RBR/XS/03	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 2 OF 5)
MC/CP/RBR/XS/04	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 3 OF 5)
MC/CP/RBR/XS/05	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 4 OF 5)
MC/CP/RBR/XS/06	RAMONGOANA ROAD CROSS SECTIONS: (SHEET 5 OF 5)
MC/CP/RBR/XS/07	ACCESS ROAD CROSS SECTIONS: (SHEET 1 OF 1)
MC/CP/RBR/SD/01	BUS/ TAXI STOP LAYOUT WITH SHELTER DETAILS
MC/CP/RBR/SD/02	TYPICAL SPEED HUMP DETAIL
MC/CP/RBR/SD/03	ROAD MARKINGS: REGULARITY, WARNING AND GUIDANCE SYMBOLS
MC/CP/RBR/SD/04	DIRECTION ARROWS AHEAD MARKINGS: MANDATORY DIRECTION ARROWS AND DIRECTION ARROWS AHEAD
MC/CP/RBR/SD/05	ROAD TRAFFIC SIGNS SUPPORTS, FOUNDATIONS AND DETAIL OF GROUND MOUNTED ROAD SIGN FACE
MC/CP/RBR/SD/06	TYPICAL DETAILS OF HAZARD PLATE AT CULVERT AND EMERGENCY ACCESS POINT
MC/CP/RBR/SD/07	NAMEBOARD DETAILS
MC/CP/RBR/DD/01	PIPE BEDDING DETAILS
MC/CP/RBR/DD/02	TYPICAL DETAILS OF CULVERT IN- AND OUTLET STRUCTURES
MC/CP/RBR/DD/03	DETAILS OF STORMWATER JUNCTION BOX
MC/CP/RBR/DD/04	DETAIL OF KERB INLET (SHEET 1 OF 3)
MC/CP/RBR/DD/05	DETAIL OF KERB INLET (SHEET 2 OF 3)
MC/CP/RBR/DD/06	DETAIL OF KERB INLET (SHEET 3 OF 3)

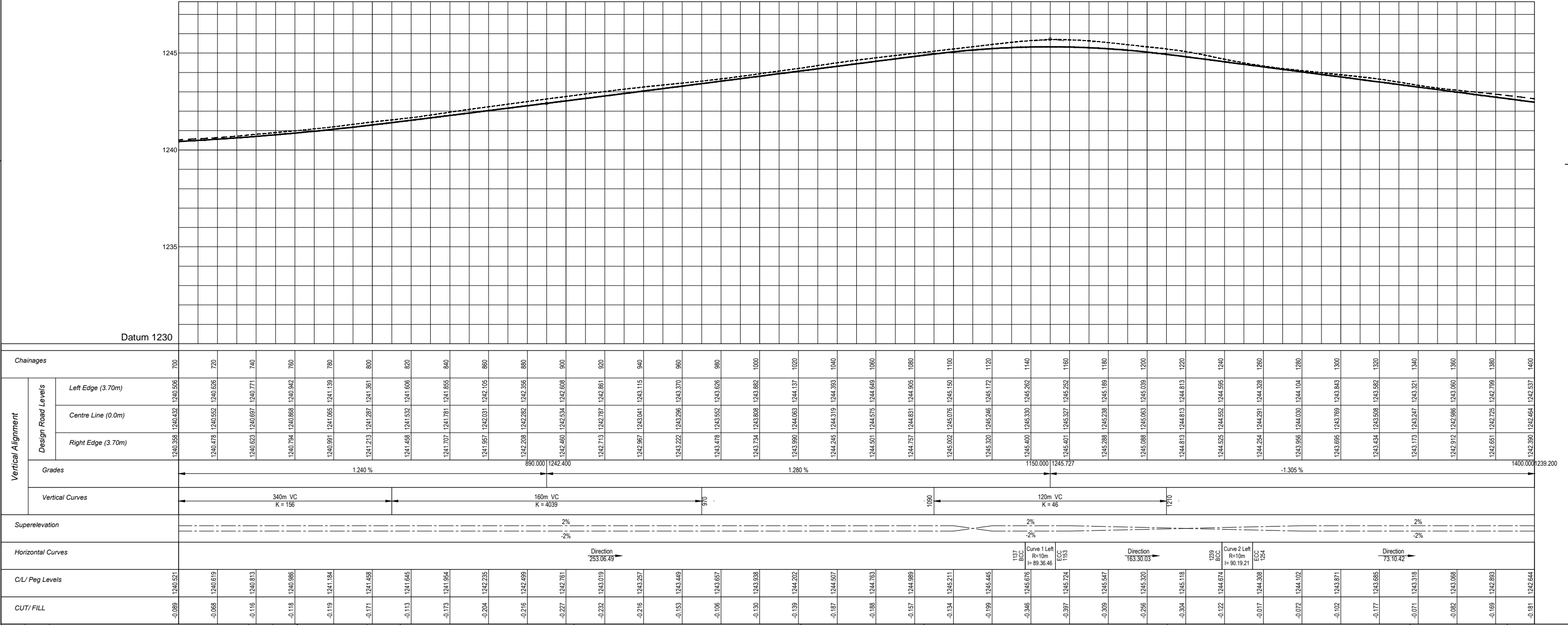
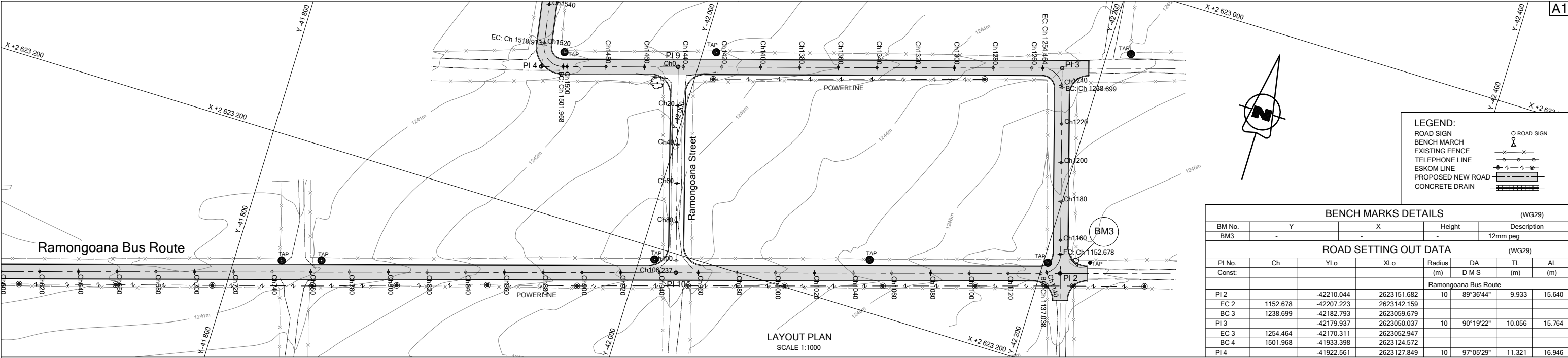
LEGEND:	
PROPOSED NEW ROAD	
EXISTING TAR ROAD	

				DESIGNED BY	F.M.	<div><div>CITY OF POLOKWANE</div><div><div>P.O Box 111 POLOKWANE 0700</div><div>TEL: (015)290-2077 FAX: (086) 613-9626</div></div></div>	MORULA CONSULTING ENGINEERS						CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full signature)		SHEET 1 OF 1	
				CHECKED BY	H.T.												SCALE			
				DRAWN BY	F.M.												1:4000			
				CHECKED BY	H.T.												REVISION			
No	DATE	REVISION	CONSULT	DIR																
						<div><div></div><div><div>CONSULTING ENGINEERS & PROJECT MANAGERS</div><div>"a new dawn"</div></div></div>						UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		DRAWING NUMBER		MC/CP/RBR/KP/01				
										KEY PLAN WITH LIST OF DRAWINGS										







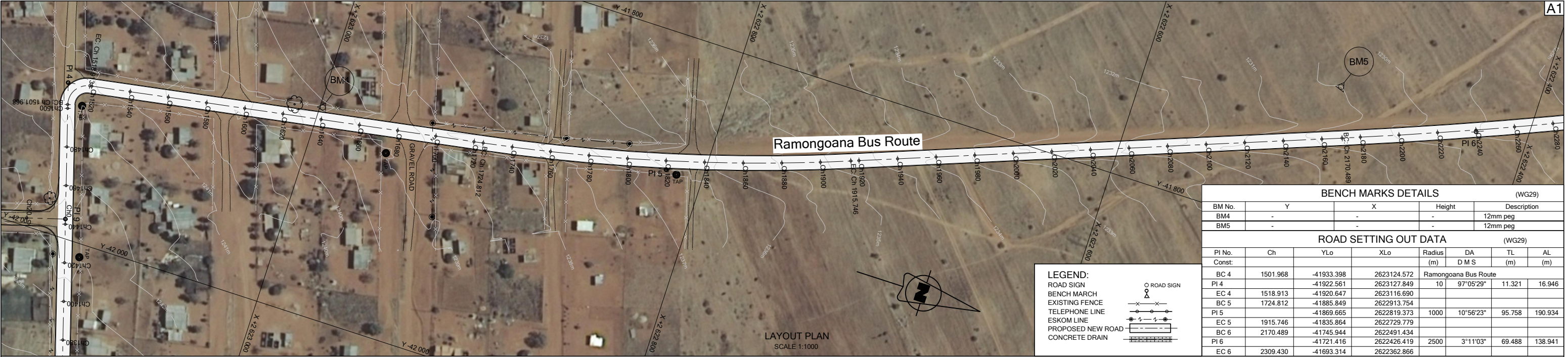


DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 2 OF 5
CHECKED BY	H.T.						SCALE
DRAWN BY	F.M.						AS SHOWN
CHECKED BY	H.T.						REVISION
No	DATE	REVISION	CONSULT	DIR			

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

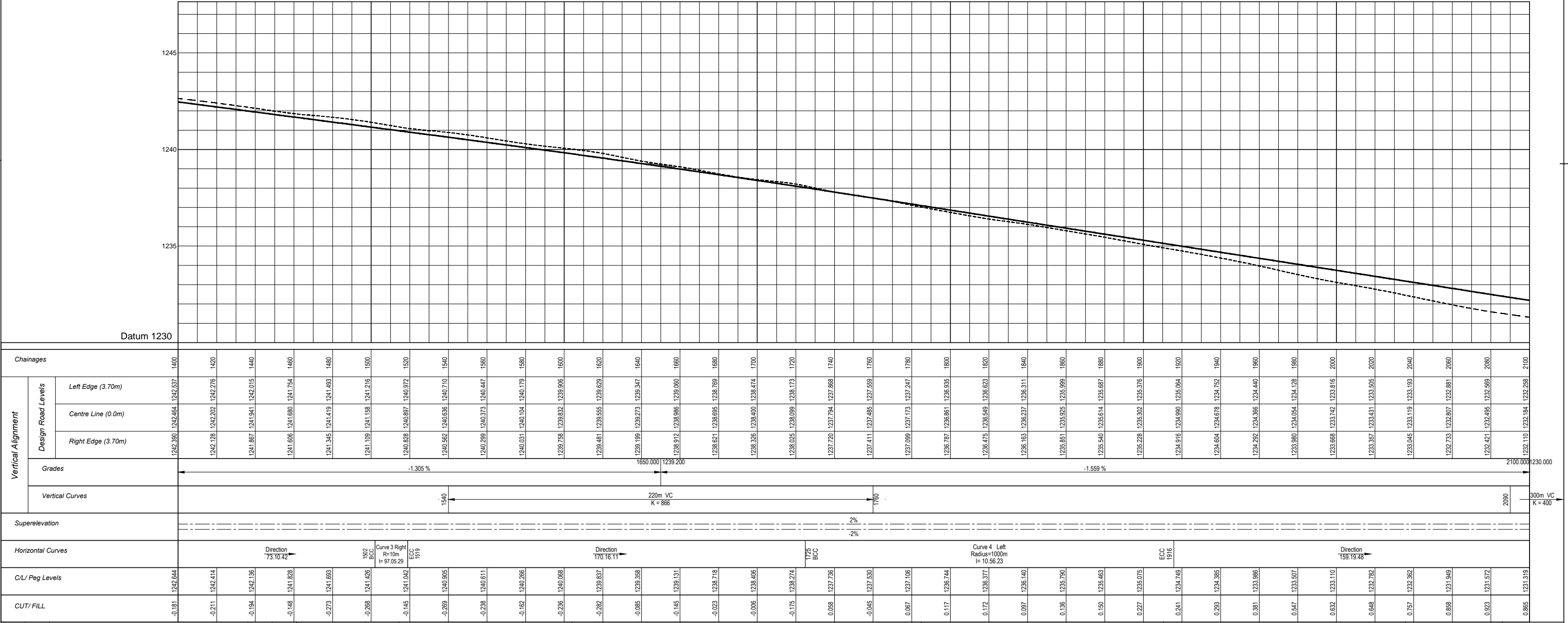
RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 700,000 TO Ch 1400,000

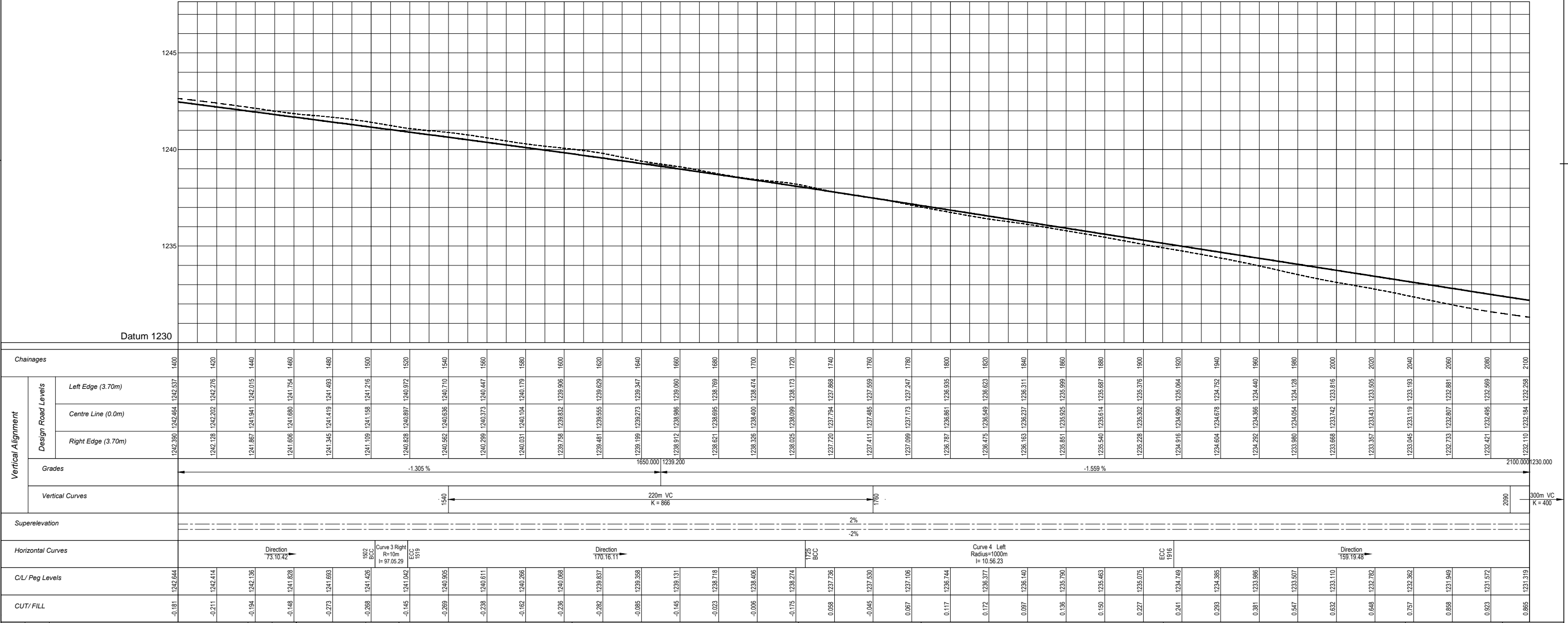
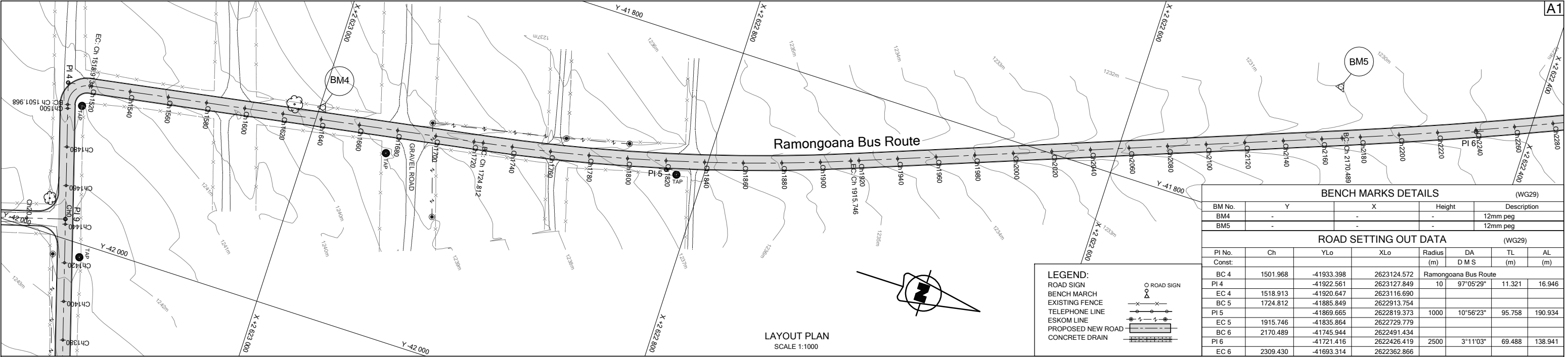
MC/CP/RBR/LS/02

