



Tender

CONSTRUCTION OF A MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ

AT THE

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

CONTRACT NO: EB/DRG/11/20/Z1A

**CONSTRUCTION OF A MANUFACTURING
FACILITY IN ZONE 1A OF THE ELIDZ**

ENVELOPE A: TECHNICAL PROPOSAL

VOLUME 1 OF 2

East London IDZ
Lower Chester Road
Sunnyridge, East London
Contact person: Ms. Anathi Mzantsi
Email: anathi@elidz.co.za

Pulana Baxter and Associates Quantity Surveyors
30 Chamberlain Road, Berea, East London, 5241
Contact Person: Mr. Inga Jakavula
Tel: 043 – 721 0984
Email: inga@pba.co.za

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Envelope A: Technical Proposal Volume 1 of 2

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Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

PART T1: TENDERING PROCEDURES

CONTRACT NO: EB/DRG/11/20/Z1A

**CONSTRUCTION OF A MANUFACTURING
FACILITY IN ZONE 1A OF THE ELIDZ**

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

**T1.1: TENDER NOTICE AND INVITATION TO
TENDER**

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

T.1.1: TENDER NOTICE AND INVITATION TO TENDER

INVITATION: CONSTRUCTION OF A MANUFACTURING FACILITY IN ZONE 1A OF THE EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

The East London Industrial Development Zone SOC Ltd is the operator of the East London Industrial Development Zone (ELIDZ), an entity which exists to help manufacturers to become globally competitive through the development and efficient management of a modern, purpose built industrial location, which offers investing industries a streamlined business environment enhanced by a range of supporting services. The zone is already operational and currently houses a number of manufacturers that supply products for the local and international markets.

SCOPE OF WORK

Tenders are hereby invited by the East London Industrial Development Zone SOC Ltd from suitably qualified and experienced Building Contractors to undertake the Construction of a Manufacturing Facility in Zone 1A of the East London Industrial Development Zone, located at our facilities within the West Bank area of the Buffalo City Metropolitan Municipality.

The successful tenderer will be required to enter into a Contract to undertake the construction.

Tender Reference No.	Tender Description / Name	Closing Date / Time
EB/DRG/11/20/Z1A	Construction of a Manufacturing Facility in Zone 1A of the ELIDZ	02 July 2021 at 12h00

The scope of work comprises of a new single storey, steel factory building with undercover loading with one dock leveler, an off-loading area and a single storey office block. There is an external guardhouse and waste storage area.

Factory

- Single storey factory building with a free inside height varying between 6m and 8m.
- Two covered canopies (off loading/loading) with one dock-leveler.

Office Building, Canteen and Ablutions / Change Rooms.

- Single storey office building, with canteen and ablutions / change rooms with in-situ concrete surface bed. The external walls consist of plastered and painted brickwalls.
- The internal walls between the factory and office block are brickwork, majority of the office internal walls will be drywalling.

Other Facilities

- Workshop and compressor room with in-situ concrete surface bed. The external walls consist of plastered and painted brickwalls.
- Waste storage building is a single storey steel framed brick building.
- The guardhouse is a single storey brick building.

General

- Concrete hardstands/roads.
- An entrance and exit on the western side of the site.
- New site services.
- New fence and landscaping.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

BRIEFING MEETING (VIRTUAL):

It is **compulsory** for interested contractors to **register** with the ELIDZ as a **potential tenderer**.

Such registration as a potential tenderer must be affected by sending an email to Anathi Mzantsi at the ELIDZ, confirming your interest in tendering. Your email is to be received by no later than **10 June 2021 at 12h00**.

Please make use of the following e-mail address for such registration:
anathi@elidz.co.za

Interested contractors who have **not** registered by the due date and time will **not** be entitled to submit a tender.

An online Teams meeting request (with link) will be emailed to all registered potential tenderers by no later than **11 June 2021 at 17h00**.

A virtual **Tender Clarification Meeting** with representatives of the Employer will take place with the **registered potential tenderers** via Teams on **15 June 2021 starting at 11h00**.

BID CONDITIONS:

- ☐ Tenderers are required to submit a Valid SARS Tax Clearance Certificate with their tender or SARS PIN number.
- ☐ Tenderers should submit a Valid original or certified B-BBEE certification. Companies with annual turnover less than R10 million to submit an accountant or SARS letter confirming turnover or DTI Affidavit
- ☐ Tenderers to provide a certified copy of Company Registration Certificate.
- ☐ The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
- ☐ The Tenderer is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing.
- ☐ The tenderer has a bank rating equal to and or better than a C. (Note letter from Bank to exclude tendered amount).
- ☐ The Tenderer has not abused the Employer's Supply Chain Management System.
- ☐ The Tenderer has not failed to perform on any previous contract and has been given a written notice to this effect.
- ☐ The Tenderer complies with the legal requirements, stated in the Tender Data.
- ☐ Tenderers to provide Letter of Good Standing from Compensation Commissioner.
- ☐ Tenderers must submit technical and financial proposals in two separate envelopes clearly marked "Envelope A -Technical Proposal" and "Envelope B – Financial Proposal". The financial proposal will only be opened should the technical proposal be deemed responsive.
- ☐ Non-signed "Form of Offer" the financial proposal in "Envelope B" submission will result in the disqualification of the Tenderer.
- ☐ Inclusion of Price Offer and / or any other price related details in "Envelope A -Technical Proposal" will result in the disqualification of the Tenderer.
- ☐ The successful Tenderer will be required to have sufficient and competent staff available to commence full time operations in accordance with the contract with effect from the Commencement Date, failing which the contract will be awarded to the next most preferred Tender.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- ❑ Registration with the CIDB in the category **8 GB** is compulsory for companies wishing to submit tenders
- ❑ All returnable documents and schedules as listed in T2.1 of Volume 2 of 2: List of Returnable Documents.
- ❑ A registered operational office within the Buffalo City Metropolitan Municipality boundaries and the Eastern Cape Province will be given preference.
- ❑ Proof of registration on CSD – MAAA number.
- ❑ Submit signed declaration of 100% Local content and production, for Steel and Steel components.
- ❑ The successful tenderer must **sub-contract a minimum of 30%** of the value of the contract to designated SMME from within the BCMM area. SMME profile must meet **51% Black ownership**. Database for selection provided by ELIDZ.
- ❑ Submit signed declaration to **sub-contract a minimum of 30%** of the value of the contract to designated SMME from within the BCMM area. SMME profile must meet **51% Black ownership**.
- ❑ ELIDZ encourages contractors to joint venture between registered contractors or to those tenderers that particularly have lower contractor grading designations and are registered as potentially emerging contractors.
- ❑ Unincorporated Joint Ventures are required to compile a consolidated verified BBBEE certificate in order to achieve Preferential Points.

EVALUATION:

Two envelope procedure:

Method 2: Functionality, Price and Preference

In the case of a functionality, price and preference:

- 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the tender data.
- 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.
- 3) Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points.

The evaluation will be guided by the ELIDZ Procurement Policy. Points will be awarded on the basis of Price and BBBEE.

Score breakdown:

- ❑ 90 Points for Price
- ❑ 10 Points for BBBEE

All tenders not providing compulsory responsive documentation and with functionality scoring less than 75 points, will not be considered for the next stage of tender evaluation

TENDER DOCUMENT & SUBMISSION:

The RFP document will be available for download at no cost from **04 June 2021 at 12h00** from the East London Industrial Development Zone website: **www.elidz.co.za under Opportunities >> Tenders**.

The tender must be returned in two separate sealed envelopes clearly marked "Envelope A - Technical Proposal" and "Envelope B - Financial Proposal" with each marked "Confidential" and with the name/address of the submitting company and the tender reference number on each envelope. Both envelopes are to be deposited in the Tender Box at the offices of East London Industrial Development Zone SOC Ltd Corporate Head Office, Lower Chester Road, East London on or before **12h00 on 02 July 2021**. Late or incomplete tenders will not be considered. ELIDZ will not be responsible for tenders placed in an incorrect tender box.

ELIDZ will not be responsible for tenders placed in an incorrect tender box.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

No late tenders will be accepted. The complete set of tender documentation must be returned with the submission and only original intact tenders will be considered.

Telegraphic, telephonic, telex, facsimile and e-mail tenders will not be accepted.

TENDER ENQUIRIES:

Queries relating to the issue of these documents may be addressed to Ms. Anathi Mzantsi, by email at anathi@elidz.co.za.

T1.2: TENDER DATA

Project title:	CONSTRUCTION OF A MANUFACTURING FACILITY IN ZONE 1A OF THE EAST LONDON INDUSTRIAL DEVELOPMENT ZONE		
Contract No:	EB/DRG/11/20/Z1A		
Advertising date:	03 June 2021	Closing date:	02 July 2021
Closing time:	12h00	Validity period:	120 Days
Clause number			
	<p>The Conditions of Tender applicable to this contract are the Standard Conditions of Tender as contained in Annexure F of the <u>CIDB Standard for Uniformity in Construction Procurement (10 July 2015)</u> as published in Government Gazette No. 38960, Board Notice 136 of 2015. This Annexure is reproduced hereafter as an Appendix for the convenience of Tenderers.</p> <p>The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender.</p> <p>Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.</p>		
F.1.1	The employer is the East London Industrial Development Zone SOC Ltd		
F.1.2	<p>The tender documents issued by the employer comprise:</p> <p>Envelope "A"</p> <p>Volume 1 of 2: TECHNICAL PROPOSAL</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 Functionality Scoring Criteria</p> <p>F Standard Conditions of Tender</p> <p>Part C3: Scope of work</p> <p>C3.1 Scope of Work</p> <p>C3.2 Design Specifications and Criteria</p> <p>C3.3 Health and Safety Specifications</p> <p>C3.4 Construction Environment Management Plan</p> <p>C3.5 HIV/AIDS Specification</p> <p>C3.6 National Treasury Designated Sectors Minimum Local Content Specification</p> <p>C3.7 SMME Specifications</p> <p>C3.8 Standard for Developing Skills through Infrastructure Contracts</p> <p>Part C4: Site information</p> <p>C4. Site Information</p> <p>Part C5: Geotechnical report</p> <p>C5. Geotechnical report</p> <p>Part D1: DRAWINGS</p> <p>D1. List of drawings included in the tender document</p>		

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

	<p>Envelope "A" Volume 2 of 2: TECHNICAL PROPOSAL: RETURNABLE SCHEDULES</p> <p>Part T2: Returnable documents T2.1 List of Returnable Documents T2.2 Returnable Documents (Compulsory Submissions) T2.3 Returnable Documents (Forms – Submissions for Evaluation) T2.4 Returnable Documents (For Functionality Scoring)</p> <p>Envelope "B" FINANCIAL PROPOSAL</p> <p>Part C1: Agreements and contract data C1.1 Contract Data C1.2 Form of Guarantee</p> <p>Part C2: Pricing data C2.1 Pricing Instructions C2.2 Provisional Bills of Quantities C2.3 Schedule for Imported Material and Equipment C2.4 Guarantor Proforma Letter of Intent C2.5 Form of Offer and Acceptance C2.6 Declaration Certificate for Local Production and Content for Designated Sectors</p>										
F.1.4	<p>The Employer's Agent is</p> <table border="1"> <tr> <td>Name:</td><td>Rob Gillard</td></tr> <tr> <td>Address:</td><td>Intsika Architects Physical address: 1st Floor, Leadwood House, Cedarsquare Bonza Bay, Beacon Bay East London 5241</td></tr> <tr> <td>Tel:</td><td>043 748 2949</td></tr> <tr> <td>Fax:</td><td>043 748 1702</td></tr> <tr> <td>E-mail:</td><td>Email: rob@intsika.com</td></tr> </table>	Name:	Rob Gillard	Address:	Intsika Architects Physical address: 1 st Floor, Leadwood House, Cedarsquare Bonza Bay, Beacon Bay East London 5241	Tel:	043 748 2949	Fax:	043 748 1702	E-mail:	Email: rob@intsika.com
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Tel:	043 748 2949										
Fax:	043 748 1702										
E-mail:	Email: rob@intsika.com										
F.2.1	<p>The following tenderers who are registered with the <u>CIDB</u>, or are capable of being so registered prior to submissions, are eligible to submit tenders:</p> <p>a) Contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 8 GB class of construction work.</p> <p>Joint Ventures are eligible to submit tenders providing that:</p> <p>Every member of the JV is registered with the <u>CIDB</u> the joint venture contractors are to comply with Table 9 of the <u>CIDB</u> Regulations. Unincorporated Joint Ventures are required to compile a consolidated verified. BBBEE certificate in order to achieve Preferential Points. JV agreement is submitted indicating the participation split of members of JV.</p>										

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

F.2.7	<p>Tender briefing meeting:</p> <p>It is compulsory for participants to register by sending an email to anathi@elidz.co.za by no later than 10 June 2021 at 12h00. Tenderers who did not register by the due date and time will not be allowed to submit a tender. A virtual Briefing or Tender Clarification Meeting with representatives of the Employer will take place via Teams virtual platform on 15 June 2021 starting at 11h00.</p> <p>Compulsory registration: Send email with company information, contact name and contact number to anathi@elidz.co.za.</p> <p>Registration due date: 10 June 2021 at 12h00</p> <p>Virtual briefing: Teams virtual platform</p> <p>Zoom invitation: Email invitations with Teams link will be forwarded by 11 June 2021 at 17h00 to all registered participants</p>
F.2.10.5	<p>Add the following Clause:</p> <p>Tenderers are to submit a fully completed schedule of rates with their tender, failure to do so will result in the tender being deemed non-responsive and disqualified.</p>
F.2.12.1	Alternative tender offer NOT permitted.
F2.13.2	The tender document, fully completed by hand in black ink, is to be deposited in the tender box in East London Industrial Development Zone SOC Ltd Corporate Head Office.
F2.13.3	Only the original tender submission is required.
F2.13.5	The original tender offer is to be placed in two sealed envelopes, marked Volume A and Volume B, and marked with the Tender Number and Description as well as the Tenderers Name and Address on both envelopes.
F2.13.6	A two-envelope procedure will be followed.
F2.14	The ELIDZ will disqualify any submission which is not suitably endorsed or which is not comprehensively completed.
F2.15.1	Submissions that are not received on or before the closing time will, in terms of the ELIDZ procurement policy, not be considered.
F.2.16.1	The tender offer validity period is 120 days.
F2.16.5	<p>Add the following Clause:</p> <p>Accept that should the Tenderer unilaterally withdraw his tender during this period, the Employer shall, without prejudice to any other rights he may have, be entitled to accept any less favourable tender for the Works from those received, or to call for fresh tenders, or to otherwise arrange for the execution of the Works, and the Tenderer shall pay on demand any additional expense incurred by the Employer on account of the adoption of the said courses, as well as either the difference in cost between the tender withdrawn (as corrected in terms of Clause 3.9 of the Conditions of Tender) and any less favourable tender accepted by the Employer, or the difference between the tender withdrawn (as corrected) and the cost of execution of the Works by the Employer as well as any other amounts the Employer may have to pay to have the Works completed.</p>

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

F2.20	<p>Add the following to the Clause:</p> <p>Accept that the Employer or his Agent, reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of the individual members of any joint venture that is constituted for purposes of this Contract, with a view to ascertain whether the required guarantee will be furnished, and for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such joint venture. Only guarantees that are submitted in the format provided will be accepted.</p>
F2.23	<p>The tenderer is required to submit with his tender:</p> <ul style="list-style-type: none"> • Tenderers are required to submit a Valid SARS Tax Clearance Certificate with their tender or SARS PIN number. • Tenderers should submit a valid original or certified B-BBEE certification. Companies with annual turnover less than R10 million to submit an accountant or SARS letter confirming turnover or DTI Affidavit • Tenderers to provide certified copy of Company Registration Certificate • Tenderers to provide Letter of Good Standing from Compensation Commissioner. • Tenderers must submit technical and financial proposals in two separate envelopes clearly marked "Envelope A -Technical Proposal "and "Envelope B – Financial Proposal". Then the financial proposal will only be opened should the technical proposal be found to be acceptable. • Non- signed "Form of Offer" the financial proposal in "Envelope B" submission will result in the disqualification of the tender. • Inclusion of Price Offer and/ or any other price related details in "Envelope A -Technical Proposal "will result in the disqualification of the tender. • Proof of Registration with the CIDB in the category 8 GB. • Proof of registration on CSD – MAAA number. • The tenderer must submit a bank rating equal to and or better than a C. (Note letter from Bank to exclude tendered amount). • All returnable documents and schedules as listed in T2.1 of Volume 2 of 2: List of Returnable Documents. • Submit signed declaration of 100% Local content and production, for Steel and Steel components. • The successful tenderer must sub-contract a minimum of 30% of the value of the contract to designated SMME from within the BCMM area. SMME profile must meet 51% Black ownership. Database for selection provided by ELIDZ. • Submit signed declaration to sub-contract a minimum of 30% of the value of the contract to designated SMME from within the BCMM area. SMME profile must meet 51% Black ownership. • Unincorporated Joint Ventures are required to compile a consolidated verified BBBEE certificate in order to achieve Preferential Points.
F3.4	<p>Tender submissions will be opened at the offices the ELIDZ immediately after the closing time.</p>
F3.11.1	<p>Method 2: Functionality, Price and Preference</p> <p>The procedure of the evaluation of tenders is the two-envelope system.</p> <p>In the case of a functionality, price and preference;</p>

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

	<p>1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the tender data.</p> <p>2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.</p> <p>Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points system.</p> <p>Tender evaluation will be carried out using the 90/10 preference point system, where:</p> <ul style="list-style-type: none"> ▪ A maximum of 90 points are allocated for financial offer. ▪ A maximum of 10 points are allocated for preference. <p>The above mentioned evaluation will be subject to offers being responsive and passing the functionality criteria prescribed in the attached schedule.</p>
<p><u>Financial Offer Evaluation</u></p> <p>The score achieved for financial offer will be determined using formula 2 (option 1) as follows:</p> $\text{Points awarded} = 90 \left[1 - \frac{P - P_m}{P_m} \right]$ <hr/> <p>Where P = the comparative offer of the tender offer under consideration P_m = the comparative offer of the lowest responsive tender</p>	
<p><u>Preference Evaluation Criteria</u></p> <ul style="list-style-type: none"> • A maximum of twenty (10) points will be awarded to a tenderer for achieving BBBEE objectives. BBBEE points shall be computed using a relevant scorecard as guided by the company's annual turnover. This is in accordance with the new Codes of Good Practice. BBBEE evaluation shall be done based only on the information submitted in the ELIDZ Procurement Handbook. No points will be awarded for achieving BBBEE objectives if the total percentage scored for BBBEE is less than 30%. • The tender will be awarded to the bid with the highest number of points. A tender may be awarded to a bidder that did not score the highest number of points if reasonable and justifiable grounds exist. • Any contract offered by the ELIDZ will be based on the correctness of information submitted by the service providers. Any misrepresentation of facts by a service provider may lead to disqualification. Should such misrepresentation be uncovered after the commencement of the contracted work, the ELIDZ reserves the right to terminate the contract and recover all payments made to that service provider and any costs that may have been incurred in the process. • ELIDZ reserves the right to have the tenderer's Black Economic Empowerment Credentials verified by an independent agency. Returnable documents ELIDZ Procurement Handbook must be fully completed and supplementary information may be forwarded to reflect on empowerment initiatives not covered in the form. • In instances of a joint venture, each participating person and/or company and/or firm must complete and submit the enclosed ELIDZ Procurement Handbook (copies available on request) with the proposal together with all profit sharing percentage information. 	
F3.13.1	Tender offers will only be considered if:

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

	<ul style="list-style-type: none"> a) The tenderer has in his or her possession an original valid Tax Clearance Certificate issued by the South African Revenue Services. b) The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector. c) The tenderer is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing. d) The tenderer complies with the legal requirements, stated in the Tender data, e) The tenderer has not: <ul style="list-style-type: none"> i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect. f) Proof of registration with the Compensation Commissioner is submitted with this tender. g) Proof of Company Registration is submitted with this tender. h) Proof of of Registration with the <u>CIDB</u> in the category 8 GB is submitted with this tender. i) The tenderer has a bank rating equal to and or better than a C. (Note letter from Bank to exclude tendered amount). j) The successful Tenderer will be required to have sufficient and competent staff available to commence full time operations in accordance with the contract with effect from the Commencement Date, failing which the contract will be awarded to the next most preferred Tender. k) Proof of registration on CSD – MAAA number. l) All returnable documents and schedules as listed in T2.1 of Volume 2 of 2: List of Returnable Documents have been completed and submitted with this document.
F.3.18	The number of paper copies of the signed contract to be provided by the employer is 1 (one).

T1.3: FUNCTIONALITY SCORING CRITERIA

T1.3: FUNCTIONALITY SCORING CRITERIA

Tenderers scoring less than 75 points for Functionality will not be considered further and the envelope containing their Financial Proposal will be returned unopened.

Tenderers are to submit information in respect of the following criteria upon which they will be scored for Functionality. Provision is made for Tenderers to submit this information in Envelope A Technical Proposal, Volume 2 of 2 - Returnable Schedules. Failure to submit the relevant information will result in zero scores in the applicable categories.

DETAILED BREAKDOWN OF FUNCTIONALITY POINTS

Details	Points Score	Max. Points
Criteria 1: Approach		25
1.1 Construction Programme		
Draft a Detailed Construction Programme (MS Projects) relevant to the Scope of Work. The Programme must demonstrate the Tenderer's approach and allocation of resources to achieve activities within timeframes and clearly indicate the critical path as well as integrate the Tenant installation requirements:		
Good (Submitted a construction programme acceptable for approval by the Principal Agent with innovative programming interventions to accelerate project objectives.)		15
Acceptable (Provided a detailed and convincing construction programme and demonstrated implementability to meet project objectives.)		10
Poor (Provided a construction programme but details are missing.)		5
Unacceptable (Does not demonstrate basic programming techniques & capabilities to meet project objectives.)		0
1.2 Methodology and Execution Strategy		
Tenderer demonstrates the ability to implement the Construction Programme and have a work implementation strategy assigned to the respective tasks for the optimization of resources and activities incorporating the Tenant installation requirements:		
Good (Submitted a methodology and execution strategy that demonstrates clearly how the project objectives will be met along with a clear risk management plan. An innovative approach is to be presented that ensures successful implementation of critical activities.)		10
Acceptable (Provided a detailed methodology and execution strategy with associated activities and resource optimization synchronized to meet the project objectives. A multi-disciplinary approach is to be documented with special emphasis on the management of all subcontractors and the accommodation of direct contractors. The methodology is to include a schedule of required construction plant and resources required for the successful implementation of the project.)		8
Poor (Provided a basic implementation strategy but lacks a clear understanding of the project scope and detailed deliverables (multi-disciplinary).)		4

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Unacceptable (Does not demonstrate a basic implementation strategy linked with the construction programme and project objectives.)		0
Criteria 2: Tenderer's Expertise and Resources		45
2.1 Management Organogram and Key Staff		
2.1.1 Provide an adequately resourced project organogram with supporting CV's and qualifications and professional registration (where required):		
Good (Submitted a comprehensive and detailed organogram and including the necessary mechanisms to ensure that staff performs at the required levels. The plan is to demonstrate that all disciplines, activities and sub-contractors will be managed and implemented successfully. Key team members are to have performed work of a similar nature.)		5
Acceptable (Provided a detailed organogram with appropriately qualified and experienced key team members. The project team is to be able to implement a multi-disciplinary project including management of domestic, selected and direct subcontractors. Key team members are to have performed work of a similar nature and be professionally registered where required.)		4
Poor (Provided a basic project organogram but are not convincing that the project team is capable of meeting the project objectives. Comprehensive CV's and qualifications of key team members are not adequate.)		2
Unacceptable (Does not demonstrate that the project organogram and project team will be able to meet the project objectives.)		0
2.1.2 Contractor Contracts Manager (CCM) (10 years minimum experience and Professionally Registered as a Pr CM):		
Should the Contract's Manager not be professional registered as a Pr CM, only 50% of the available points will be allocated in line with the experience.		
If CPM has ≥ 20 years' appropriate experience and has completed similar projects successfully in the last 5 years.		10
If CPM has ≥ 15 years' appropriate experience and has completed similar projects successfully in the last 5 years.		8
If CPM has ≥ 10 years' appropriate experience and has completed similar projects successfully in the last 5 years.		4
If CPM has ≥ 10 years' appropriate experience but has NOT completed a similar project in last 5 years, regardless of other experience.		0
2.1.3 Site Agent (SA) (7 years minimum experience):		
If SA has ≥ 15 years' appropriate experience and has completed similar projects successfully in the last 5 years.		10
If SA has ≥ 10 years' appropriate experience and has completed similar projects successfully in the last 5 years.		8
If SA has ≥ 7 years' appropriate experience and has completed similar projects successfully in the last 5 years.		6

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

If SA has ≥ 7 years' appropriate experience but has NOT completed a similar project in the last 5 years, regardless of other experience.		0
<u>2.2 Relevant Experience</u>		
5 points to a maximum of 20 points can be scored for each confirmed similar (size, type and timeframes) project in progress or carried out in the last 5 years:		20
If no similar successful projects in the last 5 years.		0
Criteria 3: Health, Safety and Environment		10
OHS and CEMP performance:		
Acceptable (Over and above the abovementioned the Tenderer submitted a Health and Safety File adequate for approval by the ELIDZ's OHS Agent and for submission to the Department of Labour for the issue of a Construction Work Permit.)		10
Unacceptable (Does not demonstrate a basic OHS and CEMP implementation strategy linked with the construction programme and project objectives.)		0
Criteria 4: Local Operational Office		20
<u>4.1 Local Operation Office</u>		
Office to consist of; <ul style="list-style-type: none"> fully functional office, adequate administrative staff and adequate equipment. Yard to consist of; <ul style="list-style-type: none"> functional workshop and functional supporting infrastructure. Above facilities are to be adequate for relevant CIDB tender grade. Tenderers are to submit adequate supporting documentation to enable assessment and scoring for the above-mentioned office and yard requirements. The ELIDZ reserves the right to visit the premises prior to scoring.		
Proof of a local operational office (incl. yard) within the confines of the BCM Municipal area		20
Proof of an operational office (incl. yard) within the confines of the Eastern Cape area		10
No local office in operation		0
TOTAL EVALUATION SCORE FOR FUNCTIONALITY		100
TENDERERS WITH A SCORE OF LESS THAN 75 OUT OF 100 WILL NOT BE CONSIDERED FURTHER		

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

F: STANDARD CONDITIONS OF TENDER

F: STANDARD CONDITIONS OF TENDER**CIDB Standard Conditions of Tender****(July 2015 edition)**

As published in Annex F of the CIDB Standard for Uniformity in Construction Procurement in Board Notice 136 Government Gazette No 38960 of 10 July 2015

F.1 General**F.1.1 Actions**

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

F.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

F.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

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 of tender, the following definitions apply:

a) **conflict of interest** means any situation in which:

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;
- e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body; and
- f) **functionality** means the measurement according to the predetermined norms of a service or commodity designed to be practical and useful, working or operating, taking into account quality, reliability, viability and durability of a service and technical capacity and ability of a tenderer.

F.1.4 Cancellation and Re-Invitation of Tenders

Each communication between the employer and a tenderer shall be to or from the Principal Agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the Principal 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 An organ of state may, prior to the award of the tender, cancel a tender if:

- a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or
- b) funds are no longer available to cover the total envisaged expenditure; or no acceptable tenders are received.

F1.5.2 The decision to cancel a tender must be published in the CIDB website and in the government Tender Bulletin for the media in which the original tender invitation was advertised.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

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

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

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

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

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

F.2 Tenderer's obligations

F.2.1 Eligibility

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

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

F.2.2 Cost of tendering

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

F.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

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.

F2.10.2 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

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

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

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.2.12.3 An alternative tender offer may only be considered in the event that the main tender offer is the winning tender.

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, 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 legibly in non-erasable 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.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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. Accept that proof of posting shall not be accepted as proof of delivery.

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 with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the Principal Agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

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

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 competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

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

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.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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 requests from the tenderer**

F.3.1.1 Unless otherwise stated in the tender Data, 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.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

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

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 three 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 and, where applicable, the total of his prices, number of points claimed for its BBBEE status level and time for completion for the main tender offer only.

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

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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

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, after opening and before detailed evaluation, whether each tender offer properly received:

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

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

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

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or

- c) arithmetic errors in:
 - i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.

F.3.9.2 The employer must correct the arithmetical errors in the following manner:

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

Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of the arithmetical error in the manner described above.

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 them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Method 1: Price and Preference

In the case of a price and preference:

- a) Score tender evaluation points for price
- b) Score points for BBEE contribution
- c) Add the points scored for price and BBEE.

F.3.11.3 Methods 2: Functionality, Price and Preference

In the case of a functionality, price and preference:

- 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data.
- 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.
- 3) Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points system prescribed in paragraphs 4 and 4 and 5 below.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- 4)(a)(i) The following formula must be used to calculate the points for price in respect of tenders (including price quotation) with a rand value equal to, or above R 30 000 and up to Rand value of R 50 000 000 (all applicable taxes included):

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

Where

P_s = Points scored for price of tender under consideration;
 P_t = Price of tender under consideration; and
 P_{\min} = Price of lowest acceptable tender.

- 4)(a)(ii) An employer of state may apply the formula in paragraph (i) for price quotations with a value less than R30 000, if and when appropriate:

- 4)(b) Subject to subparagraph(4)(c), points must be awarded to a tender for attaining the BBBEE status level of contributor in accordance with the table below:

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

- 4)(l) A maximum of 20 points may be allocated in accordance with subparagraph (4)(b).
- 4)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (4) (b) must be added to the points scored for price as calculated in accordance with subparagraph (4)(a).
- 4)(l) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scores the highest total number of points.

90/10 system for requirements with a Rand value above R 50 million (all applicable taxes included).

- 5)(a) The following formula must be used to calculate the points for price in respect of tenders with a Rand value above R50 000 000 (all applicable taxes included):

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

Where

P_s = Points scored for price of tender under consideration;
 P_t = Price of tender under consideration; and
 P_{\min} = Price of lowest acceptable tender.

- 5)(b) Subject to subparagraph(5)(c), points must be awarded to a tender for attaining the BBBEE status level of contributor in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points
1	10
2	9
3	6
4	5
5	4
6	3

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

B-BBEE Status Level of Contributor	Number of points
7	2
8	1
Non-compliant contributor	0

- 5)l A maximum of 10 points may be allocated in accordance with subparagraph (5)(b).
- 5)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (5) (b) must be added to the points scored for price as calculated in accordance with subparagraph (5)(a).
- 5)l Subject to paragraph 4.3.8 the contract must be awarded to the tender who scores the highest total number of points.

F.3.11.6 Decimal places

Score price, preference and functionality, as relevant, to two decimal places.

F.3.11.7 Scoring Price

Score price of remaining responsive tender offers using the following formula:

$$N_{FO} = W_1 \times A$$

Where N_{FO} is the number of tender evaluation points awarded for price.

W_1 is the maximum possible number of tender evaluation points awarded for price as stated in the Tender Data.

A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1 ^a	Option 2 ^a
1	Highest price or discount	$A = (1 + \frac{(P - P_m)}{P_m})$	$A = P / P_m$
2	Lowest price or percentage commission / fee	$A = (1 - \frac{(P - P_m)}{P_m})$	$A = P_m / P$
^a P_m is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration.			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences.

Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring functionality

Score each of the criteria and sub criteria for quality in accordance with the provisions of the Tender Data.

Calculate the total number of tender evaluation points for quality using the following formula:

$$N_Q = W_2 \times S_O / M_S$$

where: S_O is the score for quality allocated to the submission under consideration;

M_S is the maximum possible score for quality in respect of a submission; and

W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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

Accept the tender offer, if in the opinion of the employer, it does not present any risk and only if the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data, and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents, and
- c) other revisions agreed between the employer and the successful tenderer.

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 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.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender, but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

F.3.19 Transparency in the procurement process

F.3.19.1 The CIDB prescripts require that tenders must be advertised and be registered on the CIDB Tender system.

F.3.19.2 The employer must adopt a transparency model that incorporates the disclosure and accountability as transparency requirements in the procurement process.

F.3.19.3 The transparency model must identify the criteria for selection of projects, project information template and the threshold value of the projects to be disclosed in the public domain at various intervals of delivery of infrastructure projects.

F.3.19.4 The client must publish the information on a quarterly basis which contains the following information:

- Procurement planning process
- Procurement method and evaluation process
- Contract type
- Contract status
- Number of firms tendering
- Cost estimate
- Contract title
- Contract firm(s)
- Contract price
- Contract scope of work
- Contract start date and duration
- Contract evaluation reports

F.3.19.5 The employer must establish a Consultative Forum which will conduct a random audit in the implementation of the transparency requirements in the procurement process.

F.3.19.6 Consultative Forum must be an independent structure from the bid committees.

F.3.19.7 The information must be published on the employer's website.

F.3.19.8 Records of such disclosed information must be retained for audit purposes.

PART C3: SCOPE OF WORK

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

C3.1: SCOPE OF WORK

C3.1: SCOPE OF WORK

1. DESCRIPTION OF THE WORKS

1.1. Employer's objectives

The Employer wishes to make available to the ELIDZ tenants the most up to date manufacturing facilities and is desirous of engaging a suitably competent Building Contractor to construct a **MANUFACTURING FACILITY** in Zone 1A at the East London Industrial Development Zone.

1.2. Overview of the works

The proposed works comprises of a new factory, office with staff canteen and change rooms / ablutions, workshop, compressor room refuse facility, guardhouse and associated external works, including civil engineering services and concrete hardstands.

1.3. Extent of the works

Factory

- Single-storey steel framed factory building with a free inside height of approximately 6m and 8m respectively (approx. 3 888 m²).
- Two covered canopies (off loading/loading) with one dock-leveler (36 m²).
- Logistics office on the factory floor (16 m²)

Office Building, Canteen and Ablutions / Change Rooms.

- Single storey office building (240 m²), canteen (98 m²) and ablutions / change rooms (101 m²) with in-situ concrete surface bed. The external walls consist of plastered and painted brickwalls.
- The internal walls between the factory and office block are brickwork, majority of the office internal walls will be drywalling.

Other Facilities

- Workshop (89 m²) and compressor room (37 m²) with in-situ concrete surface bed. The external walls consist of plastered and painted brickwalls.
- Waste storage (48m²) building is a single storey steel framed brick building.
- The guardhouse (19 m²) is a single storey brick building.

General

- Concrete hardstands/roads (approx. 2559 m²).
- An entrance and exit on the western side of the site.
- New site services.
- New fence and landscaping.

1.4. Location of the Works

Zone 1A of the East London Industrial Development Zone situated on the West Bank.

1.5. Temporary works

The Contractor must price for reinstating the dedicated contractors site area.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

The dedicated Contractor site is also to house the office for the Clerk of Works and Resident Engineers as well as the office accommodation for meetings.

Please refer to the image here below for the location and the extent of the site camp area dedicated to the Contractor .



2. CONSTRUCTION PROGRAMME

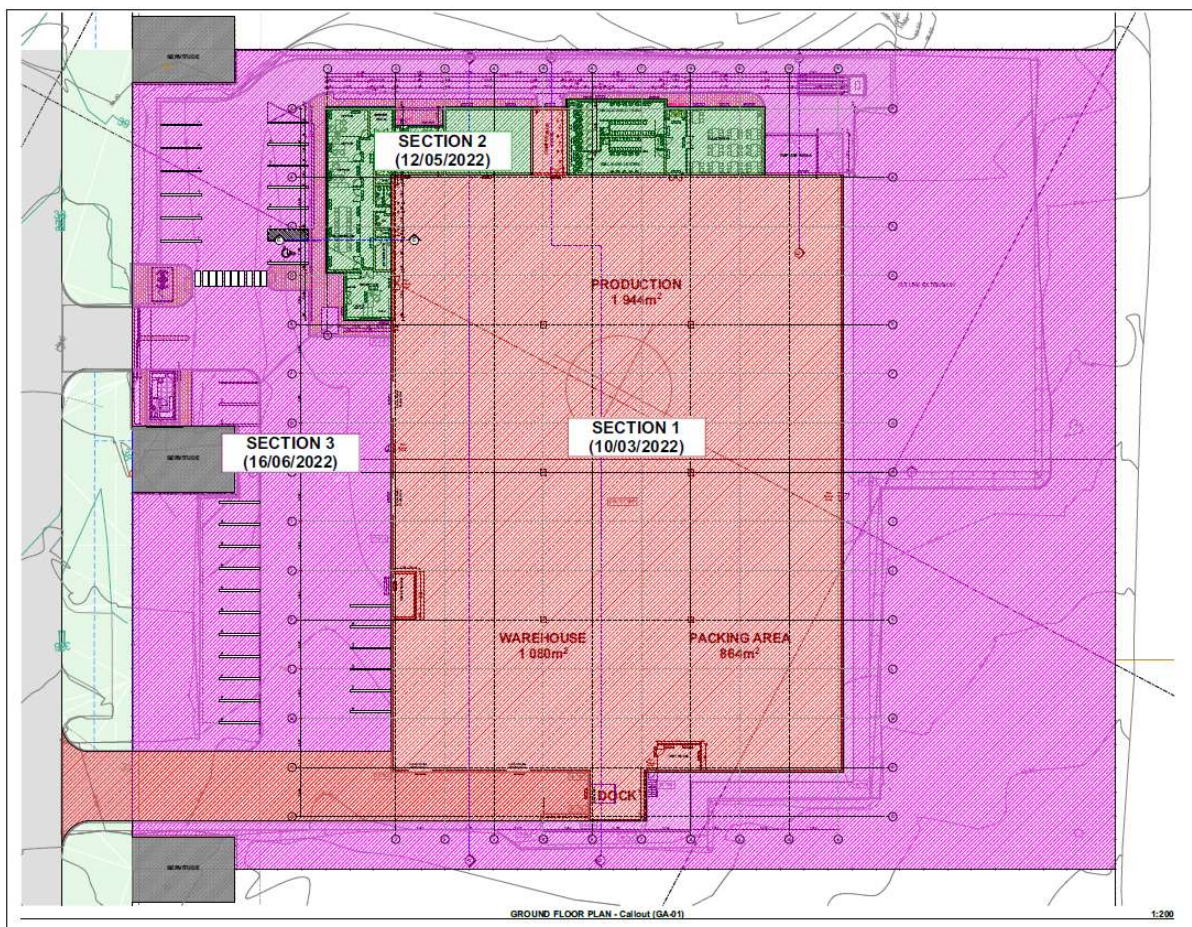
2.1. Sectional Completion

In order to meet the tenant's programme, the works will be divided into three distinct sections, each with its own Sectional Completion date. The apportionment of these three sections are described below:

- **Section 1:** Factory Production, Packaging and Warehouse Areas, incl. Dock Leveler, Logistics Office and Compressor Room, including covered loading and off-loading canopies (incl. finishes and all electrical / mechanical installations).
- **Section 2:** Offices, Canteen, Change Rooms / Ablutions and Workshop (incl. finishes and all electrical / mechanical installations).
- **Section 3:** Refuse Facility, Guardhouse, Hardstands, Civil Services and Remainder of the Works.

2.2. Sectional Completion Boundaries

Please refer to the image here below, which highlights the Sectional Completion Boundaries.



2.3. Detailed Description of Sections

The table hereunder is to be read in conjunction with the above drawing.

Sectional Completion Items	Section 1	Section 2	Section 3
Factory Production, Packaging and Warehouse Areas, incl. Dock Leveler, Logistics Office and Compressor Room, including covered loading and off-loading canopies (incl. finishes and all electrical / mechanical installations).	✓		
Offices, Canteen, Change Rooms / Ablutions and Workshop (incl. finishes and all electrical / mechanical installations).		✓	
Refuse Facility, Guardhouse, Hardstands, Civil Services and balance of the works.			✓

2.4. Sectional Completion Dates

- Refer to ENVELOPE B
- Part C1.1: CONTRACT DATA
- Item B11

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

**C3.2: PARTICULAR SPECIFICATIONS
CONSTRUCTION WORK**

C3.2: Particular Specifications



CONTRACT NO: EB/DRG/11/20/Z1A

MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ

INDEX:

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I. CORROSION PROTECTION: PAINT	20

A. GENERAL

The following SANS 1200 Standardised Specifications apply to this contract:

SABS 1200 C	:	Site Clearance
SABS 1200 D	:	Earthworks
SABS 1200 DB	:	Earthworks (Pipe Trenches)
SABS 1200 DM	:	Earthworks (Roads, subgrade)
SABS 1200 GA	:	Concrete (Small Works)
SABS 1200 L	:	Medium-Pressure Pipelines
SABS 1200 LB	:	Bedding (Pipes)
SABS 1200 LC	:	Cable Ducts
SABS 1200 LD	:	Sewers
SABS 1200 LE	:	Stormwater Drainage
SABS 1200 M	:	Roads (General)
SABS 1200 ME	:	Subbase
SABS 1200 MF	:	Base
SABS 1200 MK	:	Kerbing and Channeling
SABS 1200 MM	:	Ancillary Roadworks
SABS 1200 MJ	:	Segmented Paving

1. These notes to be read in conjunction with the drawings and project specifications.
2. All structural drawings to be read in conjunction with the relevant architectural, civil, mechanical & electrical engineers' drawings, the specifications and the tender documentation. Any errors, omissions & discrepancies to be brought to the attention of the engineer immediately.
3. Where conflicting specifications between the drawings & bill of quantities occur, the drawing specifications will take preference over the specifications in the bill of quantities. The specifications on the drawings will also take preference over specifications in this document.
4. It is the contractor's responsibility to ensure that all material shall comply and all workmanship shall be executed in strict accordance with the details and specifications shown in the drawings, the latest revisions of SANS 10400, SANS 1200, the National Building Regulations (NBR) and the latest editions of the relevant SANS codes of practice and standard methods, irrespective whether the Engineer has inspected the works on site or not. Where a SABS code has been replaced by a SANS code it is deemed that the latest version of the relevant code is applicable.
5. The contractor shall check all project dimensions on site beforehand. All dimensions are also to be checked against the architect's drawings. Any discrepancies shall immediately be reported to the engineer immediately. No work shall commence nor any material ordered until the Engineer is notified accordingly.
6. All existing dimensions and levels are to be checked on site and correlated with the Engineer's and the Architect's drawings by the contractor. All bench mark levels to be correlated with each other for correctness. Any discrepancies or variations from the drawings shall be reported to the engineer immediately. No work shall commence nor any material ordered until the Engineer is notified accordingly.
7. No scaling of dimensions is permitted on these drawings. Only written dimensions which, unless noted otherwise (u.n.o.), are given in millimeters, may be deemed to be correct. If any dimension seems doubtful, the Engineer shall be consulted.
8. Where new construction tie into existing structures, the Contractor shall cross check and confirm all critical dimensions and levels related to existing structures, before any construction or manufacturing commences.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

9. An isolation joint must be provided between all new and existing structures, unless noted otherwise (u.n.o.) on drawings. Stability requirements of elements over joints must be met.
10. All waterproofing to be according to architect's details and specifications unless noted otherwise (u.n.o.) on drawings.
11. The most recent version of the SABS/SANS specifications mentioned in the notes, on the drawings and in the project specifications shall be available on site at all times.
12. All instructions from the engineer shall be written in the triplicate site instruction book provided by the Contractor.
13. Products different to those specified may be used but only with the engineer's prior written approval.
14. The contractor shall ensure that waterproofing materials are not damaged during backfilling operations and fixing of steel. Any repair work for the contractor's account.
15. The contractor is responsible to control storm water and dewatering on the site to prevent damage to the structure, banks, excavations, or any other works for the duration of the contract period.
16. These designs and/or drawings are not sold, and are subject to recall. Reproduction or copying rights are reserved solely to BVi Consulting Engineers under copyright law. These drawings have been delivered and received on the following express conditions:
 - a) they are not to be used in any way which may be construed as being against the interests and/or benefits of BVi Consulting Engineers;
 - b) and all copies shall be returned to BVi Consulting Engineers immediately on demand;
 - c) all information disclosed by these drawings shall be deemed to be confidential and treated as such.
17. The "Engineer" means the director of BVi Consulting Engineers or duly authorized personnel appointed by BVi Consulting Engineers to supervise and take charge of the contract.
18. This document is not a legal document and must therefore be construed in the language of the construction industry.

B. FOUNDATIONS AND EARTHWORKS

1. All earthworks shall be in accordance with the latest SANS 1200 D specifications.
2. All excavations must be inspected and approved by the Geotechnical Engineer or Engineer before placing of any concrete foundation, blinding, waterproofing or geofabric membrane.
3. All excavations sides to be either sloped or shored unless otherwise instructed by the Geotechnical Engineer or the Engineer.
4. Levels of bases as shown are preliminary and have to be confirmed by the Geotechnical Engineer or Engineer on site to obtain the specified bearing pressure. Where excavation levels have to be lowered, the top level of the base should be kept as shown and the blinding layer thickened. Size and reinforcing may be altered by the engineer if required.
5. No foundation shall be cast on either non-engineered fill or backfill material. Portions that are over-excavated beyond the depth required by the geotechnical engineer, to be filled with mass concrete (10MPa / 38mm) at contractor's expense.
6. A 50mm thick blinding layer of 15 MPa/19mm shall be cast under all reinforced foundations. No blinding layer needs to be cast for unreinforced brickwork and mass concrete foundations.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

7. All foundations are placed symmetrically below columns and brickwork unless otherwise shown.
8. Retaining wall and column foundations shall be cast directly against the vertical faces of the excavation, unless noted otherwise (u.n.o.) on drawings.
9. No backfilling behind retaining walls is to be done before concrete has reached its 28-day strength. Where applicable, backfilling shall be done simultaneously on both sides of walls to minimize the relative height difference in soil levels.
10. Manual compaction of soil is to take place within 500mm of walls.

C. BRICKWORK & BLOCKWORK:

1. All brickwork / blockwork shown on engineer's drawings are load bearing u.n.o.
2. All loadbearing, hollow block work to be filled with grade 15 MPa/19mm mass concrete.
3. All setting out of brickwork / blockwork to be done from architect's drawings.
4. Refer to the architect's drawings for general layout of brickwork or blockwork and control joints in brickwork or blockwork.
5. Masonry units shall comply with the following specifications:
 - SANS 227: burnt clay masonry units
 - SANS 285: calcium silicate masonry units
 - SANS 1215: concrete masonry blocks
6. Brickwork and blockwork shall be built according to SANS 10164 and SANS 10400.
7. All brickwork, blockwork, anchors, wall ties and straps shall be in accordance with the latest SANS 10400 and SANS 10164 specifications.
8. The minimum crushing strength of all loadbearing brickwork/blockwork shall be 14MPa u.n.o.
9. The minimum crushing strength of all non-loadbearing brickwork/blockwork shall be 7MPa u.n.o.
10. The minimum crushing strength of mortar shall be as for Class II mortar in accordance with SANS 10164 Table 1 unless noted (u.n.o.) otherwise on drawings.
11. The contractor shall confirm the type of load-bearing bricks planned to use and get approval from the Engineer in writing prior to ordering.
12. The use thereof and type of maxi type brickwork; including data sheets specifying the crushing strength, shall be submitted to the engineer for approval prior to any building work being carried out.
13. Brickforce:
 - 13.1. All brickforce shall be galvanized.
 - 13.2. Load bearing brickwork shall be reinforced with an approved brickforce every second layer and all non-loadbearing brickwork every fourth layer, u.n.o. on drawings.
 - 13.3. Load bearing blockwork shall be reinforced with an approved brickforce every layer and all non-loadbearing blockwork every second layer, u.n.o. on drawings.
 - 13.4. In addition, continuous brickforce is required in every layer for the first four layers above and below the top of foundations & slabs, as well as windows and over door openings, extending at least 1m beyond both sides of the opening. Minimum laps to be 300mm. Outside wire of brickforce to be continuous at corners.
14. All brick anchors, wall ties and straps shall be galvanized.

15. Where brickwork / blockwork and concrete join, V-joints are to be made through the total thickness of the plasterwork.
16. Non-load bearing brickwork / blockwork may not be built closer than 10mm from the soffits and sides of beams and slabs (unless otherwise shown) and only after all props have been removed. The joint shall be filled with "Jointex", or similar approved, and sealed on both sides with 2-part polysulphide. Any specific waterproofing requirements to architect's details.
17. Loadbearing brickwork over slabs is to be completed before the non-loadbearing brickwork under slabs.
18. Place 2 layers of 3-ply Malthoid between slab soffits and load bearing brickwork.
19. Refer to architect's drawings for positions of expansion joints in brickwork / blockwork.
20. Where joints are indicated in slabs and beams, corresponding joints shall also be constructed in brick/block walls.
21. All brick/blockwork shall be fixed to concrete & steel columns by means of hoop iron to line up with brickforce layer.
22. Provide 10mm Isolation joint around all concrete columns, steel columns and against brick and concrete walls. After concrete has set, Jointex to be raked out 10mm deep and sealed with an approved sealant (refer standard details).
23. In cavity walls, wall ties shall join the leaves uniformly spaced and shall be embedded in masonry joints at right angles to the leaves as the work progresses.
24. The number of wall ties per m² of walling shall be:
 - 75mm > Cavity: 3.7 ties/m²
 - 75mm < Cavity < 100mm: 4.5 ties/m²
 - 100mm < Cavity < 150mm: 5,0 ties/m²
25. Additional ties shall be provided at openings, discontinuities (e.g. control joints) spaced at intervals not exceeding 300mm vertically, or, where deemed necessary or as shown on the drawings such as at external angles.
26. Butterfly galvanized ties of 3,15mm diameter shall be used u.n.o.
27. For high-lift grouted walls, ties complying with the requirements of SANS 10164 Part 2 Annex A (14) shall be spaced at intervals not exceeding 900mm horizontally and not exceeding 300mm vertically, with each layer staggered by 450mm.
28. Ensure that each tie is embedded to a depth of at least 50mm in the mortar joint of each leaf.
29. For cavity widths not exceeding 75mm. Ensure that the wall ties used comply with the relevant requirements of SANS 28 subject to the provision that ties of the single wire type shall not be used.
30. For cavity widths exceeding 75mm but not exceeding 150mm. Ensure that wall ties used are of the vertical twist type (butterfly), or any similar type having at least the equivalent strength and stiffness.
31. Cavity openings shall be left open by omitting brick on the external side until all masonry work was completed. Cavities to be cleaned out properly prior to replacing the omitted brick and the slots to be kept un-grouted.
32. Clay bricks to be wetted before being used.
33. Concrete bricks and blocks to be kept dry before being used.

34. All chases shall be vertical and shall not be greater than 25mm deep by 40mm wide. A maximum of 750mm long horizontal chase will be accepted. No diagonal chases will be accepted.
35. For curved brick/block work construction, refer to the drawings for reinforcing details.
36. All clay brick for general building work below damp-proof course or under damp conditions or below ground level; plastered or un-plastered, shall be 14MPa NFX (Non-Facing Extra) bricks.

D. CONCRETE:

1. All concrete work shall be carried out strictly in accordance with SANS 1200 G (Structural).
2. All drawings to be read in conjunction with the relevant architectural, concrete drawings as well as the Bill of Quantities and any discrepancy to be brought to the attention of the engineer immediately.
3. No concrete shall be poured until the excavation, blinding formwork and/or reinforcement etc. has been inspected and approved in writing by the Engineer. Engineer to be given a minimum of 48-hours' notice of such an inspection.
4. All casting procedures, construction methods and positions of construction joints shall be submitted to the engineer prior to the commencement of the project.
5. Minimum concrete strength at 28 days shall be as listed below or as indicated on drawings or schedules.

Blinding	-	15 MPa / 19mm
Mass	-	10 MPa / 38 mm
Foundations	-	25 MPa / 26mm
Ground beams	-	30 MPa / 19mm
Columns	-	40 MPa / 19mm
Walls	-	30 MPa / 19mm
Cavity wall infill	-	20 MPa / 19mm
Beams	-	30 MPa / 19mm
Slabs (suspended)	-	30 MPa / 19mm
Surface beds	-	35 MPa / 19mm
External Hard stand	-	30 MPa / 38mm
Stairs	-	30 MPa / 19mm

6. Aggregate used for concrete shall comply with SANS 1083. Slag aggregate shall not be used unless approved in writing by the Engineer.
7. Curing of concrete shall be carried out strictly in accordance with SANS 1200 G clause 5.5.8. The Contractor to provide a method statement, to be approved by engineer, for the curing procedures of the various elements concerned but all surfaces to be kept continuously damp for at least 7 days after casting. Concrete slabs to be covered with moist sand or covered with plastic membrane during this period. Concrete columns to be wrapped in a plastic membrane during this period.
8. Stripping times of shuttering and propping shall be in accordance with SANS 1200 G clauses 5.2.5 and table 2 as reproduced in the table below. No loading shall commence or props removed before the concrete has reached 28-day strength.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Type of structural member or formwork	Type of cement used								
	Portland cement (PC) and PC 15		Rapid-hardening PC* and rapid hardening PC 15				Portland blast-furnace cement		
	Weather								
	Hot or normal	Cool	Cold	Hot or normal	Cool	Cold	Hot or normal	Cool	Cold
a) Beam sides, walls, and unloaded columns	0.75	+	1.5	0.5	+	1	2	+	4
b) Slabs with props left underneath	4	+	7	2	+	4	6	+	10
c) Beam soffits with props left underneath, and ribs of a fibbed-floor construction	7	+	12	3	+	5	10	+	17
d) Slab props incl. cantilevers	10	+	17	5	+	9	10	+	17
e) Beam props incl. cantilevers	14	+	21	7	+	12	14	+	21
* Shorter periods may be used for sections of thickness 300mm or more + In cool weather stripping times shall be determined by interpolation between the periods specified for normal and cold weather									
Cold weather: Weather conditions in which the ambient temperature is 5°C or less. Cool weather: Weather conditions in which the ambient temperature is higher than 5°C but less than 15°C. Normal weather: Weather conditions in which the ambient temperature is higher than 15°C but not higher than 32°C. Hot weather: Weather conditions in which the ambient temperature is higher than 32°C.									

9. All suspended slabs and beams to be back-propped for two (2) completed levels below the propped level of the relevant beam or slab.
10. Propping underneath slabs and beams shall be completely removed before brickwork is built. All bricks required for brick walls on a specific slab panel should be stacked evenly onto that specific slab panel before walls are being built.
11. The contractor must co-ordinate all services drawings for details and positions of openings and sleeves required for stormwater, sewerage, drainage, electrical, mechanical and other services. Discrepancies to be brought to the attention of engineer and other relevant parties.
12. The contractor must co-ordinate concrete drawings with the architect's drawings, for details and positions of rain water pipes in concrete and other architectural cast-in items. Any discrepancy to be reported to the Engineer immediately.
13. The contractor must obtain permission from the engineer before any openings or services, which are not indicated on the drawings, may be introduced through any structural element or close to any column.
14. All pipes (conduiting, water piping, etc.) passing through expansion joints must be provided with an approved flexible joint.
15. All cast-in items to be hot-dipped galvanized, clean and free of oil, dirt or any other material which may impair the bond with concrete. Tolerance for placing according to SANS 1200 GB clause 6.2.

16. All stormwater down pipes cast into concrete to be minimum class 6 high pressure uPVC pipes.
17. The live loads for which the structures have been designed for are as follows:
- | | | | |
|-------------|------------------------|------|---------------------------------|
| Office area | live | 300 | kg/m ² |
| | brickwork | 2300 | kg/m ³ |
| | screed | 2.3 | kg/m ² /mm thickness |
| | special floor finishes | 3.0 | kg/m ² /mm thickness |
| Roof | live | 30 | kg/m ² |
| | services | 45 | kg/m ² |
| Balconies | live | 300 | kg/m ² |
| | screed | 2.3 | kg/m ² /mm thickness |
| | special floor finishes | 3.0 | kg/m ² /mm thickness |
18. Slagment is to be used in concrete mix only if approved in writing by the Engineer.
19. Concrete cube crushing tests per 50m³ (minimum of one set per day's casting) shall made as below and to SANS 5861 and tested by an approved, accredited laboratory:
- No off cubes shall be crushed at 7-day strength
 - No off cubes shall be crushed at 28-day strength
20. The type, size and fixing method of spacers used shall be discussed in advance with and approved in writing by the Engineer. Spacer blocks made of concrete shall have the strength of at least equal to the strength of the element cast.
21. Downstand and upstand beam dimensions are given as a x b where:
- a = total depth of beam including slab thickness
- b = width of beam
- 100mm kickers for columns and walls have been allowed for in the reinforcing lengths. They shall be cast with the same strength as the concrete elements below them and thoroughly compacted and cured.
22. All exposed concrete work to be off shutter finish u.n.o.
23. Concrete finishes are to be as per Engineer's drawings with 20x20mm chamfers to all visible edges u.n.o.
24. Concrete poured in excess of three meters high will not be accepted without prior written approval of the Engineer.
25. All grouts and epoxies to be used strictly in accordance with the manufacturer's specification.
26. Concrete tolerance to be degree of accuracy No. II as specified in SANS 1200G as reproduced in table below.

A. Reinforcement				
		Permissible deviation		
1	Spacing between two adjacent bars	± 25	± 20	± 15
2	Longitudinal location of bends and ends of bars	± 40	± 30	± 20
3	Cover to reinforcement (see (e) below)	-0+20	-0+20	-0+10
B.	Formwork: Formwork shall be so constructed as to ensure that the position of the finished work will be as specified, subject to the relevant: permissible deviation given in (c) or (d) below, as applicable.			

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

C.	Foundations: Mass and reinforced concrete			
1	Position on plan of any edge of surface measured from the nearest grid line or agreed centre line	± 50	± 35	± 20
2	Linear dimension on plan cast against excavation sides	± 60	± 40	± 20
3	Linear dimension on plan cast against formwork	± 30	± 20	± 10
4	Level of underside of concrete	-40+20	-30+15	-20+10
5	Surface level (i.e. top of foundation) (excluding floor slabs)	-30+15	-20+10	-10+5
D.	Elements or components above foundations (Administrative and Service Buildings)			
1	Position on plan of any edge or surface measured from the nearest grid line or agreed centre line	± 25	± 15	± 5
2	Linear (other than cross section) dimensions	± 30	± 20	± 10
3	Cross section dimensions	-10+20	-5+15	±5
4	Level (deviation from designed level with reference to the nearest transferred datum (TD) of the upper or lower surface, as may be specified, of any slab or other element or component)	-20+10	-15+5	-10+0
5	Verticality, per meter of height Subject to a maximum of	5 70	5 50	2 30
6	Out of squareness of a corner or an opening or an element such as a column (see 6.1.2 c) for short side of length i) Up to and including 0.5m ii) Over 0.5m, up to and including 2m iii) Over 2m up to and including 4m	±10 ±20 ±25	±5 ±15 ±20	±3 ±10 ±15
7	Exposed concrete surface: i) Flatness of plane surface ii) Abrupt changes in a continuous surface	10 10	5 5	3 2
8	Exposed concrete surface to be plastered: i) Flatness of plane surface ii) Abrupt changes in a continuous surface	15 10	10 5	* *
D1.	Elements and Components above foundations (factory floors)			
	FM3 Floor Finish			
E.	Cover to reinforcement			
	No deviation from the minimum cover of concrete over reinforcement specified in 5.1.3 (a) will be permitted.			
F.	Location of holding down bolts			
1	The centre line of a holding down bolt from its designated location in plan	*	+3	*
2	The top of the bolt from its designated elevation	*	-3+5	*
G.	Constituents in concrete mix (including water)			
	PD of quantities from approved or designated or prescribed mix, as applicable.	±5	±5	±5

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Tolerances not stated and those for bow, camber, and twist, and for slipform concrete and precast concrete will be staged in the project specification where applicable.

27. FAIR FACED CONCRETE:

27.1 Designation

Fair-faced concrete will be indicated as such with the code FF-Sxx-Fx, where:

27.1.1 FF - Fair-faced finish

27.1.2 Sxx - Structure class, see below for further details

27.1.3 Fx - Color Class, see below for further details

27.2 Formwork requirements:

27.2.1 All formwork to have non-porous linings. Non-porous linings are deemed to be any of the following.

27.2.1.1 Film coated or sealed plywood

27.2.1.2 Coated boards

27.2.1.3 Steel linings

27.2.1.4 Plastic linings

27.2.2 Joints in the formwork are to be sealed and rendered smooth.

27.2.3 All formwork to be water tight to prevent grout loss.

27.2.4 The formation and arrangement of the formwork on all visible areas (e.g. direction of the formwork boards, joints joint sealing, tie positions, formwork openings and blockouts) are to be shown systematically. The drawings are to be submitted to the engineer and architect for comment and/or approval in good time.

27.2.5 All fair-faced formwork is to be provided to 300mm below ground level.

27.2.6 Ties on concrete surfaces remaining visible are to be arranged to a regular grid pattern. Their number is to be restricted by suitable design of the formwork where possible.

27.2.7 Tie holes are to be carefully plugged with fine concrete of a fitting color, cleanly inserted, or with deeply bonded plugs. The proposed type is to be agreed with the architect.

27.2.8 Ties in cornices and mouldings are not permitted, unless specified otherwise.

27.2.9 A form without longitudinal joints is to be used for cornices and mouldings.

27.2.10 Board formwork:

27.10.1 Prepared boards are to be at least 22mm thick.

27.10.2 Board joints are to be staggered.

27.10.3 Joints to be either (1) tongued and grooved, or (2) wedge-shaped rebated.

27.3 Panel formwork:

27.3.1 The joints of panel formwork must be adjusted in their grid pattern to the shape of the building and also cut to the slope where necessary.

27.3.2 Supplements through board strips or wedges are not permitted on visible surfaces.

27.3.3 Only stiff panels of the same type may be used as formwork panels.

27.3.4 Only thin panels of the same type may be used on stiff base formwork.

27.4 Release agents:

27.4.1 Only proven release agents that leave no spots on the concrete may be used.

27.4.2 All agents to be used strictly as specified by the relevant manufacturer.

27.4.3 Timber formwork is to be treated with release agent in such good time that it has penetrated into the timber when the reinforcement is fixed. Reinforcement and/or pre-stressing steel may not be soiled by the release agents.

27.4.4 New formwork not coated with plastic is to be treated with cement slurry before the first use and to be cleaned and sprayed / painted with release agent at least twice.

27.4.5 Concrete requirements:

27.4.5.1 Only self compacting concrete (SCC) is to be used.

27.4.5.2 Refer to the relevant drawings for the required minimum concrete strengths.

27.4.5.3 All concrete mixes are to be designed by a specialist ready-mix supplier.

27.4.5.4 Visible surface pores:

27.4.5.6.1 The total area of open pores on the concrete surface measured within a test area of at least 500mm x 500mm, may amount to a maximum of 0.3 % of this area; pores below 1mm in diameter are not to be taken into account.

27.4.5.6.2 The pores are to be determined on two test areas for each test.

27.4.5.6.3 The test areas are to be decided by the architect and/or the engineer.

27.4.5.6.4 At least one test is to be done for each representative pour.

27.4.5.5 Concrete structure to be Class S2 (u.n.o. on drawings), where

27.4.5.6.1 Concrete structure classes are:

Class S1

Smooth, plugged concrete surface

The joints between neighbouring formwork units must be tightly sealed, so that a maximum of 10mm wide nibs can occur on the surface of the otherwise smooth concrete, by means of the exit cement slurry and/or fine mortar.

Nibs caused by this are permitted.

Class S2

As Class S1, but joints are to be so tight between neighbouring units that practically no cement slurry and/or fine mortar can escape.

Nibs are not permitted.

Class S1A

As S1, but using a specific type of formwork according to the information in the specification.

Class S2A

As Class S2, but using a specific type of formwork according to the information in the specification.

Class S3

Structured or plastically designed concrete surface according to the type demanded.

The joints are to be so tight between neighbouring units that practically no cement slurry and/or fine mortar can escape.

Any other special concrete surface finishes to architect's details & specification. Special finishes will be referred to as **Class S4**.

- 27.4.5.6 Concrete colour uniformity to be Class F1 (u.n.o on drawings), where

27.4.5.6.1 The concrete colour classes are:

Class F1

Discolouration over an area caused by: rust; different types and previous improper treatment of the form lining; improper subsequent treatment of the concrete; aggregates from different sources; as well as lines of discolouration (reinforcement marks) are not permitted.

Further demands on the uniformity are not made.

Class F2

In addition to the requirements of F1, discolourations that are to be attributed to cement of different types or origin, or to different aggregates are not permitted.

Unavoidable differences in the colour when maintaining these conditions and with careful concrete placement are permitted.

Special colouring / pigment requirements to be specified by the architect.

Special requirements will be referred to as **Class F3**.

27.5 Samples:

- 27.5.1 Representative sample panels of each required finish is to be identified on existing buildings in the region, or
- 27.5.2 If no suitable sample exists a sample panel is to be constructed on site. The panel should preferably form part of a normal concrete panel, i.e. not originally deemed fair-faced.
- 27.5.3 The distance of observation is to be agreed by all parties concerned, and documented.
- 27.5.4 Suitable digital photographic evidence of the sample panel is to be kept on record by the contractor.

27.6 Defective concrete & remedial works:

- 27.6.1 Defective concrete to the engineer's immediate attention in writing.
- 27.6.2 No remedial work may be done without written consent from the engineer.

- 27.6.3 Visible honey combing will not be permitted.
- 27.6.4 All concrete forming part of the pour containing visible honeycombing will be demolished and rebuilt at the contractor's expense.
- 27.6.5 No protruding reinforcement will be permitted.
- 27.6.6 All blows are to be filled using durarep FC (by abe Construction chemicals or similar approved), if deemed necessary by the architect and/or engineer.
- 28. Construction joints:
 - 28.1. All horizontal and vertical construction joints shall be cleaned of all dirt and loose particles. All intersections of construction joints with concrete surfaces, which will be exposed to view, shall be made straight and level or plumb.
 - 28.2. The surface of concrete to be prepared shall be between 6h and 12h old after completion of placing and shall be "blown off" using a high-pressure water jet until all dirt and laitance is removed, and particles of clean coarse aggregate are exposed sufficiently to produce a rough keyed surface. (The success of this method of preparation is dependent on selection of the correct time and equipment to suit the cement type and atmospheric conditions).
 - 28.3. The prepared surfaces shall be saturated with fresh clean water for a period of 4 hours prior to the adjoining pour.
 - 28.4. Prior to the placement of concrete, the surface condition shall be saturated, yet surface dry – no ponding or standing of water.
- 29. Concrete surfaces
 - 29.1 When a wood-floated / Mechanical Pan float finish is specified, the surface shall first be treated as follows:
 - 29.1.1 Immediately after placing and compaction, the concrete shall be levelled with true straight edged equipment working between forms or other guides set accurately to line and level.
 - 29.1.2 No mortar shall be added to depressions and proud aggregate shall be tamped level.
 - 29.1.3 After the concrete has hardened sufficiently, it shall be floated to a uniform surface, free from trowel marks with a wooden float.
 - 29.1.4 Within 2hrs of final set, curing of the concrete shall commence.
 - 29.2 When a steel-floated finish is specified, the surface shall be treated as specified for a wood-floated finish above. In addition, the following is to be done:
 - 29.2.1 When the bleed water has disappeared and the concrete has hardened sufficiently to prevent the migration of laitance foam to the surface, the leveled surface shall be floated with a steel trowel.
 - 29.2.2 Firm uniform pressure shall be applied to provide a dense, smooth, uniform surface free from any irregularities.
 - 29.3 When a power-floated finish is specified, the surface shall be treated as specified for a wood-floated finish above, in addition the following is to be done:
 - 29.3.1 The leveled concrete surface shall be power-floated to provide a dense surface.
 - 29.3.2 After the bleed water has disappeared and the concrete has hardened sufficiently the float-blades shall be replaced with trowel-blades.
 - 29.3.3 The Surface will be power-trowelled with a single pass to provide a dense, smooth, uniform surface free from irregularities.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- 29.4 When a power-trowelled finish is specified, the surface shall be treated as specified for power-floated finish above. In addition, the following is to be done:

29.4.1 After fitting the trowelled-blades the surface shall be continually burnished to provide a dense, smooth, high quality polished surface free from all irregularities.

E. SURFACE BEDS:

1. Provide 10mm isolation joints (IJ) around all concrete columns, steel columns and against brick and concrete walls. After concrete has set, Jointex to be raked out 10mm deep and sealed with approved joint sealant – refer to Standard Details.
2. Concrete class: Refer section D: Concrete to be 35/19 MPa to receive Micro Fibre at a rate of 600g – 900g/m³.
3. Finishes: FM3 Finish with a Mechanical power pan floated finish followed by a mechanical grind to expose aggregate, in order to apply an impact and chemically resistant self-levelling, HACCP certified Polyurethane-urea cement screed min 4mm or as per the manufacturer's specification. u.n.o.
4. Damp proofing membrane to be installed under surface beds 250 Micron, u.n.o.
5. Saw-cut joints shall be done as soon as concrete is firm enough not to damage the edges, usually between 6 to 16 hours but not later than 48 hours. Joints to be repeated in finished surfaces in panels of 4m c/c.
6. Preparing and sealing of joint to be carried out by specialist.
7. Sealants: All sealants as per the drawings. The preparation, quantities used and application procedure to be in strict compliance with the manufacturers' recommendations and specifications.
8. Dowels: To be hot dip galvanized. Utmost care to be taken when dowels are placed, straight and true in position. Dowel ends at sliding end to be free of burrs.
9. Method statement for pouring of surface bed panels to be approved by the engineer.

F. REINFORCEMENT:

1. Reinforcement shall be manufactured and fixed to comply with the tolerances as specified in SANS 1200 G and/or the project specification.
2. Reinforcement tolerance to be degree of accuracy No. II as specified in SANS 1200 G (as reproduced in table in Section D: Concrete).
3. Bending of reinforcement shall be in accordance with SANS 282.
4. The contractor shall inspect and approve the fixed reinforcement with spacers and cover blocks, services and confirm that the shuttering is clean before the engineer is notified. All reinforcement shall be inspected and approved by the engineer before casting of concrete may commence. Engineer to be given a minimum of 48-hours' notice of such an inspection.
5. The Contractor is to maintain the reinforcing steel in position after placing and during concreting. If additional spacers and chairs are required, (other than those detailed) they are to be provided by the contractor at his expense.
6. Reinforcing must be thoroughly cleaned of all dirt, grease, bituminous material, scale and loose rust.
7. The lap lengths of reinforcing bars are to be as specified or a minimum of 40 bar diameters for mild steel and 50 bar diameters for high tensile deformed bars.
8. No heat treatment or cutting of steel without the written approval of the engineer shall be allowed.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

9. Bend-out bars at construction joints shall be bent out with a suitable pipe so that no kink is formed in the bar.
10. Minimum concrete cover to reinforcing to be allowed for to be as follows (u.n.o.):
- | | | |
|---------------------------------|---|------------------|
| Foundations | - | 75mm |
| Columns (under damp course) | - | 30mm to stirrups |
| Columns (above damp course) | - | 30mm to stirrups |
| Beams | - | 30mm to stirrups |
| Slabs (internal) | - | 30mm |
| Slabs and roof slabs (external) | - | 30mm |
| Retaining walls (against soil) | - | 40mm |
| Retaining walls (other faces) | - | 40mm |
| Raft foundations | - | 75mm |
11. The following grouts may be used for dowel bars (or similar products prior approved by the Engineer) u.n.o. Grouts to be used strictly in accordance with the manufacturers' specifications:
- | | | |
|-----------------------------|---|----------------------------------|
| Vertical dowels | - | Hilti HIT-HY 150 or Sika similar |
| | - | ABE Epidermix 395 |
| | - | Sikadur 31 |
| | - | Pro-Struct 618/632 |
| Horizontal dowels | - | Hilti HIT-HY 150 or Sika similar |
| | - | ABE Epidermix 396 |
| | - | Sikadur 31 |
| | - | Pro-Struct 617 |
| Vertical dowels upside down | - | Sikadur 31 |
| | - | Pro-Struct 617 |

G. STRUCTURAL STEELWORK:

- All structural steelwork shall be fabricated and erected in accordance with SANS 1200 H (Structural steelwork) and SANS 10162 (Structural use of Steel).
- Steel surfaces of all steel shall be prepared to a preparation grade P3 (very thorough preparation) according to SANS 8501-3:2008 irrelevant of the type of corrosion protection specified.
- All dimensions and levels shall be checked on site in order to confirm shop drawings. Any discrepancies shall be brought to the attention of the engineer.
- All structural steel drawings to be read in conjunction with the relevant architectural, concrete drawings as well as the Tender Documents and any discrepancy to be brought to the attention of the engineer.
- A complete set of shop drawings shall be submitted to the engineer for approval before fabrication commences. Shop drawings will only be checked for compliance with design intent. No dimensional checks, checks on cleats, bolts, welds and gussets will be done. Only sizes of structural members, connections and splices will be checked also with regard to design intent. Final dimensions and the correct fitting of members shall remain the responsibility of the contractor.
- Structural steelwork shall be completed by the manufacturer (i.e. cleaned and coated with the specified primer in the workshop or hot dip galvanized with/without a duplex) before transportation to site.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

7. All hot rolled, plates, sections and CHS (Circular Hollow Sections) structural steelwork shall be grade S355JR or grade 350WA. Cold-formed steel sections used for girts and purlins, shall have a minimum yield stress of 240 MPa. Tensile strength testing results must be provided for each batch of steel.
8. No steel of grade Q345 shall be accepted.
9. All pre-hot dip galvanized sheeting shall be minimum grade Z275 to SANS 4998:2007 Continuous hot dip zinc coated carbon steel sheet or structural quality.
10. A certificate from the steel manufacturer in which the grade of the structural steel is verified shall be handed to the engineer for approval prior to any manufacturing commences.
11. The contractor is responsible for stabilizing the structure and maintaining it in the correct position during erection. Where temporary bracing or propping is required, the contractor shall be responsible for the design, erection, maintenance and removal (where necessary) of such supports. If splices in trusses are required for transport restrictions, proposals of this shall be submitted to the engineer at an early stage for written approval.
12. The contractor shall, at the commencement of the project, acquaint himself with the availability and delivery time of the products and steel profiles specified on the drawings so that such material can be ordered ahead of time.
13. Welds:
 - 13.1 Welding shall be done in accordance and comply with regulations set out in AWS D1.1 American Welding Society: Structural Welding Code – Steel.
 - 13.2 The welding symbols used are in accordance with AWS D1.1 as reproduced in Table 6.32 & 6.33 of the Structural Steel Tables published by the SAISC (SA Institute of Steel Construction).
 - 13.3 Welds shall conform to SANS 10167 and AWS D1.1 specification.
 - 13.4 Where no weld sizes are shown, the minimum weld size (throat thickness) shall be that of the thickest plate of the connecting plates/elements or 6mm minimum. Unless otherwise shown the intention of connections are to transfer the full force that can be developed in connecting members through the connection.
 - 13.5 When using SMAW (Shielded metal arc welding), all electrodes shall be E7018. For any other welding process to be used, the contractor shall apply, in writing, for the approval from the engineer for the electrodes to be used.
 - 13.6 All butt welds shall develop the full strength of the elements joined.
 - 13.7 All splices shall develop the full strength of the elements joined.
 - 13.8 Welding shall only be performed by coded welders and certificates shall be supplied to the engineer.
 - 13.9 Suitably qualified and experienced welders using proper equipment in a good condition shall do all site welding.
 - 13.10 The contractor shall design all welds and, where necessary, gussets of sufficient strength shall be provided to obtain the required weld length to ensure the full strength of the connection.
 - 13.11 In joints with groove welds, the edges of the elements to be connected shall be cut (“prepared”) to allow for the weld to penetrate into the groove and the elements.

Table 3.3 of the AWS D1.1 as reproduced in Table 6.25 of the Structural Steel Tables published by the SAISC, provides prequalified edge preparations for SMAW welding.