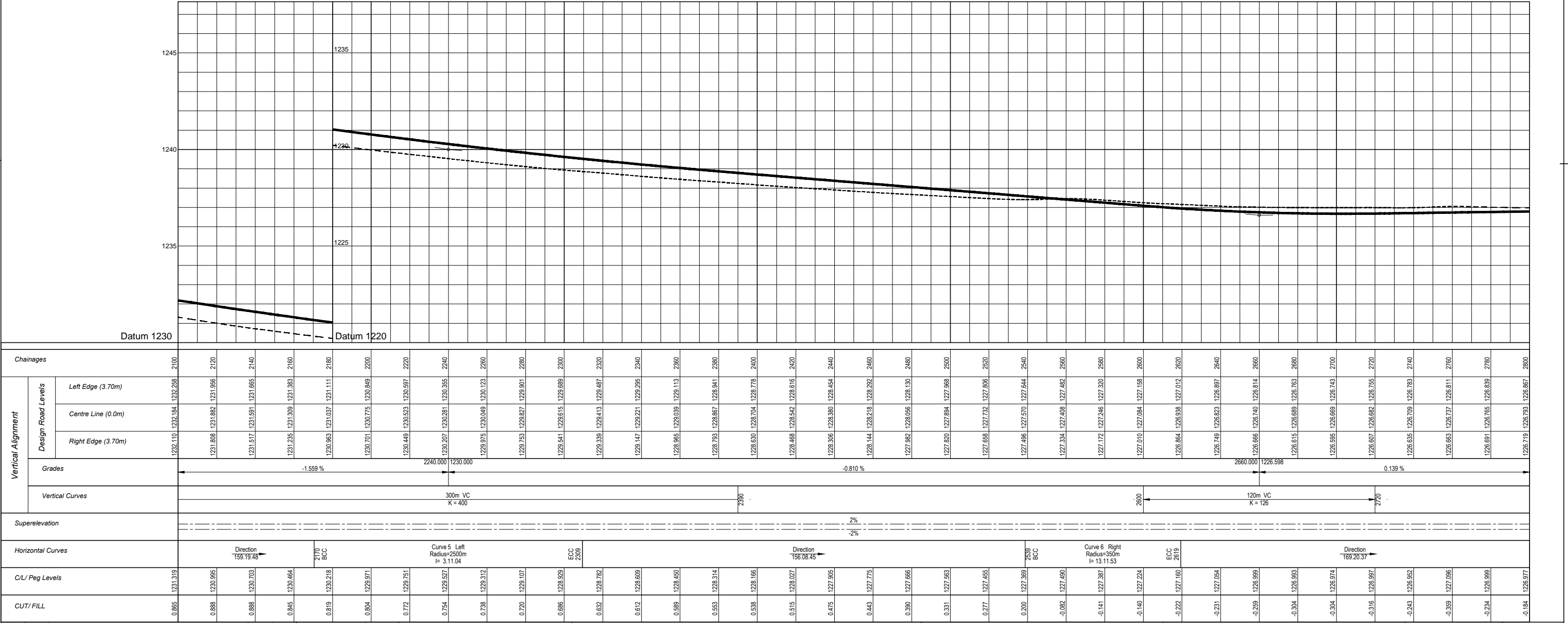
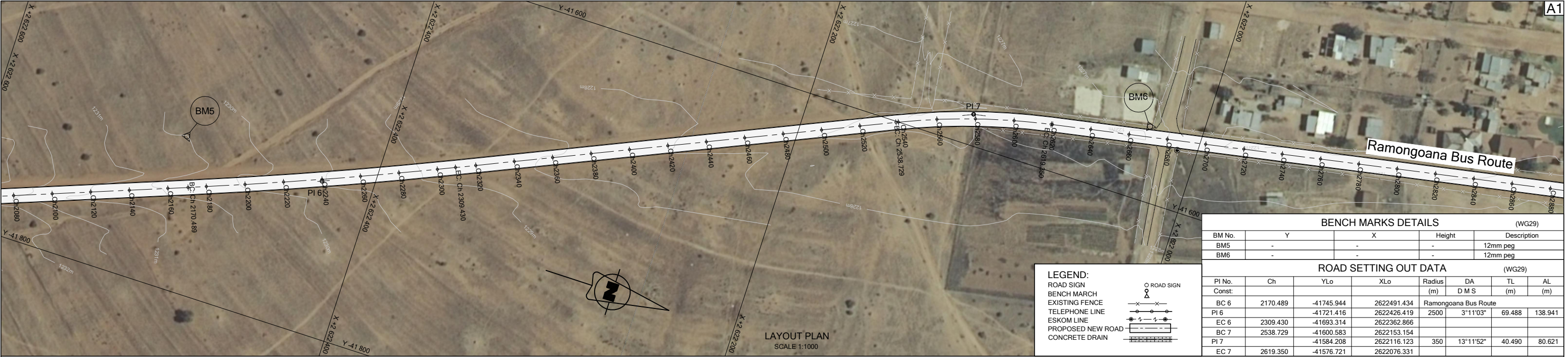


BENCH MARKS DETAILS (WG29)				
BM No.	Y	X	Height	Description
BM4	-	-	-	12mm peg
BM5	-	-	-	12mm peg

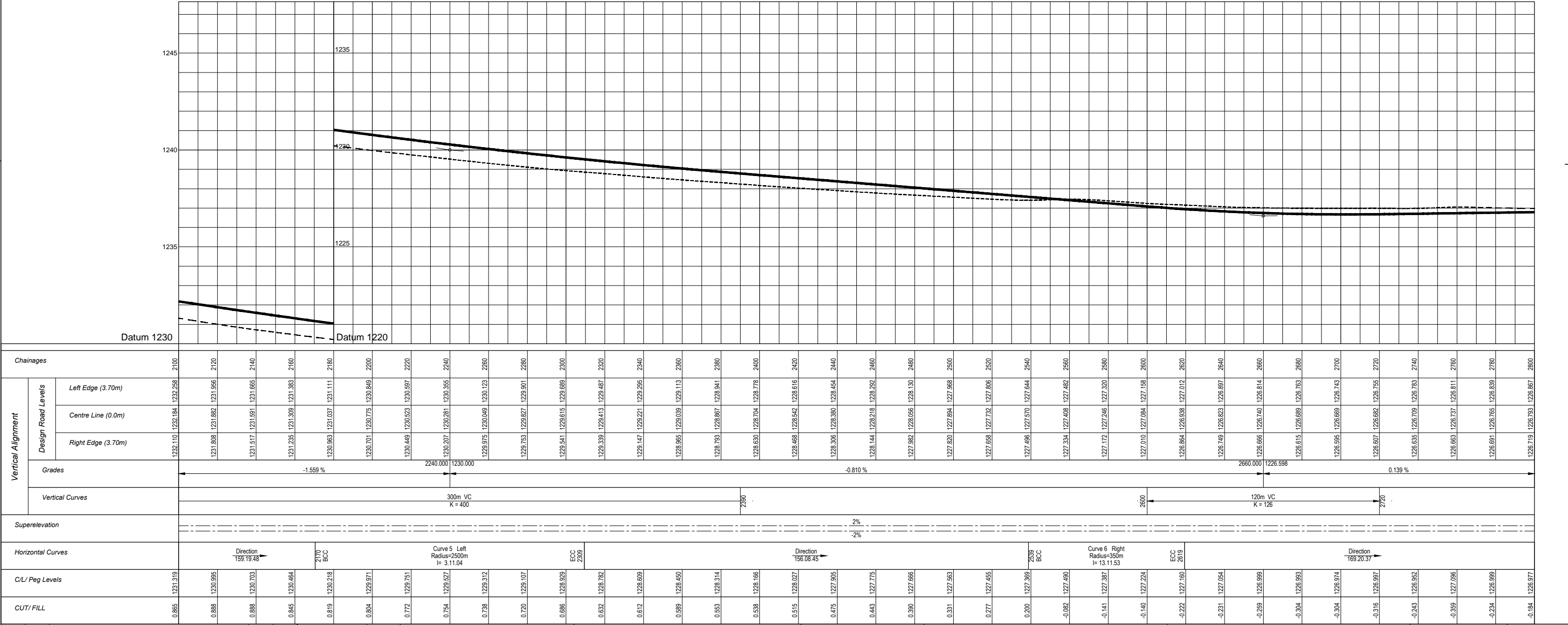
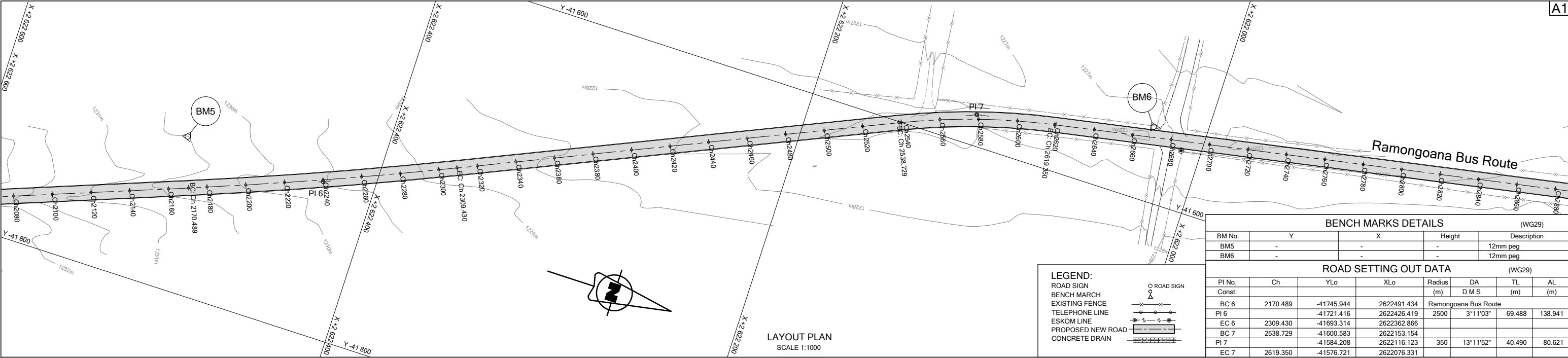
ROAD SETTING OUT DATA (WG29)							
PI No.	Ch	YLo	XLo	Radius (m)	DA D M S	TL (m)	AL (m)
BC 4	1501.968	-41933.398	2623124.572	Ramongoana Bus Route			
PI 4		-41922.561	2623127.849	10	97°05'29"	11.321	16.946
EC 4	1518.913	-41920.647	2623116.690				
BC 5	1724.812	-41885.849	2622913.754				
PI 5		-41869.665	2622819.373	1000	10°56'23"	95.758	190.934
EC 5	1915.746	-41835.864	2622729.779				
BC 6	2170.489	-41745.944	2622491.434				
PI 6		-41721.416	2622426.419	2500	3°11'03"	69.488	138.941
EC 6	2309.430	-41693.314	2622362.866				