14. Quality control on welding shall be ensured as follows:
 - 14.1 Quality control of welding will be done by qualified external consultants; u.n.o.; and the cost associated therewith shall be included in the tendered amount for the project.
 - 14.2 The following methods shall be used during quality control:
 - 12.2.1 Visual Inspection: All welds shall be inspected using visual aid and individual weld passes shall be inspected for signs of arc strikes, spatter, porosity, slag inclusion, undercut, crater cross section and any welding cracks. Bead size, shape and sequences will also be observed, as well as possible signs that may point to lack of base metal fusion and incomplete penetration.
 - 12.2.2 100% of all butt welds shall be tested using ultrasonic non-destructive tests. The requirement; under the approval of the engineer and recommendation from the consultant; may be reduced when confidence in the quality provided by the welder(s) has been developed.
 - 12.2.3 10% of all fillet welds shall be tested using magnetic particle non-destructive tests. The requirement; under the approval of the engineer and recommendation from the consultant; may be reduced to 5% of all fillet welds when confidence in the quality provided by the welder(s) has been developed.
 - 12.2.4 100% of all welds on crane or crawl beams shall be tested using ultrasonic non-destructive tests.
13. All structural bolts shall be hot-dipped-galvanized grade 8.8 u.n.o.
14. Where HSFG bolts are specified, the following shall apply:
 - 14.1 All contact surfaces at HSFG bolt splices shall be free from oil, grease, rust, scale, paint or any other impurities at the time of bolting.
 - 14.2 The tightening of high strength friction-grip bolts shall be done according to the turn-of-the-nut method as specified in clause 5.3.1(a) of SANS 10094

or

where HSFG bolts have been specified, the contractor shall use "coronet"-type load indicating washers in conjunction with such bolts.
15. Fabricator to ensure that centers of gravity of members intersect at node points, except where eccentricities are specified on engineer's drawings. Where slotted holes for bolts occur, the nut shall be hand tightened and a lock-nut be provided (u.n.o.).
16. Paint and hot dip galvanizing specifications to be adhered to as specified by Section H and K of this document.
17. Allow for all bolts to be hot dip galvanized and be painted 3 days in advance of needing them for erection. Refer to hot dip galvanizing and paint specification of bolts in Section H and K of this document.
18. Where applicable, cementitious non-shrink grout shall be provided under base plates before any primary loads are applied to the structure. Hot-dip galvanized, laminated finger shaped packing to be provided under base plates. The following grouts, u.n.o., may be used (or similar products approved by the Engineer). Grouts to be used strictly in accordance with the manufacturers' specifications:

General application:

- SikaGrout 212
- Pro-Struct 618/22 Epoxy mortar & tile grouting compound

Dynamic load application (resin, self-leveling)

- Sikadur-42 ZA
- Pro-Struct 501 Five Star epoxy Grout
- Pro-Struct 638 Pourable Epoxy Grout

H. CORROSION PROTECTION: HOT DIP GALVANIZING:

H1: General

1. The hot dip galvanized coatings shall conform in every respect to the standards contained in the South African National Standards, SANS 121 (ISO 1461) Hot dip galvanizing coatings on fabricated iron and steel articles and SANS 32 (EN 10240) Internal and/or external protective coatings for steel tubes, Hot Dip Galvanizing specification for products other than continuously galvanized sheet and wire as well as the SANS1200HC or latest edition of the relevant specification.
2. All pre-hot dip galvanized sheeting shall be minimum grade Z275 to SANS 4998:2007 Continuous hot dip zinc coated carbon steel sheet or structural quality and all wire to SANS 675:2009: Specification for coated fencing wire.
3. The galvanizer shall be an accredited member of the Hot Dip Galvanizers Association Southern Africa (HDGASA) and shall issue a certificate of conformance to ISO 10474 or if registered as a South African Bureau of Standards (SABS) Mark Scheme Galvanizer, a SABS certificate of conformance. (A list of approved members is available on the Association web site, www.hdgasa.org.za).
4. All structural steel shall be minimum grade of S355JR (350WA) and shall be certified with a Silicon content between 0.15% and 0.23% and Phosphorus content <0.02%. The contractor to supply the certificate as proof of the above requirements prior to the manufacturing of any structures.
5. For this project all steelworks shall not be hot dip galvanized U.N.O. on drawings.
6. It is the contractor's responsibility to ensure that all steel to be hot dip galvanized shall be designed and fabricated in accordance with ISO 14713: 2011 Part 1: General principles of Hot dip Galvanizing and ISO 14713: 2011 Part 2: - Design for hot dip galvanizing.
7. The hot dip galvanizer shall provide a quality management plan detailing inspection procedures, which will include inspection of steel prior to galvanizing, inline inspection during surface preparation and galvanizing and final inspection prior to dispatch. Where fabrication defects are identified prior to galvanizing, e.g. burrs, poor welding or excessive weld spatter, such components shall be placed on hold and a non-conformance report submitted to the fabricator.
8. Double end dipping shall be permitted provided that it will not result in distortion of the product and an acceptable surface finish of the coating is achieved.
9. Bolts and nuts of gr 4.8 and gr 8.8 shall be hot dip galvanized to SANS 121 (ISO 1461) and high tensile fasteners from grade 10.9 and above, shall be hot dip galvanized in conformance to ISO 10684. The hot dip galvanizer shall issue a certificate of compliance with this requirement. All fasteners shall be supplied by a SABS approved manufacturer.
10. Zinc electroplated (electro-galvanizing) bolts and nuts are unacceptable.
11. All welds to be full length seal weld.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

12. Any coating repairs undertaken on the galvanizers premises or later on site, e.g. touch up of small-uncoated surfaces (black spots), shall be strictly limited both in dimension and quantity as stipulated in the relevant SANS 121 (ISO 1461) specification.
 - 12.1. Uncoated areas and defects shall be repaired according to the site repair instructions below of this. The repaired surface shall not be accepted or dispatched until the repaired surface coating has cured.
 - 12.2. Where coating defects exceed the specified permissible limit, which qualifies for touch-up repairs after galvanizing, affected items shall be rejected and re-galvanized or, if applicable, a repair method may be approved in writing by the engineer.
 - 12.3. Final inspection: Following satisfactory completion of the final inspection and provided prior arrangements have been made as per clause 1, the galvanizers' inspectorate shall issue a certificate stating that the applied coating conforms to the requirements of SANS 121 (ISO 1461) or SANS 32 (EN 10240) as applicable.
13. Quality surveillance:
 - 13.1. For the purpose of carrying out quality surveillance, the engineer or its QA / QC Consultant shall be granted access to any part of the galvanizer's premises relevant to the work being carried out, at any reasonable time. The galvanizer shall provide, at his own cost, any equipment or labour necessary to gain access to surfaces which are coated, to be coated or are in the process of being coated.
 - 13.2. The Engineer may remove any reasonable samples of materials to be used in the coating application. Rejection of the sample will place a hold on the use of material of the same batch number and may lead to rejection of all that batch of material and the reworking of any components that have already been coated with rejected material.
 - 13.3. The Engineer may carry out reasonable destructive tests to ascertain compliance with the specification. The contractor, to the satisfaction of The Engineer and at no additional cost, shall repair areas thus damaged.
 - 13.4. The cost of quality surveillance will be borne by the Engineer, except where surveillance results in rejection of the work or when notice by the contractor results in a fruitless trip, in which case the contractor shall carry the cost of surveillance.
14. Handling and storage:
 - 14.1. Handling: All coated components shall be handled using soft slings or specially positioned lifting points provided for such handling.
 - 14.2. Loading and off-loading: All hot dip galvanized and/or duplex coated components to be transported shall be loaded on suitable dunnage and lashed to avoid chafing and steel to steel contact. Plastic "Spaghetti strips" must be used to protect smaller items of steel and angles (5mm spaghetti plastic coil). Coated steel shall be secured on the truck preferably with nylon securing straps. Where chains must be used, suitable rubber insertion pads must be placed between the coated steel and chains at all contact points.
 - 14.3. Cover: Coated items shall be stored under cover where possible. Items not stored under cover shall be stored in such a manner as to avoid retention of water and allow good circulation. Items shall be stored on timber or on trestles fitted with timber to raise the product to at least 100mm off the ground.
 - 14.4. Stacking: Items shall be stacked using timber packaging or other approved means to avoid coating-to-coating contact. Sufficient bearing area of packing shall be used to avoid damage to coatings.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

15. Site repairs/defects/uncoated areas:

- 15.1. Any coating repairs undertaken on the galvanizers premises or later on site, e.g. touch up of small-uncoated surfaces (black spots), shall be strictly limited both in dimension and quantity as stipulated in the relevant SANS 121 (ISO 1461) specification.
- 15.2. Any uncoated areas, modifications, transportation and erection damage, shall be repaired by abrading with 80 grit sand paper and painting with Zincfix, GalvPatch or equal and approved twin pack zinc rich epoxy paint, achieving an overlap of 5mm onto the surrounding sound zinc coating and to a minimum thickness of 100µm. When a duplex coating system has been specified the DFT of the repair coating shall be equal to that of the surrounding hot dip galvanized coating in terms of SANS 121 (ISO 1461). Steel shall not be accepted until the repaired surface has cured. Furthermore, in priority and as approved by the Engineer:
 - 15.2.1. Black steel utilized in modifications with hot dip galvanized steel shall be dispatched for hot dip galvanizing. Any areas that are to be subsequently welded should either be masked prior to hot dip galvanizing or suitably cleaned of zinc in order to prevent possible weld metal embrittlement or zinc residue inclusions, prior to welding on site.
 - 15.2.2. Alternatively, black steel utilized in modification with galvanized steel shall be abrasive blast cleaned to Standard SA 2½ to obtain a surface profile of 40 to 70 microns. Once the surface profile has been inspected and certified, apply zinc thermal sprayed coating to a minimum thickness of 120µm.
 - 15.2.3. Alternatively, black steel utilized in modifications with hot dip galvanized steel shall be abrasive blast cleaned to Standard SA 2½ per International Standard ISO 8501-1 – 1988 to obtain a surface profile of 40 to 70 microns. Once the surface preparation has been inspected and certified, apply one coat of Zincfix, GalvPatch or equal and approved twin pack zinc rich epoxy paint, achieving a overlap of 5mm onto existing sound hot dip galvanized coating where black steel is welded to hot dip galvanized components. Dry film thickness shall be 100µm. When a duplex coating system has been specified the DFT of the repair coating shall be equal to that of the surrounding hot dip galvanized coating.
- 15.3. Where site modifications by means of welding of a hot dip galvanized surface is required, all traces of the hot dip galvanized coating shall be ground-off prior to welding. Removal of the zinc coating from surfaces to be welded is necessary in order to prevent possible weld metal embrittlement or zinc residue inclusions. Repair to be done to all welds as per above instructions.

I. CORROSION PROTECTION: PAINT**I1: General**

1. The preparation of the substrate and all paint work shall conform in every respect to the standards contained in the South African National Standards, the SANS1200HC or latest edition of the relevant specification.
2. All work to comply with the project specifications.
3. Carefully inspect each coat for misses and carry out dry film thickness (DFT) testing. No single DFT reading may be less than the minimum or greater than the maximum. The mean of the readings shall equal or exceed the nominal.
4. All critical areas, edges, welds, etc. to be given extra stripe coats. All coats to be in contrasting shades.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

5. Surface preparation shall be done by sweep blasting to Sa2½ according to ISO 8501-1 for this project. Chemical cleaning shall only be done on written approval of the Engineer. (Sa2½ - Very thorough blast-cleaning = When viewed without magnification, the surface shall be free from visible oil, grease, and dirt, and from mill scale, rust, paint coatings and foreign matter. Any remaining traces of contamination shall show only as slight stains in the form of spots or stripes. The term "foreign matter" may include water soluble salts and welding residues. These contaminants cannot always be completely removed from the surface by dry-blast cleaning, hand tools and power tool cleaning or flame cleaning: wet blasting may be necessary)
6. **Warning:** Sweep blasting shall be undertaken strictly in accordance with the procedures as specified in the code, with particular reference to the selection of the appropriate abrasive, blasting nozzle pressure and angle of deflection of the blasting media.
7. A hold or witness point should be established after sweep blasting has taken place before painting is commenced where the contractor to give the Engineer 48 hours' notice for inspection.
8. Recoating intervals must be taken into account with transportation and erection times on site and the paint coats done at the place of manufacturing.

INDEX / SCOPE OF PAINT SPECIFICATION

SPEC. SHEET NO	AREA	SCOPE OF WORK	PRODUCT & PRODUCT CODE	WATER/SOLVENT BASED TEXTURE/FINISH	MAINT. CYCLE (years)
1	INLAND	Mild, structural and industrial steel	Plascon Wall & All	Water based	5
2	COASTAL	Hot dip galvanized mild, structural and industrial steel	Plascon Wall & All	Water based	5
3	INLAND	Mild, structural and industrial steel going into the ground	Plascon Plascotuff Epoxy Coal Tar	Solvent based	5
4	INLAND & COASTAL	Insides of hot dip galvanized steel gutters plus hot dip galvanized structural steel going into the ground	Plascon Plascotuff Epoxy Coal Tar	Solvent based	5
5	INLAND & COASTAL: WATERPROOFING	Plastered parapet walls, around hot dip galvanized box gutters & tops of steel roof overlaps	Plascon Plascotuff Epoxy Coal Tar (EPD 100)	Solvent based	-
6	INLAND & COASTAL: WELDS ON GALVANIZED STEEL	Painting welds on hot dip galvanized steel.	GalvPatch or ZinkFix Plascon Wall & All	Zink rich epoxy Water based	6
7	INLAND/COASTAL: ALUMINIUM	Painting Aluminium	Plascon Wall & All	Water based	6
8	INLAND: BOLTS	Painting mild steel bolts	Plascon Wall & All	Water based	6

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SPEC. SHEET NO	AREA	SCOPE OF WORK	PRODUCT & PRODUCT CODE	WATER/SOLVENT BASED TEXTURE/FINISH	MAINT. CYCLE (years)
9	COASTAL: BOLTS	Painting hot dip galvanized bolts	Plascon Wall & All	Water based	6

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

SPECIFICATION SHEET NO: 1**INLAND: PAINTING MILD, STRUCTURAL AND INDUSTRIAL STEEL**

(6-year life expectancy before first maintenance)

NEW WORK/REPAINT: NEW WORK - INLAND

SUBSTRATE: Mild Steel

PAINT FINISH: Plascon Wall & All

PRODUCT CODE: **WAA**

(Smooth finish – water based, premium pure acrylic - sheen)

COLOUR: **As per Architect's specification**

ENVIRONMENT: As per ISO 12944 part 2: Maintenance Cycle (Years)

C1 - Inland 6

C3 - Industrial 6

Coating System	Application Method	Theoretical Spreading Rate / m ²	DFT / WFT µm Max –Min	Reducer/ Cleaner	Overcoating time, @ 25°C	Technical Data Sheet No:
1st Coat: Plascon Epiwash Strontium Chromate Primer (AW255)	B or S	@ 25 µm Theo – 10 Prac – 5	WFT 109152 DFT 25 - 35	GP Epoxy Reducer (EPT 1)	4	E-17
2nd Coat: Plascon Wall & All (WAA)	B, R or S	@ 30 µm Theo – 13 Prac – 7	WFT 63 - 88 DFT 25 - 35	Water	2	L-19
3rd Coat: Plascon Wall & All (WAA)	B, R or S	@ 30 µm Theo – 13 Prac – 7	WFT 63 - 88 DFT 25 - 35	Water	2	L-19
			Minimum DFT 75 µm			

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SPECIFICATION SHEET NO 1:**INLAND: PAINTING MILD, STRUCTURAL AND INDUSTRIAL STEEL
SURFACE PREPARATION****Rust Free**

Surfaces must be clean, dry and rust free. Remove surface contaminants using Plascon Aquasolv Degreaser (GR 1), scrubbing with bristle brush or broom, or using Scotch Brite pads. Rinse thoroughly with tap water while brushing or hydroblast to remove all traces of Plascon Aquasolv Degreaser (GR1) to achieve a water break-free surface. Dry surface rapidly to prevent flash rust formation. Cleaned surface must be painted within 4 hours.

Rusted

After degreasing sand off rust with coarse emery paper or wire brush to ISO 8501 - 01: 1988 - St3 to attain a bright metal finish. Remove dust.

Millscale & Rust

Alternatively, remove millscale and rust by abrasive blast cleaning to ISO 8501 - 01: 1988 - Sa2½. Remove dust by vacuum cleaning. Prime within 4 hours.

APPLICATION FOR PRIMER: PLEASE NOTE POWER MIXING IS ESSENTIAL BEFORE USE FOR PRODUCT CONSISTENCY

Step 1: Primer

Apply one coat of Plascon Epiwash Strontium Chromate Primer (AW255) to achieve a continuous film. Allow 4 hours to dry.

APPLICATION FOR PRIMER AND FINAL COATS**Step 2: Final Coats**

Apply two full coats of Plascon Wall & All (WAA) to achieve complete obliteration, allowing 2 hours drying between coats.

TABLE REFERENCES:

- Technical Data Sheet (TDS): User must always ensure that the latest issue is used.
- Power mixing using a variable speed mixer is preferable.
- All two component materials need to be mixed (Component A & B) as per data sheet or as per instructions on the packaging
- Pot life varies as per temperature gradient.
- Over coating intervals are critical for good inter coat adhesion

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SPECIFICATION SHEET NO. 4:**INLAND AND COASTAL: PAINTING INSIDES OF HOT DIP GALVANISED BOX GUTTERS PLUS HOT DIP GALVANIZED STEEL GOING INTO THE GROUND**

(5 year life expectancy before first maintenance)

NEW WORK/REPAINT: NEW WORK – EXTERIOR – INLAND & MARINE AND COASTAL AREAS WITH HIGH SALINITY

SUBSTRATE: Hot dippes galvanizing (preferably non-passivated)

PAINT FINISH: Topcoats: Plascotuff Epoxy Coal Tar

PRODUCT CODE: **EPD 100**

COLOUR: Black

ENVIRONMENT: As per ISO 12944: Maintenance Cycle (Years)
C5 - Coastal/Marine 5

Coating System	Application Method	Theoretical Spreading Rate / m ²	DFT / WFT μ m Max –Min	Reducer/Cleaner	Overcoating time, @ 25°C	Technical Data Sheet No:
Stripe Coat & Full Primer Coat: Plascon Plascotuff 3000 (PEX 3000/PEH3	Spray Recommend	@150 μ m Theo – 5.3 Prac -	WFT125-250 DFT 100-200	Epoxy Reducer (EPT 2)	Min.16 hours Max 4 weeks	PC-4
1ST Coat Plascotuff Epoxy Coal Tar (EPD100 black)	Apply first layer at 85 μ m dft.	@80 μ m Theo – 7.4 Prac-	WFT118-152 DFT 70-90	G.P. Epoxy Reducer (EPT1)	3 -4 hrs.	PC-22
1ST Coat Plascotuff Epoxy Coal Tar (EPD100 black)	Apply first layer at 85 μ m dft.	@80 μ m Theo – 7.4 Prac-	WFT118-152 DFT 70-90	G.P. Epoxy Reducer (EPT1)	3 -4 hrs.	PC-22
			Minimum DFT 240 μm			

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SPECIFICATION SHEET NO. 4:**INLAND AND COASTAL: PAINTING INSIDES OF HOT DIP GALVANISED BOX GUTTERS PLUS HOT DIP GALVANIZED STEEL GOING INTO THE GROUND**

SURFACE PREPARATION: Also refer Section H: Corrosion protections: Hot dip Galvanizing**Step 1: Degreasing**

Apply Plascon Galvanized Iron Cleaner (GIC1) to all bare galvanized areas by brush, broom or spray. Allow to react for 1 minute. Rinse off with tap water using "Scotch Brite" pads to remove all surface contaminants. Check if surface is water-break free. If not, repeat the cleaning process. Allow to dry completely.

OR PREFEREABLY**Sweep Blasting Hot Dipped Galvanizing.**

Abrasive sweep blast at reduced pressure and using "Garnet Mica" as a blast media to achieve a blast profile of 20 - 30 µm (micrometres). Vacuum clean all debris from the substrate

Step 2: Soluble Salts / Chlorides Test

By means of the Wattman Paper, Weber Reilly or similar test method ensure that the Soluble Salts/ Chloride content to comply with SANS 5770.

APPLICATION FOR PRIMER: please note power mixing is essential before use for product consistency**Step 1 Primer**

NOTE: Stripe coat all welds and edges prior to applying a full primer coat.

Premix both components of the Plascotuff 3000 (PEX 3004 Grey/PEH 3) using a power mixer for 3 minutes and then apply (preferably) by airless spray, conventional spray, roller or brush (small areas only) to a minimum DFT of 100 – 200 µm or WFT of 125 – 250 µm @ a theoretical spread rate of 5.3 m² / lt.

Allow a minimum of 16 hours curing @ 25°C and a maximum of 4 weeks prior to over coating.

Dependent on the mode of application, multiple coats may be required to achieve specified DFT and or full obliteration.

APPLICATION FOR TOP COATS please note power mixing is essential before use for product consistency**Step 2: Apply top coat in multi -coat layers:**

Mix base and hardener of Plascotuff Epoxy Coal Tar (EPD100) individually using a power mixer then add together the Base and Hardener and mix until homogeneous. The mixture must be allowed to stand for at least 20 minutes before use. Mix only sufficient material for the area to be coated within the next 3-4hrs. Material becomes unusable after about 8 hrs. at 25°C.

Note: Brush and roller application: The material once mixed and having stood for 20 minutes is ready for application.

Thinning is not recommended.

Spray: For application thin as required using Plascon G.P. Epoxy Reducer (EPT1).

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Apply by brush or roller, in multicoated layers, Plascotuff Epoxy Coat Tar (EPD 100) to achieve a dry film thickness of 170um.

NOTE: Using a brush application, more than one coat may be required to achieve the specified dry film thickness (dft).

NOTE: EPOXY COAL TAR: do not overcoat with itself once fully cured

TABLE REFERENCES:

- Technical Data Sheet (TDS): User must always ensure that the latest issue is used.
- Power mixing using a variable speed mixer is preferable.
- All two component materials need to be mixed (Component A & B) as per data sheet or as per instructions on the packaging
- Pot life varies as per temperature gradient.
- Over coating intervals are critical for good inter coat adhesion

SPECIFICATION SHEET NO: 5**INLAND AND COASTAL: WATERPROOFING OF PAINTED PARAPET WALLS,
AROUND HOT DIP GALVANIZED BOX GUTTES & STEEL ROOF OVERLAPS**

NEW WORK/REPAINT: NEW WORK – EXTERIOR

SUBSTRATE: Metals – Hot dip galvanized Steel, Mild Steel, Chromadek
Masonry – Plastered Parapet Walls

WATERPROOFING PRODUCT: Professional Waterproofing Compound
PRODUCT CODE: PWC 520
or Plascon Multiseal
PRODUCT CODE: WSS 2

COLOUR: As per Architect's specification

SURFACE PREPARATION: Also refer Section H: Corrosion protections: Hot dip Galvanizing

- Step 1:** Ensure that the surfaces are clean, dry and sound.
- Step 2:** Ensure that the substrate has been pre-primed with the appropriate primer as specified and allowed to dry.
- Step 3:** APPLICATION OF WATERPROOFING COMPOUND
- Masonry parapet walls and surrounds of box gutters to be sealed with Professional Waterproofing Compound (PWC520) or Plascon Multiseal (WSS2) including tops of Chromadek canopy overlaps.
- Three coats must be applied at a wet film thickness of 650µm per coat to achieve the recommended dry film thickness of 1000µm (1mm thick). Allow 4 hours drying at 23°C between coats. (1,7lt/m² for all three coats at 1000µm dry film thickness).

TABLE REFERENCES:

- Technical Data Sheet (TDS): User must always ensure that latest issue is used.
- B = Brush (ready for use), R = Roller (synthetic, min. 10mm pile) (ready for use), S = Airless spray (ready for use).
- Theoretical spreading rate quoted is for smooth non-porous substrates and does not include allowance for surface profile, porosity, wastage and uneven film application. Suitable allowance should be made according to type of work, method and skill of applicator. Practical spreading rate quoted is an average guide only - actual must be determined by user - see Preamble for formulation how to calculate.
- Overcoating times are at 23°C and 75% relative humidity. Longer times must be allowed under cooler and moist conditions. DO NOT paint during inclement weather and when temperature is below 10°C.
- Fading and chalking will occur to a greater or lesser degree depending on pigmentation and generic binder type.
- NB: Life expectancy may vary, depending on environmental conditions and stresses, within the macro/micro climate of the project.

SPECIFICATION SHEET NO: 9
COASTAL: PAINTING HOT DIP GALVANIZED BOLTS
 (6 year life expectancy before first maintenance)

NEW WORK/REPAINT: NEW WORK - COASTAL

SUBSTRATE: Hot dip galvanized

PAINT FINISH:Plascon Wall & All
 (Smooth finish – water based, premium pure acrylic - sheen)

PRODUCT CODE: WAA

COLOUR: As per Architect's specification

ENVIRONMENT: As per ISO 12944 part 2: Maintenance Cycle (Years)
 C5 M Coastal / Marine 6

Coating System	Application Method	Theoretical Spreading Rate / m ²	DFT / WFT µm Max – Min	Reducer/Cleaner	Overcoating time, @ 25°C	Technical Data Sheet No:
1st Coat: Plascotuff 3000 (PEX 3004 Grey / PEH 3 Hardener) Mixing Ratio: 4:1 by volume	Airless Spray, Conventional Pressure Pot Spray or Brush	6.4 m ² / lit @ 125 µm	WFT:125 – 250 DFT:100 – 200	Epoxy Reducer (EPT 2)	Min 16hrs Max 4 weeks	PC - 4
2nd Coat: Plascon Wall & All (WAA)	B, R or S	@ 30 µm Theo – 13 Prac – 7	WFT 63 - 88 DFT 25 - 35	Water	2	L-19
3rd Coat: Plascon Wall & All (WAA)	B, R or S	@ 30 µm Theo – 13 Prac – 7	WFT 63 - 88 DFT 25 - 35	Water	2	L-19
			Minimum DFT 150 µm			

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SPECIFICATION SHEET NO. 9:
COASTAL: PAINTING HOT DIP GALVANIZED BOLTS

SURFACE PREPARATION Also refer Section H: Corrosion protections: Hot dip Galvanizing

Step 1: Degreasing

Apply Plascon Galvanized Iron Cleaner (GIC1) to all bare galvanized areas by brush, broom or spray. Allow to react for 1 minute. Rinse off with tap water using "Scotch Brite" pads to remove all surface contaminants. Check if surface is water-break free. If not, repeat the cleaning process. Allow to dry completely.

APPLICATION FOR PRIMER please note power mixing is essential before use for product consistency

Step 1: Primer

Premix both components of the Plascotuff 3000 (PEX 3004 Grey/PEH 3) using a power mixer for 3 minutes and then apply (preferably) by airless spray, conventional spray, roller or brush (small areas only) to a minimum DFT of 100 – 200 µm or WFT of 125 – 250 µm @ a theoretical spread rate of 5.3 m² / lt.

Allow a minimum of 16 hours curing @ 25°C and a maximum of 4 weeks prior to over coating.

Dependent on the mode of application, multiple coats may be required to achieve specified DFT and or full obliteration.

APPLICATION OF FINAL COATS

Step 2: Final Coats

Apply two full coats of Plascon Wall & All (WAA) to achieve complete obliteration, allowing 2 hours drying between coats.

TABLE REFERENCES:

- Technical Data Sheet (TDS): User must always ensure that the latest issue is used.
- Power mixing using a variable speed mixer is preferable.
- All two component materials need to be mixed (Component A & B) as per data sheet or as per instructions on the packaging
- Pot life varies as per temperature gradient.
- Over coating intervals are critical for good inter coat adhesion

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

C3.3: HEALTH AND SAFETY SPECIFICATIONS

- **ELIDZ Standard OHS Specifications**
- **ELIDZ COVID Specifications**

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE (SOC) LTD OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

For:

Project Start Date:

Project Completion Date:

In this Health and Safety Specification the “Act” or “OHS Act” shall mean the applicable Occupational Health and Safety Act, No. 85 of 1993. The “Regulations” shall mean the applicable regulations associated with the Act, including but not limited to: The applicable Construction Regulations, and the Driven Machinery Regulations. “Contractor” shall mean Contractor, as defined in section 1 of the Act, who performs construction work and includes a principal contractor (as per definitions in the Act). The “Client” means East London IDZ (SOC) Ltd or Independent Developer and “Agent” means any person who acts as a representative for the Client. “SHE” shall mean Safety, Health and Environment.

The Agent or Contractor shall use this specification in conjunction with all other applicable safety specifications, legislation and regulations in force at the time of the main contract for the supply of goods and/or services to the Client. Where unique site specifications are in force, those site specifications shall take precedence over this specification. For added clarity, many sections of the Act and associated Regulations have been quoted or paraphrased.

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PART A - GENERAL OCCUPATIONAL HEALTH AND SAFETY

01. INTRODUCTION

In terms of the applicable Construction Regulation, East London IDZ (SOC) Ltd, is required to compile a Health & Safety Specification for any intended construction project and provide such specification to any prospective tenderer.

The objective of this Health and Safety Specification is to ensure that an Independent Developer, Principal Contractors / Contractors entering into a Contract with EAST LONDON IDZ (SOC) LTD or engaging in Independent Development projects, achieve an acceptable level of occupational health and safety performance. This document forms an integral part of the Contract for Agents as well as Principal and other Contractors and must be part of any their Contracts and those that they may have with Contractors and/or Suppliers.

Compliance with this health and safety specification does not absolve stakeholders, including Principal Contractor / Contractor from complying with minimum legal requirements and the Principal Contractor / Contractor remains responsible for the health & safety of his employees and those of his Mandatories.

All stakeholders shall ensure that they are fully conversant with the requirements of this specification. This specification is not intended to supersede the applicable Act or the Construction Regulations. Those sections of the Act and the Construction Regulations, which apply to the scope of work to be performed by the Contractor in terms of this Contract, continue to be a legal requirement for project stakeholders.

Every effort has been made to ensure that this Specification is accurate in all respects, however, should it contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time.

The Agents and Contractors shall, in submitting their tenders, demonstrate that they have made provision for the cost of compliance with the specified health and safety requirements, the applicable Act and Construction Regulations.

02. SCOPE

This Health And Safety Specification shall be applicable to all projects commissioned by EAST LONDON IDZ (SOC) LTD involving "Construction Work" as defined in the Occupational Health And Safety Act 85 of 1993 (As Amended) and applicable regulations, regardless of the size and value of works and regardless of whether the project is controlled by the ELIDZ or an Independent Developer.

The Principal Contractor / Contractor is required to comply with the provisions of the Health and Safety Specification in order to reduce risks associated with the contract work, that may lead to incidents causing injury or ill-health, to a level as low as is reasonably practicable.

03. OCCUPATIONAL HEALTH AND SAFETY POLICY

The East London Industrial Development Zone (SOC) Ltd (ELIDZ) is a world class Operator of a prestigious industrial complex where highly competitive organisations thrive on streamlined business benefits and stimulate regional economic growth. ELIDZ aims to apply world-class occupational health and safety (OH&S) management practices within its Industrial Development Zone (IDZ), hence becoming the model for similar developments throughout Africa. The ELIDZ shall be developed and operated in a manner, which is economically and socially acceptable and sustainable. The ELIDZ recognizes that OH&S Management is an integral part of its overall business performance as any failure in this area will negatively impact on the Organization, its employees, tenants, contractors and the public.

The ELIDZ (SOC) Ltd is committed to establish and maintain an OH&S Management System to:

- Determine those OH&S hazards related to the ELIDZ development and activities which may put the health and safety of the ELIDZ employees, contractors, tenants, visitors, and community at risk;
- Plan actions to mitigate negative occupational health and safety risks within the ELIDZ's jurisdiction, creating a safe and healthy environment which will lead to the prevention of injuries and ill health;
- Monitor all ELIDZ tenant activities within ELIDZ's jurisdiction which can result in negative OH&S risks;
- Provide a framework and the means for setting, monitoring and achieving objectives to improve OH&S performance;
- Ensure adherence to all OH&S legislation, government policy and other requirements relevant to the development and operation of the ELIDZ;
- Periodically monitor, audit and review progress;
- The above will be underpinned through consultation and participation of workers.

In so doing, the ELIDZ shall wherever reasonably practicable manage potentially detrimental effects on the OH&S of all employees and the health and safety of communities affected by the ELIDZ development.

As a responsible corporate citizen the ELIDZ shall work with companies operating within the ELIDZ and with all tiers of government to ensure appropriate management of OH&S risks within its scope of authority.

The ELIDZ (SOC) Ltd shall pursue continual improvement through the use of:

- Cost effective OH&S performance criteria; and
- Reduction of the risk of ill health, accidents and incidents,

This policy will be communicated to all employees and contractors working for, or on behalf of the ELIDZ and will also be posted on the ELIDZ website.

Top Management take full responsibility for the OH&S performance of the ELIDZ and hereby assert that adherence to this OH&S Policy is mandatory to all ELIDZ employees, contractors and visitors. Top Management hereby further pledge on behalf of the ELIDZ (SOC) Ltd to integrate OH&S considerations into our decision-making processes.

This policy will be reviewed periodically as the need arises to ensure it remains relevant and appropriate to the ELIDZ and will be distributed to the public on request

LEGAL REQUIREMENTS

All Principal Contractors / Contractors entering into a contract with EAST LONDON IDZ (SOC) LTD shall, as a minimum requirement, comply with the following:

- The Occupational Health & Safety Act and Regulations (Act 85 of 1993), hereinafter referred to as “the Act”.
- The applicable promulgated Construction Regulations .These regulations are hereinafter referred to as “the Construction Regulations”.
- The Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the Works.
- The South African Building Regulations
- The Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993).
- All applicable environmental legislation and standards such as the National Environmental Management Act and Regulations, Environmental Conservation Act, Environmental Impact Assessment regulations, etc.
- The wiring code of South Africa in terms of SANS 10142 (Temporary Installation)
- The installation code of electrical apparatus in hazardous locations, in terms of SANS 10108
- The by-laws of the local Municipality e.g. storage of flammable material, waste disposal, etc.
- The National Road Traffic Act,1996.
- The Employment Equity Act No.55 of 1998

04. GENERAL DUTIES OF THE CONTRACTOR TO THEIR EMPLOYEES

(Section 8 of the Act)

All Principal Contractors / Contractors shall ensure that the requirements governing the general duties of employers to their employees as defined here below are carried out in terms of the Act.

- Every Contractor shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees and the environment.
- Without derogating from the generality of an employer’s duties, the matters to which those duties refer include in particular—

- The provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to the health of workers and the environment;
- Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment;
- Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the environment;
- Making arrangements for ensuring, as far as is reasonably practicable, the safety and absence of risks to health or the environment in connection with the production, processing, use, handling, storage or transport of articles or substances;
- Establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;
- Providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees and the protection of the environment;
- As far as is reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in the paragraphs above, or any other precautionary measures which may be prescribed, have been taken;
- A contractor shall ensure where applicable that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3(Refer to Regulation)

All Principal Contractors / Contractors employee shall on the premises of EAST LONDON IDZ (SOC) LTD—

- Take all necessary measures to ensure that the requirements of the Act are complied with by every person in his employment or on premises under his control where plant or machinery is used;
- Enforce such measures as may be necessary in the interest of health and safety and the protection of environment;
- Ensure that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and

- Cause all employees to be informed regarding the scope of their authority as contemplated in section 37 (1) (b) of the Act.

05. DUTIES OF PRINCIPAL CONTRACTOR AND CONTRACTOR

(1) A principal contractor must—

- (a) provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the client's documented health and safety specifications contemplated in regulation 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;
- (b) open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's OH&S agent or a contractor; and
- © on appointing any other contractor, in order to ensure compliance with the provisions of the Act—
 - (i) provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in regulation 5(1)(b) pertaining to the construction work which has to be performed;
 - (ii) ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;
 - (iii) ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;
 - (iv) ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
 - (v) appoint each contractor in writing for the part of the project on the construction site;
 - (vi) take reasonable steps to ensure that each contractor's health and safety plan contemplated in subregulation (2)(a) is implemented and maintained on the construction site;

- (vii) ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days
 - (viii) stop any contractor from executing construction work which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
 - (ix) where changes are brought about to the design and construction, make available sufficient health and safety information and appropriate resources to the contractor to execute the work safely; and
 - (x) *discuss and negotiate with the contractor the contents of the health and safety plan contemplated in subregulation (2)(a), and must thereafter finally approve that plan for implementation*
- (c) ensure that a copy of his or her health and safety plan contemplated in paragraph(a) as as the contractor health and safety plan contemplated in subregulation(2)(a) is available on request to an employee an inspector, a contractor, the or the clients OH&S agent.
- (d) Hand over the consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in subregulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure.
- (e) In addition to the documentation required in the health and safety file in terms of paragraph ©(v) and subregulations (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreement between the parties and the type of work being done and
- (f) Ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.
- (2) A contractor must prior to performing any construction work—
- a) provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification contemplated in regulation 5(1)(b) and provided by the principal contractor in terms of subregulation (1)(a), which plan must be

- applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;
- b) open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, and which must be made available on request to an inspector, the client, the client's OH&S agent or the principal contractor;
 - c) before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
 - d) co---operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
 - e) as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

(3) Where a contractor appoints another contractor to perform construction work, the duties determined in subregulation (1)(b) to (g) that apply to the principal

06 GENERAL DUTIES OF THE CONTRACTOR'S EMPLOYEES ONSITE

(Section 14 of the Act)

All Principal Contractors / Contractors shall ensure that the requirements governing the General duties of employees at work as defined here below are carried out in terms of the Act.

Every Principal Contractor's / Contractor's employee shall on the premises of EAST LONDON IDZ (SOC) LTD—

- Take reasonable care for the environment and for the health and safety of himself and of other persons who may be affected by his acts or omissions;
- As regards any duty or requirement imposed on his employer or any other person by this Act, co-operate with such employer or person to enable that duty or requirement to be performed or complied with;
- Carry out any lawful order given to him, and obey the SHE rules and procedures laid down by his employer or by anyone authorized thereto by his employer, in the interest of health, safety or the protection of the environment;
- If any situation which is unsafe, unhealthy or detrimental to the environment comes to his attention, as soon as practicable report such situation to his employer or to the SHE representative for his workplace or section thereof, as the case may be, who shall report it to the employer; and
- If he is involved in any incident which may affect his health or which has caused an injury to himself, report such incident to his employer or to anyone

authorized thereto by the employer, or to his SHE representative, as soon as practicable but not later than the end of the particular shift during which the incident occurred, unless the circumstances were such that the reporting of the incident was not possible, in which case he shall report the incident as soon as practicable thereafter.

7 DUTY TO INFORM

Without derogating from any specific duty imposed on the Contractor by this Act, every Principal Contractor / Contractor shall—

- As far as is reasonably practicable, cause every employee to be made conversant with the SHE hazards attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with respect to those hazards;
- Inform the SHE representatives concerned beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector, and of any application for exemption made by him in terms of section 40 of the Act; and
- Inform a SHE representative as soon as reasonably practicable of the occurrence of an incident in the workplace or section of the workplace for which such representative has been designated.

Duty not to interfere with, damage or misuse things —

The Principal Contractor / Contractor shall ensure that no person under his/her control shall intentionally or recklessly interfere with, damage or misuse anything, which is provided in the interest of SHE protection.

8 STRUCTURE AND RESPONSIBILITIES

Overall Supervision and Responsibility for Occupational Health and Safety

The Chief Executive Officer of the Principal Contractor / Contractor, in terms of Section 16(1) of the Act shall ensure that the duties of his employer as contemplated in the Act, are properly discharged.

Every Principal Contractor / Contractor when entering in a contract with EAST LONDON IDZ (SOC) LTD and when appointing Contractors (Sub-contractors) in terms of the applicable Construction Regulations, shall do so in terms of section 37(2) of the Act.

The Contractor shall accept the appointment under the terms and Conditions of Contract. The Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended

construction work in terms of the applicable Construction Regulations. Proof of this must be submitted to EAST LONDON IDZ (SOC) LTD.

Any acceptance, approval, check, certificate, consent, examination, inspection, instruction, notice, observation, proposal, request, test or similar act by either the Employer, any of his Agents or the Representative / OH&S Agent including lack of disapproval shall not relieve the Contractor from any responsibility he has under the Act and the applicable Construction Regulations, including responsibility for errors, omissions, discrepancies and non-compliance.

The Client or his Representative / OH&S Agent will stop the Contractor from executing construction work should the Contractor at any stage in the execution of the Works

- fail to implement or maintain his SHE plan;
- execute construction work which is not in accordance with his SHE plan; or
- act in any way which may pose a threat to the health and safety of persons and/or the environment.

Any loss of time to the contract resulting from this type of stoppage will be for the account of the Contractor.

Every Principal Contractor / Sub Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and associated Regulations.

Below is a list of identified possible (not limited to these) appointments / designations required depending on the size and nature of the project where applicable.

Designations / Appointments (see applicable Regulations of the Act)

Asbestos Stripping/Demolishing Supervisor (Asbestos Regulations)
 Construction Vehicles/Mobile Plant/Machinery Supervisor and Inspector (Construction Regulation)
 Demolition Supervisor (Construction Regulation)
 Drivers/Operators of Construction Vehicles/Plant (Construction Regulation)
 Electrical Installation and Appliances Inspector (Construction Regulation)
 Emergency/Security/Fire Coordinator (Construction Regulation)
 Excavation Supervisor and Inspector (Construction Regulation)
 Explosive Powered Tool Supervisor (Construction Regulation)
 Fall Protection Designer/Supervisor and Developer (Construction Regulation)
 First Aider (General Safety Regulation)
 Fire Equipment Inspector (Construction Regulation)
 Temporary Works Supervisor (Construction Regulation)
 Hazardous Chemical Substances Supervisor (HCS Regulations)
 Incident Investigator (General Admin Regulation)
 Ladder Inspector (General Safety Regulations)
 Lifting Equipment Inspector and Operator (Construction Regulation)
 Materials Hoist Inspector (Construction Regulation)

SHE Committee (OHS Act)
 SHE Officer (Construction Regulation)
 SHE Representatives (OHS Act)
 Person Responsible for Machinery (General Mach. Regulation)
 Scaffolding Supervisor, Erector and Inspector (Construction Regulation)
 Stacking & Storage Supervisor (Construction Regulation)
 Structures Supervisor, Inspector (Construction Regulation)
 Suspended Platform Supervisor, Erector, Inspector and Operator (Construction Regulation)
 Vessels under Pressure Supervisor (Pressure Equipment Regulations)
 Welding Supervisor (General Safety Regulation)
 Construction Manager & Supervisor (Construction Regulation)
 Temporary Works Designer, Erector, Inspector, Supervisor (Construction Regulation)
 Rope Access Work Operator and Supervisor (Construction Regulation)
 Bulk Mixing Plant Operator and Supervisor (Construction Regulation)
 The appointments shall be in writing on the Principal Contractor's / Contractor's letter head and the responsibilities clearly stated together with the period for which the appointment / designation is valid. This information shall be communicated and agreed with the appointees.
 OH&S Agent – Client (Construction Regulation)
 Assistant Construction Manager and Supervisor (Construction Regulations)
 CEO (OHS Act)
 Assistant CEO (OHS Act)
 Sub-contractor (Construction Regulations)
 Crane Supervisor (Construction Regulations)
 Competent Person Machinery (GMR)
 Explosive actuated fastening device Operator, Inspector and Controller (Construction Regulation)
 Hand Tool Inspector
 Lifting Tackle Inspector (DMR)
 Good Hoist Inspector (DMR)
 Principal Contractor (Construction Regulation)
 Risk Assessor (Construction Regulation)
 Scaffold Team Leader (Construction Regulation)

Copies of appointments shall be submitted to EAST LONDON IDZ (SOC) LTD / OH&S Agent together with concise CV's of the appointees. EAST LONDON IDZ (SOC) LTD reserves the right to approve / disapprove an appointee and any changes in appointed / designated personnel shall be brought to the attention of EAST LONDON IDZ (SOC) LTD before the appointee assumes responsibility.

The Principal Contractor / Contractor shall, provide EAST LONDON IDZ (SOC) LTD with an organogram of all appointed / designated personnel and contractors and keep an up to date copy on site at all times.

In terms of the applicable Construction Regulation, or when instructed by EAST LONDON IDZ (SOC) LTD or an Inspector of the Department of Labour, the Principal Contractor / Contractor shall appoint a full-time or part-time competent Occupational Health And Safety Construction Officer (SHE Officer). This appointment shall be subject to approval by EAST LONDON IDZ (SOC) LTD.

9 DESIGNATION OF OH&S REPRESENTATIVES

(Applicable Act)

Where the Principal Contractor / Contractor employs more than 20 persons (including the employees of others), he shall ensure that SHE Representatives are appointed in terms of the General Administrative Regulations and section 17 of the Act.

SHE Representatives shall be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

The Contractor's safety representative shall make available to EAST LONDON IDZ (SOC) LTD a telephone number at which the representative can be contacted at any time in the event of an emergency involving any of the Contractor's employees, or other persons at the Works.

10 DUTIES AND FUNCTIONS OF THE SHE REPRESENTATIVES

(Section 19 of the Act)

The Principal Contractor / Contractor shall ensure that the designated SHE representatives conduct inspections where required, using a checklist, of their respective areas of responsibility and report thereon to the Principal Contractor. The duties and responsibilities of the SHE representative are defined in section 19 of the Act

11 APPOINTMENT OF SHE COMMITTEE

(Section 20 of the Act)

The Principal Contractor / Contractor shall establish a SHE Committee where necessary consisting of all the designated SHE representatives and other co-opted persons.

Members of this committee shall be appointed in writing and shall meet at least monthly and the meeting Agenda shall contain the following but not limited to:

- Opening & Welcome;
- Present/Apologies/Absent;
- Minutes of previous Meeting;
- Matters Arising from the previous Minutes;
- SHE Representatives Reports;

- Incident Reports & Investigations;
- Incident /Injury Statistics;
- Other Matters;
- Endorsement of Registers and other statutory documents by a representative of the Principal Contractor;
- Close/Next Meeting.

12 HAZARD IDENTIFICATION AND RISK ASSESSMENT

(Applicable Construction Regulation)

Development of Risk Assessments

Every Principal Contractor / Contractor performing Construction Work shall, before the commencement of any Construction Work or work associated with the aforesaid Construction Work and during such work, cause a Risk Assessment to be performed by a competent person, appointed in writing, and the Risk Assessment shall form part of the SHE Plan and be implemented and maintained as contemplated in applicable Construction Regulation.

A copy of the risk assessment shall be available on site at all times for inspection.

The Risk Assessment Shall Include, At Least:

- the identification of the risks and hazards to which persons may be exposed to;
- the identification of the risks and hazards to the environment;
- the analysis and evaluation of the risks and hazards identified;
- a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- a monitoring plan and;
- A review plan.

Based on the Risk Assessments, the Principal Contractor / Contractor shall develop a set of site-specific Safe Work Procedures (SWP's)/ that will be applied to regulate the SHE aspects of the construction.

The Risk Assessments, together with the site-specific SWP's shall be submitted together with the SHE Plan to EAST LONDON IDZ (SOC) LTD before site hand over.

The Contractor shall at all times carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property or the environment.

The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions which contribute to the risk of injury to persons or damage to property or the environment.

Review of Risk Assessments

The Principal Contractor / Contractor shall review the Hazard Identification, Risk Assessments and SWP's as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor / Contractor shall provide the EAST LONDON IDZ (SOC) LTD and other Contractors with copies of any changes, alterations or amendments of the above-mentioned review.

A client must—

- a) prepare a baseline risk assessment for an intended construction work project;
 - b) prepare a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment contemplated in paragraph (a);
 - c) provide the designer with the health and safety specification contemplated in paragraph (b);
- ensure that the designer takes the prepared health and safety specification into consideration during the design stage;
- ensure that the designer carries out all responsibilities contemplated in regulation 6;

13 THE SHE FILE

As required by the applicable Construction Regulation the Principal Contractor / Contractors shall keep and maintain a Site Health And Safety File on the premises to be made available to the Employer or Inspector upon request, containing the following documents but not limited to:

- Notification of Construction Work;
- Copy of Act and applicable Regulations;
- Proof of Registration and letter of good standing with a compensation fund;
- Occupational Health & Safety Plan agreed with the Client including the underpinning Risk Assessment/s & (Copies of SHE Committee and other relevant Minutes;
- Copy of SHE policies, HIV/AIDS policy
- Accident and incident register and investigation forms
- Appointment forms
- Completed inspection checklists, audits
- Training and competency records
- Designs / drawings;
- Risk/Hazard assessment plan.

- A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor
- Copies of 37(2) appointments in terms of Act
- Monthly Statistical monitoring of OHS incidents as per ELIDZ requirements
- Section 37.2 agreements
- Monthly contractor reports of close outs to OHS Non-conformities reported by OH&S agent.

Upon completion of the Works, the Contractor shall hand over the consolidated health and safety file to the Employer.

14 LEGAL INSPECTION REGISTERS:

The Principal Contractor / Contractor shall conduct all prescribed inspections.. All registers shall be kept on file and EAST LONDON IDZ (SOC) LTD reserves the right to inspect all legal compliance registers.

- Accident/Incident Register (Annexure 1 of the General Administrative Regulations);
- OH&S Representatives Inspection Register;
- Asbestos Demolition & Stripping Register;
- Batch Plant Inspections;
- Construction Vehicles & Mobile Plant Inspections by Controller;
- Daily Inspection of Vehicles. Plant and other Equipment by the operator/Driver/User;
- Demolition Inspection Register;
- Designer's Inspection of Structures Record;
- Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools);
- Excavations Inspection;
- Explosive Powered Tool Inspection/Maintenance/Issue>Returns Register (incl. cartridges & nails);
- Fall Protection Inspection Register;
- First Aid Box Contents;
- Fire Equipment Inspection & Maintenance;
- Formwork & Support work Inspections;
- Hazardous Chemical Substances Record;
- Ladder Inspections;
- Lifting Equipment Register;
- Materials Hoist Inspection Register;
- Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.);
- Scaffolding Inspections;
- Stacking & Storage Inspection;
- Inspection of Structures;

- Inspection of Suspended Platforms;
- Inspection of Tunnelling Operations;
- Inspection of Vessels under Pressure;
- Welding Equipment Inspections;
- Oxy-Acetylene equipment inspections;
- Inspection of Work conducted on or Near Water;
- All other applicable records;

15 SHE GOALS, OBJECTIVES & ARRANGEMENTS FOR MONITORING & REVIEW OF SHE PERFORMANCE

The Principal Contractor shall maintain incident/ injury statistics and report on this to EAST LONDON IDZ (SOC) LTD on a monthly basis.

Disabling Injury: is defined as any incident which arises directly out and in the course of duty, resulting in any occupational illness, injury or disease: giving rise to any related temporary or permanent disablement as determined by a medical practitioner. Furthermore, incidents shall be classified as **disabling** where one or more of the following criteria are applicable:

- ◆ The affected person is unable to continue with all of the task for which they were appointed responsible for, and which constitutes their normal work duties;
- ◆ The loss of one or more days or shifts following the shift during which the incident occurred, inclusive of weekends and scheduled off-duty days;
- ◆ All fractures and amputations, irrespective whether any days were lost (with exception of a hairline fracture which is certified by an attending physician as needing no further medical treatment, and provided no supportive materials are applied);
- ◆ Unconsciousness, irrespective of duration, resulting from workplace exposure or incident;
- ◆ Occupational illness which necessitates medical treatment resulting in restricted duties; and
- ◆ Any bone damage except close damage to the tuft of the terminal phalanx e.g. closed fracture, amputation of the tip of a finger.

The Contractor shall report monthly incident/injury statistics in the following manner:

Each contractor must maintain and provide a monthly summary register of incidents in the following tabulated format

Contractor Name _____	Month _____
FATAL	
LTI	
MT	
FA	
Man hours worked for the month	

FATAL = Fatal injury

LTI = Lost time injury

Mt = Medical Treatment

FA = First aid

These statistics are to be completed month on month representative of a calendar month. These statistics are to be submitted within the first week of the new month to the ELIDZ SHEQ Manager or representative

Non-conformities and corrective actions

Non-conformities are raised by appointed SHE agents representing the ELIDZ. These are typically reported on a daily or weekly basis for action by the contractors. Contractors are to summarise these non-conformities onto the following tabulation and submit comments re' close out of these at the end of each calendar month to the SHEM of the ELIDZ:

PROJECT	DATE	SIGNIFICANT OPEN NON-CONFORMANCES/ INCIDENTS	CORRECTIVE/PREVENTIVE ACTION/ COMMENTS	STATUS Complete/open
OHS agent inspections/ audits				
Environmental non-conformances - construction				

Employer's Incentive Programme

The Employer, through the Engineer may, develop and implement an incentive system from time to time to award, or acknowledge Contractor's health and safety performance.

PENALTIES

The Contractor shall be penalised R1000.00 for commencing works on site without requisite approved method statements and safe working procedures.

The Contractor shall be penalised R200.00 for each day on which work continues without requisite approved method statements.

Penalties arising out of lack of method statements shall be deductible from monthly payment certificates.

The tabulation below

Minor: Penalty: R50/count	Medium: Penalty: R200/count or non-conformance	Severe Penalty: R5000/count, non-conformance and/or activity stoppage
Non-use of PPE supplied	Toilets not supplied or regularly serviced; lack of drinking water	Contractors working without Health and Safety Plan approval
Non completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate H&S method statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Failure to adhere to requirements of fall protection and fall arrest controls
Minor at risk actions and or conditions of a continuous nature.	No monthly OHS report at site meeting to report on	Scaffolding and or formwork not inspected, signed off and grossly non-compliant to the SANS codes and legal requirements
	No certificates of fitness for workers as required	Deep excavations not inspected, signed off and grossly non-compliant to legal requirements
	General non-compliance to developed procedures, forms, appointments and other requirements of the contractors OHS plan	Continued or repeated gross at risk actions and or conditions.

16 NOTIFICATION OF CONSTRUCTION WORK / CONSTRUCTION WORK PERMIT

(Construction Regulation: Applicable)

CONSTRUCTION WORK NOTIFICATION / PERMIT

A contractor who intends to carry out any construction work must at least 7 days before the work is carried out notify the provincial director in writing.

The client must at least 30 days before construction work is carried out, apply to the provincial director in writing for a construction permit to perform construction work if the Refer to exemption issued by the Chief Inspector.

17 TRAINING, AWARENESS, PROMOTION AND COMPETENCE

The Principal Contractor/Contractor shall include training certificates of appointed/designated personnel in the Health and Safety Plan.

Site Specific SHE Induction Training

The Principal Contractor / Contractor shall develop project specific SHE Induction Training based on the Risk Assessments and ensure that all employees receive induction training. No employees shall be allowed on site unless in possession of valid proof of induction training and identification at all times. The Principal Contractor / Contractor shall present him/herself for EAST LONDON IDZ (SOC) LTD site specific induction training at the SHEQ department office prior to commencement of work.

Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment shall be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations shall be in possession of valid proof of training.

Failure to adhere to the above mentioned will result in the operator's eviction from site and no delay claims will be entertained by the client.

OH&S Training Requirements: (as required by the applicable Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- General Induction (Section 8 of the Act)
- Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- Site/Project Manager
- Construction Supervisor
- SHE Representatives (Section 18 (3) of the Act)
- Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation)
- Basic Fire Prevention & Protection (Applicable Environmental Regulations and Construction regulation)
- Basic First Aid (General Safety Regulations)
- Storekeeping Methods & Safe Stacking (Construction Regulation)
- Emergency, Security and Fire Co-coordinator

Awareness & Promotion

The Principal Contractor / Contractor shall develop and implement a SHE promotion and awareness scheme for all employees and others affected by work activities. The following are some of the methods that may be used:

- Toolbox Talks

- SHE Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as SHE circles.

Competence

The Principal Contractor / Contractor shall ensure that his and other Contractors personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences. The Principal Contractor / Contractor shall ensure that follow-up and refresher training is conducted as construction work progresses and the work situation changes.

Records of all training shall be kept in the OH&S file for auditing purposes.

18 CONSULTATION, COMMUNICATION AND LIAISON

All SHE liaison between the Client, the Principal Contractor, other Contractors, the Designer, the Principal Agent and other concerned parties shall be through the SHE committee.

In addition to the above, communication may be directly to the Client or his appointed Agent, in writing, as and when the need arises.

Consultation with the workforce on SHE matters shall be through their Supervisors, SHE Representatives, the SHE committee and their elected Trade Union Representatives, if any.

The Principal Contractor / Contractor shall be responsible for the dissemination of all relevant SHE information to other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her Agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

19 INSPECTIONS, AUDITING, REPORTING AND CORRECTIVE ACTIONS

Monthly Inspections & Audit by OH&S Agents

These Occupational Health and Safety Inspections & Audits will be conducting monthly to ensure that the principal Contractor has implemented and is maintaining the agreed and approved SHE Plan.

Other Audits and Inspections by EAST LONDON IDZ (SOC) LTD / Agent

EAST LONDON IDZ (SOC) LTD reserves the right to conduct other ad hoc audits and inspections as deemed necessary.

Conducting an Audit

A representative of the Principal Contractor / Contractor shall accompany EAST LONDON IDZ (SOC) LTD SHEQM team or OH&S Agent on all Audits and Inspections and may conduct his / her own audit / inspection at the same time.

Contractor's Audits and Inspections

The Principal Contractor / Contractor shall conduct monthly internal audits to verify compliance with his own occupational health and safety management systems and procedures.

Inspections by SHE Representative's and Other Appointees

Occupational Health and Safety Representatives shall conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees shall conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

Recording and Review of Inspection Results

All the results of the abovementioned inspections are to be reported in writing, reviewed by the relevant stakeholders, endorsed by the delegated authority and kept on file.

20 INCIDENT REPORTING

Reporting Of Accidents And Incidents (*Section 24 and General Administrative Regulation 8 of the Act*)

Subject to the provisions of this section of the Act, the Contractor shall within seven days after having received notice of an accident or having learned in some other way that an employee has met with an accident, report the accident to the commissioner in the prescribed manner

The Principal Contractor / Contractor shall provide EAST LONDON IDZ (SOC) LTD with copies of all internal and external accident / incident investigation reports including the reports contemplated above and below within 7 days of the incident occurring.

21 ACCIDENT AND INCIDENT INVESTIGATION

(*General Administrative Regulation 9 of the Act*)

The Principal Contractor / Contractor shall investigate all accidents / incidents where employees and non-employees were injured to the extent that he / she / they had to be referred for medical treatment by a doctor, hospital or clinic and results recorded on file.

The Principal Contractor / Contractor shall investigate all minor and non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Principal Contractor / Contractor shall investigate all road traffic accidents and keep a record of the results of such investigations including the steps taken to prevent similar accidents in future.

EAST LONDON IDZ (SOC) LTD reserves the right to hold its own investigation into any incident or call for an independent external investigation.

22. EMERGENCY PREPAREDNESS, CONTINGENCY PLANNING AND RESPONSE

The Principal Contractor / Contractor shall appoint a competent person to act as Emergency Controller/Coordinator.

The Principal Contractor / Contractor shall conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she shall then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that EAST LONDON IDZ (SOC) LTD may have in place.

The Contractor shall establish in the interest of his employees and any other person who may be affected by his/her acts or omissions an on-site emergency plan, which must be adhered to during the construction work.

The plan shall include: -

- Emergency response for seriously injured people under his/ her control requiring the assistance of an **ambulance service**.
- An emergency plan containing a procedure for the reporting and the cleaning up of any hazardous substance spillage.
- A firefighting emergency plan.
- Discuss the emergency plan with his/her employees, and subcontractors.
- Reviewing of the on-site emergency plan and, where necessary, update the plan.
- Signing of a copy of the on-site emergency plan in the presence of two witnesses, who shall attest the signature;
- Ensure that the on-site emergency plan is readily available at all times for implementation and use;
- Ensure that all his/her mandatories are conversant with the on-site emergency plan; and
- Cause the on-site emergency plan to be tested in practice at least twice a year during the construction contract and keep a record of such test.

23 FIRST AID

(General Safety Regulation 3 of the Act)

The Principal Contractor / Contractor shall provide First Aid equipment (**including a stretcher**) and have qualified First Aider/s as required by General Safety Regulation 3 of the Act.

The first aid box shall be checked by a responsible person, who shall be appointed by the Contractor, and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor.

The Contractor shall provide a safety notice board where safety notices, site regulations concerning safe working practices and information on the nearest first aid station, ambulance, doctor and telephone numbers of the safety officer and other relevant persons can be conspicuously displayed to all its staff.

The Contingency Plan of the Principal Contractor / Contractor shall include the arrangements for speedily and timeously transporting injured / ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor / Contractor shall have firm arrangements with his other contractors in place regarding the responsibility of the other Contractor's injured / ill employees.

24 SECURITY

The Principal Contractor / Contractor shall comply with EAST LONDON IDZ (SOC) LTD site access rules.

The Contractor's employees are not allowed to enter any of the EAST LONDON IDZ (SOC) LTD tenant facilities except the areas demarcated as construction areas, as defined in the scope of work within the contract. Failure to comply with this instruction will result in the Contractor's employees being escorted from EAST LONDON IDZ (SOC) LTD premises.

25 FIRE PREVENTION AND PROTECTION

Subject to the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No. R.2281 of 16 October 1987, as amended. The Principal Contractor / Contractor shall at all times ensure that:

- All appropriate measures are taken to avoid the risk of fire;
- Sufficient and suitable storage is provided for flammable liquids, solids and gases;
- Smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
- In confined spaces and other places in which flammable gases, vapours or dust can cause danger—
 - Only suitably protected electrical installations and equipment, including portable lights, are used;
 - There are no flames or similar means of ignition;
 - There are conspicuous notices prohibiting smoking;
 - Oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and
 - Adequate ventilation is provided;
- Combustible materials do not accumulate on the construction site;
- Welding, flame cutting and other hot work are done only after the appropriate precautions as required have been taken to reduce the risk of fire;

- Suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;
- The fire equipment is inspected by a competent person, who has been appointed in writing, in the manner indicated by the manufacturer thereof;
- A sufficient number of workers are trained in the use of fire- extinguishing equipment;
- Where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;
- The means of escape is kept clear at all times;
- There is an effective evacuation plan providing for all:
 - Persons to be evacuated speedily without panic;
 - Persons to be accounted for; and
 - Plant and processes to be shut down; and
 - A siren is installed and sounded in the event of a fire.

6 CONSTRUCTION WELFARE FACILITIES AND LIVING ACCOMODATION

The Contractor shall ensure that the requirements governing Construction welfare facilities as indicated here below are carried out in terms of the applicable Construction Regulations.

The contractor shall, depending on the number of workers and the duration of the work, provide at or within reasonable access of every construction site, the following clean and maintained facilities:

- At least one shower facility for every 15 workers;
- At least one sanitary facility for every 30 workers;
- Changing facilities for each sex; and
- Sheltered eating areas.

The Contractor shall submit to the engineer for approval plans for the layout of temporary construction buildings, facilities, fencing, access routes and anchoring systems, 10 days before installation of such temporary structures.

Fencing

The contractor shall provide temporary fencing around the site camp and for all works carried out in areas of active utilization by members of the public. The Contractor shall note that the Site perimeter is currently being walled and fenced under a separate contract, which will run concurrently with this Contract. Therefore the Contractor should not include the cost of perimeter fencing in the tender, but should include any other temporary fencing around his installations.

Signage

Signs warning of presence of construction hazards and requiring unauthorized persons to keep out of the construction area shall be posted on the fencing.

Living Accommodation

No employee accommodation will be allowed on site.

7 PERSONAL & OTHER PROTECTIVE EQUIPMENT

(Sections 8, 15 & 23 of the Act)

The Principal Contractor / Contractor shall identify the hazards in the workplace and deal with them. Personal Protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered.

Where it is not possible to create an absolutely safe and healthy workplace the Contractor shall inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the Contractor maintain the said equipment, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use/wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment

was prescribed but an alternative solution has to be found that may include relocating or discharging the employee.

The Contractor may not charge any fee to an employee for protective equipment prescribed by him/her but may charge for equipment under the following conditions:

- Where the employee requests additional issue in excess of what is prescribed
- Where the employee has patently abused or neglected the equipment leading to early failure
- Where the employee has lost the equipment

All employees shall, as a minimum, be required to wear the following PPE on site:

- Hard hats - All employees of the Contractor shall wear hard hats in areas where appropriate hazard notices are displayed. The Representative/Agent shall have the right to ban certain colours if they are similar to the Client's identifying colours. Hard hats shall not be painted or otherwise defaced.
- Eye protection - Suitable eye protection shall be worn in areas where appropriate hazard notices are displayed, or when grinding, chipping, breaking, drilling, arc-welding, cutting with oxyacetylene equipment of similar activities are taking place.
- Hearing protection - Suitable hearing protection shall be worn in areas where appropriate hazard notices are displayed.
- Foot wear - All employees of the Contractor shall wear undamaged, laced-up safety boots or safety shoes, suitable for the intended purpose, in prescribed areas where appropriate hazard notices are displayed.
- Gloves - All employees of the Contractor's shall wear suitable protective gloves in areas where appropriate hazard notices are displayed or when handling hot or hazardous materials or chemicals.
- Clothing - All employees of the Contractor shall wear suitable protective clothing when working in proximity of machinery, power tools, hazardous materials or chemicals.

8 PUBLIC HEALTH & SAFETY

(Section 9 of the Act)

The Contractor shall ensure that each person visiting a site, or the public, particularly the community residing in the surrounding area, shall be made aware of the dangers likely to arise from on-site activities and the precautions to be observed to avoid or minimize those dangers. Appropriate health and safety signage shall be posted at all times. Appropriate signage shall be posted to this effect and all employees on site shall be instructed on ensuring that non-employees are protected at all times. All non-employees entering the site shall receive induction into the hazards and risks and the control measures for these.

The Employer, Engineer and the Contractor have a duty in terms of the OHSA to do all that is reasonably practicable to prevent members of the public and others being affected by the construction processes and to be aware and put preventative measures in place.

Pest and Vermin Control

All Contractors enclosed workplaces, including residential accommodation for staff on site shall be maintained so far as reasonably practical, to prevent entrance and harborage of rodents and pests and other vermin. An effective extermination programme shall be instituted where the presence of such vermin is detected.

Epidemics

The Contractor shall ensure that all modifiable disease occurring on their site are reported to the relevant health authorities and proper precautions implemented to contain the disease, in accordance with the regulations promulgated under the National Health Act No. 61 of 2003.

Table 3

Medical condition	Medical condition	Medical condition	Medical condition	Medical condition
Acute flaccid paralysis	Food poisoning	Meningococcal infection	Tetanus	Typhus fever – rat lead born
Anthrax	Haemophilus Influenza type B	Paratyphoid fever	Trachoma	
Brucellosis	Lead Poisoning	Plague	Tuberculosis – Primary	Viral hepatitis type A
Cholera	Legionellosis	Poisoning agricultural stock remedies	Tuberculosis – Pulmonary	Viral hepatitis type B
Congenital syphilis	Leprosy	Poliomyelitis	Tuberculosis – other	Viral hepatitis non A non B
Crimean Congo Haemorrhagic Fever and other Haemorrhagic diseases of Africa	Malaria	Rabies – Human	Typhoid	Viral hepatitis unspecified
Diphtheria	Measles	Rheumatic fever	Typhus fever – Lice borne	Whooping cough
				Yellow Fever

29 . Night Work

The Contractor shall not undertake any night work without prior arrangement with the ELIDZ and a written work permit. The Contractor shall ensure that adequate lighting is provided for all night work and failure to do so shall result in work being stopped

30. HIV/AIDS MANAGEMENT

HIV/AIDS Policy

The Contractor shall submit to the Engineer a HIV/AIDS policy signed by the Chief executive of the Company.

The HIV/AIDS Policy shall address but not limited to the following:

- HIV prevention and precaution programme;
- Education and awareness programme;
- Statements on job access for applicants with HIV;
- Statement on job security of employees;
- Statement on HIV testing of employees and applicants;

- Confidentiality and or disclosure policy; and
- Statement on safety of co-workers.

HIV/AIDS Management Plan

The Contractor shall submit a HIV/AIDS management plan to the Engineer within 10 days of receiving a letter of appointment and before commencement of work.

PART B – SITE SPECIFIC REQUIREMENTS

31. FALL PROTECTION

(Applicable Construction Regulation)

A pre-emptive Risk Assessment shall be required for any work carried out above two metres from the ground or any floor level and will be classified as “Work in Elevated Positions”.

As far as is practicable, any person working in an elevated position shall work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing a single belt with lanyard that shall be worn to prevent the person falling from the platform, ladder or other device utilized.

This safety belt shall be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard shall be of such a length that the person will not be able to move over the edge.

Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribed in SANS 1085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the above mentioned requirement is not practicable, the person shall be provided with a full body harness that shall be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device. Only double lanyard fall arrest harnesses are permitted on site.

Where the above-mentioned requirements are not practicable, a suitable catch net shall be erected. Workers working in elevated positions shall be trained to use this safely and without risk to safety and health. Where work on roofs is carried out, the Risk Assessment shall take into account the possibility of persons falling through fragile material, skylights and openings in the roof.

Where ladders are used – they are to be of good construction, sound material and adequate strength and suitable to the purpose for which it is used (e.g. electricians shall use suitable insulated ladders). Fitted with non-skid devices at the bottom of the stiles or with hooks or similar devices at the tops of the stiles.

Except for extension ladders, no ladder shall be used which is longer than 4,5m and no ladder shall have its reach extended by tying together two or more ladders. All ladders shall be inspected weekly and a log shall be kept of the inspections.

2. STRUCTURES

(Applicable Construction Regulation)

The Principal Contractor / Contractor shall ensure that:

- All reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing pipe work or structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying of construction work.
- No structure will be overloaded that it may become unsafe.
- He/she has received from the designer the following information:
 - Information on known or anticipated hazards relating to the construction
 - work and the relevant information required for the safe execution of the construction work.
 - A geo-scientific report (where applicable).
 - The loading the structure is designed to withstand.
 - The methods and sequence of the construction process.
- Drawings will be kept on site and made available for inspection by an inspector, contractors, client, client's agent or employee.

33. TEMPORARY WORKS

(Applicable Construction Regulation)

- A contractor must appoint a temporary works designer in writing to design, inspect and approve the erected temporary works on site before use.
- A contractor must ensure that all temporary works operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose.
- A contractor must ensure that—
 - all temporary works structures are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the structure that the structure is not designed to withstand;
 - all temporary works structures are done with close reference to the structural design drawings, and where any uncertainty exists the structural designer should be consulted;
detailed activity specific drawings pertaining to the design of temporary works structures are kept on the

site and are available on request to an inspector, other contractors, the client, the client's agent or any employee;

- all persons required to erect, move or dismantle temporary works structures are provided with adequate training and instruction to perform those operations safely;
- all equipment used in temporary works structure are carefully examined and checked for suitability by a competent person, before being used;
- all temporary works structures are inspected by a competent person immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least on a daily basis until the temporary works structure has been removed and the
- results have been recorded in a register and made available on site;
- no person may cast concrete, until authorization in writing has been given by the competent person contemplated in paragraph (a);

34 . EXCAVATIONS

(Applicable Construction Regulation)

Hidden Hazards Penetration

In order to minimize the impact of hidden hazards when performing penetration or excavation activities the following process should be followed:

- a drawing review of the affected area,
- a site investigation,
- detection using instrumentation (as appropriate),
- the use of appropriate tools
- the use of PPE.

Workers engaging in excavation or penetration activities shall use tools, which are in good working condition and utilise PPE, electrically rated gloves and double insulated tools as appropriate.

To mitigate risk, the contractor shall ensure that adequate site investigation, utilising methods that would not penetrate hidden hazards (e.g. visual inspection, detection using instrumentation) is performed prior to any excavation or penetration activity. If hidden hazards cannot be identified through site investigation, the Client shall be notified prior to excavation or penetration activities and appropriate PPE shall be worn during the work activity.

Authorisation

Where excavations will exceed 1,5 m in depth, the Principal Contractor / Contractor shall submit a Method Statement for approval before commencing with the excavation. Permission to proceed will only be granted once the Risk Assessment and Method Statement are approved.

The Principal Contractor / Contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

The Principal Contractor / Contractor shall evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

Every Principal Contractor / Contractor who performs excavation work shall:

- Take suitable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- Not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where:
 - The sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or such an excavation is instable material: Provided that:-
 - a) Permission being given in writing by the appointed competent person contemplated in applicable *Construction Regulation* upon evaluation by him or her of the site conditions; and
 - b) Where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations shall be decisive and such a decision shall be noted in writing and signed by both the competent person contemplated in the applicable *Construction Regulation* and the professional engineer or technologist, as the case may be;
- Take steps to ensure that the shoring or bracing contemplated in the above paragraph is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;
- Ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the safety of, any person, unless precautions such as the revision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;

- Ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, the steps are taken that may be necessary to ensure the stability of such building, structure or road and the safety of persons;
- Cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;
- Ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed, and shall before the commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved;
- Cause every excavation, including all bracing and shoring, to be inspected:
 - daily, prior to each shift;
 - after every blasting operation;
 - after an unexpected fall of ground;
 - after substantial damage to supports; and
 - after rain.

by the competent person contemplated in sub regulation (1), in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request;

- Cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be:
 - Adequately protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable; and
 - Provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor

Upon entering an excavation the requirements of General Safety Regulation 5 of the Act shall be observed:

Underground Storage Tanks

Underground storage tank installation and maintenance operations shall comply with all International standards, DWAF, SANS and local By-law requirements. A Certified Contractor shall perform work activities on underground storage tanks. If an unanticipated underground storage tank is discovered during construction activity, the responsible EAST LONDON IDZ (SOC) LTD Project Engineer is to be notified.

Extract from the General Safety Regulation:

1. The Contractor or a user of machinery shall take steps to ensure that a confined space is entered by an employee or other person only after the air therein has been tested and evaluated by a person who is competent to pronounce on the safety thereof, and who has certified in writing that the confined space is safe and will remain safe while any person is in the confined space, taking into account the nature and duration of the work to be performed therein.
2. Where the provisions of sub-regulation (1) cannot be complied with the employer or user of machinery, as the case may be, shall take steps to ensure that any confined space in which there exists or is likely to exist a hazardous gas, vapour, dust or fumes, or which has or is likely to have, an oxygen content of less than 20 per cent by volume, is entered by an employee or other person only when:
 - a) Subject to the provisions of sub-regulation (3), the confined space is purged and ventilated to provide a safe atmosphere therein and measures necessary to maintain a safe atmosphere therein have been taken; and
 - b) The confined space has been isolated from all pipes, ducts and other communicating openings by means of effective blanking other than the shutting or locking of a valve or a cock, or, if this is not practicable, only when all valves and cocks, which are a potential source of danger, have been locked and securely fastened by means of chains and padlocks
3. Where the provisions of sub-regulation (2)(a) cannot be complied with, the employer or user of machinery shall take steps to ensure that the confined space in question is entered only when the employee or person entering is using breathing apparatus of a type approved by the chief inspector and, further, that:
 - a) The provisions of sub-regulation (2)(b) are complied with;
 - b) Any employee or person entering the confined space is using a safety harness or other similar equipment, to which a rope is securely attached which reaches beyond the access to the confined space, and the free end of which is attended to by a person referred to in paragraph (c).
 - c) At least one other person trained in resuscitation is and remains in attendance immediately outside the entrance of the confined space in order to assist or remove any person or persons from the confined space, if necessary; and

- d) Effective apparatus for breathing and resuscitation of a type approved by the chief inspector is available immediately outside the confined space.
4. The Contractor or user of machinery shall take steps to ensure that all persons vacate a confined space on completion of any work therein.
5. Where the hazardous gas, vapour, dust or fumes contemplated in sub regulation (2) are of an explosive or flammable nature, the Contractor or user of machinery shall further take steps to ensure that such a confined space is entered only if:
 - a) The concentration of the gas, vapour, dust or fumes does not exceed 25 per cent of the lower explosive limit of the gas, vapour, dust or fumes concerned where the work to be performed is of such a nature that it does not create a source of ignition; or
 - b) Such concentration does not exceed 70 per cent of the lower explosive limit of the gas, vapour, dust or fumes where other work is performed.
6. The provisions of this regulation shall mutatis mutandis also apply, in so far as they can be so applied, to any work which is performed in any place or space on the outside of and bordering on or in the immediate vicinity of, any confined space, and in which place or space, owing to its proximity to the confined space, any hazardous article, oxygen-deficient atmosphere or dangerous concentration of gas, vapour, dust or fumes may occur or be present.
7. All pipes, ducts etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage.

35. DEMOLITION WORK

(Applicable Construction Regulation)

The Principal Contractor /Contractor shall ensure that the contractor appoint a competent person in writing to supervise and control all demolition work on site.

The Contractor shall ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed. During the demolition, a competent person shall check the structural integrity of the structure at intervals determined in the method statement contemplated in sub regulation (2), in order to avoid any premature collapses.

Every contractor who performs demolition work shall:

With regard to a structure being demolished, take steps to ensure that:

- No floor, roof or other part of the structure is overloaded with debris or material in a manner which would render it unsafe;

- All reasonably practicable precautions are taken to avoid the danger of the structure collapsing when any part of the framing of a framed or partly framed building is removed, or when reinforced concrete is cut; and
- Precautions are taken in the form of adequate shoring or such other means as may be necessary to prevent the accidental collapse of any part of the structure or adjoining structure;
- Not require or permit any person to work under overhanging material or structure, which has not been adequately supported, shored or braced;
- Where the stability of an adjoining building, structure or road is likely to be affected by demolition work on a structure, take such steps as may be necessary to ensure the stability of such structure or road and the safety of persons;
- Ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in anyway, be affected by the work to be performed, and shall before the commencement of demolition work that may affect any such service, take the steps that may be necessary to render circumstances safe for all persons involved;
- Cause every stairwell used and every floor where work is being performed in a building being demolished, to be adequately illuminated by either natural or artificial means;
- Cause convenient and safe means of access to be provided to every part of the demolition site in which persons are required to work; and
- Erect a catch platform or net above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.
- The contractor shall ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless the area is effectively protected.

Waste and debris shall not be disposed from a high place by a chute unless the chute:

- Is adequately constructed and rigidly fastened;
- If inclined at an angle of more than 45 degrees to the horizontal, is enclosed on its four sides;
- If of the open type, is inclined at an angle of less than 45 degrees to the horizontal;
- Where necessary, is fitted with a gate at the bottom end to control the flow of material; and
- Is discharged into a container or an enclosed area surrounded by barriers.

The contractor shall ensure that every chute used to dispose of rubble is designed in such a manner that rubble does not free-fall and that the chute is strong enough to withstand the force of the debris travelling along the chute.

The contractor shall ensure that equipment is not used on floors or working surfaces, unless such floors or surfaces are of sufficient strength to support the imposed loads.

Where the risk assessment indicates the presence of asbestos, the contractor shall ensure that all asbestos related work is conducted in accordance with the provisions of the Asbestos Regulations promulgated by Government Notice No. R.155 of 10 February 2002, as amended. Regulation 21:

- Demolition of asbestos may only be carried out by a registered (with the Department of Labour) Asbestos Contractor;
- All asbestos materials likely to become airborne must be identified;
- A Plan of Work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA) (approved by the Department of Labour) 30 days prior to commencement of demolishing work unless the Plan was drawn up by an AAIA and a signed (by all parties) copy must be submitted to the Department of Labour 14 days before commencement of the demolishing.

During Demolition Work:

- All asbestos containing material shall be disposed of safely.
- Employees shall be issued with appropriate PPE and the proper use thereof enforced.
- After the demolition has been completed the area/premises shall be thoroughly checked to ensure that all asbestos waste has been removed.
- No person is allowed to:
 - Use compressed air or permit the use of compressed air to remove asbestos dust from any surface or person;
 - Smoke, eat, drink or keep food or beverages in an area not specifically designated for this;
 - Apply asbestos by spraying.

Where the risk assessment indicates the presence of lead, the contractor shall ensure that all lead related work is conducted in accordance with the provisions of the Lead Regulations promulgated by Government Notice No. R.236 of 28 February 2002, as amended.

Where the demolition work involves the use of explosives, a method statement is to be developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for demolition work and the procedures therein are adhered to.

The contractor shall ensure that all waste and debris is as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

36. TUNNELLING

(Applicable Construction Regulation)

To be performed in accordance with the Tunnelling Regulations as published under the Mines Health & Safety Act (29 of 1996).

Notwithstanding the provisions of sub regulation (1), no person shall enter a tunnel,

which has a height dimension of less than 800 mm.

Definition of Tunnelling: “the construction of any tunnel beneath the natural surface of the earth for the purpose other than the searching for or winning of a mineral.

37. ACCESS SCAFFOLDING

(Applicable Construction Regulation)

Access Scaffolding shall be erected, used and maintained safely in accordance with Construction Regulation and SA Bureau of Standards Code of Practice, SANS 1085 entitled, “The Design, Erection, Use & Inspection of Access Scaffolding.

Every contractor using access scaffolding, shall ensure that such scaffolding, when used, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act.

Detailed consideration shall be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It shall also be ensured that there is sufficient material available to erect the scaffolding properly.