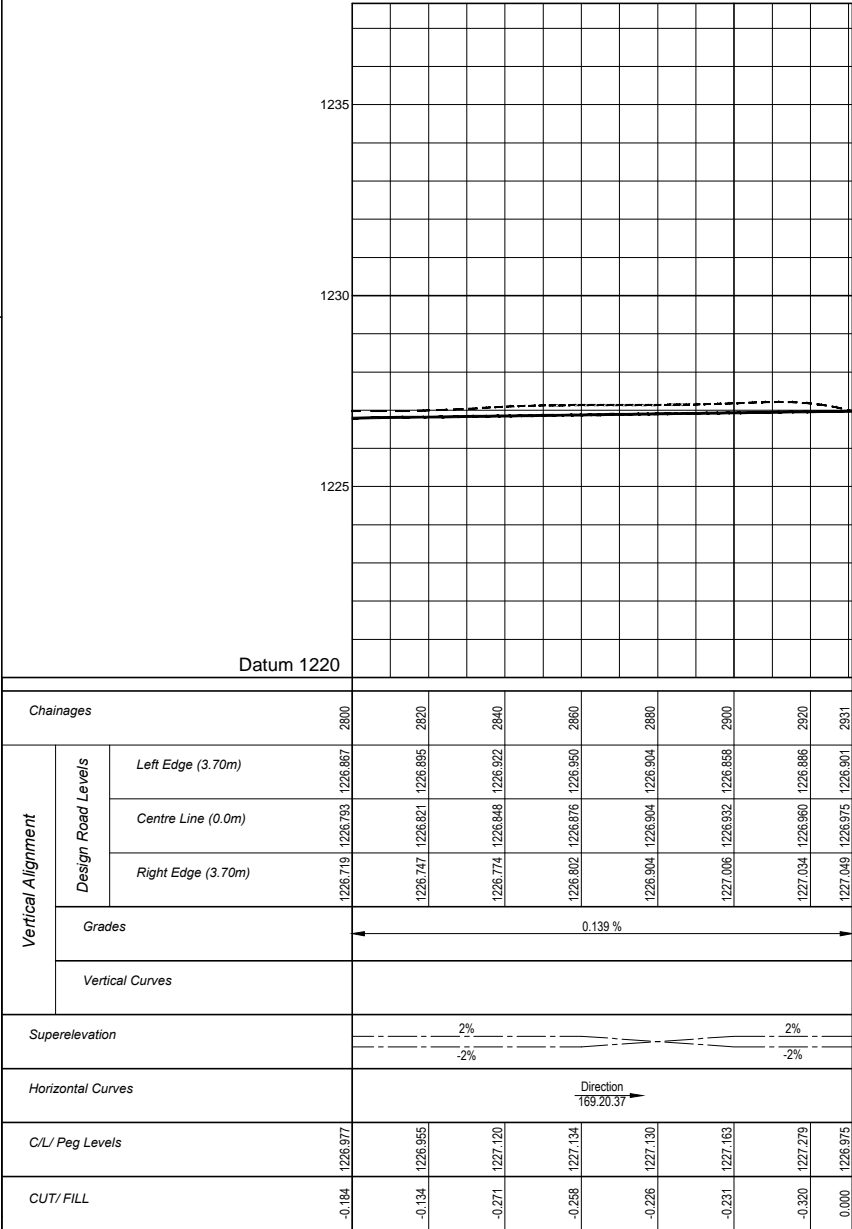




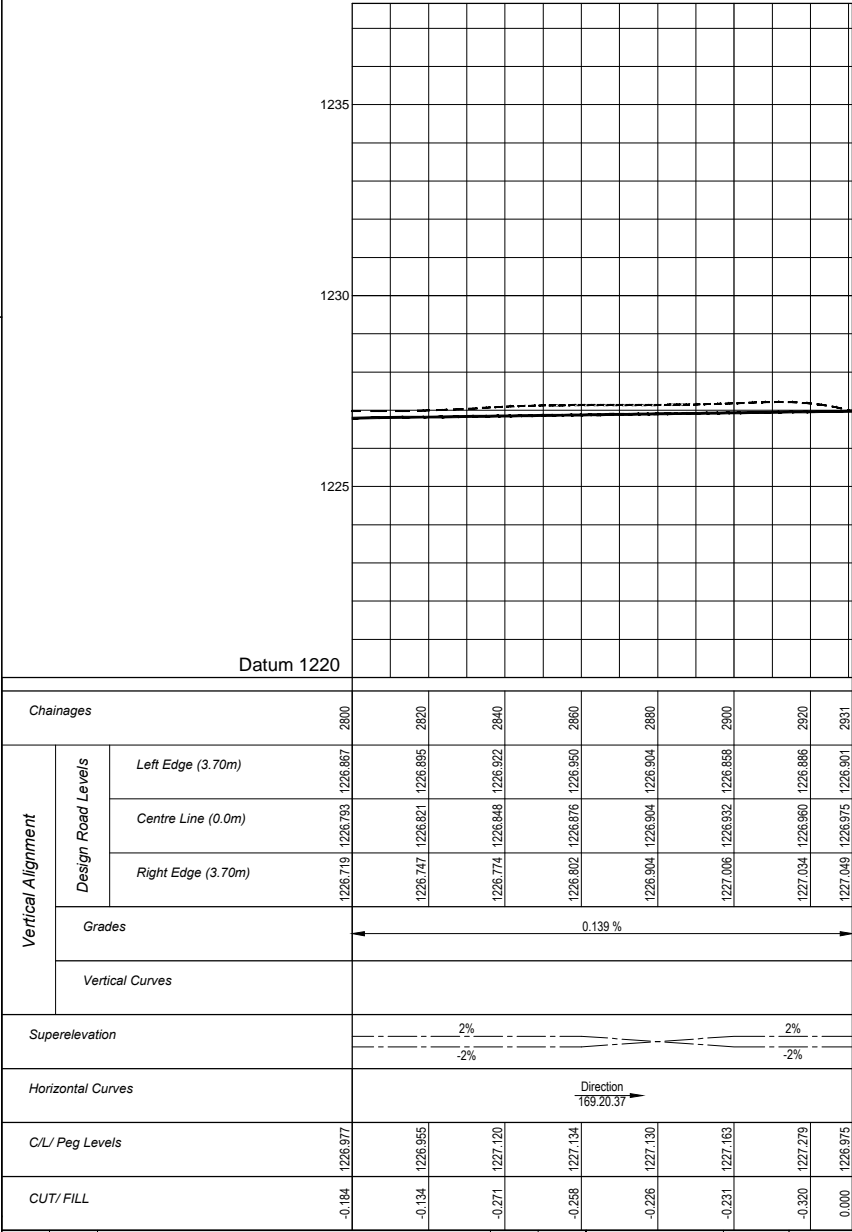
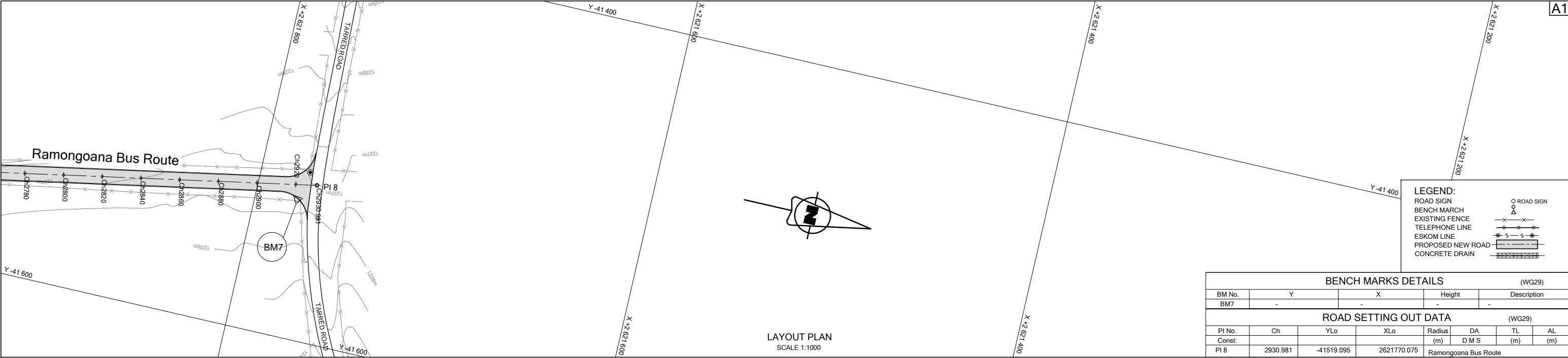
DESIGNED BY				F.M.	CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015				TYPE OF PLANNING: PRELIMINARY				DETAIL DESIGN (Full signature)				SHEET 4 OF 5	
CHECKED BY				H.T.	CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				UPGRADING OF RAMONGOANA BUS AND TAXI ROADS								SCALE AS SHOWN					
DRAWN BY				F.M.	CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS												DRAWING NUMBER MC/CP/RBR/LS/04				REVISION	
CHECKED BY				H.T.	CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS																0	
No	DATE	REVISION	CONSULT	DIR																						




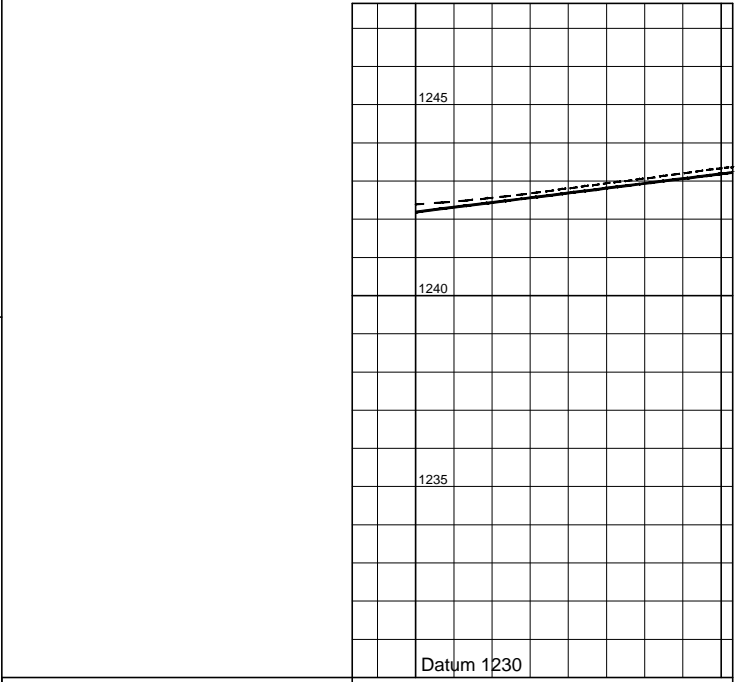
DESIGNED BY: F.M.				CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				CONTRACT No.: 30/2015				TYPE OF PLANNING: PRELIMINARY				DETAIL DESIGN (Full signature)				SHEET 4 OF 5	
CHECKED BY: H.T.				CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				UPGRADING OF RAMONGOANA BUS AND TAXI ROADS								SCALE AS SHOWN					
DRAWN BY: F.M.				CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS				RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2100,000 TO Ch 2800,000								DRAWING NUMBER MC/CP/RBR/LS/04				REVISION	
CHECKED BY: H.T.				CITY OF POLOKWANE				MORULA CONSULTING ENGINEERS																0	



DESIGNED BY		F.M.	<div> <div> CITY OF POLOKWANE </div> <div> </div> </div> <div> P.O. Box 111 POLOKWANE 0700 TEL: (015)290-2077 FAX: (086) 613-9626 </div>	MUNICIPALITY		DATE	<div> <div> CONTRACT No.: 30/2015 </div> <div> TYPE OF PLANNING: PRELIMINARY </div> </div> <div> <div> UPGRADING OF RAMONGOANA BUS AND TAXI ROADS </div> <div> RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2800,000 TO Ch 2930,981 </div> </div>	<div> DETAIL DESIGN <small>(Full signature)</small> </div> <div> </div>		SHEET 4 OF 5	
CHECKED BY		H.T.		CONSULTING ENGINEER		DATE		<div> SCALE AS SHOWN </div>			
DRAWN BY		F.M.		CONSULTING ENGINEER		DATE		<div> DRAWING NUMBER MC/CP/RBR/LS/04 </div>			
CHECKED BY		H.T.		CONSULTING ENGINEER		DATE		<div> REVISION </div>			



DESIGNED BY F.M.			 <p>CITY OF POLOKWANE P.O. Box 111 POLOKWANE 0700 TEL: (015)290-2077 FAX: (086) 613-9626</p>	MORULA CONSULTING ENGINEERS		CONTRACT No.: 30/2015		TYPE OF PLANNING: PRELIMINARY		DETAIL DESIGN (Full signature)		SHEET 4 OF 5	
CHECKED BY H.T.				P.O.Box 2740 POLOKWANE 0700		MUNICIPALITY DATE		UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		For Consulting Engineer		SCALE	
DRAWN BY F.M.				Tel: (015)296-3631 Fax: (086) 558-6446		CONSULTING ENGINEER DATE				DRAWING NUMBER		REVISION	
CHECKED BY H.T.								RAMONGOANA BUS ROUTE PLAN WITH LONGITUDINAL SECTION: Ch 2800,000 TO Ch 2930,981		MC/CP/RBR/LS/04		AS SHOWN	



Chainages											
Vertical Alignment	Design Road Levels	Left Edge (3.0m)		1242.128		1242.378		1242.628		1242.878	1243.184
		Centre Line (0.0m)		1242.188		1242.438		1242.688		1242.938	1243.188
		Right Edge (3.0m)		1242.248		1242.498		1242.748		1242.998	1243.248
	Grades	1250 %									102.837
	Vertical Curves										103
Superelevation			<div>2% ----- -2% -----</div>								
Horizontal Curves			<div>Direction 343.38.56</div>								1243.223
C/L/ Peg Levels				1242.390		1242.525		1242.824		1243.053	1243.347
CUT/ FILL				-0.202		-0.087		-0.136		-0.115	-0.159

						DESIGNED BY	
						CHECKED BY	
						DRAWN BY	
No	DATE	REVISION			CONSULT	DIR	CHECKED BY

CITY OF POLOKWANE

P.O Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

NATURALLY PROGRESSIVE

MORULA CONSULTING ENGINEERS

CONSULTING ENGINEERS & PROJECT MANAGERS
"a new dawn"

P.o.Box 2740
POLOKWANE
0700

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

TYPE OF PLANNING: PRELIMINARY

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237

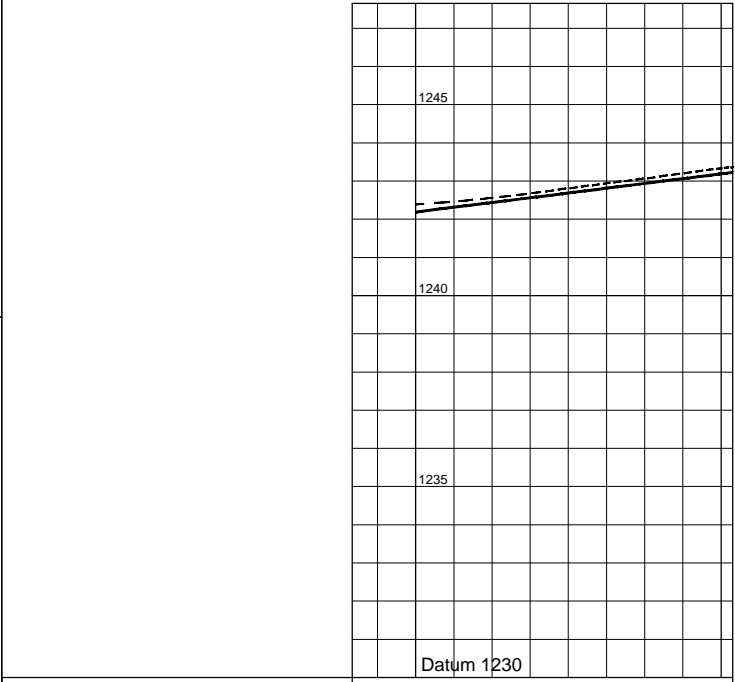
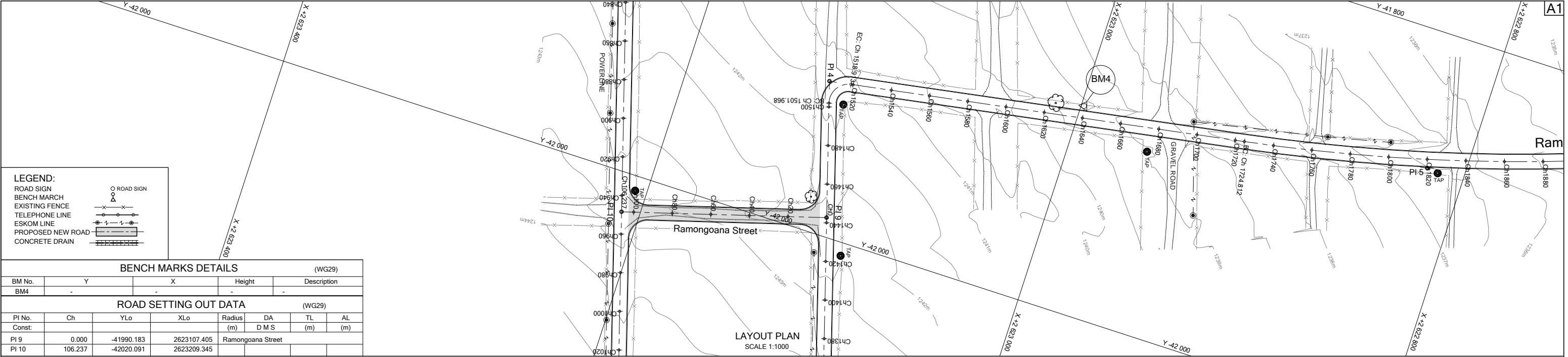
DETAIL DESIGN
(Full signature)

SCALE
AS SHOWN

DRAWING NUMBER
MC/CP/RBR/LS/06

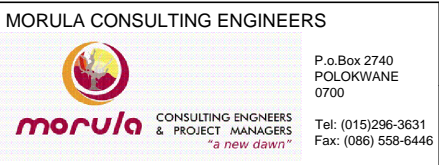
SHEET 1 of 1

REVISION
0



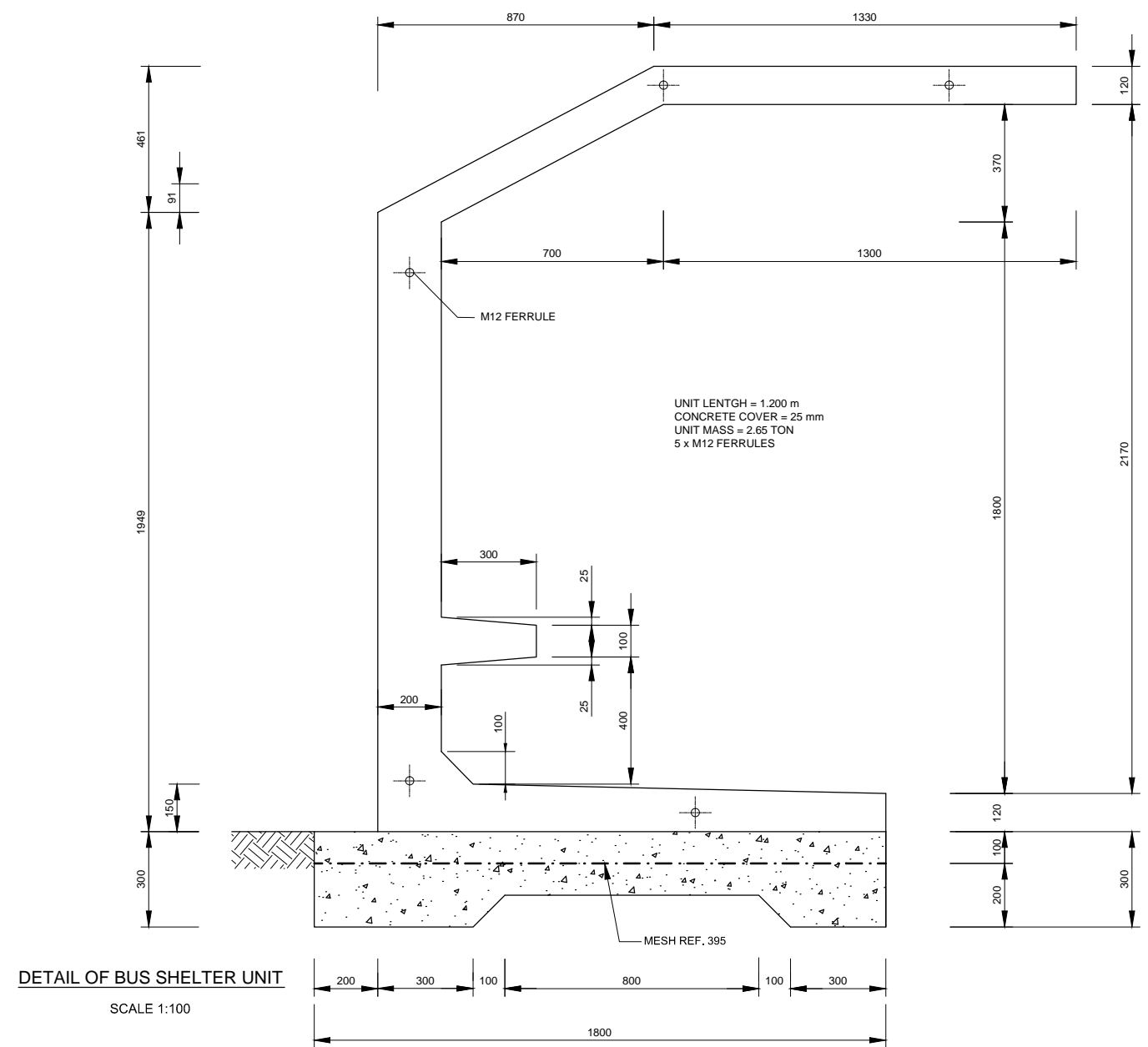
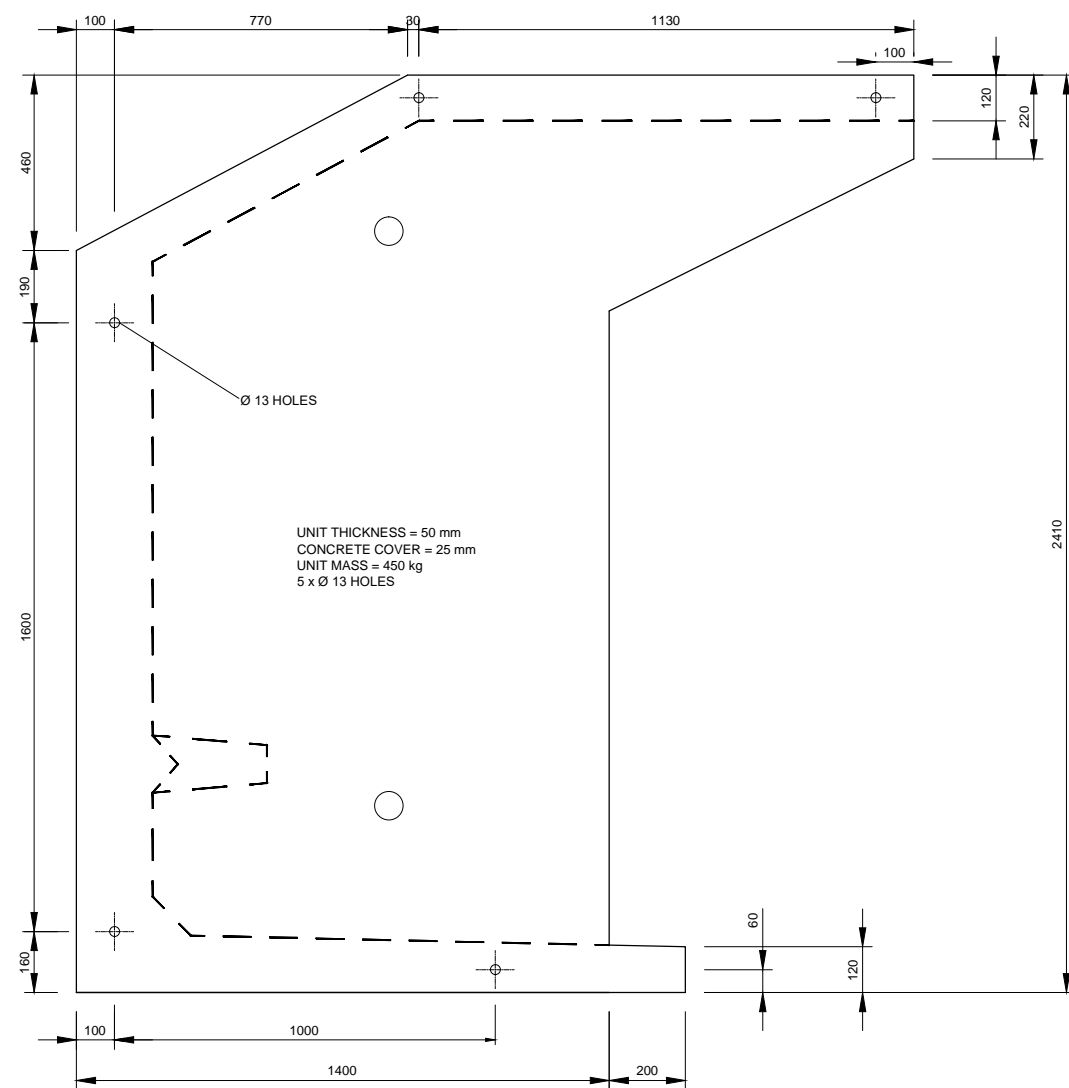
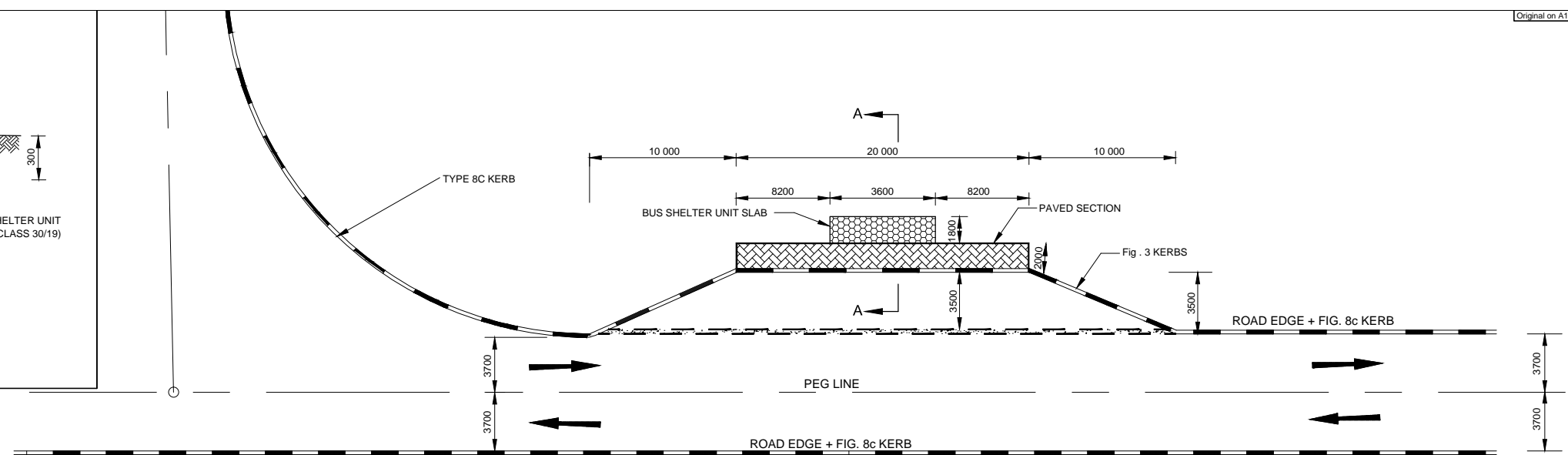
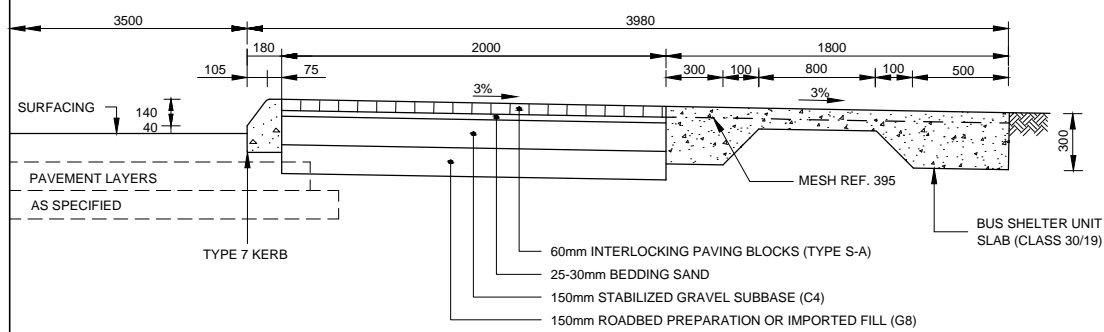
Chainages										
Vertical Alignment	Design Road Levels	Left Edge (3.0m)			1242.128					
		Centre Line (0.0m)			1242.188		1242.378		1242.628	
		Right Edge (3.0m)			1242.248		1242.498		1242.748	
	Grades	1250 %								102.837
	Vertical Curves									103
	Superelevation	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								

						DESIGNED BY	
						CHECKED BY	
						DRAWN BY	
No	DATE	REVISION			CONSULT	DIR	CHECKED BY



MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 of 1
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		For Consulting Engineer	SCALE AS SHOWN
RAMONGOANA ACCESS ROAD PLAN WITH LONGITUDINAL SECTION: Ch 0,000 TO Ch 106,237		DRAWING NUMBER MC/CP/RBR/LS/06	REVISION 0



No	DATE	REVISION	CONSULT	DIR

DESIGNED BY	F.M.
CHECKED BY	H.T.
DRAWN BY	F.M.
CHECKED BY	H.T.

CITY OF POLOKWANE

P.O.Box 111
POLOKWANE
0700

TEL: (015)290-2077
FAX: (086) 613-9626

Polokwane
NATURALLY PROGRESSIVE

MORULA CONSULTING ENGINEERS

morula

CONSULTING ENGINEERS
& PROJECT MANAGERS
"a new dawn"

P.O.Box 2740
POLOKWANE
0700

Tel: (015)296-3631
Fax: (086) 558-6446

MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

TYPE OF PLANNING: PRELIMINARY

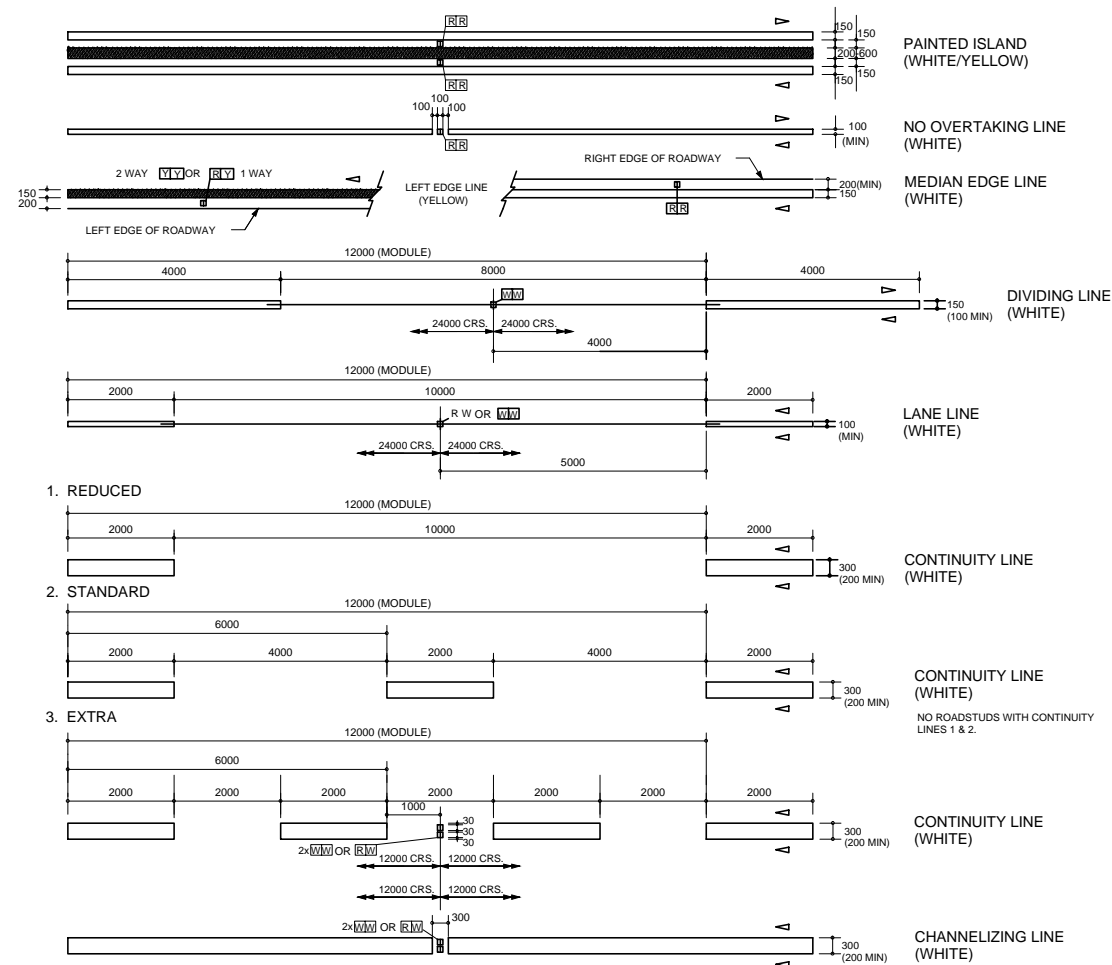
UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

BUS/ TAXI STOP LAYOUT WITH SHELTER DETAILS

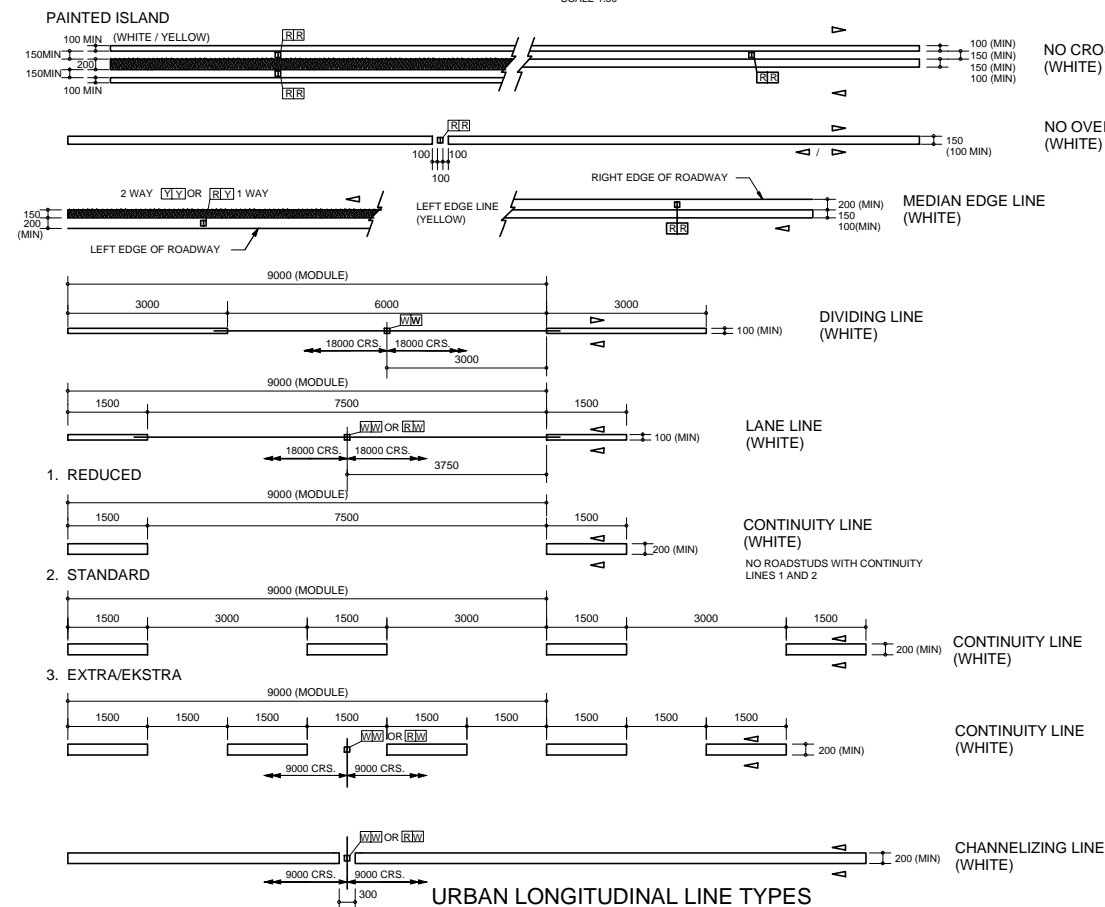
DETAIL DESIGN (Full signature)	SHEET 1 OF 1
For Consulting Engineer	SCALE AS SHOWN
DRAWING NUMBER MC/CP/RBR/SD/01	REVISION 0