The contractor shall ensure that all scaffolding work operations are carried out under the supervision of a competent person who has been appointed in writing and that all scaffold erectors, team leaders and inspectors are competent to carry out their work. The Contractor shall ensure that all contractors that erect scaffolding are in compliance to SANS 10085-1 and have on site a copy of SANS 10085-1 as amended.

- The Contractor shall ensure that all contractors that make use of scaffolding have on site a copy of SANS 10085-1 as amended.
- The Contractor shall ensure that all contractors ensure that all scaffolding is in compliance to SANS 1008-1.

NB The Contractor shall ensure that a notice board containing the names and contact details of their Scaffolding erectors and scaffolding inspectors are clearly displayed and securely fixed to their scaffolding.

38. SUSPENDED PLATFORMS & ROPE ACCESS

(Construction Regulations: Applicable)

The Principal Contractor / Contractor shall design, erect, use and maintain suspended platforms in accordance with the requirements of the applicable Construction Regulation.

The Contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

No Contractor / Principle Contractor shall use or permit the use of a suspended platform, unless:

- The design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;
- He or she is in possession of a certificate of system design issued by a professional engineer, certificated engineer or a professional technologist for the use of the suspended platform system; and
- He or she is, prior to the commencement of the work, in possession of an operational compliance plan developed by a competent person based on the certificate of system design contemplated in paragraph (b) and applicable to the environment in which the system is being used, this must include proof of the:
 - Competent person who has been appointed for supervision;
 - Competency of erectors, operators and inspectors;
 - Operational design calculations which should comply with the requirements of the system design certificate;
 - Performance test results;
 - Sketches indicating the completed system with the operational loading capacity of the platform;
 - Procedures for and records of inspections having been carried out; and
 - Procedures for and records of maintenance work having been carried out: Provided that sub regulation (2) shall only become applicable six months from the date of promulgation of these regulations.

The contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional engineer, certificated engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director before commencement of the use of the system and must further indicate the intended type of work the system would be used for.

The contractor need not re-submit a copy of the certificate of system design contemplated in sub regulation (3) for every new project: Provided that the environment in which the system is being used does not change to such an extent that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional engineer, certificated engineer or professional technologist shall be decisive.

The contractor shall ensure that the outriggers of each suspended platform:

- Are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and
- Have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.

The contractor shall ensure that:

- The parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;
- The suspension wire rope and the safety wire rope are separately connected to the outrigger;
- Each person on a suspended platform is provided with and wears a safety harness as a fall prevention device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;
- The hand or power driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;
- The machinery referred to in the paragraph above is so situated that it is easily accessible for inspection;
- The rope connections to the outriggers are vertically above the connections to the working platform; and
- Where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.

The contractor shall ensure that the suspended platform:

- Is suspended as near as possible to the structure to which work is being done and,
- except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;

- Is fitted with anchorage points to which workers shall attach the lanyard of the safety harness worn and used by the worker and such anchorage connections shall have sufficient strength to withstand any potential load applied to it; and
- Is fitted with a conspicuous notice easily understandable by all workers working with the suspended platform, showing the maximum mass load that the suspended platform can carry.

The contractor shall cause:

- The whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification;
- The whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;
- The performance test contemplated in paragraph (b) to be done by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices before they are used, every time suspended platforms are erected;
- The performance test contemplated in paragraph (b) of the whole installation of the suspended platform to be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 per cent of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly.

Notwithstanding the provisions of sub regulation (8), the contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person contemplated in sub regulation (8) before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

- All connection bolts are secure;
- All safety devices are functioning;
- All safety devices are not tampered with or vandalized;
- The maximum mass load of the platform is not exceeded;
- The occupants in the suspended platform are using safety harnesses which have been properly attached;
- There are no visible signs of damage to the equipment; and
- All reported operating problems have been attended to.

The contractor shall ensure that all inspection and performance test records are kept on the construction site at all times and made available to an inspector, client, client's agent or employee upon request.

The contractor shall ensure that all employees required to work or to be supported on a suspended platform are:

- Physically and psychologically fit to work safely in such an environment by being in possession of a medical certificate of fitness;
- Competent in conducting work related to suspended platforms safely;
- Trained or had received training which include at least:
 - How to access and egress the suspended platform safely;
 - How to correctly operate the controls and safety devices of the equipment; Information on the dangers related to the misuse of safety devices; and
 - Information on the procedures to be followed in the case of:
 - An emergency;
 - The malfunctioning of equipment;
 - The discovery of a suspected defect in the equipment;
 and
 - Instructions on the proper use of safety harnesses.

Where the outrigger is to be moved, the contractor shall ensure that only persons trained and competent to effect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.

The Contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

Rope Access to be erected, used maintained and inspected in accordance with the requirements of the applicable Construction Regulation.

39. BULK MIXING PLANTS

(Applicable Construction Regulation)

The Principal Contractor / Contractor shall erect, operate and maintain Bulk Mixing Plants in accordance with the requirements of Construction Regulation 20

40. EXPLOSIVE POWERED TOOLS (EPT)

(Applicable Construction Regulation)

No contractor shall use or permit any person to use an explosive powered tool, unless—

- a) It is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
- b) The firing mechanism is so designed that the explosive powered tool will not function unless—

- i. It is held against the surface with a force of at least twice its weight; and
- ii. The angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle;
- iii. Provided that the provisions of this sub regulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.

The Contractor or user shall ensure that:

- Only cartridges suited for the explosive powered tool and the work to be performed are used;
- The explosive powered tool is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed;
- That the safety devices are in proper working order prior to use;
- When not in use, the explosive powered tool and the cartridges are locked up in a safe place, which is inaccessible to unauthorised persons;
- The explosive powered tool is not stored in a loaded condition;
- A warning notice is displayed in a conspicuous manner wherever the explosive powered tool is used;
- The issuing and collection of cartridges and nails or studs is—
 - Controlled and done in writing by a person having been appointed in writing; and
 - Recorded in a register and that the recipient has accordingly signed for the
 - receipt thereof as well as the returning of any spent and unspent cartridges.

No contractor shall permit or require any person to use an explosive powered tool unless such person has been—

- Provided with and uses suitable protective equipment; and
- Trained in the operation, maintenance and use of such a tool.

1. CRANES & LIFTING EQUIPMENT

(Applicable Construction Regulation)

Cranes and Lifting equipment shall be designed and constructed in accordance with generally accepted technical standards and operated, used, inspected and maintained in accordance with the requirements of Driven Machinery Regulation 18 of the Act:

Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No. R.533 of 16 March 1990, as amended, the contractor shall ensure that where tower cranes are used—

- Account is taken of the effects of wind forces on the structure;
- Account is taken of the bearing capacity of the ground on which the tower crane is to stand;
- The bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;
- The tower cranes are erected at a safe distance from excavations;
- There is sufficient clear space available for erection, operation and dismantling;
- The tower crane operators are competent to carry out the work safely; and
- The tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness
- to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, that a table should be used by the driver/operator;
- each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;
- every lifting machine shall, where practicable, be fitted with a brake or other device capable of holding the MML. This brake or device to automatically prevent the downward movement of the load when the lifting power is interrupted;
- every chain or rope on a lifting machine that forms an integral part of the machine must have;
- a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
 - chains – 4 (four);
 - steel wire ropes - 5 (five);
 - fibre ropes- 10 (ten).
- every hook or load attaching device shall be designed such or fitted with a device that will prevent the load from slipping off or disconnecting;
- every lifting machine shall be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test shall be in accordance with the manufacturers prescription or to 110% of the MML

- in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;
- all maintenance, repairs, alterations and inspection results shall be recorded in a log book and each lifting machine must have its own log book;
- no person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour;
- every jib crane with an MML of 5 000 kg or more at minimum jib radius shall be provided with a load indicator or a load lifting limiting device;

2. LIFTING TACKLE

- to be manufactured of sound material, well-constructed and free from patent defects;
- to be clearly and conspicuously marked with ID number and MML;
- factor of safety:
 - Natural fibre ropes - 10(ten)
 - Man-made fibre ropes & woven webbing - 06(six)
 - Steel wire ropes – single rope - 06(six)
 - Steel wire ropes – combination slings - 08(eight)
 - Mild Steel chains - 05(five)
 - High tensile/alloy steel chains - 04(four)
- steel wire ropes shall be discarded (not used any further for lifting purposes) when excessive wear and corrosion is evident and must be examined by a competent person every three months or this purpose and the results recorded.

3. OPERATOR

- Every lifting machine operator shall be trained specifically for the type of lifting machine that he/she is operating;
- Operators of Jib cranes with a MML of 5 00 kg or more shall be in possession of a certificate of training issued by an accredited (by The Department of Labour) training provider.

4. CONSTRUCTION VEHICLES & MOBILE PLANT

(Applicable Construction Regulation)

Construction Vehicles and Mobile Plant shall be inspected by a competent person prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the Act and Regulations.

Construction Vehicles and Mobile Plant (CV&MP) to be:

- Are of acceptable design and construction;
- Are maintained in good working order;
- Are used in accordance with their design and intention for which they were designed, having due regard to safety and health;
- Are operated by workers who -
 - Have received appropriate training and been certified competent and been authorised to operate such machinery; and
 - Are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
- Have safe and suitable means of access;
- Are properly organised and controlled in any work situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- Are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers;
- Where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- Are equipped with an electrically operated acoustic signalling device and a reversing alarm; and
- Are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

CV&MP to be fitted with two head and two taillights whilst operating under poor visibility conditions;

The contractor shall furthermore ensure that—

- No person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- Every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
- The traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
- Every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;
- All construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;

- Bulldozers, scrapers, loaders, and other similar mobile plants are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- Tools and material are secured in order to prevent movement when transported in the same compartment with employees;
- Vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- When workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.
- Whenever visibility conditions warrant additional lighting, all mobile plants are equipped with at least two headlights and two taillights when in operation;
- Workers employed adjacent or on public roads shall wear reflective safety vests.
- All CV&MP inspection records shall be kept in the OH&S File.
- All vehicles of the Contractor shall display a name board bearing the Contractor's name. Hired vehicles shall bear an identifying sticker.

Speed Restrictions and Protection

The Contractor shall ensure that all persons in their employ and all those that are visiting the site are aware and comply with the site speed restriction(s). On site gravel or earth roads and within 500m of the Site, the vehicles of the Contractor and their suppliers shall be regulated to a maximum of 35km/h.

5. ELECTRICAL INSTALLATIONS

(Applicable Construction Regulation)

The installation of temporary electricity for Construction shall be in accordance with the Construction Regulation and the Electrical Installation Regulations.

Notwithstanding the provisions contained in the Electrical Installation Regulations promulgated by Government Notice No. R.2920 of 23 October 1992 and the Electrical Machinery Regulations promulgated by Government Notice No. R.1953 of 12 August 1988, respectively, as amended, the contractor shall ensure that—

- Before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- All parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;

- In working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, are provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;
- All temporary electrical installations are inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections are recorded in a register to be kept on site; and
- The control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing.

6. ELECTRICAL & MECHANICAL LOCK-OUT

An electrical and mechanical lock-out procedure shall be developed and implemented. This lock-out procedure to be adhered to by all Contractors on site.

7. USE & STORAGE OF FLAMMABLES

(Applicable Construction Regulation)

The contractor shall ensure that—

- Where flammable liquids are being used, applied or stored at the workplace concerned, this is done in such a manner which would cause no fire or explosion hazard, and that the workplace is effectively ventilated: Provided that where the workplace cannot effectively be ventilated—
- Every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and Steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;
- No person smokes in any place in which flammable liquid is used or stored, and such contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
- Flammable liquids on a construction site is stored in a well-ventilated reasonably fire resistant container, cage or room and kept locked with proper access control measures in place;
- An adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognized symbolic signs;
- Only the quantity of flammable liquid needed for work on one day is to be taken out of the store for use;
- All containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, to be removed from the construction site and safely disposed of;
- Where flammable liquids are decanted, the metal containers are bonded or earthed; and

- No flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.
- Stored in a locked well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as “Flammable Store – No Smoking or Naked Lights”;
- the flammables store to be constructed of two-hour fire retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall;
- All electrical switches and fittings to be of a flameproof design;
- Any work done with tools in a flammables store or work areas to be of a non-sparking nature;
- The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored;
- A sign indicating the capacity of the store to be displayed on the door;
- Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas;
- Welding and other flammable gases to be stored segregated as to type of gas and empty and full cylinders.
- Bulk fuel bowzers, must be installed as per the BCMM by-laws and suitably permitted by the local fire safety authority.

8. HOUSEKEEPING

(Applicable Construction Regulation)

The Principal Contractor / Contractor to ensure that:

- Housekeeping is continuously implemented;
- Materials & equipment are properly stored;
- Scrap, waste & debris are removed regularly;
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to free flow of pedestrian and vehicular traffic;
- Waste & debris not to be removed by throwing from heights but by chute or crane;
- Construction sites in built-up areas, adjacent to a public way, are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorized persons;
- A catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe in the case of danger or possibility of persons being struck by falling objects.
- An unimpeded work space is maintained for every employee;
- Every workplace is kept clean, orderly and free of tools etc. that are not required for the work being done materials;

- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;
- The walls and roof of every indoors workplace is sound and leak-free;
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling.

9. STACKING & STORAGE

(Applicable Construction Regulation)

Extract from the General Safety Regulation:

The Contractor shall require or permit the building of stacks that consist of successive tiers, one on top of another, unless—

- The stacking operation is executed by or under the personal supervision of a person with specific knowledge and experience of this type of work;
- The base is level and capable of sustaining the weight exerted on it by the stack;
- The articles in the lower tiers are capable of sustaining the weight exerted on them by the articles stacked above them;
- All the articles which make up any single tier are consistently of the same size, shape and mass;
- Pallets and containers are in good condition; and
- Any support structure used for the stacking of articles is structurally sound and can support the articles to be stacked on it.

The Contractor shall not permit—

- Articles to be removed from a stack except from the topmost tier or part of that tier; and
- Anybody to climb onto or from a stack, except if the stack is stable and the climbing is done with the aid of a ladder or other safe facility or means.

The Contractor shall take steps to ensure that—

- Persons engaged in stacking operations do not come within reach of machinery which may endanger their safety;
- Stacks that are in danger of collapsing are dismantled immediately in a safe manner; and
- The stability of stacks is not endangered by vehicles or other machinery or persons moving past them.

Unless a stack is otherwise supported the Contractor shall take steps to ensure that tiers of stacked material consisting of sacks, cases, cartons, tins or similar containers—

- Are secured by laying up articles in a header and stretcher fashion and that corners are securely bonded; and
- Are stepped back half the depth of a single container at least every fifth tier or that, alternatively, successive tiers are stepped back by a lesser amount: Provided that at least the same average angle of inclination to the vertical is achieved: Provided further that where the containers are of a regular shape and their nature and size are such that the stack will be stable, they may be stacked with the sides of the stack vertical if the total height of the stack does not exceed three times the smaller dimension of the underlying base of the stack.

Notwithstanding the provisions of sub-regulation (4), free standing stacks that are built with the aid of machinery may, with the approval of an inspector, be built to a height and in a manner permitted by the nature of the containers being stacked: Provided that—

- The stacks are stable and do not overhang; and
- The operator of the stacking machinery is rendered safe as regards falling articles.
- Adequate storage areas are provided and demarcated;
- The storage areas are kept neat and under control;
- Cartons and other containers that may become unstable due to wet conditions are kept dry;
- Pallets and containers are in good condition and no material is allowed to spill out;
- Structures for supporting stacks are structurally sound and able to support the mass of the stack;

50. PORTABLE ELECTRICAL TOOLS & EQUIPMENT

(Electrical Machinery Regulation 9 of the Act)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 amp. plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition electrical appliances such as fridges, hotplates, heaters, etc. shall be inspected and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorized persons are allowed to use portable electrical tools and equipment;

- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.
- All power tools and machinery driven by belts, gears, ropes, chains, couplings and similar drives shall be adequately guarded. The Contractor shall prohibit the use of any equipment with a damaged, missing or inadequate guard.

Portable Electrical Tools

- Shall be maintained in good condition at all times to prevent an electrical shock to the user. The main source shall incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such.
- All equipment shall be fitted with a switch to allow for safe & easy starting and stopping.
- The Contractor shall ensure that all his electrical equipment conforms to operational and safety requirements.
- All earth leakage units shall be tested at intervals of not more than one month and signed for by a qualified electrician.

Portable Lights

- Shall be fitted with a robust non-hygroscopic non-conducting handle;
- Live metal parts/parts which may become live must be protected against contact;
- The lamp must be protected by a strong guard;
- The cable lead-in must withstand rough handling;
- It is suggested that a register be kept for each piece of equipment and findings of regular inspections must be entered;
- Inspections must concentrate on plug, cord, switch and any obvious faults;
- When used in wet/damp/metal container conditions, it must be protected as for portable electrical tools, above.

51. HAZARDOUS CHEMICAL SUBSTANCES

The Principal Contractor / Contractor shall ensure that:

- Employees receive the necessary information & training to be able to use and store HCS safely;
- Employees obey lawful instructions regarding:
- the wearing and use of protective equipment;
- the use and storage of HCS;
- the prevention of the release of HCS;
- the wearing of exposure monitoring and measuring equipment;
- the cleaning up and disposal of materials containing HCS;
- housekeeping, personal hygiene and the protection of the environment;
- the Risk Assessments required in terms of the applicable Construction Regulation include employee exposure to HCS and that the necessary

steps to protect persons from being detrimentally affected by HCS present or used in the workplace, are taken;

- suppliers to provide the necessary information in the form of a Material Safety Data Sheet (MSDS) regarding an HCS required to ensure the safe use and storage of that HCS;
- an up-to-date list is kept on site of HCS's stored and used together with the MSDS's of the said HCS's;
- HCS containers are clearly marked as to the contents and main hazardous category "Flammable" or "Corrosive" and the reference number of the HCS on the list indicated above;
- HCS e.g. Asbestos dust is not cleared by the use of compressed air but is vacuumed;
- No person eats or drinks in a HCS workplace;
- HCS waste is disposed of safely in terms of hazardous waste disposal requirements;

2. ENVIRONMENTAL

In addition to the below, the ELIDZ CEMP must be strictly adhered to.

All Construction debris/rubble is to be stored in a skip.

In the event of large demolition or excavation work and where this is not possible, debris/rubble is to be stored in a safe manner, to prevent any form of injury to personnel or equipment.

When transporting rubble to a landfill site, reasonable care is to be taken to ensure that spillage of rubble from such skip or truck is avoided.

Timber, brick-work, dry walling, non-asbestos insulation, clean concrete, and similar debris shall be transported to a landfill, authorized to receive such waste. Reasonable effort shall be made to separate recoverable metals from construction debris.

Personnel waste such as papers and food containers should be bagged, removed from the site, and properly disposed of by the Contractor.

Fluorescent, sodium, mercury vapour and incandescent light bulbs shall be removed from light fixtures and managed as Chemical waste. These items shall be boxed and then labelled to identify the contents.

Equipment containing oil or other petroleum products shall be drained of oil, and managed as residue material. Drained oil shall be managed as chemical waste.

ADDENDUM

Occupational Health and Safety COVID-19 Site Management



Issued in terms of the Occupational Health and Safety Act 85 of 1993 and the Disaster Management Act 57 of 2002: COVID-19 Occupational Health and Safety Measures in the Workplace

PROVISION OF AUTOMOTIVE MANUFACTURING FACILITIES IN ZONE 1A OF THE ELIDZ

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Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2_____

1 INTRODUCTION

Novel corona virus infection Involves your upper respiratory tract (nose, throat, airways, lungs). Caused by the newly discovered coronavirus, referred to as novel coronavirus, first identified in Wuhan, China, in December 2019.

COVID-19 is the infectious condition, which means it can be spread, directly or indirectly, from one person to another.

The COVID-19 has had and will continue to have an impact on our lives. We must all be responsible and ensure the safe return to our construction sites. Our actions and implemented controls will affect the lives of thousands of people in our communities.

This addendum is written in conjunction with the Risk Adjusted Strategy Regulation promulgated under the Disaster Act and Regulation 43257, Vol, 658 Covid-19 Occupational Health and Safety Measures in Workplaces Covid-19, in the absence of a construction sector COVID-19/guidelines/regulations

2 DEFINITIONS (RELATED TO COVID-19)

COVID-19 means the Novel Coronavirus (2019-nCov) which is an infectious disease caused by a virus, which emerged during 2019 and was declared a global pandemic by the WHO during the year 2020 that has previously not been scientifically identified in humans

Disaster Management Act means the Disaster Management Act, 2002 (Act No. 57 of 2002)

Adequate space means not more than one person per 1.5m² of floor space

Gathering means any assembly, concourse or procession of more than 100 persons, wholly or partially in open air or in a building or premises

Isolation means separating a sick individual with a contagious disease from healthy individuals without that contagious disease in such a manner as to prevent the spread of infection or contamination

Worker means any person who works in an employer's workplace including an employee of the employer or contractor, a self-employed person or volunteer

Workplace means any premises or place where a person performs work

Quarantine means separating asymptomatic individuals potentially exposed to a disease from non-exposed individuals in such a manner as to prevent the possible spread of infection or contamination

Covid-19 Compliance officer-who will oversee implementation of COVID-19 plan

WHO means the World Health Organisation

Cleaning means the removal of dirt and impurities from objects using water with detergents or soap but does not kill the virus

Decontamination means the use of chemicals to kill the virus after cleaning.

3 KEY REFERENCES

Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)

Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>

Advice and guidance from WHO on COVID-19

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

<https://www.epi-win.com/>

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2_____

Government Gazetted No. 43257, Vol, 658 Covid-19 Occupational Health and Safety Measures in Workplaces Covid-19 as well as the Risk Adjusted Strategy Regulation- issued by the Department of Cooperative Governance.

4 SCOPE

This scope is in respect of:

Project: **AUTOMOTIVE MANUFACTURING FACILITIES IN ZONE 1A OF THE ELIDZ**

- Provides the overarching framework within which the Principal Contractor is required to demonstrate compliance with COVID-19 requirements for occupational health and safety during construction work at the workplace (construction site);
- Establishes the way the Principal Contractor is to manage the COVID-19 risk of health and safety incidents during construction; and
- Establishes the way the Client's Health and Safety Agent will interact with The Principal Contractor on assessing compliance to the health and safety protocols for COVID-19.

The Principal Contractor (PC) is required to adapt and change, implement and maintain a site-specific COVID 19 health and safety plan. The Client is providing this, an addendum to the site-specific health and safety specification to the Principal Contractor for the works to enable such a plan to be formulated. Accordingly, this specification on its own cannot ensure compliance with the COVID-19 regulations and in the absence of construction sector COVID-19 guidelines/ regulations (awaited).

The Construction Regulations, 2014, requires a Client to stop any contractor from executing construction work which is not in accordance with the contractor's health and safety plan for the site or which poses to be a threat to the health and safety of persons and this will now include all the COVID-19 health and safety workplace regulations.

5 INTERPRETATION

The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.

5.1 Purpose of the addendum

The COVID-19 addendum is a performance specification to ensure that the Client and any bodies that have entered into formal agreements with the Client / Agents, Professional Service Consultants (Engineers, Quantity Surveyors and Architects), Principal Contractors and Contractors achieve an acceptable level of OHS COVID-19 performance.

No advice, approval of any document required by the Project Specific Health and Safety Specification (PSHSS), such as hazard identification and risk assessments, or any other form of communication from the Client shall be construed as acceptance by the Client of any obligation that absolves the Principal Contractor from achieving the required level of performance and compliance with legal requirements. Furthermore, there is no acceptance of liability by the Client, which may result from the Principal Contractor failing to comply with the COVID-19 H&S addendum, i.e. the Principal Contractor remains responsible for achieving the required performance levels.

Requirements may be changed/updated should new risks or issues be identified that could not have been foreseen during this risk adjusted strategy approach. Any new legislation or standards (legislated or determined by the Client) that are promulgated or accepted during the contract will automatically be applied.

It should be noted that this COVID-19 health and safety requirements in no way relieves the Contractor of any of his responsibilities set out in the Act and Regulations.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2_____

5.2 COVID-19 Baseline Risk Assessment

Refer to **Annexure A** for the COVID-19 Baseline Risk Assessment.

5.3 COVID-19 Schedule of Quantities

Refer to **Annexure B** for the COVID-19 pricing template.

5.4 Requirements

A project specific COVID-19 H&S Plan in response to this addendum will be subject to approval by the CHS Agent. This must include all supporting documentation as required to verify the H&S system.

6 COVID-19 H&S PLAN

6.1 General Requirements

6.1.1 Risks

Risks must include:

- Identification of exposure levels
- Identification of “high contact” activities

Identification of vulnerable workers and special measures for their protection, including protection against unfair discrimination or victimization.

The Principal Contractor is to utilize this addendum and the COVID-19 baseline risk assessment in preparation of his documents.

The Principal Contractor is to provide a detailed updated COVID-19 risk assessment for the works on site.

6.2 Occupational Health & Safety Management

6.2.1 Appointment of Competent Site Personnel as per the COVID-19 regulations

Covid-19 Compliance Officer (Separate to CHSO)

Will oversee the:

- implementation of the plan;
- adherence to the standards of hygiene and health protocols relating to COVID-19 at the workplace;
- develop a plan for the phased-in return of their employees to the workplace, prior to reopening the workplace for business, which plan must contain the following information:
 - which employees are permitted to work;
 - what the plans for the phased-in return of their employees to the workplace are;
 - what health protocols are in place to protect employees from COVID-19;
 - phase in the return of their employees to work to manage the return of employees from other provinces, metropolitan and district areas; and
 - develop measures to ensure that the workplace meets the standards of health protocols, for adequate space (number of mobile toilets and frequency of disinfecting) for employees and social distancing, hand washing, wearing of face masks measures as required.

6.3 General Risk Management

6.3.1 Health Risks and Medical Surveillance-Symptom Screening

The PC must conduct symptom screening which will entail the following:

- Utilize an infra-red thermometer to record an employee's temperature.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2 _____

- PC must screen workers for symptoms of COVID19 at the time that they report for work, namely: fever, cough, sore throat, redness of eyes or shortness of breath (or difficulty in breathing);
- Additional symptoms to be noted: body aches, loss of smell or loss of taste, nausea, vomiting, diarrhoea, fatigue, weakness or tiredness
- refer to Annexure C for symptom screening template.

6.3.2 Emergency Procedures

An emergency plan and procedure that is appropriate to the risks of COVID-19 is required prior to resumption on site. It is advised that the system should be simple and easy for any worker to follow.

Local emergency telephone numbers with COVID-19 must be displayed and made part of the emergency procedure.

The general principals of emergency management are to be applied as it applies to the hierarchy of control and management.

6.4 First Aiders and First Aid Equipment

First aiders will be permitted to wear N95 or medical face masks when attending to cases on site.

6.5 Emergency Management

Attention to emergency planning and procedures is very important during this Risk Adjusted Strategy level of COVID-19 Requirement in terms of identified risks:

- Suitable areas of assembly with adequate space for distancing during roll call.

The emergency plan is to ensure the inclusion of COVID response team and the nearest COVID testing sites. Such arrangements should be made with these persons prior to the commencement of the project.

6.5.1 Incident Management and COVID-19 Compensation

The Principal Contractor (PC) must notify its employees that if they are sick or have symptoms associated with COVID-19 that they must not come to work and to take paid sick leave in terms of section 22 of the BCEA.

If the employee is already at work, the PC must immediately isolate the worker, provide the employee with a FFP1 surgical mask and arrange for the employee to be transported in manner that does not place other employees at risk to an identified testing site.

If a employee has been diagnosed with COVID-19, the PC must inform the Department of Health and the Department of Employment and Labour.

Investigate the cause including any control failure and review its risk assessment to ensure that the necessary controls and PPE requirements are in place.

It must give administrative support to any contact tracing measures implemented by the Department of Health.

If an employee has been diagnosed with COVID-19 and isolated in accordance with Department of Health Guidelines, the PC may only allow the employee to return to work on the following conditions:

- The employee has undergone a medical evaluation confirming that the worker has been tested negative for COVID-19;
- The PC ensures all health and safety protocol are adhered to; and
- The PC closely monitors the employee for symptoms on return.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2_____

The PC must ensure that no employee is discriminated against on grounds of having tested positive for COVID -19 in terms of section 6 of the Employment Equity Act.

6.5.2 Personal Protective Equipment (PPE) and Clothing

The PC is to provide PPE to all employees free of charge based on a risk assessment.

The wearing of the identified COVID-19 PPE is non-negotiable:

- Cloth face masks for all (including visitors, suppliers entering site); and
- Full face shields and cloth masks in relation to the construction activity.

6.6 Occupational Health and Safety Signage

On-site H&S signage to now include more COVID-19 workplace information.

Hereunder are examples:



6.7 Induction of Employees and Visitors, General H&S Training

A simple, formal re - induction is to be done in relation to the COVID-19 health and safety risks.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2 _____

Education communication of COVID-19 hazards to employees and training on handwashing and respiratory etiquette, properly wearing, inspecting, and maintaining the cloth face masks.

The PC to utilize technology and be innovative to reduce the number of employees at any given time in a meeting room.

6.8 Transportation of Employees

To cater for the directive return to work, the PC must provide a transportation plan as per the Transport Minister.

The transport must adhere to the hygienic conditions that must be adhered to and steps to be followed for the limitation of exposure of employees using public transport to COVID-19.

Form 2 – Permit to Perform an Essential or Permitted Service be completed for all employees and subcontractors.

6.9 Communication on Site

The PC must keep clear records of all information, as the Labour Inspectors will be conducting inspections of the respective workplaces.

6.10 Care of Workers on Site (Welfare)

Social Distancing

Workplaces must be arranged to ensure a minimum of 1.5 meters between employees. If this is not practicable, physical barriers must be erected and workers must be supplied free of charge with appropriate Personal Protective Equipment (PPE).

Social distancing must be implemented in all common areas in and around the workplace to prevent crowding (including working spaces, canteens, meeting rooms etc.).

The PC must provide alternatives for shift work and rotation of employees.

Sanitizers and Disinfectants

Provide enough quantities of hand sanitizer with at least 70% alcohol content.

Ensure that work surfaces, equipment and common areas such as toilets, door handles and shared equipment are regularly cleaned and disinfected.

Provide adequate facilities for hand washing with soap and clean water and enough paper towels and bins.

Masks

Employees must wear cloth masks at work. The PC must also require members of the public entering a workplace to wear cloth masks.

Employers must provide each employee, free of charge, with at least two cloth masks to wear while at work or commuting. There must be suitable arrangements for washing and drying masks. Ultimately, the PC remains responsible for the maintenance and upkeep of PPEs. Where a risk assessment indicates, workers must be provided with alternative appropriate PPE (e.g. N95 or N97 masks) to provide a greater level of protection.

Canteens and Lavatories

The PC to divide the workforce into groups, Staggering breaktimes to avoid concentration/congregation of workers in common areas.

The PC must ensure adequate number of mobile toilets and must also provide a disinfecting schedule.

The PC to discourage sharing of cups/mugs at canteens.

In order to comply with above the PC to provide a detailed disinfection policy.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2_____

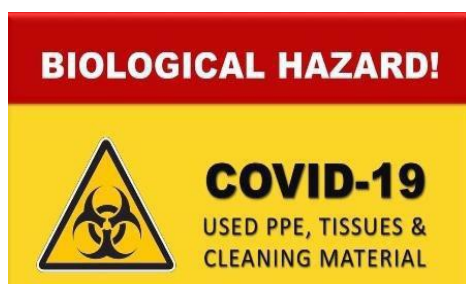
6.11 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given in the interest of previous H&S and now COVID 19 H&S requirements. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

6.12 Hazardous Waste Management and Disposal

All discarded personal items such as used PPE (disposable dust masks and gloves, etc.), used paper towels or alcohol-based wipes, etc. must be treated as hazardous waste and disposed of as such.

The Principal Contractor must provide separate and appropriately labelled hazardous waste bins (symbolic signage to be used where appropriate – see example below) on site and ensure that waste is disposed of at a registered hazardous waste site and a hazardous waste disposal certificate must be obtained and kept on site for verification.



Workers who handling hazardous waste on site must be provided with proper instruction and suitable PPE.

6.13 Non-Conformances

If the PC does not comply with the COVID-19 requirements they may be ordered to close their Site.

In addition, as the failure to comply fully with the OHSA (Occupational Health and Safety Act) is a criminal offence, failure to take the necessary measures to prevent the transmission of COVID19 may result in criminal prosecution.

7 SECURITY

7.1 Security

Access to the various sites remains as per normal protocol of the ELIDZ.

Contractor_____ Witness 1_____ Witness 2_____ Employer_____ Witness 1_____ Witness 2 _____

8 ANNEXURE A: BASELINE RISK ASSESSMENT

ANNEXURE A: COVID-19 BASELINE RISK ASSESSMENT

Note: This is a broad overview the anticipated hazards and risk issues for resuming work under lock down COVID-19 restrictions. Key issues will be addressed in this COVID-19 Risk Assessment, however this should not be seen as exhaustive. This will be reviewed and adjusted with any new COVID-19 regulations as gazetted by Government

#	ITEM	HAZARD /ISSUE	RISK/ISSUE	Raw Risk			ACTION REQUIRED	RESPONSIBLE	Residual Risk			RESIDUAL ACTION
				LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)			LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)	
1	Occupational Health-Screening	Workers symptom free but infected with COVID-19, older workers of 60+, workers with underlying auto-immune or chronic diseases	Increased risk of transmission to others and family, compromising the vulnerable.	10	10	100	H&S Plan update, Policy and method statement to be available relating to screening surveillance. All workers are to be symptom screened at the time that they report to work , to ascertain whether they have any of the observable symptoms associated with COVID 19, namely- fever , cough , sore throat, redness of eyes or shortness of breathing.PC to provide methodology to remove staff from site safely to an identified test site. Staff in exposed age group and compromised health condition to be considered high risk and managed appropriately.	PC PC	5	5	25	Manage the risk
2	Demographics of labour	Vulnerability due to age, underlying auto-immune or chronic diseases, socio-economic status, having to use public transport to get to work	Increased exposure, increased infected positive persons	10	10	100	The screening surveillance policy and method statement to be adhered to. Daily temperature checks on entry to site. Induction, DSTIs and toolbox talks to be done daily on topics relating to covid, personal hygiene and PPE. Strict enforcement for use of PPE Job substitution if possible for those who are affected. Must include catering and cleaning facilities. Staff in exposed age group and compromised health condition to be considered high risk and managed appropriately.	PC	5	5	25	Manage the risk
3	Accommodation	Social density - inability to maintain social distancing in local communities, cross contamination from the lack of social distancing, shared utilities and belongings, shared ablutions, cross infection among inhabitants and cleaning, catering staff	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Increased risk of transmission to others	10	10	100	Policy and method statement for accommodation. Sleeping and dining quarters to allow for minimum 1.5m space between persons. Dedicated bedding, towels, utensils, soaps etc. Individual facilities for safe keeping. Individual, segregated facilities for storage of laundry. Procedures and rules of occupancy and cleaning. Induction and primary health promotion to be done regularly. Isolation area to be available should anyone display symptoms, and safe removal for testing. Food to be served wrapped and available individually. Staff in exposed age group and compromised health condition to be considered high risk and managed appropriately.	PC	5	5	25	Manage the risk
4	Origin of labour	Transportation of employees/workers across borders and between towns and cities, districts and municipalities.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	5	10	50	Selection and provision of transport services compliant with gazetted requirements. Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, ongoing toolbox talks and if possible supply of cloth masks to be worn when travelling. Limitation of border crossing unless specialised contractors. Staff in exposed age group and compromised health condition to be considered high risk and managed appropriately.	PC	2	5	10	Accept the risk

#	ITEM	HAZARD /ISSUE	RISK/ISSUE	Raw Risk			ACTION REQUIRED	RESPONSIBLE	Residual Risk			RESIDUAL ACTION
				LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)			LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)	
5	Transportation	Maximum allowed capacity exceeded. No facilities for sanitising vehicles and passengers. No additional protective measures available, e.g. face masks. Unlicensed drivers and operators.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover.	10	10	100	Selection and provision of transport services compliant with gazetted requirements. Policy and procedures and rules for travel, where possible to limit the use of public transport, or to arrange selective methods of transport, ongoing toolbox talks and supply of cloth masks to be worn when travelling or moving on and off site. Vehicles maintained at 70% capacity or less. Vehicles sanitised between trips. Hand sanitiser provided for passengers. Staff in exposed age group and compromised health condition to be considered high risk and managed appropriately.	PC	5	5	25	Manage the risk
6	Social distancing	Many construction tasks require more than one worker, that will be required to work within the limit of 2m. Access/egress to and off site. Welfare facilities, meeting areas.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	7	10	70	Policy and method statements for the provision of suitable and sufficient PPE. Demarcation and spacing of queueing areas. Segregation of queueing areas and public outside site perimeters. Meeting/eating areas large enough to maintain 2m distance at maximum occupancy, use of drones, security cameras to limit the need to spend time on site. Only essential workers to spend time on site, Staggered meeting/eating times, use of Zoom, Skype, teams for meetings where necessary. Individual, segregated facilities for safe keeping. Induction training and a programme for information and training.	PC	2	5	10	Accept the risk
7	Alcohol and substance abuse	Workers, visitors arriving at site under the influence of substances.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	5	10	50	Policy and method statement for substance abuse to be reviewed, management of visitors, workers under the influence of alcohol or other substances. No breathalysers unless individual testing units used, and appropriate disposal in hazardous waste.		2	2	4	Accept the risk
8	Waste management	Spreading of virus and contact with virus causing infection from handwashing, drying hands, cleaning equipment and other related aspects.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	7	10	70	Prepare a policy, method statements, HIRA and review by PA. Establish and follow protocols for disposal of hazardous waste (containers). Awareness through notices (posters) regarding correct procedures and classification of waste. Competent supervision and adequate awareness training required. Provide adequate supplies of material and consumables, provision of sealable disposal containers/bags through appropriate waste removal company. Provide adequate supply of paper towels. Ensure appropriate management.	PC	5	5	25	Manage the risk
9	Signage	Provision of sealable disposal containers/bags, unintentional entry to site and work areas compromising workers being contaminated. Acts and behaviours that compromises workers.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover.	10	10	100	A policy and method statement to be prepared. Display of posters and signage with the site rules and protocols that needs to be maintained at strategic points. Awareness through notices and posters regarding correct protocols to be maintained. Competent supervision and adequate awareness training required. Discipline to be applied to those not complying.	PC	5	5	25	Manage the risk
10	Security access	Workers, visitors, site administration arriving on site via personal and public transportation.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	10	10	100	Policy and method statements to be revised and reviewed by the PA. All persons entering site to sanitize hands, prior to entry to site. Access controller trained on correct procedure to utilize no-contact hand-held thermometer. Back-up access controllers trained on same procedure. All persons entering site screened by trained access controller. Periodic alcohol testing will continue however only when warranted through suspicion.	PC	5	5	25	Manage the risk

#	ITEM	HAZARD /ISSUE	RISK/ISSUE	Raw Risk			ACTION REQUIRED	RESPONSIBLE	Residual Risk			RESIDUAL ACTION
				LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)			LIKELIHOOD (P)	IMPACT (I)	RISK (P X I)	
11	Welfare facilities	Spreading of virus and contact with virus causing infection.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and families.	10	10	100	Updating of policy, method statements and HIRA, limiting of personnel on site to minimum number required to maintain control and management. Implement and maintain cleaning and disinfecting programme(esp. frequency). Site rules for social distancing to 1.5m. Stagger number of people attending induction and training sessions. Use technology to avoid close proximity between individuals where possible. Number of toilets on sites to be increased.	PC	5	5	25	Manage the risk
12	Emergency planning	Assembly points may have more than 50 people, limited space for social distancing when practice or actual sessions	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover.	5	10	50	Review emergency plan and method statements. DSTIs and toolbox talks. Competent supervision to be trained in the emergency arrangements. Updating of the emergency plan communicated to all personnel. Emergency Number List updated to include National Institute of Communicable Diseases (NICD) Emergency Hotline – 0800 029 999 and dedicated Isolation Hospital Details	PC	5	5	25	Manage the risk
13	Personal protective equipment	Spread of droplet infection through coughing, sneezing when in close contact.	Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and family.	10	10	100	Update the policy, method statements and HIRA for PPE. No employee and or visitor will be allowed on site without a face mask. N95 masks only for medical or high risk workers. Adequate training must be provided in the correct use and disposable of these masks. Cloth masks must washed and ironed daily. Face shields protect mouth, nose and eyes. Daily cleaning of face shields No sharing of PPE will be permitted. Adequate supervision, inclusion induction, policy, method statements and HIRAs. Covid PPE does not replace conventional PPE as per Construction activity HIRA.	PC	2	5	10	Accept the risk
13	Construction vehicle plant Fleet vehicles	Spread of droplet infection in fleet vehicles & driven machinery. Rotation of operators- no 1 operator allocated to plant /fleet for entire project duration. Lack of awareness amongst operators. Failure to disinfect construction vehicles and mobile plant.	Operators allowing others inside operator cabs that are designed for one person may increase the risk of contamination and infection. Contaminated surfaces due to failure to disinfect.	8	10	80	Updated policy, method statements and HIRA; Proper induction of operators, toolbox talks and relevant DSTIs; Implementation and maintenance of disinfecting programme for construction vehicles and mobile plant; Operators to also wear prescribed PPE at all times; Supervision to monitor and control;	PC	5	6	30	Manage the risk
14	Consequence management	Non compliance issues not promptly addressed.	All workers, suppliers, contractors; Workers older than 60 years and workers with compromised health/immune condition statistically has a low chance to recover. Transmission to others and family.	7	10	70	Revision of policy, method statements and HIRA. PC must ensure that workers are updated daily with all the relevant COVID-19 information through DSTIs/Toolbox talks, notices etc.. PC must ensure that site is updated daily with all the relevant COVID-19 information. Workers should be updated with new information daily. PC must ensure that company disciplinary procedures are in place. All employees should have knowledge of the company disciplinary procedures. Work stoppage/site closure where non compliance exists.	PC	2	5	10	Accept the risk
LEGEND												
								Eliminate Risk (> 50)				
								Mitigate Risk (31 - 50)				
								Manage/Deflect Risk (11 - 30)				
								Accept risk (< 11)				

9 ANNEXURE B: COVID-19 SCHEDULE OF QUANTITIES

Contractor _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Addendum OHS COVID-19 Site Management Specifications

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ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
	PRELIMINARY & GENERAL ITEMS				
1	Occupational Health & Safety Obligations				
1.1	Update of the Contractor's site specific COVID-19 Health and Safety Plan	Sum			
1.2	Principal Contractor's initial obligations in respect of the COVID-19 Workplace Regulations and COVID-19 Construction Sector Regulations	Sum			
1.3	Principal Contractor's time related obligations in respect of the COVID-19 Workplace Regulations (Anticipated Period)	Month			
2	COVID-19 Compliance Officer (In Addition to H&S Officer)				
2.1	Provision of a full time COVID-19 Compliance Officer (Anticipated Period)	Month			
3	Provision of Personal Protective Equipment (PPE)				
3.1	(a) Plastic face shield mask (quantity to be aligned with scaling in employment)	No			
3.2	(b) Disposable gloves (quantity to be aligned with scaling in employment)	No			
3.3	(c) Cloth face masks (quantity to be aligned with scaling in employment)	No			
4	Cost of medical certificates and medical surveillance				
4.1	(a) Initial (baseline) medical examinations (quantity to be aligned with risk assessment and scaling in employment)	No			
4.2	(b) Periodic and exit examinations (quantity to be aligned with risk assessment and scaling in employment)	No			
5	Education & Training				
5.1	Initial COVID-19 training (quantity to be aligned with risk assessment and scaling in employment)	No			
5.1	Weekly COVID-19 toolbox talks	Months			
6	Facilities and equipment				
6.1	(a) Separate office (16m2) with windows and a door for use by COVID-19 Compliance Officer including electricity connection and supply	No			
6.2	(b) Provision and upkeep of infrared handheld thermometer	No			
TOTAL CARRIED FORWARD					

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
TOTAL BROUGHT FORWARD					
8	Supply and fix COVID-19 signs				
8.1	Hand Hygiene (800 x 800mm)	No			
8.2	Sanitisation Station (297 x 400mm)	No			
8.3	Face Mask (297 x 420mm)	No			
8.4	Social Distancing (400 x 400mm)	No			
8.5	Prevention Tips (297 x 420mm)	No			
9	Cleaning materials and Hand sanitizers				
9.1	Monthly disinfection of facilities	Months			
9.2	Supply and upkeep of hand sanitizer dispensers and consumables (paper towel)	Months			
10	List any extra COVID-19 requirements not mentioned above				
10.1					
10.2					
10.3					
10.4					
10.5					
10.6					
TOTAL (Excluding VAT)					

10 ANNEXURE C: SYMPTOM SCREENING TEMPLATE

COMPANY NAME:.....