ROAD MARKING DETAILS

SHEET 1 OF 2



RURAL LONGITUDINAL LINE TYPES



NOTES: (RURAL LONGITUDINAL LINE TYPES)

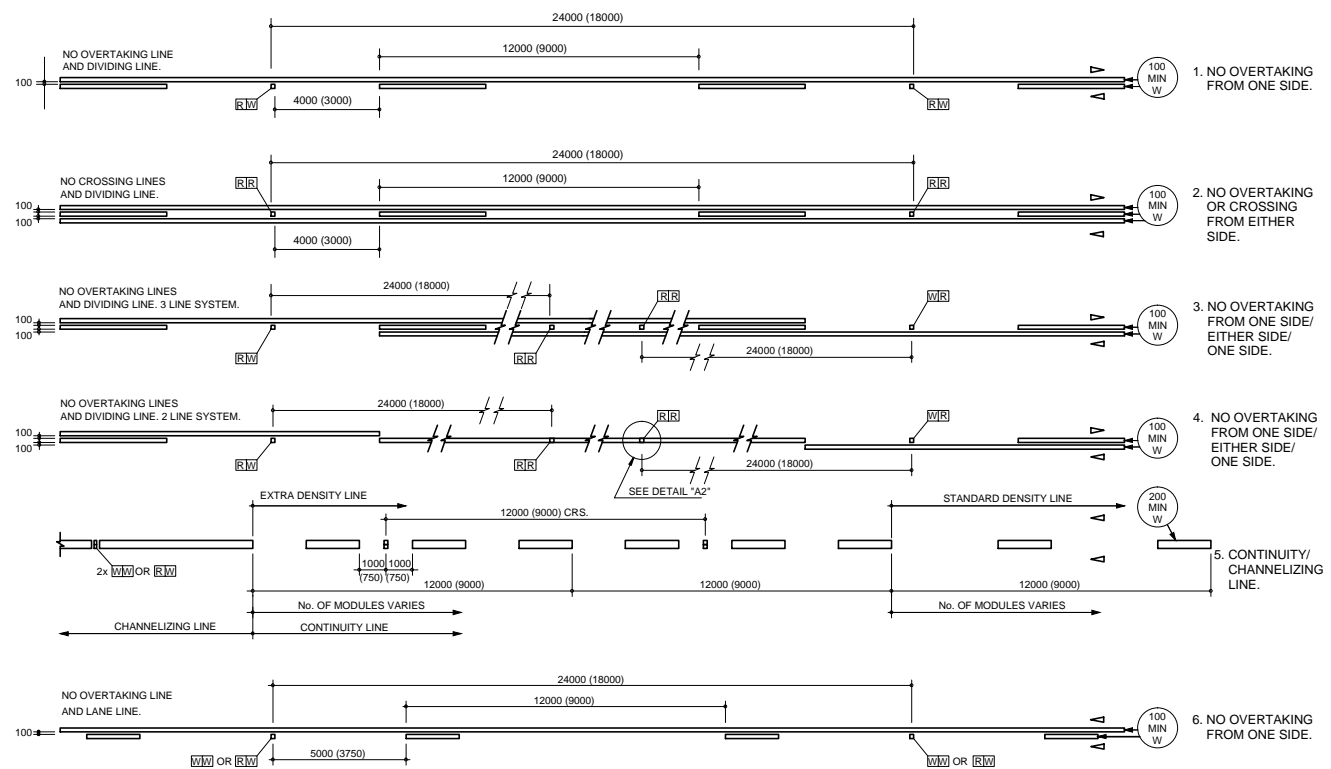
- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO LINE MARKING INDICATED THUS \rightarrow OR \leftarrow
- PAINTED ISLAND MARKINGS SHALL BE USED AS A STANDARD DIVIDING MARKING ON ALL 4-LANE 2-WAY ROADWAYS. (SEE URBAN LONGITUDINAL LINE TYPES)
- A NO OVERTAKING LINE MAY BE USED TO REPLACE A DIVIDING LINE MARKING ON MINOR ROADS OR TO MATCH PROVINCIAL ROAD MARKING POLICY ON AN INTERSECTING ROADWAY AS APPROPRIATE. A NO OVERTAKING LINE MAY BE USED IN COMBINATION WITH A LANE LINE. (NORMALLY ON A FREEWAY CARRIAGEWAY.)
- A LEFT EDGE LINE MARKING SHALL NOT EXTEND ACROSS THE POINT OF DEPARTURE FROM A THROUGH PORTION OF ROADWAY.
- A RIGHT EDGE LINE MARKING IS ONLY REQUIRED TO DEMARCAT AN UNKERBED MEDIAN (A MEDIAN GUARDRAIL OR CONCRETE SEPARATOR BARRIER DOES NOT CONSTITUTE A KERBED MEDIAN.)
- THE DIVIDING LINE MARKING REPLACES THE PREVIOUS "CENTRE LINE" MARKING AND SHALL ONLY BE USED BETWEEN LANES CARRYING OPPOSING TRAFFIC FLOWS WHERE OVERTAKING IS PERMITTED.
- A CONTINUITY LINE MAY BE SPECIFIED IN ONE OF THREE DENSITIES - 1. REDUCED 2. STANDARD OR 3. EXTRA. A CONTINUITY LINE MAY BE USED TO DEFINE THE LIMIT OF THE THROUGH PORTION OF A ROADWAY, EITHER AT A HIGH SPEED EXIT (OFF-RAMP OR SLIP ROAD), A DEDICATED EXIT LANE ON FREEWAY, OR AT-GRADE ROAD (RIGHT OR LEFT TURN.)
- A CHANNELIZING LINE MAY BE USED AS AN EXTENSION OF A CONTINUITY LINE FOR CERTAIN APPLICATIONS ON THE APPROACH TO AN AT-GRADE SLIP ROAD GORE AREA.
- A LANE LINE, CONTINUITY LINE OR CHANNELIZING LINE SHALL NOT BE USED BETWEEN OPPOSING TRAFFIC MOVEMENTS.
- THE WIDTHS OF LINES SHOWN ARE RECOMMENDATIONS ONLY. (SEE LONGITUDINAL LINE COMBINATIONS.)

LEGEND:

R = RED
W = WHITE
Y = YELLOW

DETAIL "A2"

SCALE: 1:25



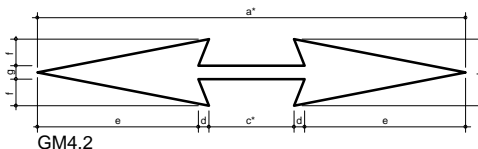
NOTES: (LONGITUDINAL LINE COMBINATIONS)

- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO THE MARKING INDICATED THUS \rightarrow OR \leftarrow
- FOR FULL LONGITUDINAL DIMENSIONS OF COMPONENT MARKINGS SEE RURAL AND URBAN LONGITUDINAL LINE TYPES.
- COMBINATION MARKING 1 TO 4 ARE FOR TWO WAY TRAFFIC AND ARE APPLICABLE TO NATIONAL NON-FREEWAY ROUTES WHICH INTERSECT FREEWAYS.
- COMBINATION MARKING 5 SHALL BE USED TO INDICATE THE DIVISIONS BETWEEN THE THROUGH ROADWAY AND ANY EXCLUSIVE EXIT/TURN LANES. WHEREVER POSSIBLE A CONTINUITY LINE SHOULD LEAD TO, OR TERMINATE IN A CHANNELIZING LINE WHICH MAY BE SHORT. RECOMMENDED MINIMUM LENGTH IS 12m FOR RURAL AND 9m FOR URBAN APPLICATIONS.
- FOR MARKINGS 1 TO 4 ROADSTUDS SHOULD BE LOCATED ON CENTRE LINE OF THE DIVIDING LINE (OR SINGLE NO OVERTAKING LINE MARKING 4)
- WHERE POSSIBLE THE LENGTH OF CHANNELIZING MARKING SHOULD BE ADJUSTED SO THAT THE CONTINUITY LINE ROADSTUDS MATCH OTHER ROADSTUDS ON CROSS-SECTION AND FALL IN THE CENTRE OF A GAP IN THE CONTINUITY LINE.
- DIMENSIONS FOR URBAN APPLICATIONS ARE INDICATED IN BRACKETS.
- ROADSTUDS ON THE SINGLE NO OVERTAKING LINE IN MARKING 4 MAY BE COVERED DURING LINE MARKING OR PLACED AS INDICATED IN DETAIL "A2".

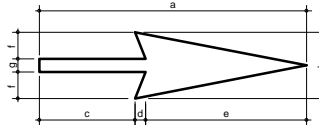
LONGITUDINAL LINE COMBINATIONS

GM4.2 REVERSIBLE FLOW ARROW / GM4.1 INFORMATION ARROW

Operating Speed km/h	Typical Applications	a	a*	b	c	c*	d	e	f	g
30 - 40	City Centre	1250	2000	1250	450	400	50	750	500	250
50 - 60	Urban	2500	4000	1250	900	800	100	1500	500	250
70 - 90	Urban Arterial/Rural Expressway	4000	6400	1250	1440	1280	160	2400	500	250
100 - 120	Rural and Freeways	5000	8000	1250	1800	1600	200	3000	500	250



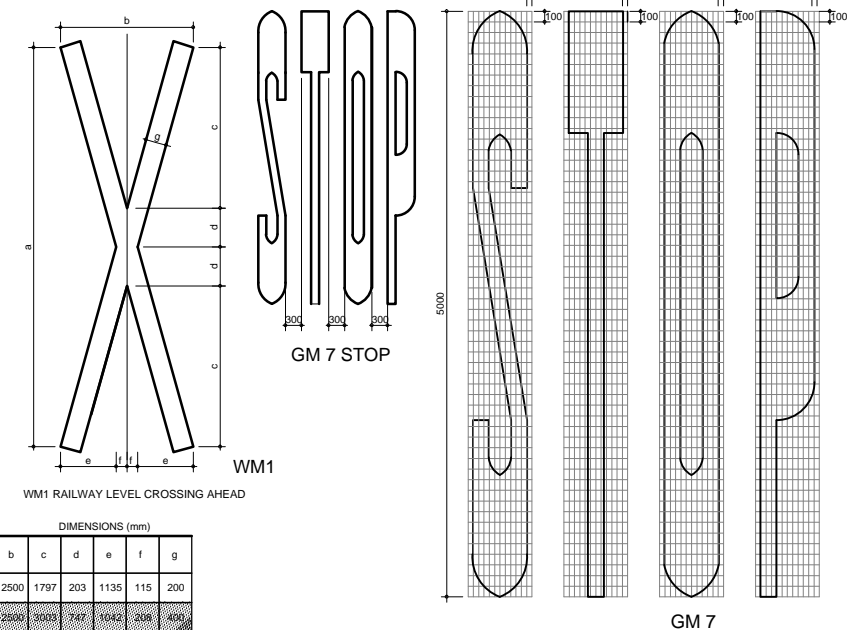
GM4.2



GM4.1

Marking	a	Area	a*	Area
WM1	4000	1.84		
	7500	6.00		
	1250	0.59	2000	1.05
GM4.1/ GM4.2(a*)	2500	1.17	4000	2.10
	4000	1.88	6400	3.36
	5000	2.35	8000	4.20
WM5	450	0.20		
	850	0.83		
	1350	2.15		
GM7	5500	6.90		

- NOTES:**
- THIS DRAWING DETAILS A RANGE OF GENERAL WARNING OR GUIDANCE SYMBOLS. APPLICATION SHALL BE IN ACCORDANCE WITH THE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL.
 - MARKING WM5 - YIELD CONTROL AHEAD MAY BE REPEATED 1m FROM THE YIELD LINE MARKING.



REGULATORY/WARNING /GUIDANCE SYMBOLS

Typical Applications	a	b	c	d	e	f	g
Urban	4000	2500	1797	203	1135	115	200
Rural	7500	2500	3303	747	1842	215	400

NOTES: (URBAN LONGITUDINAL LINE TYPES)

- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO LINE MARKING INDICATED THUS \rightarrow OR \leftarrow
- A NO CROSSING LINE MAY BE USED AS A FORM OF DIVIDING LINE MARKING IN PLACE OF A NO OVERTAKING LINE, TO PROHIBIT ACCESS TO OR FROM PROPERTIES AT THE SIDE OF AN URBAN ROAD. A PAINTED ISLAND MAY BE USED AS AN ALTERNATIVE MARKING FOR THIS PURPOSE.
- A NO OVERTAKING LINE MAY BE USED TO REPLACE A DIVIDING LINE MARKING TO PROHIBIT OVERTAKING IN THE PATH OF ON-COMING TRAFFIC. A NO OVERTAKING LINE MAY BE USED IN COMBINATION WITH A LANE LINE.
- LEFT EDGE LINE MARKING SHALL NOT BE EXTENDED ACROSS THE POINT OF DEPARTURE FROM A THROUGH PORTION OF ROADWAY.
- A RIGHT EDGE LINE MARKING IS ONLY REQUIRED TO DEMARCAT AN UNKERBED MEDIAN. (A MEDIAN GUARDRAIL OR CONCRETE SEPARATOR BARRIER DOES NOT CONSTITUTE A KERBED MEDIAN.)
- THE DIVIDING LINE MARKING REPLACES THE PREVIOUS "CENTRE LINE" MARKING AND SHALL ONLY BE USED BETWEEN LANES CARRYING OPPOSING TRAFFIC FLOWS WHEN OVERTAKING IS PERMITTED.
- A CONTINUITY LINE MAY BE SPECIFIED IN ONE OF THREE DENSITIES - 1. REDUCED 2. STANDARD OR 3. EXTRA. THROUGH PORTION OF A ROADWAY EITHER AT A HIGH SPEED EXIT (OFF-RAMP OR SLIPROAD), A DEDICATED EXIT LANE ON A FREEWAY, OR AT-GRADE ROAD (RIGHT OR LEFT TURN.)
- A CHANNELIZING LINE MAY BE USED AS AN EXTENSION OF A CONTINUITY LINE OR INSTEAD OF A PAINTED ISLAND TO CHANNELIZE TRAFFIC MOVEMENT WHERE SPACE IS LIMITED.
- A LANE LINE, CONTINUITY LINE OR CHANNELIZING LINE SHALL NOT BE USED BETWEEN OPPOSING TRAFFIC MOVEMENTS.
- THE WIDTHS OF LINES SHOWN ARE RECOMMENDATIONS ONLY. (SEE LONGITUDINAL LINE COMBINATIONS.)

WM5 YIELD CONTROL AHEAD

Operating Speed km/h	Typical Applications	Distance from Yield line	a	b	c	d
30 - 40	City Centre	90m	450	250	100	1250
50 - 60	Urban	120m	850	450	150	2500
70 - 90	Rural	150m	1350	750	250	4000

DESIGNED BY	F.M.	CITY OF POLOKWANE
CHECKED BY	H.T.	P.O Box 111 POLOKWANE 0700
DRAWN BY	F.M.	TEL: (015)290-2077 FAX: (086) 613-9626
CHECKED BY	H.T.	
No	DATE	REVISION
		CONSULT
		DIR

MORULA CONSULTING ENGINEERS	P.O.Box 2740 POLOKWANE 0700
CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"	Tel: (015)296-3631 Fax: (086) 558-6446
MUNICIPALITY	DATE
CONSULTING ENGINEER	DATE

CONTRACT No.: 30/2015

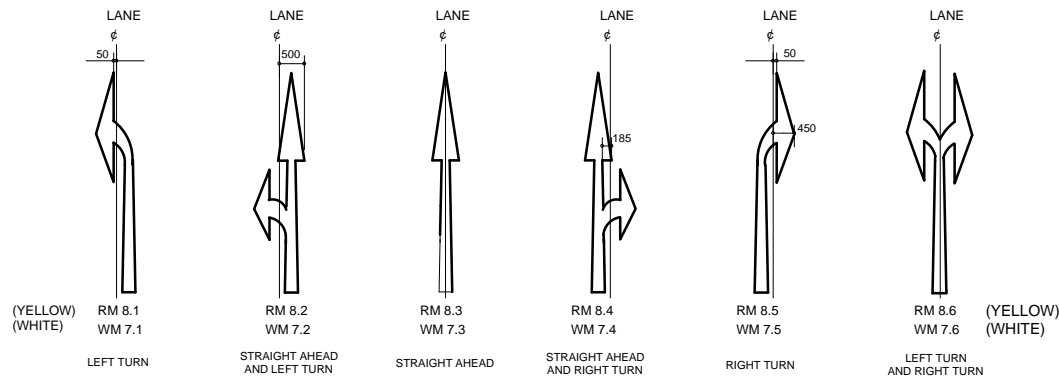
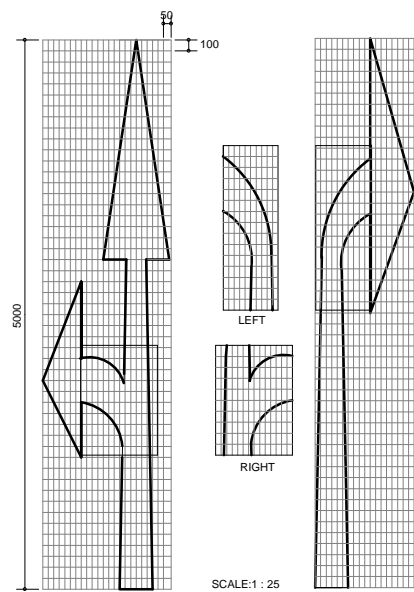
TYPE OF PLANNING: PRELIMINARY

UPGRADING OF RAMONGOANA BUS AND TAXI ROADS

ROAD MARKINGS: REGULARITY, WARNING AND GUIDANCE SYMBOLS

DETAIL DESIGN (Full signature)	SHEET 1 OF 1
TM	SCALE 1:1000
For Consulting Engineer	REVISION 0
DRAWING NUMBER MC/CP/RBR/SD/03	

ROAD MARKING DETAILS



APPLICATIONS

SCALE 1:50

DIMENSIONS (mm)

Operating Speed km/h	Typical Applications	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
30 - 40	City Centre	2500	600	350	450	884	200	417	1000	1700	250	550	1250	700	380	1450	58	30	29
50 - 90	Urban/Rural Expressway	4000	960	560	720	1406	320	666	1600	2720	400	880	2000	1120	608	2320	93	48	46
100 - 120	Rural and Freeways	5000	1200	700	900	1767	400	833	2000	3400	500	1100	2500	1400	760	2900	116	60	58
ALL	Special Applications	7500	1800	1050	1350	2651	600	1250	3000	5100	750	1650	3750	2100	1140	4350	174	90	87

All Operating Speeds and Applications	N	O	P	Q	R	S	T
	210	180	350	300	500	400	600

ARROW AREA / (m²)				
a	RM8.1/RM8.5 WM7.1/WM7.5	RM8.2/RM8.4 WM7.2/WM7.4	RM8.3 WM7.3	RM8.6 WM7.6
2500	0.67	0.89	0.66	1.03
4000	1.14	1.43	1.06	1.68
5000	1.45	1.78	1.32	2.12
7500	2.23	2.66	1.98	3.20

NOTES: (MANDATORY DIRECTION ARROWS)

1. THESE ARROWS MAY BE USED IN LANES TO INDICATE THAT DRIVERS SHALL PROCEED ONLY IN THE DIRECTION OR DIRECTIONS SHOWN. THEY SHOULD ONLY BE USED IF THE JUNCTION CONCERNED REQUIRED TURNING MOVEMENT CONTROL BY LANE.

2. THE FINAL ARROW NEAREST THE POINT OF TURN OR STRAIGHT ON MOVEMENT SHALL BE YELLOW; ANY ARROWS MARKED IN ADVANCE OF THIS POINT TO WARN DRIVERS OF THE MANDATORY MOVEMENT AHEAD SHALL BE WHITE.

3. A MANDATORY OR WARNING DIRECTION ARROW SHALL NOT BE USED IN ADVANCE OF A WIDENING OF THE ROADWAY TO A GREATER NUMBER OF LANES. THIS SHALL BE INDICATED IF NECESSARY, BY USING FURCATION ARROWS.

LEGEND:

R = RED

W = WHITE

Y = YELLOW

DIMENSIONS (mm)

Typical Applications	a	b	c	d	e	f	g	h	r	r*
Urban	3000	1941	83	976	1741	528	731	1206	5620	5820

All Applications	H	I	J	K	L	M
	735	260	181	219	75	100 or 150

MARKING SPACING

ARROW AREA / (m²)	
a	Per Arrow
3000	0.62
4000	0.82

BARRIER LINE AHEAD ARROWS

NOTES: (BARRIER LINE AHEAD ARROWS)

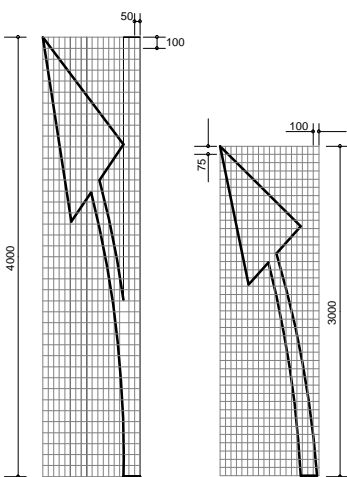
1. THESE ARROWS SHOULD BE USED IN MULTIPLES OF THREE (AT LEAST) IN ADVANCE OF THE START OF A SECTION OF NO OVERTAKING LINE, NO CROSSING LINE OR PAINTED ISLAND WHEN SUCH BARRIER LINES REPLACE A DIVIDING LINE.

2. THE ARROWS MAY BE MARKED ON TOP OF EXISTING DIVIDING LINE MARKINGS (IF THE EXISTING LINE IS A CENTRE LINE TO A 12m OR 7.2m MODULE THE POINT OF THE ARROW SHOULD BE LINED UP WITH THE FORWARD END OF THE LINE).

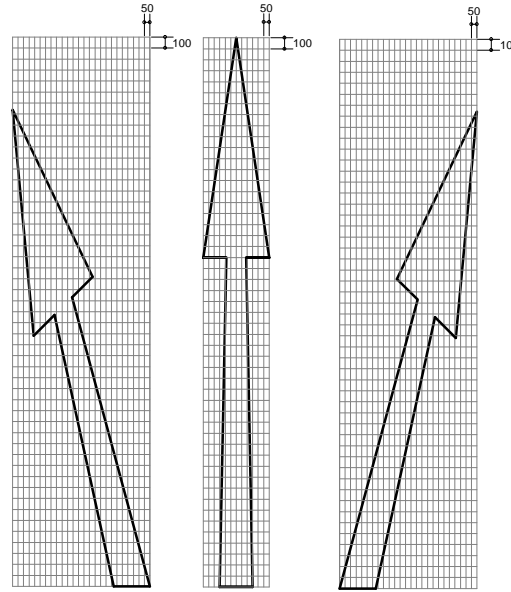
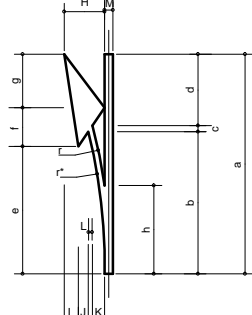
3. WHEN OVERTAKING SECTIONS ARE REGULARLY INTERSPERSED WITH NO OVERTAKING SECTIONS AND ARE SHORT IN LENGTH MARKING WM 8.2 MAY BE USED AT THE CENTRE OF THE OVERTAKING SECTION.

APPLICATIONS

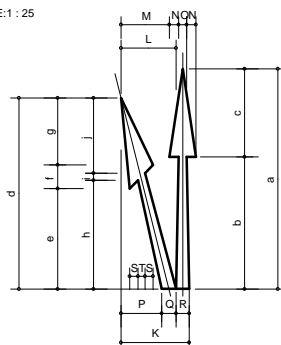
SCALE 1:50



SCALE:1:25



SCALE:1:25



NOTES: (FURCATION ARROWS)

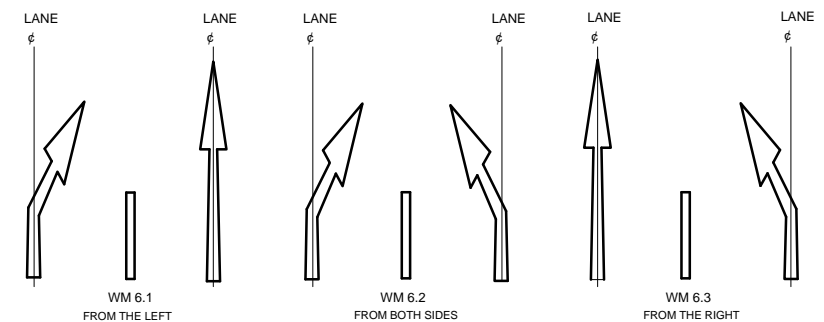
1. THESE ARROWS MAY BE USED TO INDICATE THAT THE NUMBER OF LANES IS INCREASING AHEAD. ONLY ONE SET OF ARROWS SHOULD BE USED UNLESS A LEFT AND RIGHT TURN LANE ARE ADDED TO A MULTI-LANE ROADWAY AT THE SAME POINT WHERE TWO SETS MAY BE USED.

2. DIRECTION ARROWS AHEAD SHALL NOT BE USED TO INDICATE THE ADDITION OF LANES AHEAD.

3. AS A GENERAL RULE BIFURCATION ARROWS SHOULD BE LOCATED TWO TO THREE MARKING MODULES BEFORE THE START OF THE LANE GENERATING TAPER OR CURVE.

ARROW AREA / (m²)			
a	GM3.1/GM3.3	GM3.2	GM3.4
2500	1.30	1.27	1.93
4000	2.07	2.04	3.09
5000	2.59	2.55	3.87
7500	3.89	3.82	5.80

FURCATION ARROWS



APPLICATIONS

SCALE 1:50

DIMENSIONS (mm)

Operating Speed km/h	Typical Applications	a	b	c	d	e	f	g	h	i	j	k
30 - 40	City Centre	4000	2400	1600	3200	1271	847	227	855	1696	1277	1126
50 - 60	Urban Roads	5000	3000	2000	4000	1589	1058	284	1069	2120	1596	1407
70 - 90	Urban Arterial Roads/ Rural Expressways	7500	4500	3000	6000	2384	1587	426	1603	3180	2394	2111
	Rural Roads and Freeways	12000	7200	4800	9600	3920	2544	635	2464	4752	3584	3136

All Operating Speeds and Applications	M	N	O	P	Q	R	S	T	U	V
	300	210	180	1300	898	402	155	370	32	390

NOTES: (LANE REDUCTION ARROWS)

1. IT IS RECOMMENDED THAT THREE SETS OF ARROWS BE USED ON HIGH SPEED ROADS, SPACED AT FOUR MODULE INTERVALS BEFORE THE END OF THE LANE LINE. SINGLE ARROWS SETS MAY BE USED ON LOWER SPEED ROADS.

2. THE BENT ARROWS MAY BE USED IN ADDITION TO THE THREE-ARROW SETS ALONG THE LENGTH OF THE LANE REDUCTION TAPER.

ARROW AREA / (m²)		
a	WM6.1/WM6.3	WM6.2
4000	2.08	2.06
5000	2.61	2.58
7500	3.92	3.88
12000	6.56	6.20

LANE REDUCTION ARROWS

DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
CHECKED BY	H.T.	P.O. Box 111 POLOKWANE 0700	P.O. Box 2740 POLOKWANE 0700	UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		TM	SCALE 1:1000
DRAWN BY	F.M.	TEL: (015)290-2077 FAX: (086) 613-9626	CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"			For Consulting Engineer	REVISION
CHECKED BY	H.T.		Tel: (015)296-3631 Fax: (086) 558-6446			DRAWING NUMBER MC/CP/RBR/SD/04	0
No	DATE	REVISION	CONSULT	DIR	CONSULTING ENGINEER	DATE	DIRECTION ARROWS AHEAD MARKINGS: MANDATORY DIRECTION ARROWS AND DIRECTION ARROWS AHEAD

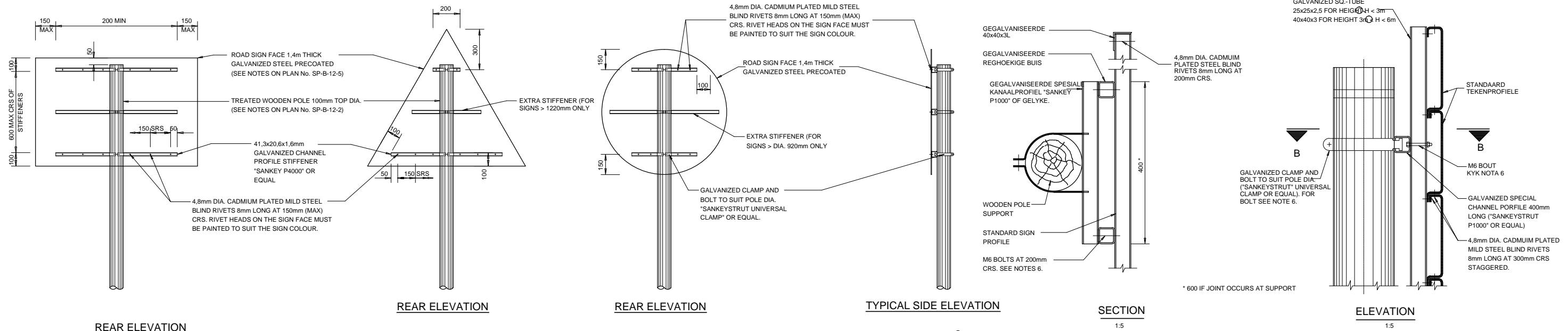
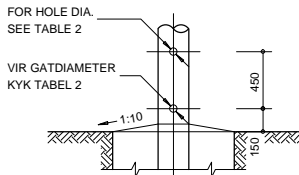
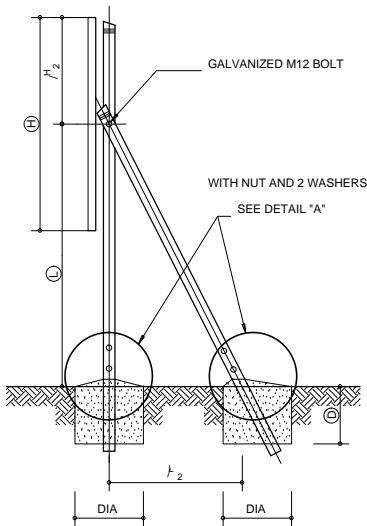