Date:.....

Site Address:.....

No	Employee Name & Surname	Job Title	Contact Details	Attended a Funeral		Temperature		Symptoms	
				YES	NO	AM	PM	YES	NO
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Symptom Legend (Place number under symptom column as shown below e.g for fever, temperature 1)

Signs of COVID-19

- 1.Fever, Temperature greater than 37. 2
- 2.Cough
- 3.Sore throat
- 4.redness of eyes
- 5.shortness of breath

Additional Symptoms

- 6.Body Aches
- 7.Loss of smell or Loss of taste
- 8.Nausea
- 9.Vomitting
- 10.Diarrhoea
- 11.Fatigue
- 12.Weakness
- 13.Tiredness

Any employee presenting with any of the above symptoms – should not be allowed onto site, refer to identified testing sites for management

Contractor _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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**C3.4: CONSTRUCTION ENVIRONMENT
MANAGEMENT PLAN**

SHE/WI/02 rev 10 (Feb 2020)

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE (SOC) LTD
**GENERAL REQUIREMENTS OF THE CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN
(CEMP)**

FOREWORD

The East London Industrial Development Zone (SOC Ltd) (ELIDZ) encourages sustainable environmental management practices in the East London Industrial Development Zone (IDZ). This applies to all planning, design, construction and operation of the ELIDZ.

The Strategic Environmental Assessment (SEA) for the ELIDZ - completed in November 1997 by the CSIR - recommended that a series of principles and guidelines be applied to minimise negative environmental impacts and enhance the positive environmental impacts during the planning of the ELIDZ. These conditions and guidelines (as part of the Draft SEA) were submitted for public comment and, revised accordingly.

The CEMP incorporates specifications derived from recommendations in the SEA, ELIDZ Rezoning Environmental Impact Assessment (EIA) and Comments Report, Department of Economic Affairs, Environment and Tourism's Conditions of Approval for the rezoning EIA, together with specifications for 'good environmental practice' for construction work.

ENVIRONMENTAL POLICY

The East London Industrial Development Zone (ELIDZ) (SOC) Ltd is a world class operator of a prestigious industrial complex where highly competitive organizations thrive on streamlined business benefits and stimulate regional economic growth. ELIDZ aims to apply world-class environmental management practices within its Industrial Development Zone (IDZ), hence becoming the model for similar developments throughout Africa. The East London IDZ (ELIDZ) shall be developed and operated in a manner, which is economically, socially acceptable and sustainable. ELIDZ (SOC) Ltd recognizes that Environmental Management is an integral part of its overall business performance as any failure in this area will negatively impact on the Organization, its employees, tenants, contractors and the public.

The ELIDZ (SOC) Ltd is committed to striving for environmental best practice in all phases of development by:

1. Complying with all applicable environmental legislation, government policies and any other requirements that pertains to the Industrial Development Zone (IDZ);
2. Encouraging the participation of all interested and affected parties in all phases of development of the IDZ;
3. Monitoring all tenant's activities within ELIDZ's jurisdiction that could have potential detrimental impacts for the environment.
4. Avoiding or limiting the disturbance of landforms, ecosystems and loss of biological diversity through all phases of development and operation;
5. Promote the responsible use of water, energy and other non-renewable natural resources where feasible;
6. Preventing pollution and waste where feasible.
7. Limiting potentially detrimental impacts of the IDZ on neighbouring communities.
8. Continual improvement of the Environmental Management System

These objectives focus on the planning, design and development and operations phases of the IDZ.

In order to achieve the aforementioned objectives the ELIDZ (SOC) Ltd will develop and maintain an Environmental Management System according to the principles contained in ISO 14001.

This policy will be communicated to all employees and contractors working for or on behalf of the ELIDZ.

Top Management take full responsibility for the Environmental responsibility of the ELIDZ (SOC) Ltd and hereby assert that adherence to this Environmental Policy is mandatory to all employees and contractors within the ELIDZ. Top Management, hereby, further pledge on behalf of the ELIDZ (SOC) Ltd, to integrate Environmental considerations into our decision-making processes.

The environmental policy will be reviewed periodically as need arise to ensure it remains relevant and appropriate to the ELIDZ and will be distributed to the public on request.

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List of Abbreviations

CSIR	Council for Scientific and Industrial Research
ELIDZ	East London Development Zone (SOC) Ltd.
IDZ	Industrial Development Zone
SHEQM	Safety, Health, Environment & Quality Management (for the ELIDZ).
CEMP	Construction Environmental Management Plan
EMS	Environmental Management System for the ELIDZ (SOC) Ltd
EMP	Environmental Management Plan
ESA	Environmentally Sensitive Area
ECO	Environmental Control Officer
PECO	Project Environmental Control Officer
SABS	South African Bureau of Standards
SSSI	Sites of Special Scientific Interest
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
PA	Principal Agent, or duly appointed principal Consultant

1 PURPOSE OF THE CEMP

The purpose of the CEMP is to translate the recommendations of the Strategic Environmental Assessment (SEA) and the Rezoning EIA into a contractual environmental management plan for application during construction activities within the ELIDZ.

The CEMP provides specifications that the Contractor shall adhere to in order to minimize adverse environmental impacts and to develop a project specific EMP. It is critical that the contractor make provision for the implementation and maintenance of the requirements of the ELIDZ CEMP and their project specific EMP.

2 IMPLEMENTATION OF THE CEMP

The CEMP is intended for dissemination by the SHEQM to approved PA's (or persons responsible for management of projects) who shall ensure that it is included in all Tender Documents issued to the prospective Contractors. The Pa's and Contractors shall incorporate the requirements of the CEMP in their tenders, and are required to make it an integral part of their contract with Subcontractors.

The Safety, Health Environment & Quality Management (SHEQM) shall be responsible for updating the CEMP as required, auditing the implementation of the CEMP for each construction project and for maintaining the document control and record systems associated with the CEMP.

The CEMP is a generic document that will be applicable for all construction activities within the ELIDZ, and will be implemented by the key role players of the project team including the Pa's, and Contractor, as per the organizational requirements specified.

3 ORGANIZATIONAL REQUIREMENTS

3.1 Organizational Structure

This section outlines the required management structure for the administration of the CEMP, with particular emphasis on the roles and responsibilities of key individuals.

The organizational structure for the implementation of the CEMP is presented in Figure 1 and should be viewed in conjunction with the roles and responsibilities identified below.

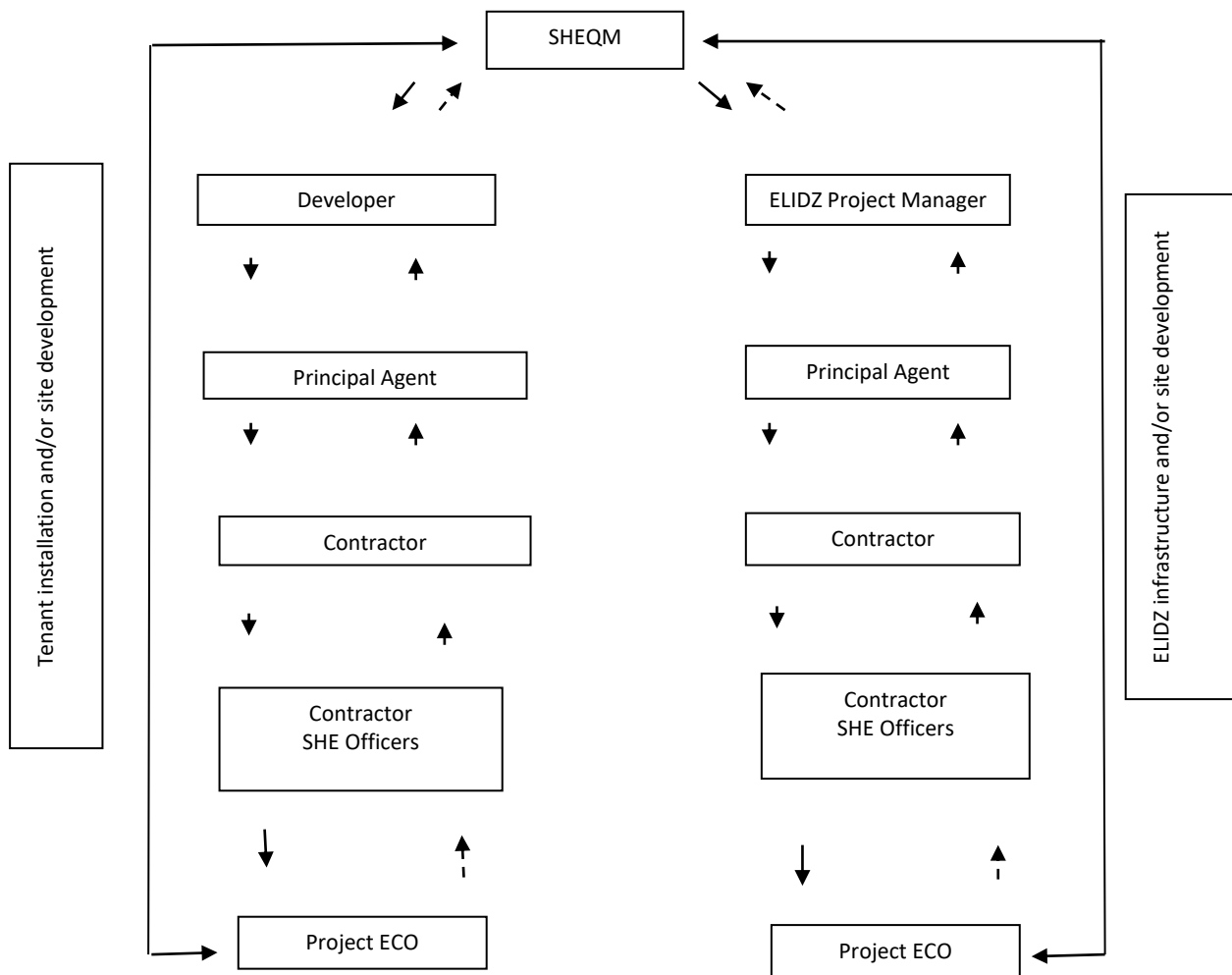


Figure 1: Organisational structure showing lines of responsibility and communication.

3.2 Roles and responsibilities

3.2.1 Safety, Health, Environment & Quality Management (SHEQM)

The ELIDZ is ultimately responsible for ensuring effective environmental management of the ELIDZ in terms of the conditions in the Environmental Management System. It is the function of the Safety, Health and Environment Manager (SHEQM) of the ELIDZ or the duly appointed representative to monitor the implementation of the requirements of the CEMP by ELIDZ Project Management team, Consultants and Contractors, as specified in the CEMP.

The SHEQM shall ensure the appointment of a Project Environmental Control Officer (PECO) to act as his representative. The PECO shall have the same authority as the SHEQM except that a work stoppage instruction shall be subject to a 24 hour delay pending confirmation by the SHEQM and the PA.

In terms of the application of this CEMP the SHEQM or his representative shall have, inter alia, the following responsibilities:

- 3.2.1.1 Maintain the CEMP and its contents for issue to PA's and Contractors.
- 3.2.1.2 Receive and adjudicate any requests for deviations from PA's and Contractors and issue a decision within 21 days of the date of receipt of any application.
- 3.2.1.3 Confirm the issue of the CEMP for every construction project within the ELIDZ.
- 3.2.1.4 PECO to brief Contractors on the general requirements of the CEMP for each project prior to establishing site and stipulate any variations to the CEMP and indicate the method statements required for the project.
- 3.2.1.5 PECO to conduct contractor environmental awareness and induction.
- 3.2.1.6 PECO to receive, review and approve in writing any method statements required for the project within 10 days of receipt, or reject inadequate method statements and request alterations within the same 10 day period.
- 3.2.1.7 PECO to frequently inspect the Contractor's site to check compliance with the CEMP and any required method statements (at least monthly) and maintain independent inspection reports on file.
- 3.2.1.8 PECO to participate in monthly project site meetings.
- 3.2.1.9 PECO to provide SHEQM with written reports related to non-conformance with the CEMP and method statements. Escalate to SHEQM issues which cannot first be resolved in co-operation with the relevant PA and Contractor, and distribute copies of the record to the PA and Contractor.
- 3.2.1.10 Issue any work stoppage instruction for serious non-compliance of the CEMP to the PA for further action.
- 3.2.1.11 Carry out site completion inspections and provide details of any outstanding issues for the Contractors attention.
- 3.2.1.12 Carry out at least two (2) post-construction inspections to monitor the site with respect to re-vegetation, alien vegetation control and erosion.
- 3.2.1.14 PECO to submit Environmental Close-out report for SHEQM to Issue a project closure instruction for the requirements of the CEMP to the PA to authorize the release of retention monies for the project.

3.2.2 Project Environmental Control Officer (PECO)

The SHEQM may ensure the appointment of a Project Environmental Control Officer (PECO) to act as his representative. The PECO shall have the same authority as the SHEQM except that a work stoppage instruction shall be subject to a 24 hour delay pending confirmation by the SHEQM and the PA.

3.2.3 The Developer

In terms of the application of this CEMP the Developer or his duly appointed representative shall, inter alia, have the following responsibilities:

- 3.2.3.1 The Developer shall notify the ELIDZ (SOC Ltd) in writing of any intention to undertake construction activities or installation of infrastructure;
- 3.2.3.2 Notify the ELIDZ (SOC Ltd) in writing of the appointed Principal Agent for the project.
- 3.2.3.3 Include the CEMP with any tender document related to maintenance or construction activities on site;
- 3.2.3.4 Submit an Environmental Management Plan (EMP) for the proposed development to the ELIDZ (SOC Ltd);
- 3.2.3.5 Allow the SHEQM or PECO access to the site for monitoring purposes; and
- 3.2.3.6 Submit monthly environmental reports and audits to the ELIDZ (SOC Ltd).

3.2.4 Principal Agent (PA) and ELIDZ Project Managers

In terms of the application of this CEMP the PA or his duly appointed representative shall, inter alia, have the following responsibilities:

- 3.2.4.1 Include most up to date version of the CEMP in any tender document related to construction activities within the ELIDZ
- 3.2.4.2 Provide feedback to the SHEQM on any areas of the project for which the CEMP may require deviation.
- 3.2.4.3 Instruct the Contractor to appoint an Environmental Control Officer (ECO) for the project.
- 3.2.4.4 Include in all site meetings the opportunity to address environmental matters from all parties to the works and keep minutes of these meetings.
- 3.2.4.5 Stop work on site on instructions of the SHEQM in the event of serious non-compliance to the CEMP.
- 3.2.4.6 Request a project closure instruction for the requirements of the CEMP from the SHEQM to authorize the release of retention monies for the project.
- 3.2.4.7 Only release the retention monies for the project once the CEMP project closure instruction is received from the SHEQM.

3.2.5 Contractor

In terms of the application of this CEMP the Contractor shall have, inter alia, the following responsibilities:

- 3.2.5.1 Comply with the requirements of the CEMP as provided in the contract document
- 3.2.5.2 Provide copies of any method statements required for the work to the PA 10 days prior to commencing work on site. These method statements shall be in sufficient detail that a third party with the relevant experience of the work and the site could reasonably carry out the work based on the method statement provided.
- 3.2.5.3 Provide to the PA and the PECO, a detailed CV of the proposed SHE Officer, responsible for managing the CEMP on the Contractors behalf, for approval. The proposed SHE Officer shall have the required environmental experience to manage the CEMP and the SHEQM shall reserve the right to reject the appointment of unsuitable persons.
- 3.2.5.4 Provide a copy of the letter of appointment of the SHE Officer to the PA and SHEQM within 7 days of the appointment to commence work. The appointed SHE Officer shall be available on site during normal working hours.
- 3.2.5.5 The contractor shall be required to undertake post-construction CEMP activities on site until such time as a project closure certificate is issued by the PA.
- 3.2.5.6 Provide information to the ELIDZ as required during external audits that shall be conducted by the ELIDZ as part of the EMS auditing procedure. The information required shall include the reports of internal audits conducted by the Contractor.

3.2.6 Contractor: SHE Officer

The SHE Officer for the Contractors site shall be responsible for, inter alia, the following tasks:

- 3.2.6.1 Be familiar with the contents of the CEMP and be capable of ensuring compliance with all aspects of the document.
- 3.2.6.2 Conduct regular internal audits to ensure that the system for implementation of the CEMP is operating effectively.
- 3.2.6.3 Be familiar with the method statements that apply to any work and audit the compliance to those requirements.

- 3.2.6.4 Ensure that employees of Contractors, sub-Contractors, suppliers etc. receive appropriate environmental awareness training prior to commencing work on the project and maintain records of training.
- 3.2.6.5 Record any transgressions of the method statements, that lead to environmental impacts in an incident register, and report these to the PECO, PA and SHEQM immediately.
- 3.2.6.6 Participate in monthly project site meetings.
- 3.2.6.7 Maintain a site log of any public complaints, details of the corrective action taken, and confirmation that the complainant has been advised that the issue has been resolved.
- 3.2.6.8 At the completion of the contract period a full record of the correspondence pertaining to the application of the CEMP for the work shall be handed in within 30 days to the PECO.

4. MANAGEMENT AND MONITORING

4.1 General inspection, monitoring and reporting

The Contractor shall ensure that the following is complied with:

- 4.1.1 Keep the records of daily site inspection reports to ensure that the environmental specifications are adhered to.
- 4.1.2 Maintain records of all tool box talks and awareness training
- 4.1.3 Maintain a record of all incidents (spills, impacts, complaints, legal transgressions etc.) as well as corrective and preventive actions taken, for submission to the PECO, SHEQM and PA at the scheduled monthly meetings.

4.2. Method Statements

The Contractor shall submit written method statements indicating how compliance with the Particular Specification for Environmental Management will be achieved. An example of a typical method statement format is attached as Annexure 1.

- 4.2.1 Method statements shall state clearly:
 - Timing, location and phasing of activities
 - materials to be used
 - how and where materials will be stored
 - containment of leaks or spills of any liquid or material that may occur
 - equipment and staffing requirements
 - the proposed construction procedure designed to implement the relevant environmental specifications
 - description of potential positive and negative environmental impacts and how these will be managed
 - the system to be implemented to ensure compliance with the above
 - other information deemed necessary by the ELIDZ and Consultant
- 4.2.2 Method statements shall be submitted to the PECO, for approval at least ten working days prior to commencement of related works on site, to allow the PECO time to study and approve the method statement. The Contractor shall not commence work on the activity requiring a method statement until such time as the method statement has been approved in writing by the PECO which shall be done within ten working days of receipt.
- 4.2.3 Approved method statements shall be kept on site for auditing purposes.

4.3 Documentation

- 4.3.1 The Contractor shall maintain an Environmental Management file that includes but might not be limited to: method statements, monthly reports, internal audits and other relevant material. These files shall be available on site at all times and are to be presented on request.
- 4.3.2 The Contractor shall ensure that all records of spills, pollution incidents, spot fines, training details etc. are copied to the PECO.
- 4.3.3 The Contractor shall ensure that a register of public complaints and action taken thereon, plus the relevant documentation from the PECO, is maintained.
- 4.3.4 All records relating to the CEMP are to be copied to a file which is to be handed over to the PECO on completion of the project.

4.4. Penalties

Failure to comply with the provisions of the CEMP will attract the following penalties:

4.4.1 Spot Fines

Spot fines not exceeding R1,500.00 shall be imposed by the PA on the Contractor if the Contractor is found to be in breach of this Specification. The PA shall advise the Contractor in writing of the nature of the infringement and the amount of the spot fine, which shall be deducted from monthly payment certificates.

The imposition of spot fines does not replace any legal proceedings the ELIDZ (SOC Ltd), authorities, land owners and/or members of the public may institute against the Contractor. The severity of the spot fine shall be decided at the discretion of the PA, and the PA's decision is final.

Spot fines will be imposed for the following infringements that include but might not be limited to:

- 4.4.1.1 Commencement of work without approval of method statements
- 4.4.1.2 Moving outside the demarcated Site boundaries;
- 4.4.1.3 Using the river for any purposes other than those specified;
- 4.4.1.4 Littering of the Site and surrounds;
- 4.4.1.5 Burying waste on Site and surrounds;
- 4.4.1.6 Smoking in the vicinity of fuel storage and filling areas and in any other areas where flammable materials are stored/used;
- 4.4.1.7 Making fires outside designated areas;
- 4.4.1.8 Defacement of natural features;
- 4.4.1.9 Performing ablutions outside of designated ablution areas.
- 4.4.1.10 Spillage onto the ground of oil, diesel, etc;
- 4.4.1.11 Harming / damaging Flora and Fauna within the ELIDZ; and
- 4.4.1.12 Other acts deemed by the PECO to be in breach of the CEMP.

Spot fines that are issued by the PA, will be issued as a 'Compliance Notice' to the Contractor, and the Compliance Notice shall present the activity that caused the non-compliance, and the amount to be paid. A copy of the Compliance Notice will also be submitted to the financial manager for the project who will deduct the value of the fine from the Contractors payment claim.

4.4.2 Fines

More severe fines may be issued by the SHEQM on a Contractor if there are repeated contraventions of the CEMP. The fines that are issued shall be in accordance with the severity of the incident, and these will be classified as minor-, medium-, or major environmental incidents.

4.4.2.1 Minor environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, that does not result in any negative impact on the environment immediately after remedial action, and does not result in pollution, and does not pose risk of injury or death.

Minor environmental incidents may attract a fine not exceeding R5,000.00 imposed at the discretion of the SHEQM. The SHEQM's decision is final and the Contractor remains liable for the costs of any remedial action required.

4.4.2.2 Medium environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, which results in reversible significant negative impact on the environment, and/or risk of legal liability to the ELIDZ, and does pose risk of injury or death.

Medium environmental incidents may attract a fine not exceeding R10,000.00 imposed at the discretion of the SHEQM. The SHEQM's decision is final and the Contractor remains liable for the costs of any remedial action required and / or legal liabilities.

4.4.2.3 Major environmental incidents

This refers to an incident or sequence of incidents, whether immediate or delayed, that results in irreversible significant negative impact on the environment, and/or risk of legal liability to the ELIDZ.

Major environmental incidents may attract a fine not exceeding R50,000.00 imposed at the discretion of the SHEQM. The SHEQM's decision is final and the Contractor remains liable for the costs of any remedial action required and / or legal liabilities.

4.4.2.4 Fines Procedure

1. PECO will issue the contractor with a pre-compliance notice.
2. The pre-compliance notice will include the non-conformance as well as recommendations for corrections.
3. Final corrective actions are to be implemented within 48 hours of receipt of the pre-compliance notice.
4. Failure to address the pre-compliance notice will result in a compliance notice being issued to the contractor and copy to the PA as well as SHEQM.
5. The compliance notice will include the non-conformance, proposed corrective action, failure to address non-conformance and recommended fine value.
6. The compliance notice shall be addressed within 48 hours, failing which related construction activities are at risk of being stopped by SHEQM.
7. The PA will ensure that a copy of the Compliance Notice will be submitted to the project's financial manager with an instruction to deduct the value of the fine from the Contractor's next payment certificate.

4.4.2.5 Repeat Offences

A repeated contravention of the CEMP requirements shall be sufficient grounds for the removal by the SHEQM of the person responsible for the non-compliance from the Site, and the Contractor shall have no claim for such action.

A repeat major environmental incident may be grounds for the SHEQM to claim a 'breach of contract' against the Contractor and the ELIDZ shall have the right to terminate the contract in such circumstances.

4.4.3 Dispute Resolution

Dispute resolution will be in accordance with the terms dictated by the construction contract entered into between the Contractor and ELIDZ (SOC) Ltd (i.e. GCC, JBCC etc.).

5. ENVIRONMENTAL AUDITING

It shall be the responsibility of the SHEQM and the PECO to attend to the preliminary briefing of the Contractor on the CEMP at the site hand-over meeting and to conduct external audits of the works area at not less than monthly intervals.

The audit shall assess compliance with each clause of the CEMP, including any variations and additions which may have been approved.

6. ENVIRONMENTALLY SENSITIVE AREAS

- 6.1 The Contractor is advised that certain areas within the IDZ have been identified as being Environmentally Sensitive Areas (ESA's). The ESA's include the following:
- coastal grasslands
 - wetlands which protect and support aquifers and riverine systems
 - the Mvubukazi and Ngqenga River
 - steep slopes which are prone to erosion when vegetation is removed or disturbed and which support areas of pristine indigenous vegetation
- 6.2 No ESA shall not be entered or used for any purpose unless a written motivation has been submitted to the SHEQM by the Contractor, and a written approval has been received from the SHEQM.
- 6.3 The Contractor shall exercise special care when working close to the ESA in order to avoid physical disturbance or pollution of these areas.

PARTICULAR SPECIFICATIONS TO THE ELIDZ CEMP

PS 1 INTRODUCTION

The Contractor's attention is drawn to requirements of the Environmental Specification which are intended to complement the requirements laid down in SABS 1200 and are not intended to extend these requirements except where the Contractor fails to take due care, whereupon any additional requirements shall be at the expense of the Contractor.

PS 2 GENERAL ISSUES

PS 2.1 Access to Marine Zone

The Contractors and their staff are specifically prohibited from going across to the marine zone (and beach) adjacent to the ELIDZ directly from the ELIDZ.

PS 2.2 Pollution of Groundwater

The Contractor must ensure that pollution of the ground or surface water does not occur as a result of the release, accidental or otherwise, of contaminated run-off from construction sites, discharge of contaminated construction water, chemicals, oils, fuels, sewage, run off from stockpiles, solid waste and litter.

PS 2.3 Wind Generated Pollution

The Contractor is advised that the site is prone to strong winds. All material storage areas should be designed so as to reduce the risk of spillage, dispersal or damage from materials as a result of strong winds. The protection of stored materials should be included in method statements.

PS 2.4 General Emergency Procedures

- PS 2.4.1 The Contractor shall submit his Emergency Procedure Method Statement for approval prior to commencing activities on site.
- PS 2.4.2 Emergency response procedures shall include, but are not limited to, the reaction to fire, spills contamination , ground contamination, accidents to employees, accidental discharge of hazardous substances, etc.
- PS 2.4.3 Emergency procedures, including contact details of emergency response services, shall be made available to all the relevant personnel and shall be clearly displayed at the relevant locations around the site.
- PS 2.4.4 The Contractor shall advise the PECO, SHEQM and PA of any emergencies on site, together with a record of action taken as soon as practical but not later than 36 hours after the event.
- PS 2.4.5 The Contractor must provide the PECO and the PA with temporary site closure procedures in the event that the construction site is closed for five days or more.

PS 2.5 Fire prevention

The Contractor shall take all the necessary precautions to ensure that fires are not started as a result of his activities on site, and shall also comply with the requirements of the Occupational Health and Safety Act 85 of 1993.

The Contractor shall be liable for any expenses incurred by any organisations called to assist with fighting fires, and for any costs relating to the rehabilitation of burnt areas.

PS 2.6 Hazardous materials

The Contractor shall provide spill kits and his staff are to be trained in the use of the equipment. In addition the Contractor shall ensure that key personnel are aware of local Contractors who are experienced in hazmat handling in the event of the on-site reaction proving inadequate.

PS 3 ENVIRONMENTAL PROTECTION

PS 3.1 Protection of Flora and Fauna

PS3.1.1 Indigenous flora is to be protected throughout the areas surrounding the site. All fauna within and around the site is protected.

PS 3.1.2 It is illegal, in terms of applicable Environmental legal and other requirements to remove or pick any protected or unprotected indigenous flora without the written permission of the land owner. The applicable Environmental Legislation sets out particular penalties for offenders and the PECO as well as SHEQM will ensure compliance.

PS 3.2 Poaching, disturbance of Wildlife and domestic pets

PS 3.2.1 No fauna shall be disturbed on site or in surrounding indigenous bush and open spaces.

PS 3.2.2 Wildlife shall not be caught or killed by any means, including poisoning, trapping, shooting or setting of snares. Offenders shall be prosecuted in terms of the applicable Environmental Legislation.

PS 3.2.3 Any Contractor's staff caught interfering with wildlife will face suspension from the project. Criminal charges will be initiated if poaching is detected.

PS 3.2.4 No domestic pets will be allowed on site.

PS 3.3 Defacement of Natural Features

Defacement of any features within the ELIDZ shall be cause for the PECO as well as SHEQM to invoke penalties in accordance with clause 4.4 - Penalties

PS 3.4 "Endangered" or "Protected Plants"

A number of species of plants have been declared "Endangered" or "Protected Plants" in terms of the applicable Environmental legislation, which includes Cycads, Tree Ferns, Aloes, Lilies, Orchids amongst others.

In terms of the applicable Environmental legislation, these plants may not be gathered, transported or relocated without a permit. These plants must therefore be avoided, or if unavoidable, the PECO as well as the SHEQM and the PA must be notified timeously so that the necessary approvals for removal and rehabilitation can be obtained.

PS 3.5 Indigenous Vegetation

PS 3.5.1 No indigenous trees or bush shall be disturbed or removed without approval from the PECO and SHEQM.

PS 3.5.2 Areas where construction will occur in close proximity to indigenous forest/bush must be strictly controlled and the limits of the construction activities must be demarcated with hazard tape. No construction staff may be access this indigenous vegetation at any time.

PS 3.6 Alien Vegetation

PS 3.6.1 The PECO will assist in the identification of alien plant species which must be removed and will advise the Contractor on methods of eradication

PS 3.6.2 The Contractor shall remove all alien vegetation that establishes within the demarcated site after construction commences. The removal of alien vegetation shall comply with legal and other requirements, with related method statements approved by the PECO prior to removal.

PS 3.6.3 Any treatment of alien vegetation with herbicides shall be approved by the PECO prior to implementation.

PS 3.7 Fire Prevention and Control

PS 3.7.1 The Contractor shall at all times ensure that fires do not start or spread within the site or the environs thereof as a result of the Works or the actions of employees.

PS 3.7.2 No open fires, that is fires in undesignated and/or unauthorized areas, are allowed on site or anywhere else within the ELIDZ.

PS 3.7.3 In the event of fire the Contractor shall immediately implement construction site emergency preparedness protocol to have the fire emergency addressed.

PS 3.8 Erosion Control

PS 3.8.1 Areas affected by construction related activities must be monitored on an ongoing basis for evidence of soil erosion. Where evidence of soil erosion occurs, the Contractor shall develop and implement remedial measures at an early stage to avoid severe erosion problems occurring. Proposed remedial action must be approved by the PECO, SHEQM, the PA and the ELIDZ before implementation can commence.

PS 3.8.2 The disturbance of steep slopes by the removal of vegetation, may result in slope instability and erosion by rain and surface run off. The Contractor shall ensure that slopes that are disturbed during construction are stabilised to prevent erosion occurring. Where re-vegetation of slopes is undertaken, this shall be in accordance with the CEMP specification for rehabilitation.

PS 3.8.3 The positions of scour valves are to be checked on site by the PA, PECO and Contractor prior to construction thereof, to ensure that scouring will not cause erosion. All scour positions will require some form of erosion protection.

PS 3.9 Archaeological and Paleontological sites

If any possible paleontological / archaeological material is found during excavations, the Contractor shall stop work immediately and inform the PECO and the SHEQM who will inform the National Monuments Council (NMC) and arrange for a palaeontologist /archaeologist to inspect, and if necessary excavate the material, subject to acquiring the requisite permits from the NMC

PS 3.10 Environmentally sensitive areas

The Contractor must refer to Clause 6 above:

3.10.1 No ESA shall be entered or used for any purpose unless a written motivation has been submitted to the PECO by the Contractor, and a written approval has been received from the SHEQM.

3.10.2 The Contractor shall exercise special care when working close to the ESA in order to avoid physical disturbance or pollution of these areas.

3.10.3 Damage caused to an ESA by the Contractor shall be cause for the PECO and SHEQM to invoke penalties in accordance with clause 4.4 - Penalties.

PS 4 CONSTRUCTION SITE ACTIVITIES

PS 4.1 Sanitation

PS 4.1.1 The Contractor shall provide the necessary ablution facilities for all his personnel. A temporary connection to the ELIDZ sewerage system for use during construction shall take precedence, failing which chemical toilets shall be provided with a minimum of one toilet per 15 persons.

Chemical toilets shall be cleaned and serviced at least twice per week by a reputable toilet servicing company, and shall be emptied before weekends, long weekends and shutdown periods (also known as builders holidays). The toilet servicing company shall provide proof that they are licensed to dispose of waste to the Buffalo City Municipality sewers.

PS 4.1.2 The Contractor shall ensure that chemicals and/or waste from toilet cleaning operations are not spilled on the ground at any time. Should there be repeated spillage of chemicals and/or waste (i.e. more than three), the Contractor shall place the toilets on a solid base with a sump, at his own expense. Accumulations of chemicals and waste will have to be removed from the site and disposed at an approved waste disposal site or sewage plant.

PS 4.1.3 Waste water from any other ablution or kitchen facilities on site shall be discharged into a suitable conservancy tank or directed to the nearest sewer. The Contractor shall be responsible

for ensuring that the system continues to operate effectively for the duration of the construction activity and that the conservancy tank is emptied as required during the project. The Contractor shall engage a suitably qualified sub-contractor or the local authority to empty the conservancy tank and provide proof that the effluent is discharged to a licensed disposal site.

PS 4.2 Refuse

PS 4.2.1 All waste shall be collected and contained immediately.

Examples of typical construction waste which could be expected on the site and how they should be classified include but is not limited to what is indicated in the following table:

WASTE	CLASSIFICATION	
	HAZARDOUS	GENERAL
Aerosol containers	X	
Batteries, fluorescent light bulbs, circuit boards, etc.	X	
Clean soil		X
Soil or debris contaminated with oil or organic compounds	X	
Domestic waste		X
Empty drum (depends on prior use)	X	X
Empty paint and coating containers		X
Explosive waste	X	
Waste paint and/or solvent	X	
Previously contaminated building waste	X	
Uncontaminated rubble		X
Waste plastic		X
Waste cable		X
Waste oil	X	
Waste concrete		X
Waste containing asbestos	X	
Waste timber		X
Sewerage sludge	X	
Scrap metal		X
Chemically-derived sanitary waste	X	

PS 4.2.2 The Contractor shall not dispose of any waste and/or construction debris by burning or burying. Waste bins and / or skips are to be provided. The bins shall have lids and an external closing mechanism to prevent their contents blowing out. Bins shall not be used for any purposes other than waste collection and shall be emptied on a regular basis. All waste shall be disposed of off-site at approved landfill sites.