TABLE 1

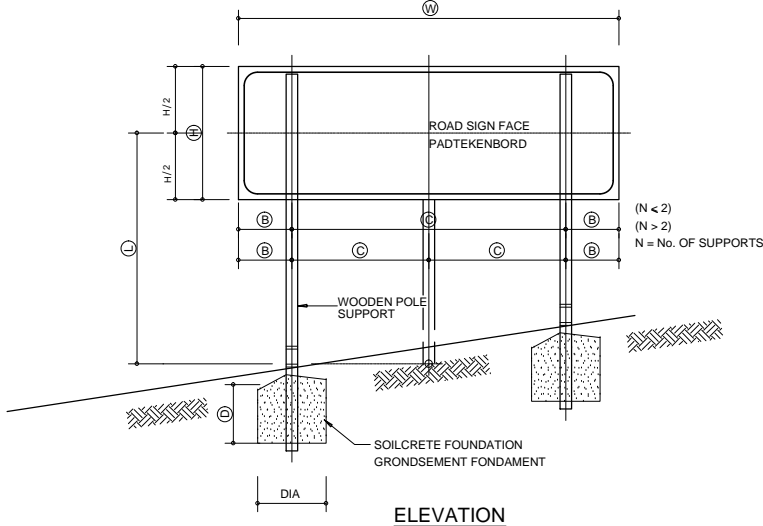
WIDTH OF SIGN W	No. OF SUPPORTS N	DIMENSIONS	
		B	C
1,2m	1	w/z	-
1,2m - 4,0m	2	w/5	3w/5
4,0m - 7,2m	3	w/2N	w/N
7,2m - 9,6m	4		
9,6 - 12,0m	5		



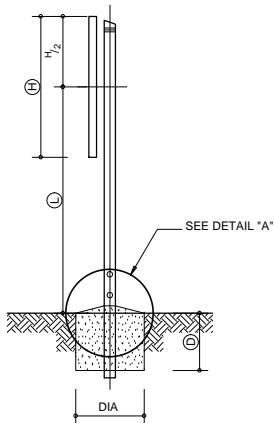
DETAIL "A"



TYPICAL SECTION
BRACED SUPPORT



ELEVATION

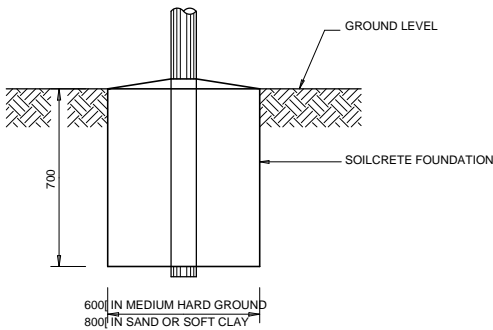


TYPICAL SECTION
FREE STANDING SUPPORT

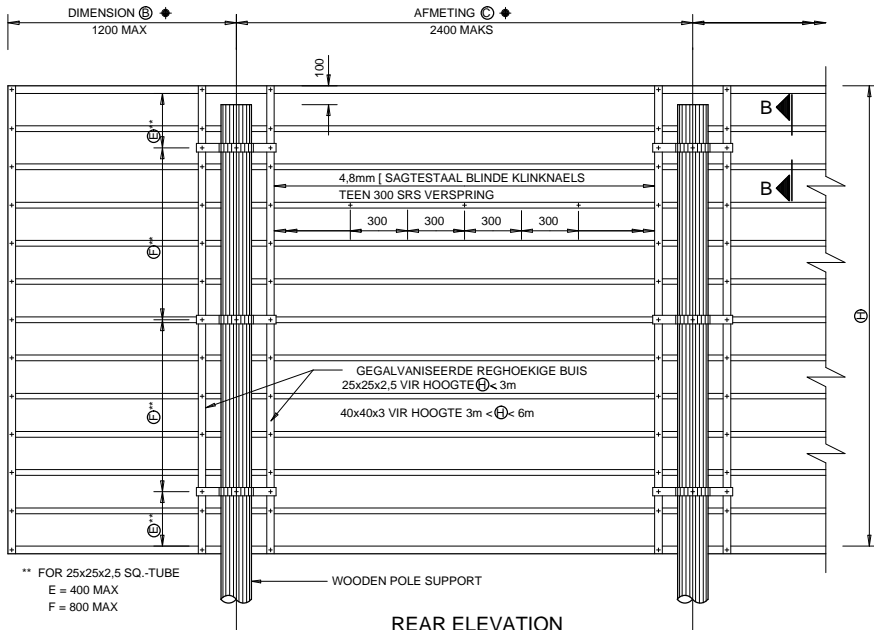
* AT GROUND LEVEL

TABEL 2

POLE DIA * (mm)	HOLE DIA (mm)
< 140	NONE
141 - 170	40
171 - 200	50
201 - 225	65



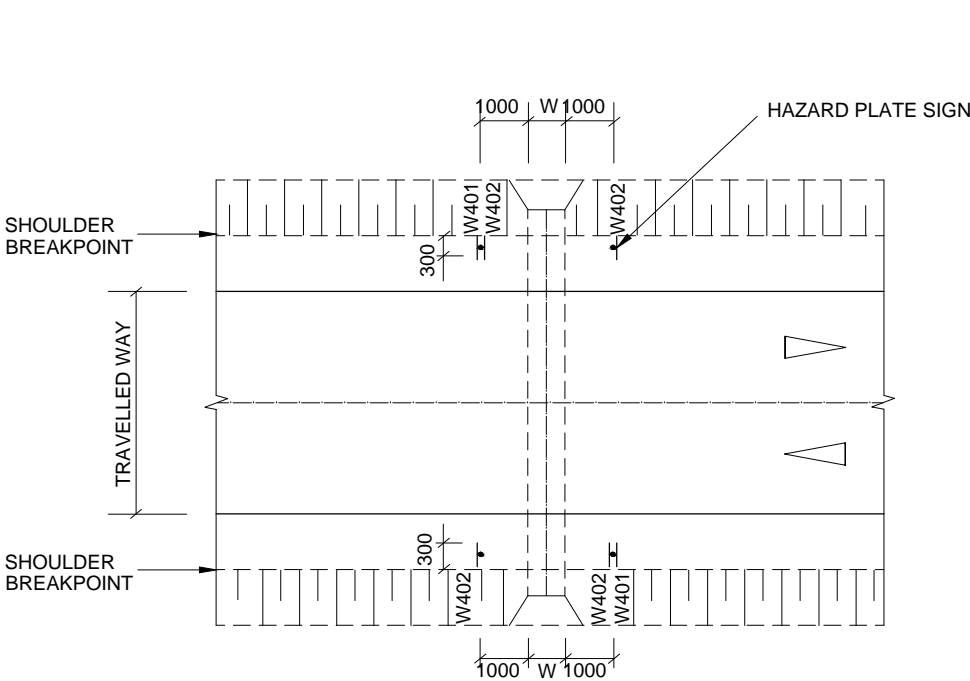
TYPICAL FOUNDATION



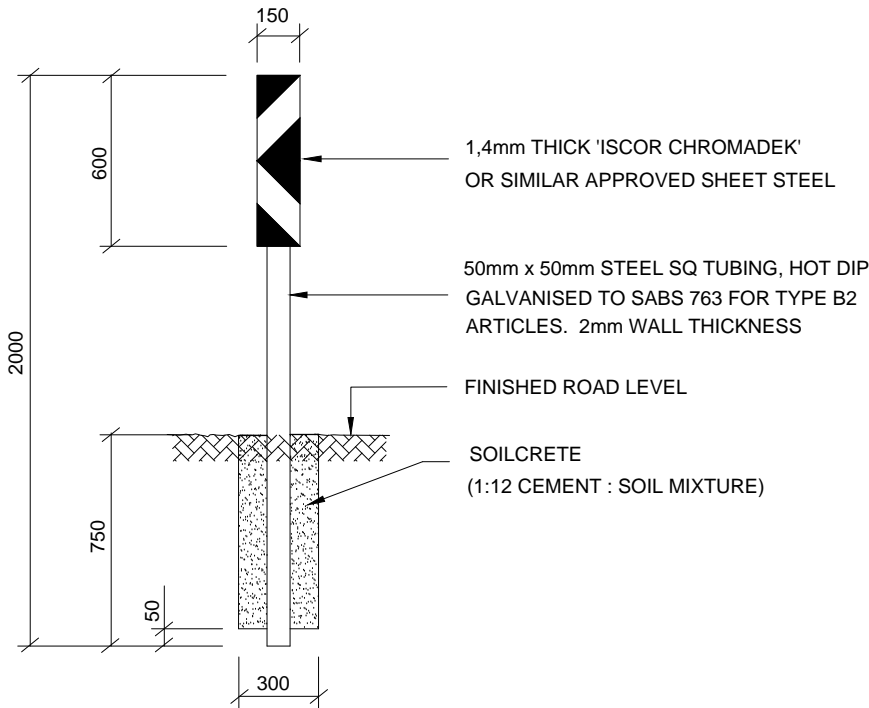
REAR ELEVATION
1:20

NOTES

- THE ROAD SIGN FACES SHALL BE MANUFACTURED AND ERECTED IN ACCORDANCE WITH THE REVISIONS AS WELL AS THE FOLLOWING REQUIREMENTS:-
- SIGN FACES SHALL BE FOR TYPE "A" OR "B" EXPOSURE AS INDICATED ON THE ROAD SIGN DETAIL DRAWINGS OR AS DIRECTED BY THE ENGINEER-ANALYST.
 - TYPE "A": ALL CASES OTHER THAN TYPE "B".
 - TYPE "B": SIGN FACES FOR USE IN MARINE OR CHEMICALLY POLLUTED CORROSIVE ENVIRONMENTS.
 - THE COATING SYSTEMS FOR SIGN FACES TYPE "A" AND "B" ARE SPECIFIED ON PLAN No. SP-B-12-5.
 - THE STANDARD SIGN PROFILE SHALL BE MADE IN ACCORDANCE WITH THE DETAILS SHOWN ON PLAN No. SP-B-12-5.
 - A SIGN FACE WHICH EXCEEDS 6m IN LENGTH MAY BE MANUFACTURED IN TWO SECTIONS. THE JOINT SHALL BE MADE IN ACCORDANCE WITH DETAILS OF SECTION 7100 OF THE STANDARD SPECIFICATIONS. OF COMMERCIAL QUALITY MILD STEEL.
 - STRUCTURAL STEEL SECTIONS SHALL BE OF MILD STEEL CONFORMING TO THE REQUIREMENTS OF SECTION 5600 OF THE STANDARD SPECIFICATIONS.
 - BOLTS, WASHERS AND NUTS SHALL BE AS FOLLOWS:-
 - TYPE "A" SIGN FACES: GALVANIZED STEEL BOLTS COMPLYING WITH THE REQUIREMENTS OF SECTION 5602(b) OF THE STANDARD SPECIFICATIONS.
 - TYPE "B" SIGN FACES: STAINLESS STEEL BOLTS GRADE 304 MANUFACTURED TO SABS 1 NUTS FOR BOTH TYPE "A" AND "B" SIGN FACES SHALL BE SELF-LOCKING "NYLOC" OR EQUIVALENT.
 - BLIND RIVETS SHALL BE 4,8mm DIA CADMIUM PLATED MILD STEEL.
 - ALL STEEL SECTIONS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH CLAUSE 710 OF THE STANDARD SPECIFICATIONS.
 - REFERENCE MUST BE MADE TO THE RELEVANT ROAD SIGN DETAIL DRAWINGS FOR DETAILS OF THE SYMBOLS AND LEGEND FOR EACH INDIVIDUAL SIGN.
 - MEASUREMENT AND PAYMENT OF THE SIGN FACES SHALL BE IN ACCORDANCE WITH CLAUSE 5609 OF THE STANDARD SPECIFICATIONS. AN "EXTRA OVER" RATE SHALL BE APPLICABLE FOR TYPE "B" SIGN FACES.



POSITION OF HAZARD PLATES
AT CULVERTS
N.T.S.



TYPICAL DETAIL OF HAZARD PLATE
(W402 SHOWN)
SCALE 1:20

NOTES:

- A. HAZARD PLATES
- HAZARD PLATE SHALL BE 300mm FROM THE SHOULDER BREAKPOINT.
 - FOR WIDE CULVERT ($W > 2\text{m}$ WIDTH) SINGLE-SIDED HAZARD PLATES SHALL BE PLACED ON EACH SIDE OF CULVERT.
 - FOR NARROW CULVERTS ($W < 2\text{m}$) PLACE ONE DOUBLE-SIDED HAZARD PLATE PER DIRECTION, ON UPSTREAM SIDE OF TRAFFIC FLOW.
 - W401 AND W402 SIGNS SHALL COMPLY WITH THE LATEST EDITION OF THE SA ROAD TRAFFIC SIGNS MANUAL.
- B. EMERGENCY ACCESS
- TO BE PLACED AT SAFE LOCATIONS WHERE THERE IS NO INTERFERENCE WITH DRAINAGE.
 - ENSURE 300m SIGHT DISTANCE TO BOTH SIDES.