PS 4.2.3 Waste generated at the construction camps shall be separated into recyclable and non-recyclable waste, and shall be separated as follows:

- Hazardous waste (including old oil, diesel, petrol tins, paint, bitumen, etc.)
- Recyclable waste (paper, tins, glass)
- General waste
- Reusable construction material.

PS 4.2.3.1 Recyclable waste shall be deposited in separate skips and removed off site for recycling.

PS 4.2.3.2 Hazardous waste, including waste oil and other chemicals (e.g. paints, solvents) shall be stored in enclosed area/s and shall be clearly marked. Such waste shall be disposed of off-site by a specialist waste contractor, at a licensed hazardous waste disposal site.

PS 4.3 Dust

The Contractor shall at all times control dust emanating from all of the Works, access roads/tracks, stockpiles, spoil sites and borrow pits. Dust suppression may entail the judicious use of water and care shall be taken to avoid unnecessary runoff and / or erosion.

PS 4.4 Cement and Concrete

The Contractor is advised that cement and concrete are regarded as highly hazardous to the natural environment on account of the very high pH of the material, and the chemicals contained therein.

PS 4.4.1 On site mixing of Concrete and Mortar
The Contractor shall ensure that:

- All mixing is done on mortar boards, and not directly on the ground;
- The visible remains of concrete, either solid, or from washings, are physically removed immediately and disposed of as waste. Washing the visible signs into the ground is not acceptable.

PS 4.4.2 Cement stabilization
The Contractor shall not undertake cement stabilization during windy periods. Special care shall be taken when working in the vicinity of the demarcated wetlands and Mvubukazi and Ngqenga Rivers to avoid damage caused by cement entering the water.

PS 4.4.3 Concrete Batching

PS 4.4.3.1 Concrete batching plants shall be located more than 100 m from the nearest river channel or wetland. The batching site shall be bunded with earth berms or sandbags such that runoff cannot escape from the site. Contaminated storm water and wastewater runoff shall not be permitted to enter streams but shall be led to a pit where the water can soak away.

PS 4.4.3.2 Waste concrete and cement sludge shall be scraped off the site of the batching plant and carted to an approved landfill site.

PS 4.4.3.3 Adequate measures shall be taken to control dust from stockpiles and the batching plant processes. The placement of the batching plant shall not be closer than 500 metres from the nearest dwelling or occupied premises, other than the site camp.

PS 4.4.4 Concrete Mixing

PS 4.4.4.1 Concrete mixing stations shall be located on the construction site and shall be bunded with earth berms or sandbags such that runoff cannot escape from the site. Contaminated storm water and wastewater runoff shall not be permitted to enter storm water reticulation and/or streams but shall be led to a pit where the water can soak away and any dried debris can be collected and disposed of.

PS 4.4.4.2 The cleaning of concrete mixing trucks is prohibited on the construction site or anywhere else on the ELIDZ property.

PS 4.5 Blasting Operations

Notification of blasting operations shall be provided to the SHEQM, PECO and PA at least 72 hours before the planned activity. Blasting activities may not commence until written approval is received from the SHEQM, (SHE agent where applicable), PA and PECO.

The Contractor must take appropriate measures to minimise the generation of dust and fly rock from blasting operations. No blasting is permitted unless the Contractor has satisfied the PA, PECO and SHEQM that the proposed blasting methods and controls are such that no damage will be caused to any adjoining structures, pipelines, services, trees or sensitive vegetation. Topsoil may not be used as over-burden for blasting.

PS 4.6 Open Excavations

Adequate measures must be taken to prevent humans or animals from injuring themselves by falling into any open excavations. All excavations deeper than 1.5 m that are likely to be left unattended for more than 24 hours are to have the sides cut back to a 1 : 3 slope to allow persons or animals to climb out.

PS 4.7 Protection of Indigenous trees

Indigenous trees shall be protected and may not be removed nor damaged. The area immediately around the stems of the trees must be kept free of piled rubble, soil or material stockpile.

PS 4.8 Servicing and Refuelling of Equipment

- PS 4.8.1 Servicing should preferably occur off site however if these activities occur on site the contractor will be required to conduct all servicing of machines and equipment within a designated area within the site camp.
- PS 4.8.2 The contractor shall ensure that there are adequate facilities for the handling and storage of used parts, oils, grease, cleaning fluids and fuels. Drip trays are to be available for use at the servicing area.
- PS 4.8.3 In the event of a breakdown on site, the contractor may temporarily repair equipment on location provided that drip trays are in place during all work and a spill control kit is immediately available.
- PS 4.8.4 No vehicles or machines shall be refuelled on site except at designated refuelling locations.
- PS 4.8.5 A designated refuelling area must have an impermeable layer to prevent contamination of the soil and ground water.

PS 4.9 Fuels and Chemicals

The Contractor shall take all reasonable precautions to prevent the pollution of the ground and/or water resources by fuels and chemicals as a result of his activities.

- PS 4.9.1 The Contractor shall keep the necessary materials and equipment on site to deal with ground spills of any of the materials used or stored on site.
- PS 4.9.2 The Contractor shall ensure that no oil, petrol, diesel, etc. is discharged onto the ground. Drip trays shall be provided where required, cleaned and emptied regularly, and the waste disposed of off-site at a facility capable of handling such waste water.

- PS 4.9.3 The Contractor shall remove any oil-, petrol-, and diesel-soaked ground immediately and shall dispose of it as hazardous waste.
- PS 4.9.4 Tanks containing fuels shall have lids and shall remain firmly shut. Fuel stores shall be placed on a bunded sealed base - the bunds shall have a volume of 110% of the volume of the largest tank in the storage area. Any waste water or spilled fuel collected within the bund shall be disposed of as hazardous waste.
- PS 4.9.5 The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores, and smoking shall be prohibited in the vicinity of the stores.
- PS 4.9.6 No open fuel containers may be stored on bare ground or left near a designated smoking area.

PS 4.10 Storage Areas

All areas used for the storage of materials shall be clearly demarcated and shall prohibit unauthorised access. The storage of sand, stone, bricks and large pipes is not to take place on areas without removing and stockpiling topsoil for the rehabilitation of the site after use.

PS 5 MATERIAL HANDLING

PS 5.1 Borrow Pits

Material from outside of the actual construction site may not be borrowed without the prior approval of the SHEQM and PA. Contractors will not be allowed to open borrow pits outside of the site and all materials supplied to site are to be sourced from external sites with valid licenses from the Department of Minerals and Energy. The Contractor shall be required to supply copies of the licenses to the PECO prior to obtaining material from the site.

PS 5.2 Spoil Sites

- PS 5.2.1 Spoil sites within the ELIDZ are reserved for stockpiling of good quality topsoil for later use on the site for rehabilitation. The SHEQM and PA shall approve the quality of material to be stockpiled and location thereof.
- PS 5.2.2 The on-site stockpiles shall be maintained by the Contractor for the duration of the project. This maintenance shall include, inter alia, seeding, erosion control and storm water management relating to the stockpile.
- PS 5.2.3 The spoiling of surplus material off-site will be required and the Contractor shall be responsible for identifying suitable sites for the disposal of this material. The contractor shall provide a letter of consent for the location of the disposal of such material from the land owner.

PS 5.3 Construction Materials

The manner in which materials are transported onto site, and stored prior to use, must be controlled by the Contractor. The impacts of noise, dust, traffic and social disruption must be considered, and materials stored on site are to be placed so as not to negatively impact on operations within the ELIDZ.

PS 5.4 Hazardous Materials

- PS 5.4.1 The Contractor shall comply with all relevant National, Regional and Local legislation with regard to the transport, use and disposal of hazardous materials. If necessary, the Contractor shall obtain the advice of the manufacturer with regard to the safe handling of hazardous materials.
- PS 5.4.2 The Contractor shall provide the SHEQM and PA with a list of all hazardous materials on site, together with storage procedures for these materials.
- PS 5.4.3 The Contractor shall ensure that information on all hazardous substances is available to all relevant personnel on site. The Contractor shall furthermore be responsible for the training of all personnel on site who will be handling the material, regarding the proper use, handling and disposal thereof.

PS 6 SITE REHABILITATION

- PS 6.1 The Contractor shall be responsible for rehabilitating all areas cleared or disturbed for construction purposes to return these areas to their former condition. This will include removal of all cement sludge, waste concrete, builders, refuse etc., ripping of compacted surfaces to a depth of 150 mm to loosen soil.
- PS 6.2 Areas that require reshaping shall be cut, filled and compacted so as to follow the contours of the surrounding landscape. Topsoil removed from the area initially shall be replaced. Care must be taken not to mix the topsoil with the subsoil during shaping operations. Should a crust form on the soil before re-vegetation is commenced, the Contractor(s) shall, at own cost, loosen the crust by scarifying to a depth of 150 mm.
- PS 6.3 The re-establishment of vegetation will be monitored for six months after completion of rehabilitation to ensure the vegetation cover is adequate to prevent erosion. i.e.: When in the PECO's opinion the grass is fully established (75% cover per square metre).
- Extra measures including composting, sodding, sprigging, hand seeding or hydro-seeding may be required in order to achieve this.
- PS 6.3.1 **Seeding**
A commercial annual and perennial grass seed mix shall be used which has an annual to perennial ratio of greater than 1.5:1. Seeding shall not take place in windy conditions.
- PS 6.3.2 **Irrigation**
Irrigation will enhance the rehabilitation and should be considered if unusually dry conditions prevail.
- PS 6.3.3 **Fertiliser**
Before seeding, 2:3:2 (N:P:K) fertiliser shall be mixed into the topsoil at a rate of 30g/m². Trafficked topsoil shall be loosened. The soil shall then be watered so that it is visibly moist to a depth of 100 mm (15 mm/m² per week should be sufficient).

- PS 6.4 The Contractor shall remove all alien vegetation that establishes within the demarcated site after construction commences. The removal of alien vegetation shall be by uprooting. The treatment of alien vegetation by weed killer is not acceptable. Disposal of alien vegetation, after removal, may be controlled by burning with the written permission of the PECO.
- PS 6.5 All construction equipment and excess aggregate, gravel, stone, concrete, bricks, temporary fencing and the like shall be removed from the site upon completion of the work. No discarded materials of whatsoever nature shall be buried on the site or within the confines of the ELIDZ.

PS 7 STORM WATER AND EFFLUENT MANAGEMENT

- PS 7.1 The Contractor must take reasonable precautions to prevent the pollution of the ground and / or water resources on and adjacent to the site as a result of his activities.
- PS 7.2 No natural watercourse is to be used for the cleaning of tools or any other apparatus. This includes for purposes of bathing, or the washing of clothes etc.
- PS 7.3 All washing operations will take place off-site at a location where wastewater can be disposed of in an acceptable manner
- PS 7.4 No spills may be hosed down into a storm water drain or sewer, or into the surrounding natural environment.

PS 8 ACCESS TO WATER

- PS 8.1 Contractors shall not make use of/collect water from any other source than those pointed out to them as suitable for use by them.

PS 9 NOISE CONTROL

- PS 9.1 The Contractor shall take all reasonable precautions to minimize noise generated on site as a result of construction operations.
- PS 9.2 Excessive noise levels shall be limited to normal working hours, that is between 08h00 and 17h00.

PS 10 TEMPORARY SITE CLOSURE

This is applicable in any period where the site is closed for 3 days or more. On such occasions the following controls will be implemented:

- All construction areas will be sufficiently closed off to make these safe, and to prevent unauthorized access.

SHE/WI/02 rev 10 (Feb 2020)

- All plant left on site during this period will be parked at the designated parking area that has been prepared with an impermeable layer, or returned to the Contractors yard for safe keeping.
- Any plant left at the designated parking will still have a drip tray placed under the engine and these shall be periodically checked by standby staff to make sure there is no overflow.
- All equipment shall be removed from site or safely stored in storage containers.
- All waste containers shall be emptied.
- All waste skips shall be emptied if they are more than 50% full in the case of Christmas shutdown, otherwise these can remain on site for security staff to discard waste into.
- All chemical toilets shall be emptied, however the toilets at both security gates shall be serviced as per usual.
- Electrical connections shall be shut down, with a connection for security being left in working order.
- Water connections to site shall be shut, with a single water connection for security being left usable.
- Security shall remain on site for the duration of the period and will do regular inspection of the entire site and works area.
- Security shall be issued with an emergency contact list of senior personnel and standby personnel who will be contactable in case of emergencies.
- Security shall allow access to site for ELIDZ Personnel but shall keep a record of such visits.
- No items of any sort may be removed from the site during this period.

PS 11 FINANCIAL CLAIMS

The ELIDZ shall make payment to the contractor on submission of a payment certificate from the Consultant. The Consultant shall adjudicate claims on the basis of performance and compliance with the requirements of the CEMP and fulfilment by the contractor of the requirements of the CEMP specification against the scheduled items.

These scheduled items shall inter alia include:

1. Provision for management of the general requirements of the CEMP as a lump sum payable pro rata against progress (time based). This amount shall be considered to include all contractual obligations of the CEMP not priced separately in the Bill.
2. Costs of administration of the meetings required for the CEMP, including minute keeping, distribution, venue and management. The amount payable shall be reflected as a monthly cost and shall include all the administration costs of managing the CEMP.
3. Requirement for method statements for selected activities shall be paid per method statement provided the method statement adequately fulfils the requirement of the activity. The amount payable will be deemed to include all costs of producing the method statement, including any revisions and the costs of applying the requirements of the method statement.
4. Training requirements of the CEMP shall be payable as a lump sum once proof of training has been provided to the Consultant and certified adequate by the ELIDZ 25 % of the amount will be withheld until the end of the contract and shall be paid if additional training obligations for new staff were met.
5. Provision for penalties to be applied shall be assigned in the Bill and any penalties deducted against this item.

LEGISLATION APPLICABLE TO THIS SPECIFICATION

In terms of the constitution, environmental matters are delegated to the province, but not exclusively. National Acts of relevance to this environmental specification are:

Conservation of Agricultural Resources Act, No 43 of 1983
Environment Conservation Act, No 73 of 1989
National Environmental Management Act, No 107 of 1998 (NEMA)
National Environmental Management: Biodiversity Act of 2004
National Environmental Management: Waste Act of 2008
National Forests Act, No 84 of 1998
National Heritage Resources Act, No 25 of 1999 (NHRA)
National Veld and Forest Fires Act, No 101 of 1998
National Water Act, No 36 of 1998 (NWA)
Provincial Nature Conservation Ordinances.
Minerals and Petroleum Resources Development Act, No 28 of 2002.
Health Act, No 63 of 1977
Atmospheric Pollution Prevention Act, No 45 of 1965.
Occupational Health & Safety Act, No.85 of 1993.

ANNEXURE 1: **METHOD STATEMENT SHEET - ENVIRONMENTAL METHOD STATEMENT**

WHAT:	Subject of M/Statement				
WHO:	Site Foreman/contact person:				
	Submitted to (e.g. PECO):		Approved by:		
	Date Submitted on:		Date Approved:		
WHEN:	Date works start		Date works complete		
	Rehabilitation period:		Programme restrictions (critical path, season restrictions etc.)		
	Split work Phasing:	Item	start date	end date	
	Phase 1				
	Phase 2				
WHERE	Area of works – submit plan or sketch if appropriate – stockpile, detention ponds, boundaries / restriction of works, special features or mitigation works landscape specials etc:				
HOW:	Route/site layout pegged:	Date available to inspect		Inspection persons required:	
	Landscape concerns: (Specify items not covered in CEMP. Refer to CEMP items if required.)				
	Existing features & services affected (e.g. paths, curbing, irrigation etc.)				
	Trees (protection or removal methods).				
	Special vegetation				
	Reinstatement methods				
	Maintenance				
	Restricted areas				
	Access:				
	Machinery:				
	Earthworks & dust control:				
	Concrete works:				

	Storm-water control:
	Stockpiles:
	Refuse/rubble:
	Water quality – pumping, source & discharge points, settlement, filtration, duration etc:
	Hydrocarbon control measures:
	I&AP notifications:
	Fire/emergency contingencies:
	Special conditions / mitigation measures (e.g. stream crossings, live sewer proximity etc):
	Comments:

ERVEN 60948 AND 60950

ASSESSMENT OF VEGETATION ON SITE

19 March 2021



PREPARED FOR:

East London IDZ (Pty) Ltd
P.O. Box 19254
TECOMA
5214

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Fax: 043 736 6405

Mr. Vernon Moonieya
SHEQM

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Mr. Brett Dustan
(Pr.Sci.Nat.)(EAPASA)
Owner

INTRODUCTION

Imithi Services was appointed by Engineering Advice & Services (Pty) Ltd on behalf of East London IDZ (Pty) Ltd, to do a Vegetation Assessment of the Erven 60948 and 60950 in Zone 1A of the East London Industrial Development Zone.

The erven fall within a site which has been earmarked for the Drager factory development and the first priority in terms of environmental control of the proposed development, which requires the clearing of all vegetation, was to assess the vegetation on site in order to identify any protected species and to make recommendations on the saving of any specimens, as well as potential plant rescue operations. This report serves as the Vegetation Assessment Report on the site.

METHODOLOGY

The methodology adopted was to inspect the site and to identify various trees and saplings that will have to be removed to make way for the development.

The site was walked, specifically where thickets of trees exist in order to identify any possible protected tree species.

FINDINGS

There were a number of indigenous tree species that were found that are well represented within the Private Open Spaces in Zone 1A, and therefore there will not be a loss in biodiversity with the loss of the trees on the factory site. However, the trees still had to be identified to determine whether or not there may be specimens of protected species.

The following indigenous tree species were identified in the thickets that exist on the sites, some of which are medium sized trees (3-5m):

Brachylaena discolor – Coast silver-oak
Burchellia bubalina – Wild pomegranate
Canthium mundianum – Rock alder
Clerodendrum glabrum – Smooth tinderwood
Cussonia spicata – Cabbage tree
Euclea crispa – Blue guarri
Euphorbia triangularis – River Euphorbia
Grewia occidentalis – Cross-berry raisin
Gymnosporia buxifolia (*Maytenus heterophylla*) – Common spikethorn
Harpephyllum caffrum – Wild plum
Protorhus longifolia – Red beech
Schotia brachypetala – Weeping boer-bean
Strelitzia nicolai – Coastal strelitzia
Syzigium cordatum – Umdoni Waterberry
Trimeria grandiflora – Wild mulberry
Vepris lanceolata – White ironwood
Ziziphus mucronata – Buffalo thorn

There were also numerous *Vachellia karroo* (Sweet-thorn acacia) trees found, but this is a result of bush encroachment due to previous disturbance of the soils. There is a vast amount of Lantana spread on the site, are also numerous shrubs such as burweed, Scotch thistle, thorn apple and cocklebur that are prevalent on site, however these are all ‘weeds’ and should be removed from site in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)(CARA).

There were two of seven species of trees identified which are found in the East London area that are protected under the National Forests Act (No. 84) of 1998, namely:

Pittosporum viridiflorum – Cheesewood (15 trees identified)
Sideroxylon inerme – White Milkwood (6 trees identified)

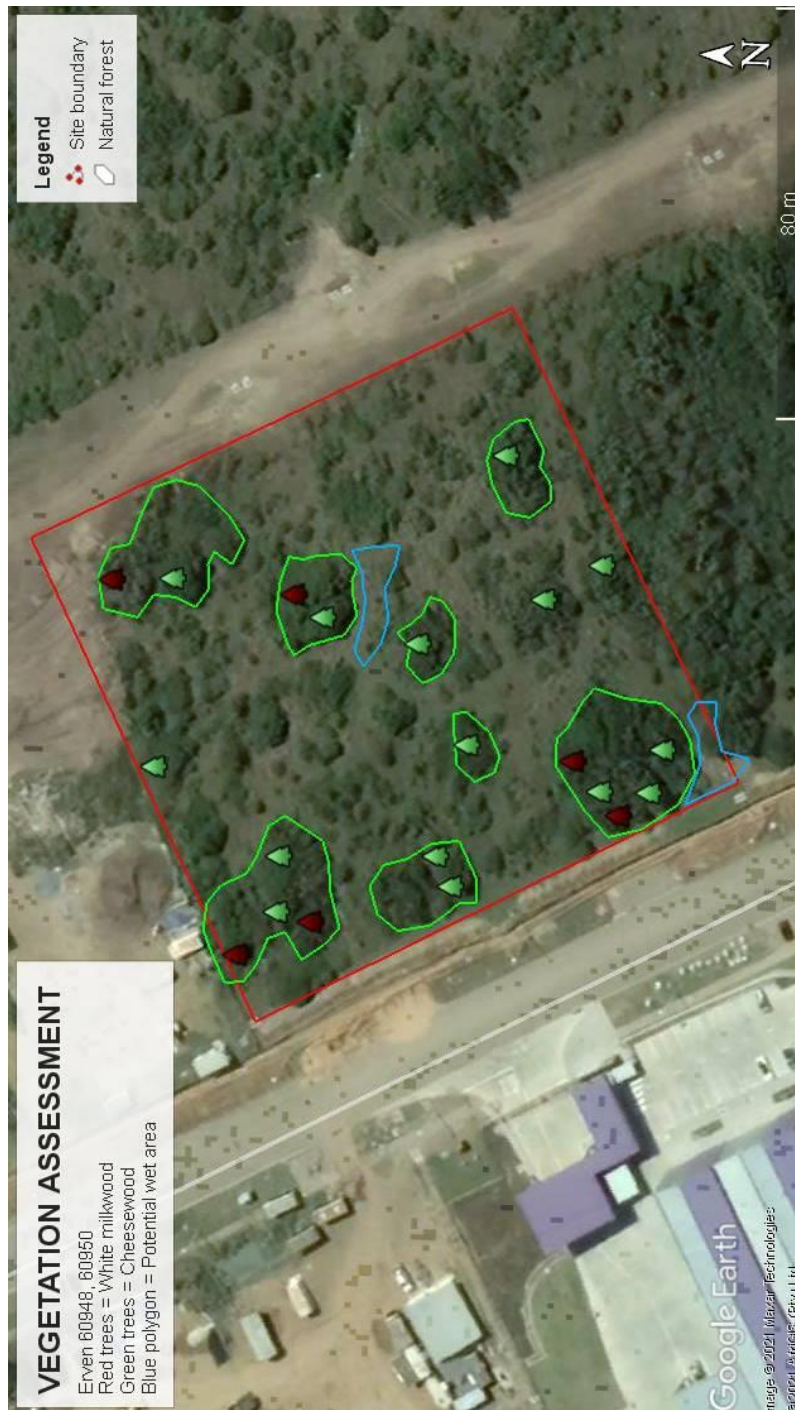
In terms of the NFA, the definition of a natural forest is as follows:

(xx) “*natural forest*” means a group of indigenous trees—

- (a) whose crowns are largely contiguous: or*
(b) which have been declared by the Minister to be a natural forest under section 7(2): (xxviii)

There were eight (8) clusters of trees where the crowns were largely contiguous (touching) therefore these are regarded as 'natural forest'. This covers an area of about 2224m² in total.

This protected trees and natural forests found on the site are presented on the google image below.



PHOTOGRAPHS



This natural forest on the southern corner of the site is home to Cheesewood trees and White Milkwood trees which are protected tree species.



Some of the 'open patches' between the parcels of forest are invaded with Lantana (alien) and Sweet thorn (bush encroachment).



Grass exists in open patches not invaded by alien vegetation or bush encroachment.



Wild pomegranate is an indicator of shallow soils with underlying shale or decomposed dolerite.



Vlei grass is an indicator of areas where soils are periodically wet.



Ferns are another indicator of soils that are prone to holding moisture.



This parcel of natural forest is at the northern corner of the site and is home to a White Milkwood and a Cheesewood.



There is plenty of alien vegetation alongside the Mpumalanga Construction Site Camp which borders the north western side of the Drager site.



This solitary Cheesewood is surrounded by alien vegetation, particularly Lantana.



These two photos show the parcel of natural forest which is situated at the western corner of the site.



These photos are typical of a natural forest where the crowns are touching (contiguous). The Rock Alder encircled in the bottom photo is an indicator of underlying hard rock.



Umdoni Waterberry is an indication of natural ground water.

RECOMMENDATIONS

The following recommendations apply:

- If any bird nesting sites are found during the clear and grub operation, these must be rescued by an ornithologist.
- There are few plants or saplings observed that are worth rescuing therefore this exercise should be forfeited if time is an issue.
- The indigenous trees that are to be cut down must be cut first by a reputed service provider and removed from site, before any clear and grub occurs.
- All trees and saplings should be cut and mulched on site and then removed with the soil which is being spoiled.

- The area not being used as a site camp or laydown area must not be cleared of vegetation down to bare earth, because this will lead to erosion and dust problems.
- Caution must be practised during clearing operation as there are snakes that exist here and there are signs of python activity. There is a resident python in the zone and no harm must come to it.
- If any snakes or animals are found, I can be contacted on 082 377 6428 to organize a rescue
- The site is also home to small wildlife like duiker, and monkeys and no harm must come to these creatures.
- If no NFA Permit exists on file at the ELIDZ Environmental office for the removal of protected trees, and trees in natural forest, then a new application must be submitted to the Department of Environment, Forestry and Fisheries (Forestry Branch) for a permit.



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

LICENCE

**TO AUTHORISE ACTIONS AND ACTIVITIES AFFECTING a) INDIGENOUS TREES
IN NATURAL FORESTS AND/OR b) PROTECTED TREES**

[SECTIONS 7(1) AND 15(1) OF THE NATIONAL FORESTS ACT, 1998, AS AMENDED]

Ref No: ECKWT 03/11/04/2016

This licence:

grants authority under the National Forests Act, 1998 (Act No. 84 of 1998), as amended, to carry on one or more of the activities, upon such conditions, and for such a period, as specified in more detail below;

- It does not exempt the licensee from adhering to the provisions of any other law.
- It is valid as from the 13 April 2021 to 12 April 2022.
- It must be renewed at the King Williams Town Forestry office after expiry of the specified period if still required.

A PARTICULARS OF LICENSEE

Surname	East London IDZ SOC LTD					
First names	Represented by Mr. Vernon Moonieya					
ID Number	7111085245080					
Postal address	P.O. Box 5458					
	Greenfields					
	5208					
Residential address	Lower Crescent road					
	Sunnyridge					
	5208					
Email Address	vernon@elidz.co.za					
Tel. / Cell. / Fax numbers	Tel.	0437028200	Cell	0824632277	Fax	0867671321
Name and number of property	erf 60948 and 60950 , East London Industrial Development Zone (ELIDZ) in East London.					
Location of property	East London, IDZ					
Name of forest	N/A					

Prepare by: **Thobani Vetsheza.**

Regulation officer

Date: **13 April 2021**

B	LICENSED ACTIVITIES
----------	----------------------------

Delete whichever is not applicable, and furnish particulars where applicable:

1. In respect of indigenous trees in natural forests: **Cut**
2. In respect of protected trees: **Cut**

Yes / No / N/A

According to sustainable management plan?

3. Name and sizes of trees: as per attached report

-
4. 4. Estimated quantity / volume of products per species: N/A

7. Origin: **erf 60948 and 60950, ELIDZ in East London**

8. Destination: **erf 60948 and 60950, ELIDZ in East London**

9. Specifications, prescriptions and remarks: N/A

Prepare by: **T. Vetsheza.**

Regulation officer

Date: **13 April 2021**

C LICENCE CONDITIONS

1. General license rules

This license is –

- (a) not transferable (you cannot pass, or cede it to another person), and
- (b) Only valid for the period it was issued for.

2. Showing this license

- (a) You must produce this license together with your valid identity document on demand to any forest officer or police officer.
- (b) The person(s) moving or transporting timber or other products on your behalf must at all times be in possession of a certified / stamped copy of this license.
- (c) Distributors / wholesalers of firewood / braaiwood must provide all of their retail clients with a certified / stamped copy of this license, who have to produce it on demand to any forest or police officer.

3. Any further conditions:

- 3.1. This license is for cutting down indigenous trees and protected trees at erf 60948 and 60950, ELIDZ in East London for the development of industrial house.
- 3.2. All young indigenous seedlings or saplings found in the developmental area should be searched, rescued and kept in a nursery for rehabilitation purposes to any deforested natural forest patch within Buffalo City Metropolitan Municipality.
- 3.3. Bisho Forestry Office should be contacted in the identification of the deforested natural forest intended for rehabilitation, and when rehabilitation is going to be implemented.
- 3.3. It is the responsibility of the applicant to liaise with the land owner if the affected natural forest and protected tree (s) is or are on private land.
- 3.4. DAFF officers and other relevant stake holders should at all times be permitted to monitor the compliance
- 3.5. Failure to comply with the rules and conditions stated herein will be subjected to the withdrawal of this license or legal actions taken against the applicant


DIRECTOR-GENERAL

DATE STAMP

07/05/2021

C3.5: HIV/AIDS SPECIFICATION

C3.5: HIV Aids Specification



CONTRACT NO: EB/DRG/11/20/Z1A

MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ

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East London IDZ
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Sunnyridge, East London
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Pulana Baxter and Associates Quantity Surveyors
30 Chamberlain Road, Berea, East London, 5241
Contact Person: Mr. Inga Jakavula
Tel: 043 – 721 0984
Email: inga@pba.co.za

1 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- 1) Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers.
- 2) Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- 3) Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices.

2 DEFINITIONS AND ABBREVIATIONS

2.1 Definitions

Service Provider: The natural or juristic person recognised and approved by the Department of Public Works as a specialist in conducting HIV/AIDS awareness programmes.

Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in all.

2.2 Abbreviations

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

STI: Sexually Transmitted Infection

3 BASIC METHOD REQUIREMENT

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- 1) Number of Workers and Sub-contractors on site;
- 2) When new Workers or Sub-contractors will join the construction project;
- 3) Duration of Workers and Sub-contractors on site;
- 4) How the maximum number of Workers can be targeted with workshops;
- 5) How the Contractor prefers workshops to be scheduled, e.g. three hourly sessions per Worker, or one 2.5 hour workshop per Worker;
- 6) Profile of Workers, including educational level, age and gender (if available);
- 7) Preferred time of day or month to conduct workshops;
- 8) A Gantt chart reflecting the construction programme, for scheduling of workshops; and
- 9) Suitable venues for workshops.

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training.

The Service Provider Workshop Plan shall address, but will not be limited to the following:

- 1) The nature of the disease;
- 2) How it is transmitted;
- 3) Safe sexual behavior;
- 4) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- 5) Attitudes towards other people with HIV/AIDS;
- 6) Rights of the Worker in the workplace;
- 7) How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
- 8) How the Service Provider will support the Awareness Champion;
- 9) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- 10) How the workshops will be presented, including frequency and duration;
- 11) How the workshops will fit in with the construction programme;
- 12) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- 13) How the video will be used;
- 14) How the Service Provider will elicit maximum participation from the Workers; and
- 15) A questions and answers slot (interactive session)
 - a. The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated.

4 HIV/ AIDS AWARENESS EDUCATION AND TRAINING

4.1 Workshops

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the Department of Public Works, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

4.2 Recommended practice

4.2.1 Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.

Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session.

4.2.2 Service Providers

A database of recommended Service Providers is available from all Regional Offices of the Department of Public Works

4.2.3 HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met.

4.2.3.1 UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

- 1) Define and describe HIV and AIDS; and
- 2) List and describe the progression of HIV/AIDS.

4.2.3.2 UNIT 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

- 1) Record in what bodily fluids the HI virus can be found;
- 2) Describe how HIV/AIDS can be transmitted; and
- 3) Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

4.2.3.3 UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream.

Assessment Criteria:

- 1) Report on how to minimise the risk of HIV/AIDS infection;
- 2) Report on precautions that can be taken to prevent HIV/AIDS infection;
- 3) Explain or demonstrate how to use a male and female condom; and
- 4) List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission.

4.2.3.4 UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling.

Assessment Criteria:

- 1) Describe methods of testing for HIV/AIDS infection;
- 2) Report on why voluntary testing is important; and
- 3) Report on why pre- and post-test counselling is important.

4.2.3.5 UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria:

- 1) List and describe ways to manage HIV/AIDS;
- 2) Describe nutritional needs of people living with HIV/AIDS;
- 3) Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS; and

- 4) Explain the need for counselling and support to people living with HIV/AIDS.

4.2.3.6 UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people

Assessment Criteria:

- 1) Discuss anti-retroviral therapy;
- 2) List methods of treatment to prevent HIV/AIDS transmission from mother-to-child;
- 3) Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS; and
- 4) Describe post exposure prophylactics.

4.2.3.7 UNIT 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way

Assessment Criteria:

- 1) Discuss the rights of a person living with HIV/AIDS in the workplace;
- 2) Discuss the responsibilities of a person living with HIV/AIDS in the workplace; and
- 3) Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

4.3 Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works.

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover.

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.

The posters on display must always be intact, clear and readable.

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site.

5 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

6 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

7 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

The Awareness Champion shall be responsible for:

- 1) Liaising with the Service Provider on organising awareness workshops;
- 2) Filling condom dispensers and monitoring condom distribution;
- 3) Handing out information booklets; and
- 4) Placing and maintaining posters.

8 MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

The attached SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent.

The attached SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager, through the Representative/Agent.

The attached CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C), a close out programme report, shall be completed by the Contractor at the end of the contract.

SCHEDULE A**HIV/AIDS PROGRAMME: SITE CHECKLIST**

When _____ did _____ construction _____ commence _____

Name of _____ Departmental _____ Project _____ Manager _____

*Please refer to HIV/AIDS Programme activities during the reporting period**Tick the block if Contractor satisfactorily complied with specifications*

DATE	PI				PI				PI				PI				PI				PI			
	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
Programme implemented within 14 days of site handover																								
Awareness champion on site																								
HIV/AIDS awareness service provider report																								
Male condom dispenser																								
Sufficient male condoms available																								
Male condom dispenser in a highly trafficked area																								
Female condom dispenser																								
Sufficient female condoms available																								
Female condom dispenser in a highly trafficked area																								
All four types of posters displayed																								
Posters in a good condition																								
Posters in a highly trafficked area																								
Posters displayed on local support services: clinic & VCT centre																								
Support service poster/s in highly trafficked area																								
Support service poster/s in a good condition																								

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

<i>Please indicate the applicable number for the reporting period</i>							
Workers on payroll (at PI)							
Sub-Contractors who will be on site for longer than 30 days (at PI)							
Workshop attendees							
Number of workshops held							
Scheduled workshops according to approved workshop plan							
Booklets distributed							
Male condoms distributed							
Female condoms distributed							
Representative/Agent							
Contractor							

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

Date of progress inspection (dd/mm/yy) _____

Reporting period: (dd/mm/yy) _____ to (dd/mm/yy) _____

Deviations from HIV/AIDS awareness programme plan:

Corrective actions:

Representative/Agent

Departmental Project Manager

Date:

Date:

SCHEDULE B

HIV/AIDS AWARENESS PROGRAMME: SERVICE PROVIDER REPORT

Reporting period: (dd/mm/yy) _____ to (dd/mm/yy) _____

Number of workshops conducted in reporting period: _____

Number of scheduled workshops according to approved workshop plan: _____

Deviations from workshop plan:

State reasons for deviating from workshop plan:

Corrective actions:

Service Provider

Contractor

Date:

Date:

HIV/AIDS AWARENESS PROGRAMME: WORKSHOP CONTENT ADDRESSED

Fill in the applicable information with regard to each workshop conducted																												
DATE	W/S				W/S				W/S				W/S				W/S				W/S				W/S			
	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M	D	D	M	M
Content of workshop: (Mark the content included)																												
SLO1																												
SLO2																												
SLO3																												
SLO4																												
SLO5																												
SLO6																												
SLO7																												
HIV/AIDS in construction video																												
Indicate the duration of the workshop in hours																												
Total number of Workers																												
Indicate workshop venue																												

HIV/AIDS AWARENESS PROGRAMME: ATTENDANCE REGISTER

Fill in your name and indicate attendance by ticking the appropriate date

[illegible]

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

SCHEDULE C

CONTRACTOR HIV/AIDS PROGRAMME REPORT

Project name _____

Project Location _____

Contract value of project (R) _____

Department of Public Works Project Manager _____

HIV/AIDS Programme duration: (dd/mm/yy) _____ to (dd/mm/yy) _____

AWARENESS MATERIAL

Describe location of posters displayed during the programme _____

Comments on posters _____

Indicate total number of booklets distributed _____

Comments on booklets _____

CONDOMS

Indicate total number of male condoms distributed _____

Indicate total number of female condoms distributed _____

Describe where male condom dispenser was placed _____

Describe where female condom dispenser was placed _____

HIV/AIDS WORKSHOPS

Indicate the total number of HIV/AIDS workshops conducted _____

Indicate the duration of workshops _____

Indicate the total number of Workers that participated in the HIV/AIDS workshops _____

Indicate the total number of Workers that were exposed to the video on HIV/AIDS in the Construction Industry

Comments on HIV/AIDS workshops on site _____

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

GENERAL

Briefly describe programme activities and satisfaction with outcome _____

Additional comments, suggestions or needs with regard to the HIV/AIDS awareness programmes on site

Please indicate if your company has a formal HIV/AIDS policy focussing on HIV/AIDS awareness raising and care and support of HIV/AIDS Workers

Currently		
Yes	No	developing one

Please indicate if, to your knowledge, you have lost any workers during the duration of the project to HIV/AIDS related sicknesses. One or more of the following might indicate an HIV/AIDS related death:

Excessive weight loss
Reactive TB
Hair loss
Severe tiredness

Coughing or chest pain
Pain when swallowing
Persistent fever
Diarrhoea

Vomiting
Meningitis
Memory loss
Pneumonia

Number of HIV/AIDS-related deaths _____

Contractor

Date

Departmental Project Manager

Date

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

C3.6: NATIONAL TREASURY DESIGNATED SECTORS MINIMUM LOCAL CONTENT SPECIFICATION

Tenderer ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

Part C3.6: National Treasury Designated Sectors Minimum Local Content Specification

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

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

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

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9) makes 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 bids local production and content is of critical importance, such bids must be advertised with the specific bidding 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. Where necessary, for bids referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

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

Where

x is the imported content in Rand

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

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

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

- 1.6 A bid may be disqualified if –
 - (a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and
 - (b) the bidder fails to declare that the Local Content Declaration Templates (Annex C, D and E) have been audited and certified as correct.

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

2. Definitions

- 2.1. **“bid”** includes written price quotations, advertised competitive bids or proposals;
- 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);
- 2.3. **“contract”** means the agreement that results from the acceptance of a bid 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 bid 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 (this includes labour or intellectual property costs), 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 bid 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 (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

#	Industry/Sector/Sub-Sector Already Designated	Minimum local content
2.1	Steel Products and Components for Construction	
	Steel Value-added Products: <ul style="list-style-type: none"> Fabricated Structural Steel Joining/Connecting Components Frames Roof and Cladding Fasteners Wire Products Ducting and Structural pipework Gutters, downpipes & lauders 	100%
	Primary Steel Products: <ul style="list-style-type: none"> Plates Sheets Galvanized and Colour Coated Coils Wire Rod and Drawn Wire Sections Reinforcing bars 	100%

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

#	Industry/Sector/Sub-Sector Already Designated	Minimum local content
2.2	Pumps, Medium Voltage (MV) motors and associated Accessories	
	Pumps: <ul style="list-style-type: none"> • End Suction Centrifugal Multistage Centrifugal Horizontal Split casing pumps Vertical Turbine Pumps Positive displacement • Self-priming Centrifugal Pumps • Slurry Pumps • Vacuum Pumps • Centrifugal Process Pumps 	70%
	Medium voltage electric motor Components and manufacturing Processes: <ul style="list-style-type: none"> • Casting and Frame Fabrication Fabrication and winding of the stator core Fabrication and winding of the rotor core Accessories • Assembly and testing of the fully built unit 	70%

4. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

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

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

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

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

5. Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?