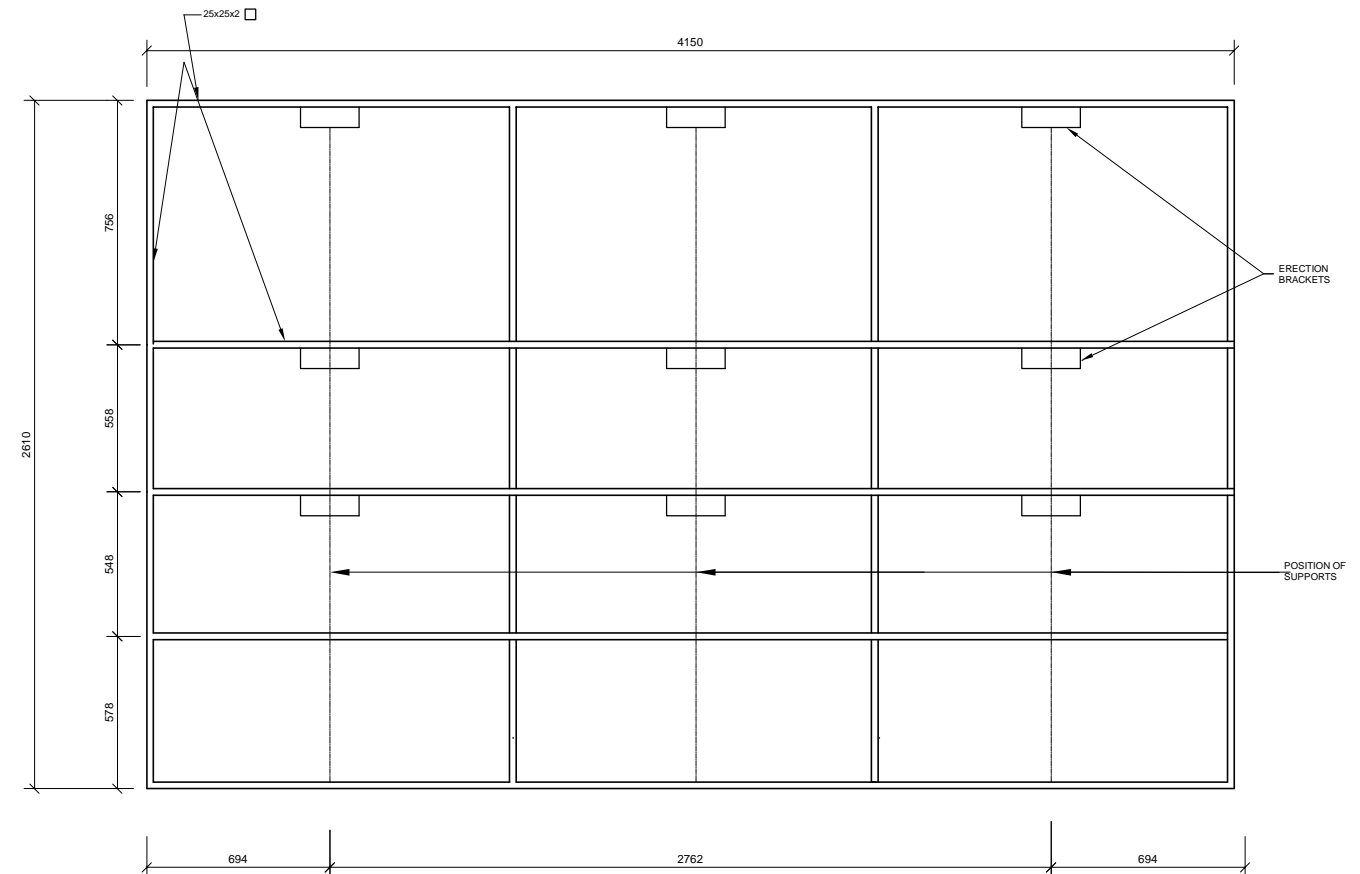
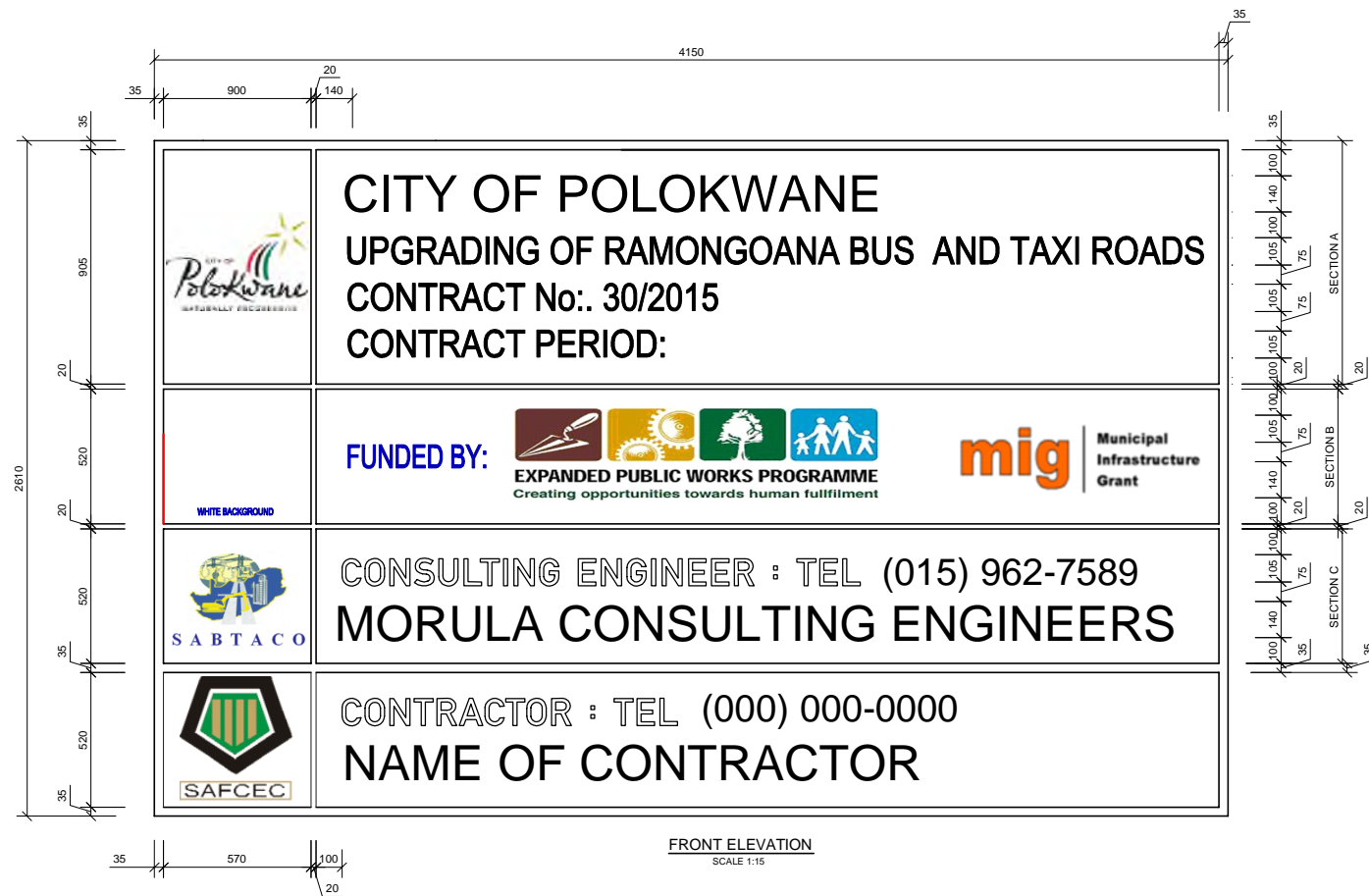
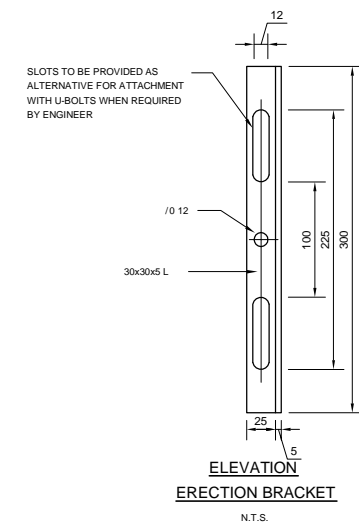
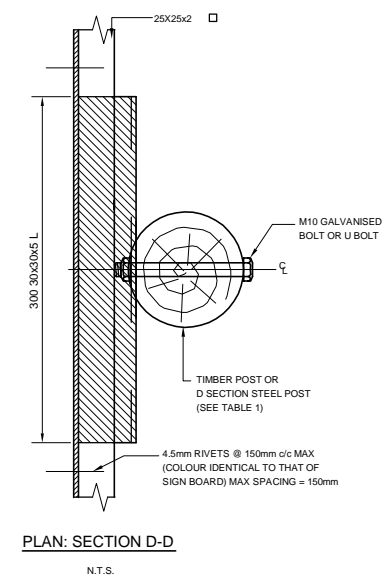
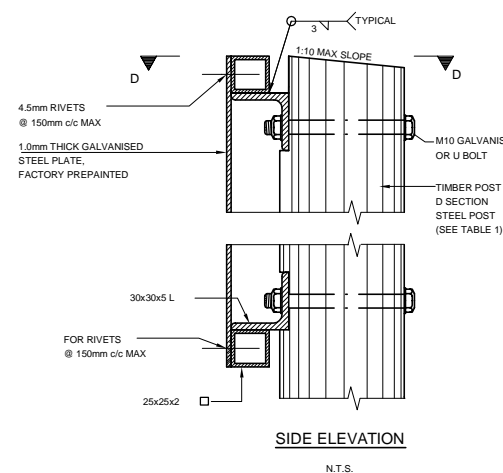
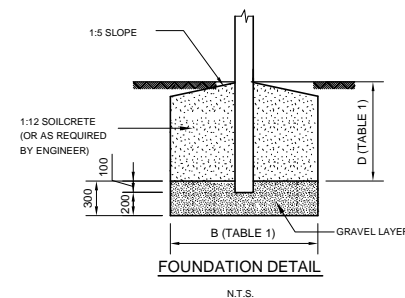


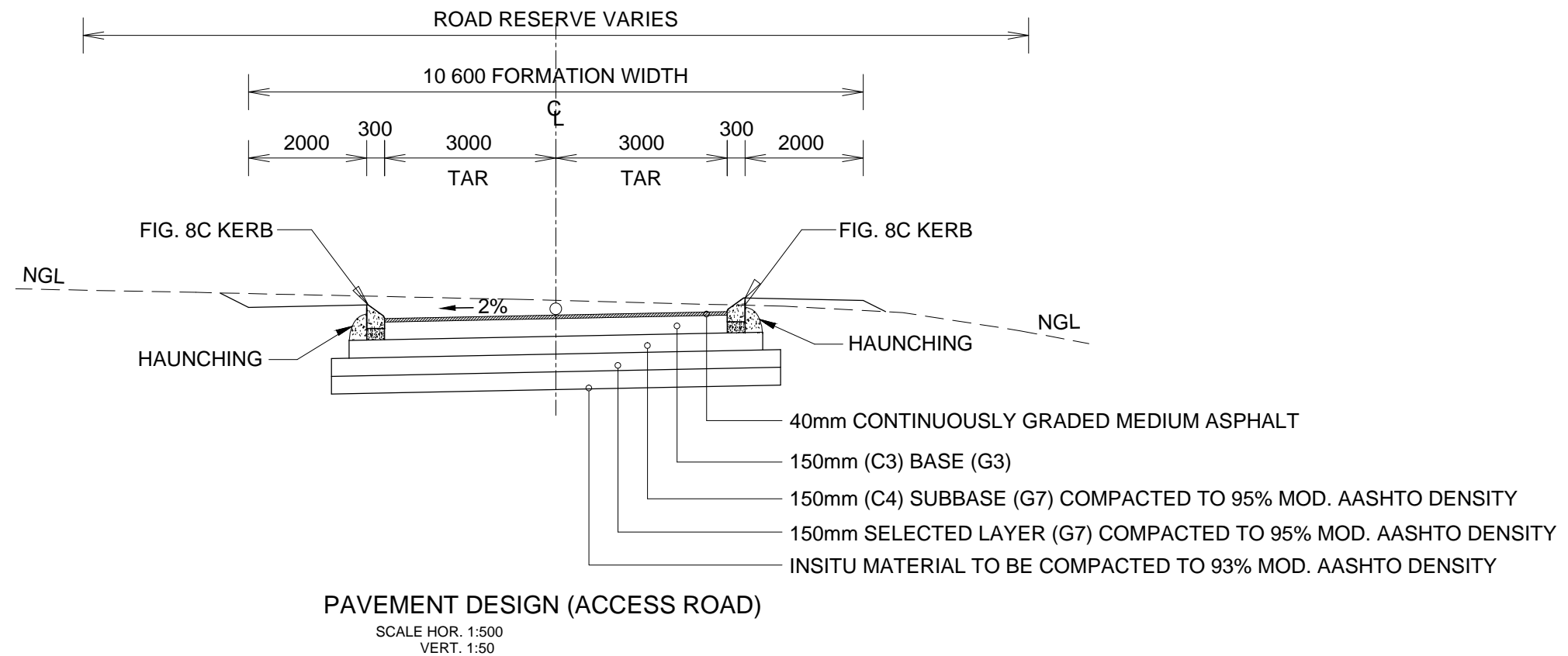
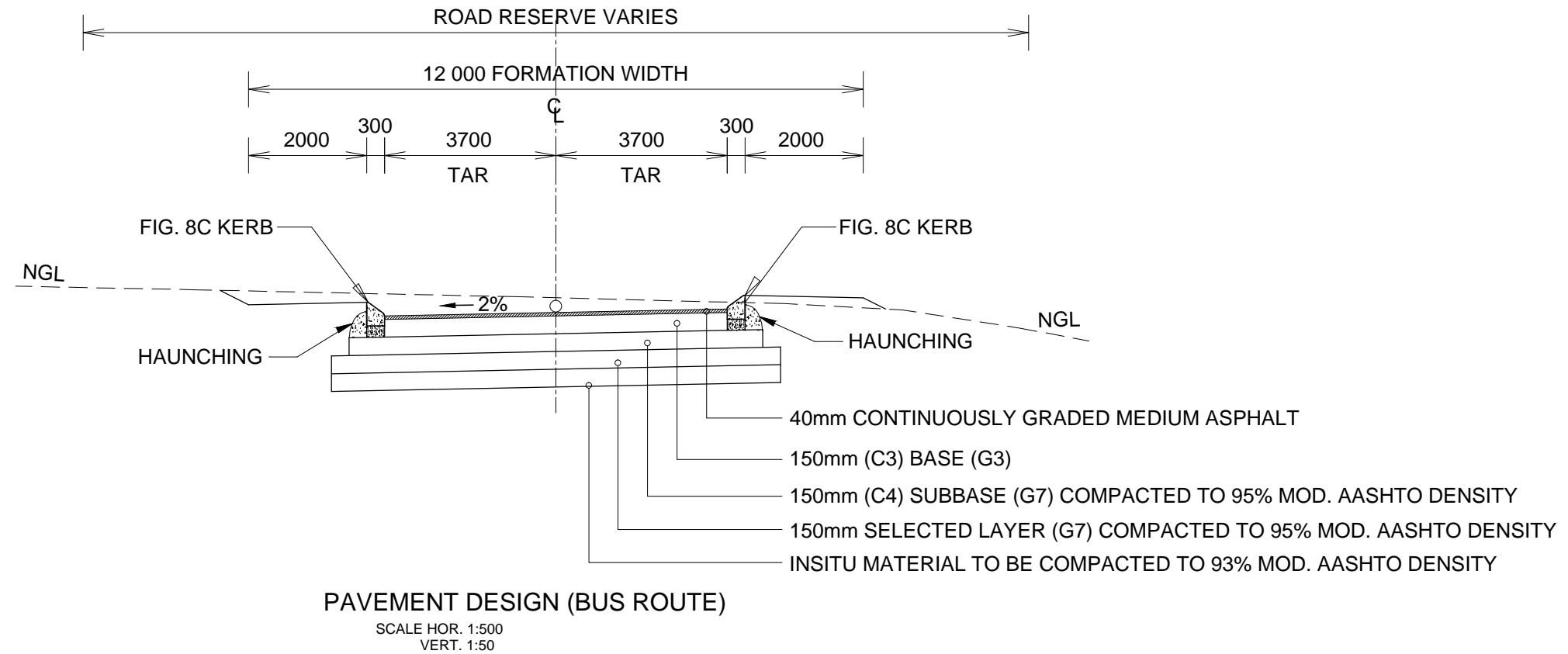
TABLE 1				
ERECTION DETAILS				
TYPE POST	UPRIGHT	STAY	D	B
TIMBER POST AND STAY	80mm	80mm	600mm	750mm
TIMBER POST	160mm	-	900mm	1350mm
D SECTION STEEL POST	100mm x 4mm	-	900mm	1350mm



NOTE:

- ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEMI-MATT BACKGROUND.
- DESCRIPTION: MATT-BLACK, SERIES DIN B LETTERS AND NUMBERS ON A SEMI-MATT SMOKE-GREY BACKGROUND (PANTONE 429U).
- BORDER : GREEN NON-REFLECTORIZED.
- TWO SIGN BOARDS SHALL BE ERECTED AS DETERMINED BY THE ENGINEER.
- DESCRIPTION OF WORK (NUMBER OF KILOMETRES AND TYPE OF WORK, eg "13.5 km RE= CONSTRUCTION OF ROAD 1974"). DESCRIPTION STARTS CENTERED ON THE LEFT-HAND SIDE AND IN THE FIRST 105mm-DIMENSION BELOW "MAKHADO LOCAL MUNICIPALITY".
- (a) SAFCEC EMBLEM ONLY, IF CONTRACTOR IS A MEMBER, ALL OTHER CASES, INCLUDING DEPARTMENTAL CONSTRUCTION, REMAIN BLANK.
 (b) IF DEPARTMENTAL CONSTRUCTION, THE CONTRACTOR AND TELEPHONE ARE REPLACED WITH ROAD AGENCY LIMPOPO (PTY) LTD CONSTRUCTION UNIT : TEL : 7. SABTACO LOGO TO BE OBTAINED FROM SABTACO, JOHANNESBURG.



DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
CHECKED BY	H.T.			UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		TM	SCALE
DRAWN BY	F.M.	P.O. Box 111 POLOKWANE 0700 TEL: (015) 290-2077 FAX: (086) 613-9626	P.O. Box 2740 POLOKWANE 0700 Tel: (015) 296-3631 Fax: (086) 613-9626			For Consulting Engineer	AS SHOWN
CHECKED BY	H.T.					DRAWING NUMBER	REVISION



					DESIGNED BY	F.M.	CITY OF POLOKWANE	MORULA CONSULTING ENGINEERS	CONTRACT No.: 30/2015	TYPE OF PLANNING: PRELIMINARY	DETAIL DESIGN (Full signature)	SHEET 1 OF 1
					CHECKED BY	H.T.	P.O.Box 111 POLOKWANE 0700	 P.O.Box 2740 POLOKWANE 0700	UPGRADING OF RAMONGOANA BUS AND TAXI ROADS		20 / /	SCALE
					DRAWN BY	F.M.	TEL: (015)290-2077 FAX: (086) 613-9626	CONSULTING ENGINEERS & PROJECT MANAGERS "a new dawn"			20 / /	AS SHOWN
					CHECKED BY	H.T.	 NATURALLY PROGRESSIVE	TEL: (015) 296-3631 FAX: (086) 558-6446	TYPICAL CROSS SECTION		DRAWING NUMBER MC/CP/RBR/XS/01	REVISION 0
No	DATE	REVISION	CONSULT	DIR								