(Tick applicable box)

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

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

5.1. If yes, provide the following particulars:

(a) Full name of auditor:

(b) Practice number:

(c) Telephone and cell number:

(d) Email address:

(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)

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

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

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

IN RESPECT OF BID NO.

ISSUED BY:

(Procurement Authority / Name of Institution)

NB:

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

I, the undersigned, (full names),

do hereby declare, in my capacity as

of(name of bidder entity),
the following:

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

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

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

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

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

d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____ **DATE:** _____

WITNESS No. 1 _____ **DATE:** _____

WITNESS No. 2 _____ **DATE:** _____



national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

TO: ACCOUNTING OFFICERS OF ALL NATIONAL DEPARTMENTS AND
CONSTITUTIONAL INSTITUTIONS

ACCOUNTING OFFICERS OF ALL MUNICIPALITIES AND MUNICIPAL ENTITIES

ACCOUNTING AUTHORITIES OF ALL SCHEDULE 2 AND 3 PUBLIC ENTITIES

HEAD OFFICIALS OF PROVINCIAL TREASURIES

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017.

INVITATION AND EVALUATION OF BIDS BASED ON A STIPULATED MINIMUM THRESHOLD
OF CONVERSION PROCESSES FOR LOCAL PRODUCTION AND CONTENT FOR STEEL
PRODUCTS AND COMPONENTS FOR CONSTRUCTION.

1. PURPOSE

- 1.1 The purpose of this instruction note is to regulate the environment within which accounting officers (AOs) and accounting authorities (AAs) may procure steel products and components for construction which have been designated as a sector for local production and content.

2. BACKGROUND

- 2.1 The Preferential Procurement Regulations, 2011 ("the regulations") issued in terms of section 5 of the Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000) which came into effect on the 7 December 2011, make provision for the Department of Trade and Industry (the dti) to designate sectors in line with the national development and industrial policies for local production.
- 2.2 Regulation 9 (1) of the Regulations prescribes that, in the case of designated sectors, wherein the award of bids for local production and content is of critical importance, such bids must be advertised with the specific bidding 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.
- 2.3 the dti has designated and determined the stipulated minimum threshold for steel products and components for construction for the state procurement for local production and content.

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

3. PRODUCT DESIGNATION

- 3.1 In this instruction note, steel products and components for construction have been recommended for designation
- 3.2 Steel products and components for construction refer to:
- 3.2.1 **Fabricated structural steel** which includes a wide range of free standing shapes, cross sections and sizes of steel metal pieces produced through a variety of operations according to a specific design, certain standards of chemical composition and mechanical properties. The fabricated components are produced from various primary and downstream steel products, including: channels (parallel and taper flanges); I-beams and H-beams; angles (equal and unequal); bars (flat; square and round); reinforcing bar and fasteners. The fabrication comprises of detailing (cutting, rolling, drilling, bending, grinding and machining), fitting, welding and/or, fastening, surface preparation (cleaning) and surface protection (coating) of steel components for application in an assortment structures.
- 3.2.2 In addition to the processes in 3.2.1; **joining components** such as gussets, cleats, stiffeners, splices, plates, cranks, kinks, doglegs, holes, girders, spacers, tabs, brackets, fasteners (bolts, nuts, rivets and nails) are used for connection and assembly of structures.
- 3.2.3 **Frames** refer to all rigid structures that surround doors, windows, patio, showers and built-in-cupboards made of steel.
- 3.2.4 **Roof Cladding** refers to a layer of covering applied to a roof in order to provide both weather protection and aesthetic appeal which consist of large sheets of material, or many small, overlapping units made of steel.
- 3.2.4.1 **Vertical cladding** refers to the protective or insulating layer fixed to the outside of a building or another structure for aesthetic appeal made of steel.
- 3.2.5 **Wire Products** refers to all downstream wire products manufactured from hot-rolled ferrous wire rod coils, including drawn wire – carbon/alloy steel (galvanised or plain), articles of wire – forged, wire rope/strand, fabric reinforcing, all fencing wire (barbed, welded mesh, hexagonal wire netting, diamond mesh), welding electrodes nails/tacks, chains, gabions, springs and screws.
- 3.2.6 **Fasteners** refer to hardware products that mechanically join or affix two or more steel components.
- 3.2.7 **Ducting and Structural Pipework** refers to non-conveyance tubing fabricated from steel sheeting and plate with structural supports.
- 3.2.8 **Gutters, downpipes & launders** refers to drainage systems made from sheeting associated with roofing
- 3.2.9 **Primary steel products** which includes flat and long products which are converted into value-added steel products in 3.2.1 to 3.2.8 as well as for reinforcement of buildings and structures.

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

- 3.3 Table 1 provides the stipulated minimum threshold for local content and production for steel products and components for construction (as described in 3.2)

Table 1a: Minimum local content for Steel Value-added Products

Steel Construction Materials	Components	Local Content Threshold	
Fabricated Structural Steel	Latticed steelwork, reinforcement steel, columns, beams, plate girders, rafters, bracing, cladding	100%	
	supports, stair stringers & treads, ladders, steel flooring, floor grating, handrailing and balustrading, scaffolding, ducting, gutters, launders, downpipes and trusses		
	Joining/Connecting Components	100%	
	Frames	100%	
	Roof and Cladding	100%	
Fasteners	Bolts, nuts, rivets and nails	100%	
Wire Products	All fencing products: all barbed wire and mesh fencing, fabric/mesh reinforcing, gabions, wire rope/strand and chains, welding electrodes, nails/tacks, springs and screws	100%	
Ducting and Structural Pipework	Non-conveyance tubing fabricated from steel sheeting and plate with structural supports	100%	
Gutters, downpipes & launders	Fabricated materials made from sheeting associated with roof drainage systems	100%	

Table 1b: Minimum local content for Primary Steel Products

Steel Construction Materials	Local Content Threshold
Plates (>4.5mm thick and supplied in flat pieces)	100%
Sheets (<4.5mm thick and supplied in coils)	100%
Galvanised and Colour Coated Coils	100%
Wire Rod and Drawn Wire	100%
Sections (Channels; Angles, I-Beams and H-Beams)	100%
Reinforcing bars	100%

- 3.4 In the designation, imported inputs raw materials (i.e. zinc and additives in the surface preparation and protection processes (cleaning and coating/galvanising)) used in the production of steel products and components for construction are deemed as locally manufactured input materials.
- 3.5 The imported input raw materials, as specified in 3.4, used in the manufacture and production of steel products and components for construction will be deemed to have been sourced locally for the purposes of calculating local content.

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

The application of this instruction note is applicable where an organ of state purchases directly from the manufacturer, in a case of turnkey projects (design, build, operate and/or transfer) and/or on purchases for maintenance and repairs where a contract is awarded for a project which the designated products are part of the bill of quantities or materials to be utilised in the entire project.

- 3.6 Organs of state may contact **the dti** in instances where the stipulated minimum threshold for local content cannot be met in order for **the dti** to verify and in consultation with the AO/AA provide directives in this regard.
- 3.7 For further information, bidders and procuring state organs may contact the following units with **the dti**: Metals Fabrication, Capital and Rail Transport Equipment at telephone 012 394 1356 or email Thandi Phele at TPhele@thedti.gov.za and Primary Minerals processing & Construction at telephone 012 394 5157 or email Tapiwa Samanga at TSamanga@thedti.gov.za.
- 3.8 Bid specifications for the designated products in this instruction note may be done in collaboration with **the dti**.

4. INVITATION OF BIDS FOR STEEL PRODUCTS AND COMPONENTS

- 4.1 Bids in respect of steel products and components for construction must contain a specific bidding condition which states that:
- 4.1.1. Only locally produced or locally manufactured steel products and components for construction with a stipulated minimum threshold for local production and content will be considered.
- 4.1.2. If the quantity of steel products and components for construction required cannot be wholly sourced from South African (SA) based manufacturers and/or at the designated local content threshold stipulated in paragraph 3.3 at any particular time, bidders and the procuring entities should obtain written exemption from **the dti**. **the dti**, in consultation with the procuring organ of state and the local industry, will consider the exemption applications on a case-by-case basis and will consider the following:
- required volumes in the particular bid;
 - available collective SA industry manufacturing capacity at that time;
 - delivery times;
 - availability of input materials and components;
 - technical considerations including operating conditions;
 - materials of construction; and
 - security of supply
- 4.1.3. Bidders must clearly indicate in their bids the quantities to be supplied and the level of local content for each product.
- 4.2 AOs/AAs must stipulate in bid invitations that:

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

- 4.2.1. the exchange rate to be used for the calculation of local production and content must be the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid; and
- 4.2.2. only the South African Bureau of Standards (SASS) approved technical specification number SATS 1286:2011 must be used to calculate local content

- 4.3 The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the following formula which must be disclosed in the bid documentation :

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

Where

x is the imported content in Rand

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

(in the case of turnkey products/projects x and y will only refer to the value of steel products and components in the project)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by the SARB at 12:00 on the date of advertisement of the bid.

- 4.4 AOs/AAs must clearly stipulate in the bid documentation that the SABS approved technical specification number SATS 1286:2011 and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)] are accessible to all potential bidders on the dti's official website <http://www.thedti.gov.za/industrialdevelopment/ip.jsp> at no cost.
- 4.5 For the purpose of paragraphs 4.1, 4.2 and 4.3 above, the attached Declaration Certificates for Local Production and Content (SBD/MBD 6.2) must form part of the bid documentation. The SBD 6.2 is for use by all national and provincial departments, constitutional institutions and public entities listed in schedules 2, 3A, 38, 3C and 3D to the Public Finance Management Act whilst the MBD 6.2 is for use by all municipalities and municipal entities to which the Municipal Finance Management Act (MFMA) apply.
- 4.6 AOs/AAs must stipulate in the bid documentation that:
 - (a) the Declaration Certificate for Local Production and Content (SBD / MBD 6.2) together with the Annex C (Local Content Declaration: Summary Schedule) must be completed, duly signed and submitted by the bidder at the closing date and time of the bid;
 - (b) bidders must submit a certificate from a registered auditor confirming that the Local Content Declaration Templates have been audited and certified as correct. (See paragraph 5 of the Declaration Certificate); and
 - (c) the rates of exchange quoted by the bidder in paragraph 4.1 of the Declaration Certificate will be verified for accuracy.

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

4.7 Benchmark /market related prices

- 4.7.1. AOs/AAs are required to ensure that reasonable or market related prices are secured for steel products and components for construction being procured taking into account factors such as benchmark prices, value for money and economies of scale.
- 4.7.2. For this purpose, AOs/AAs may approach the dti for assistance , where possible, with benchmark prices for steel products and components for construction that have been designated for local production and content. The dti will be in a position to provide price references for the different products that have been designated for local production and content.
- 4.8 Bid specifications for the sub-sectors referred to in paragraph 3 above and the price benchmarking referred to in paragraph 4.7 above must be done in collaboration with the dti. Contact information in this regard is provided in paragraph 8 below.

5. EVALUATION OF BIDS FOR STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

5.1 A two stage evaluation process may be followed to evaluate the bids received.

5.1.1. First stage: Evaluation in terms of the stipulated minimum threshold for local production and content

5.1.1.1 Bids must be evaluated in terms of the minimum threshold stipulated in the bid documents .

5.1.1.2 The declaration made by the bidder in the Declaration Certificate for Local Content (SBD / MBD 6.2) and Annex C (Local Content Declaration: Summary Schedule) must be used for this purpose. If the bid is for more than one product, the local content percentages for each product contained in Declaration C must be used.

5.1.1.3 The amendment of the stipulated minimum threshold for local production and content is not allowed.

5.1.1.4 A bid may be disqualified if:

- The bidder fails to achieve the stipulated minimum threshold for local production and content unless written exemption has been granted to the bidder by the dti to bid at a lower local content level; and
- The Declaration Certificate for Local Content (SBD / MBD 6.2), the Annex C (Local Content Declaration: Summary Schedule) and the registered auditors' certificate referred to in paragraphs 4.6 (a) and (b) are not submitted as part of the bid documentation.

5.1.1.5 AOs / AAs must verify the accuracy of the rates of exchange quoted by the bidder in paragraph 4.1 of the Declaration Certificate for Local Content (SBD / MBD 6.2)

5.1.2 Second stage: Evaluation in terms of the 80/20 or 90/10 preference point systems

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

- 5.1.2.1 Only bids that achieve the minimum stipulated threshold for local production and content may be evaluated further. Unless otherwise exempted by the Minister of Finance, the evaluation must be done in accordance with the 80/20 or 90/10 preference point systems prescribed in Preferential Procurement Regulations, 2011.
- 5.1.2.2 AOs/AAs must ensure that contracts for steel products and components are awarded at prices that are market related taking into account, among others, the dti's pre-determined benchmark prices, value for money and economies of scale.
- 5.1.2.3 Where appropriate, prices may be negotiated with short listed or preferred bidders. Such negotiations must not prejudice any other bidders.

6. EVALUATION OF BIDS BASED ON FUNCTIONALITY

- 6.1 Whenever it is deemed necessary to evaluate bids on the basis of functionality, the prescripts contained in regulation 4 of the Preferential Procurement Regulations, 2011 and paragraphs 6 and 11 of the Implementation Guide must be followed.

7. POST AWARD AND REPORTING REQUIREMENTS

- 7.1 Once bids are awarded, **the dti** must be:
 - (i) notified of all the successful bidders and the estimated value of the contracts; and
 - (ii) provided with copies of the contracts, the SBD/MBD 6.2 Certificates together with the Declaration C submitted by the successful bidders.
- 7.2 The purpose of the requirements of paragraph 7.1 above is for **the dti** to among others conduct compliance audits with a view to monitor the implementation of the industrial development strategies.
- 7.3 Contractors may not be allowed to sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the minimum threshold as stipulated in regulation 9 of the Preferential Procurement Regulations, 2011.

8. CONTACT INFORMATION

- 8.1 **Any enquiries in respect of Local Production and Content and all documents to be submitted to the dti must be directed as follows:**

The Department of Trade and Industry
Private Bag X84
Pretoria
0001

For Attention :

Dr Tebogo Makube
Chief Director: Industrial Procurement
Tel: (012) 394 3927

NATIONAL TREASURY DESIGNATED SECTORS INSTRUCTION NUMBER 15 OF 2016/2017: STEEL PRODUCTS AND COMPONENTS FOR CONSTRUCTION

Fax: (012) 394 4927

EMAIL: TMakube@thedti.gov.za

9. APPLICABILITY

- 9.1 This instruction applies to all National and Provincial Departments, Constitutional Institutions; Public Entities listed in schedules 2 and 3 to the PFMA, and, Municipalities and Municipal Entities to which the MFMA apply.

10. DISSEMINATION OF INFORMATION CONTAINED IN THIS INSTRUCTION NOTE

- 10.1 Heads of Provincial Treasuries are requested to bring the contents of this Instruction to the attention of accounting officers and supply chain management officials of their respective provincial departments.
- 10.2 Accounting Officers of National and Provincial Departments are requested to bring the contents of this Instruction to the attention of Accounting Authorities and the supply chain management officials of Schedule 3A and 3C Public Entities reporting to their respective Executive Authorities.
- 10.3 Accounting Officers of Municipalities and Municipal Entities are requested to bring the contents of this Instruction to the attention of the supply chain management officials of their Municipalities and Municipal entities.
- 10.4 Accounting Authorities of Schedule 2, 3B and 3D Public Entities are requested to bring the contents of this Instruction to the attention of the supply chain management officials of their Public Entities.

11. NOTIFICATION TO THE AUDITOR-GENERAL

- 11.1 A copy of this Instruction Note will be forwarded to the Auditor-General for notification.

12. AUTHORITY FOR THIS INSTRUCTION NOTE AND EFFECTIVE DATE

- 12.1 This Instruction is issued in terms of Regulation 9(2) of the Preferential Procurement Regulations, 2011 and takes effect on the date of issuance.
- 12.2 This Instruction takes effect on 1 February 2017.



SCHALK HUMAN
ACTING CHIEF PROCUREMENT OFFICER
DATE: 13-Q1-2017

C3.7: SMME SPECIFICATION

C3.7: SMME Specification



CONTRACT NO: EB/DRG/11/20/Z1A

MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ

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Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

1 PREFERENTIAL PROCUREMENT PROCEDURES

Tenders will be evaluated in terms of the ELIDZ Supply Chain Management Policy.

2 DEFINITIONS

SMME: Small Micro and Medium Enterprise

The ELIDZ defines an SMME as a company with at least 51% black ownership, a turnover of less than R50 million and from the BCMM area.

3 SUBCONTRACTING

3.1 Scope of Mandatory Subcontract Works

A major objective of the targeted procurement procedure is to extend **ECONOMIC** and **DEVELOPMENTAL** opportunities to SMMEs in the execution of the project.

It is an express condition of this Contract, that the ELIDZ enforce that a minimum of **30%** of the contract amount, be subcontracted to SMMEs, registered in the appropriate CIDB Contractor grading designation, for the appropriate type and value of the subcontracted works.

Notwithstanding the normal requirements of Government for an enterprise to be acknowledged and categorised as a SMME, the ELIDZ further require the Tenderer to ensure that the SMMEs he intends subcontracting with complies with the following criteria:

- Must have a valid Tax Clearance Certificate;
- Must have a valid CIDB registration in the appropriate category and value range for the anticipated scope of work;
- Must be registered on the Central Supplier Database (CSD);
- Must be 51% Black owned;
- Must have a turnover of less than R50 million;
- Must be from the Buffalo City Metropolitan Municipality area; and
- Must have a B-BBEE Certificate from a SANAS accredited institution or a Micro Enterprise Affidavit (as issued by the Department of Trade and Industry).

The scope of the work to be subcontracted to SMMEs is the prerogative of the Tenderer (referred to in this specification as the Principal Contractor).

The contractual relationship between the Principal Contractor and any of the Subcontractors / SMMEs shall be the same as if the Principal Contractor had appointed these subcontractors. The Principal Contractor shall take full responsibility for these Subcontractors.

3.2 SMME Subcontractors

This section provides the specifications that relate to the Principal Contractor's implementation of the policies and initiatives of the Government, community participation, and employment of SMMEs. These specifications should be read in conjunction with the various statutes and legislation that relate to small businesses and Broad-Based Black Economic Empowerment.

In this regard all tenders will be considered with specific reference to applicable legislation in force from time to time and which are specifically applicable to organs of state for example the following:

- (i) The Constitution of the Republic of South Africa, 1993;

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

- (ii) Public Finance Management Act, 1999 (Act No 1 of 1999);
- (iii) Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000);
- (iv) Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003);
- (v) Construction Industry Development Board Act, 2000 (Act No 38 of 2000) and Regulations; and
- (vi) National Small Business Amendment Act, 2003 (Act No 26 of 2003).

It should be noted that only one work package may be subcontracted to one specific subcontractor unless the subcontractor is able to demonstrate that he / she has the necessary capacity, ability, infrastructure and financial means to simultaneously undertake and execute more than one package of work.

3.3 SMME Subcontractor Selection Process

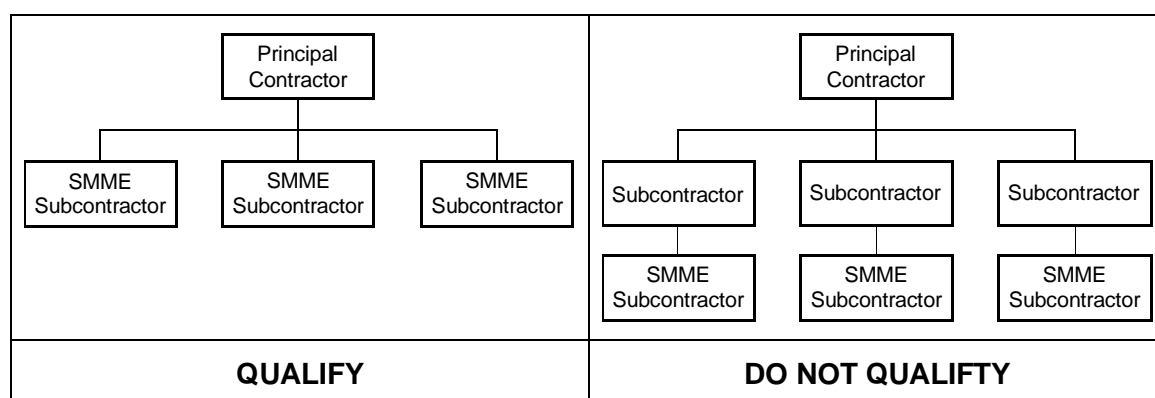
SMMEs on the ELIDZ SMME database are to be approached first. If these SMMEs are not suitable or adequate then SMMEs who are not on the database may be selected.

3.4 Preferred subcontractors / suppliers

To be confirmed.

3.5 Subcontracting Structures

All Subcontractors (SMMEs) shall be directly appointed by the Principal Contractor and the contents and requirements for subcontracting as contained in the JBCC shall apply in full. SMME Subcontractors of Subcontractors do not qualify as SMMEs.



3.6 Subcontracting Conditions

It must be noted, that the Subcontractor (SMME) must be registered with the Construction Industry Development Board, in the appropriate category, according to the estimated value of the work package.

The **Tender Data and Contract Date**, as applicable to the Contractor, shall apply where relevant, to the subcontracts (SMMEs).

The Subcontract Agreement shall also specify:

- (i) the terms and conditions relating to the recruitment, employment and remuneration of workers engaged on the subcontract works; and
- (ii) details of any training to be provided to the temporary workforce.

The Principal Contractor shall at all times remain responsible for providing the subcontracted portion of the Works as if the work had not been subcontracted.

3.7 30% SMME Allocation

The tenderer is to note that the 30% SMME allocation split is to be applied as follows:

- **30% of provisional sum items;**
- **30% of building works** excluding provisional sums; and
- **30% of total spending** (including disbursements, P&G's, VO's) is to be allocated to SMME's.

3.8 Attendance on Subcontractors (SMMEs)

The Principal Contractor shall be responsible for ensuring that the Subcontractors (SMMEs) fully comprehend the following:

- Implications of the liabilities and responsibilities inherent in the subcontract into which the tenderer proposes entering;
- Implications of the tendered rates; and
- Scope and extent of the Works included in the Subcontract.

The Principal Contractor shall closely manage, mentor, supervise, guide and assist each Subcontractor (SMMEs) in all aspects of management, planning, execution and the completion of each Subcontract.

The above shall include inter alia, but is not limited to, the following:

- (i) Planning and programming of the Works;
- (ii) The sourcing, ordering, purchasing, hiring all the necessary Construction Equipment, Materials, tools and accidentals necessary and required for the successful execution and completion of the Permanent as well as the Temporary Works;
- (iii) Labour relations and employment;
- (iv) Monthly measurements, costing and invoicing;
- (v) General safety, occupational health and safety matters;
- (vi) Functions of civil engineering infrastructure, structures, services and systems;
- (vii) Interpreting and understanding the contract and subcontract;
- (viii) Construction and maintenance methods and procedures;
- (ix) Communication;
- (x) Cash-flow control, submitting invoices and payment certificates;
- (xi) Planning, programming, scheduling, critical path control and acceleration;
- (xii) Maintenance planning;
- (xiii) Material procurement and control;
- (xiv) Risk limitation and management;
- (xv) Quality assurance and procedures;
- (xvi) Compliances with all applicable laws, regulations, statutory provisions and agreements;
- (xvii) General Conditions of Contract and Contract Data; and
- (xviii) Contractual claims, if situations arise that entitle a contractor to claims in terms of the Conditions of Contract.

The extent and level of management, mentorship, supervision, guidance and assistance to be provided by the Principal Contractor shall be in **commensuration with the expertise** of the **relevant subcontractor (SMME)** and should be so directed

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

as to enable the subcontractors to achieve the successful execution and completion of the respective Subcontracts (SMMEs).

3.9 Quality of work and performance of the Subcontractor (SMME)

The Contractor shall closely monitor and supervise all Subcontractors (SMMEs) and shall guide and assist each subcontractor in all aspects of management, execution and completion of his subcontract. This shall typically include assistance with planning of the works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures. The extent and level of such guidance and assistance, to be provided by the Contractor shall be commensurate with the basic level of subcontract applicable and shall be directed at enabling the subcontractor to achieve the successful execution and completion of his subcontract.

The Contractor shall give reasonable warning to the subcontractors when any contravention of the terms and conditions of the subcontract has occurred or appears likely to occur. The Contractor shall, when required, give the subcontractor reasonable opportunity to make good any such contravention or to avoid such contravention and shall render all reasonable assistance to the subcontractor in this regard.

3.10 Works to be undertaken by SMMEs

It is the Principal Contractor's responsibility to identify SMME work packages. It shall remain the Principal Contractor's responsibility to ensure that the target percentage of works to be subcontracted to SMMEs as contained in this specification, is attained.

The rates tendered by the Principal Contractor for work undertaken by Micro Enterprises shall include full compensation for all guidance, supervision, mentoring, setting out and monitoring activities that may be deemed necessary to ensure the works carried out by the SMMEs are in accordance with the drawings, technical and OHS specifications, and within the agreed timeframes. The Principal Contractor's tendered rates for SMME works shall further include full compensation for such administration, management and company overhead charges, finance costs, risk, profit and all other requirements contained in this specification.

3.11 Penalty Calculation for Failure Achieve Targeted Percentage

Should the contractor fail to meet the minimum requirement of subletting at least **30%** of the Contract value to SMMEs, a penalty of **25%** x the value of the amount to be sublet, minus the actual value sublet, will be implemented. This amount will be deducted from the Principal Contractor's payment certificate.

The Principal Contractor is to indicate to the ELIDZ via a report certified by their Auditors confirming that at least **30%** of the Contract value has been paid to SMMEs at the end of the Contract before the Final Completion Certificate is issued.

Pre-qualification Criteria

The tenderer must sub-contract a minimum of 30% of the value of the contract to-

- (a) an EME or QSE;
- (b) an EME or QSE which is at least 51% owned by black people;
- (c) an EME or QSE which is at least 51% owned by black people who are youth;
- (d) an EME or QSE which is at least 51% owned by black people who are women;
- (e) an EME or QSE which is at least 51% owned by black people with disabilities;
- (f) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
- (g) a cooperative which is at least 51% owned by black people;
- (h) an EME or QSE which is at least 51% owned by black people who are military veterans.

Bidders must take note of the following subcontracting requirements

Failure to comply with the following sub-contracting requirements will render the bidder non-responsive and will not be considered for further evaluation

- 1) Tenderers or main contractors must submit proof of subcontracting agreement between the main tenderer and the subcontractor.
- 2) The responsibility to subcontract with competent and capable subcontractors rests with the tenderers or main contractors.
- 3) The contract will be concluded between the tenderer/main contractor and ELIDZ, therefore, the main contractor and not the subcontractor would be held liable for performance in terms of its contractual obligations.
- 4) Tenderers/main contractors must not subcontract with their subsidiary companies as this will be interpreted as subcontracting with themselves and / or using their subsidiaries for fronting.
- 5) Tenderers/main contractors that do not meet subcontracting requirements of minimum 30% compulsory subcontracting provisions will be considered as being not acceptable tenders and shall be disqualified and shall not be considered for further evaluation or award.

- 6) Tenderers/main contractors that do not meet subcontracting allocations provided by ELIDZ will be considered as being not acceptable tenders and shall be disqualified and may not be considered for further evaluation or award.
- 7) Tenderers/main contractors must utilize the list of potential subcontractors provided by ELIDZ. In the event of not finding suitable subcontractors on the Supplier Data Base list provided, the bidder may source other subcontractors within the Eastern Cape, with preference given to subcontractors within a 50km radius from East London.
- 8) The 30% subcontracting value will be based on the value of the work rendered, including VAT.
- 9) Subcontractors must be directly appointed and paid by the main contractors, the value of work undertaken by subcontractors that are not directly employed and paid by the main contractor will not be considered for the purpose of calculating the 30% SMME mandatory subcontracting.
- 10) Originally certified BBBEE certificates or valid original sworn affidavits for EMEs and QSEs, and a copy of CSD registration of all SMME subcontractors to be submitted with the tender.

Contractor declaration with regards to 30% SMME Sub-contracting:

I / We tender the following SMME participation targets of:

If the two envelope system is used, the bidders can be instructed to only indicate the percentage of work allocated to SMME's without disclosing the amounts. The same document can be included in envelope 2 where the bidders will be required to fill in the amounts

Tender Amount Including VAT	R
SMME Value Including VAT	R
Percentage of SMME to Tender Amount	30%

Signatures of authorised persons

Apportionment of the SMME subcontractor's amount

Option 1

CIDB Grading irrespective of trade	Max CIDB Value Range	Minimum Targeted Percentage Allocation Apportioned to the 30%	Percentage Goal Tendered	Estimated Rand Value (R) Including VAT
CIDB Grade 1-2	R1 000 000	1%		
CIDB Grade 3	R 3 000 000	1%		
CDIB Grade 4	R 6 000 000	3%		
CIDB Grade 5	R 10 000 000	5%		
CIDB Grade 6	R 20 000 000	6%		
Total % SMME Goal Tendered		30%		

Option 2

CIDB Grading irrespective of trade	Max CIDB Value Range	Minimum Targeted Percentage Allocation Apportioned to the 30%	Percentage Goal Tendered	Estimated Rand Value (R) Including VAT
CIDB Grade 1-2	R1 000 000	1%		
CIDB Grade 3	R 3 000 000	1%		
CDIB Grade 4	R 6 000 000	8%		
CIDB Grade 5	R 10 000 000	10%		
CIDB Grade 6	R 20 000 000	10%		
Total % SMME Goal Tendered		30%		

ELIDZ to decide on the apportionment of the value based on the sub-contractors that are in their database.

Details of SMME subcontractors:

Name of Subcontractor GRADE 1 & 2s		Construction Element	Rand Value Including VAT	CSD Registration Number	CIDB Designation and Classification
1					
2					
3					
Total Value Including VAT: Grade 1 & 2s			R		

Name of Subcontractor GRADE 3s		Construction Element	Rand Value Including VAT	CSD Registration Number	CIDB Designation and Classification
1					
2					
3					
Total Value Including VAT: Grade 3s			R ...		

A list to be completed for all the targeted grades

Sub-contracting Agreements:

Declaration	
I/we, the undersigned, do hereby declare that I/we have entered into a sub-contract agreement with....., I/we have read and understood this Sub-Contracting Agreement, including the applicable rates and prices for the sub-contract work.	
Name of the Subcontractor	
Name and Signature of the Subcontractor Representative	
Construction Element	
Rand Value Including Vat	
CIDB Grading	
Contact Details	

Additional Preliminaries and General Item:

MANDATORY SUBCONTRACTING TO SMMEs:

The principal contractor shall comply with all the requirement of mandatory subcontracting of SMMEs for a minimum of 30% of their contract value (Including VAT) as stipulated under the SMME subcontracting requirements. The Principal Contractor shall on fulltime basis closely mentor, manage and supervise all SMMEs and shall manage, guide and assist each SMMEs in all aspects of management, execution and completion of his/her subcontract. This shall typically include the on-site productivity planning, management of materials, cost management, contract management, Health and Safety management, quality management, communication management and close-out documentation.

Provision for pricing of compliance with the aforementioned is made under this clause and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained

Fixed: _____ Value related: _____ Time related: _____

**C3.8: STANDARD FOR DEVELOPING SKILLS
THROUGH INFRASTRUCTURE CONTRACTS**



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www.gpwonline.co.za**Construction Industry Development Board****Standard for Developing Skills through
Infrastructure Contracts****July 2020**

In terms of sections 5(2) of the Construction Industry Development Board Act, 2000 (Act no. 38 of 2000) (the Act), the Construction Industry Development Board is empowered to promote best practice Standards. This best practice Standard for developing skills through infrastructure contracts standard establishes a minimum contract skills development goal which is to be achieved in the performance of a contract in relation to the provision of different types of workplace opportunities linked to work associated with a contract which culminate in or lead to:

- a) a part- or full occupational qualification registered on the National Qualification Framework;
- b) a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);
- c) a national diploma registered on the National Qualification Framework; and
- d) registration in a professional category by one of the professional bodies listed in the standard.

Ms Nonkululeko Sindane

Chairperson: Construction Industry Development Board

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Public Works
REPUBLIC OF SOUTH AFRICA**higher education
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Higher Education and Training
REPUBLIC OF SOUTH AFRICA**economic
development**Economic Development Department
REPUBLIC OF SOUTH AFRICA

Standard for developing skills through infrastructure contracts

(July 2020)

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INTRODUCTION

Procurement may be defined as *the process which creates, manages and fulfils contracts*. Procurement accordingly commences once a need for goods, services or works has been identified and it ends when the goods are received, or the services or construction works are completed. Public procurement, because of its nature and size, can have a significant impact on social and economic development if it is used to leverage social and development objectives.

The South African government requires that its considerable expenditure on the delivery, maintenance and operation of infrastructure (fixed assets that are constructed or result from construction operations) contribute to an increase in the number of people who have part or full occupational qualifications registered on the NQF or professional designations awarded by professional bodies or statutory councils. This standard has been prepared to leverage contributions towards the increase of the pool of qualified skilled people, and where required professionally registered, through training on professional services, services, design and build or engineering and construction works contracts associated with such expenditure. This standard establishes a minimum contract skills development goal which is to be achieved in the performance of a contract in relation to the provision of different types of workplace opportunities linked to work associated with a contract which culminate in or lead to:

- a) a part or full occupational qualification registered on the National Qualification Framework;
- b) a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);
- c) a national diploma registered on the National Qualification Framework; and
- d) registration in a professional category by one of the professional bodies listed in Table 1 of this standard.

Contractors are responsible for achieving the contract skills development goal and are provided with a number of methods for measuring their achievements. They may, if need be, devolve their obligations onto subcontractors.

This standard should be applied to a contract or an order issued in terms of a framework agreement that has a duration of 12 months or more, and a contract amount exceeding:

- a) R5 million in the case of a professional service or service contract or an order issued in terms of such a contract; or
- b) R60 million in the case of an engineering and construction works, or design and build contract or an order issued in terms of such a contract.

This Standard will be subject to review every five years, or sooner if required.

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Standard for developing skills through infrastructure contracts

1 SCOPE

This standard establishes a key performance indicator in the form of a contract skills development goal (CSDG) relating to the structured workplace learning of occupational or professional learning, which enables learners to make measurable progress towards the attainment of:

- a) a part or full occupational qualification registered on the National Qualification Framework; or
- b) a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012); or
- c) a national diploma registered on the National Qualification Framework; or
- d) registration in a professional category by a statutory council listed in Table 1.

in the delivery, maintenance and operation of infrastructure through the performance of professional service, service, engineering and construction works, or design and build contracts or an order associated with such a contract.

This standard sets out the methods by which the key performance indicator is established, measured, quantified and verified in the performance of the contract or the execution of an order.

NOTE 1: Guidance on the manner in which this standard should be incorporated into procurement documents is provided in Annex A.

NOTE 2: This standard can be applied to contracts or to orders (call-offs) issued in terms of framework agreements. Framework agreements are well suited to situations in which long term relationships are entered into. They offer flexibility in attaining contract skills development goals as requirements can be adjusted from one order to another, thus allowing key performance indicators to be improved upon over time.

2 TERMS AND DEFINITIONS

For the purposes of this document, the following terms and definitions apply:

2.1 allowance amount provided for in the contract or an order by the employer relating to one or more of the following:

- a) the performance by the contractor of work or services that are foreseen but cannot be accurately specified at the time that the contract was entered into or the order issued;

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- b) work or services to be performed, or goods provided, by a subcontractor who is either nominated by the employer or is selected by the employer in consultation with the contractor after the award of the contract or the issuing of an order;
 - c) provision for price adjustment for inflation; or
 - d) other budgetary provisions intended to cover the employer's contractual risks
- 2.2 artisan** a person who has been certified as competent to perform a listed trade in accordance with Section 26B of the Skills Development Act of 1998 (Act No. 97 of 1998)
- 2.3 black people** a generic term which means Africans, Coloureds and Indians or Chinese and who are a citizen of the Republic of South Africa:
- a) by birth or descent; or
 - b) naturalisation occurring before the commencement date of the Constitution of the Republic of South Africa Act, Act No. 200 of 1993 or occurring after the commencement date of such Act, but who, without the Apartheid policy would have qualified for naturalisation before then
- 2.4 candidate** a person who is registered in a category of registration which ultimately leads to registration in a professional category by one of the statutory councils listed in Table 1
- 2.5 cidb** Construction Industry Development Board, established in terms of the Construction Industry Development Board Act of 2000 (Act 38 of 2000)
- 2.6 class of construction works** the class of construction works referred to in Schedule 3 of the Construction Industry Development Regulations 2004 as amended and published in terms of the Construction Industry Development Board Act of 2000 (Act 38 of 2000)
- 2.7 contract amount** financial value of the contract at the time of the award of the contract or an order at the time of issue, including value added tax but excluding all allowances and expenses
- 2.8 contract skills development credits** the number of learners employed by the contractor and placed for continuous training opportunities in a three-month period
- 2.9 contract skills development goal (CSDG)** the number of hours or head count of skills development opportunities that a contractor contracts to provide in relation to work directly related to the contract or order up to:
- a) completion in the case of a professional service contract;

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- b) the end of the service period in the case of a service contract; and
 - c) practical completion in the case of an engineering and construction works contract
- 2.10 contractor** person or organization that contracts to provide professional services, services, goods and related services, or engineering and construction works
- 2.11 design and build contract** engineering and construction works contract where both the design and the construction are the responsibilities of the same contractor
- 2.12 employed learner** a learner who was in the employment of an employer prior to the commencement of the contract or execution of the order. Learners deployed from the public sector, other organisations, or other contractors for the purposes of gaining structured workplace learning shall also be considered to be an employed learner albeit that their employer will remain unchanged.
- 2.13 Employer** person or organization entering into a contract with the contractor for the provision of professional services, services, goods and related services, engineering and construction works (commonly referred to as the client)
- 2.14 employer's representative** person authorized to represent the employer in terms of the contract
- 2.15 engineering and construction works contract**, contract for the provision of a combination of goods and services arranged for the manufacture, development, extension, refurbishment, rehabilitation or demolition of a fixed asset, including building and engineering infrastructure
- 2.16 expenses** costs incurred by the contractor in the performance of the contract or order which are in terms of the contract recoverable from the employer
- 2.17 framework agreement**, agreement between an employer and one or more contractors, the purpose of which is to establish the terms governing orders to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged
- 2.18 mentor** a qualified, experienced and, in the case of professionals, registered person, designated to guide a learner or candidate through a structured work experience learning component of a learning programme required for the acquisition of a part or full qualification or professional designation
- 2.19 occupational qualification** occupational qualification registered on the National Qualifications Framework Act (Act No. 67 of 2008)
- 2.20 order** the instruction to carry out construction works, services or professional services under a framework agreement

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2.21 part qualification an assessed unit of learning that is registered on the National Qualifications Framework as part of an occupational qualification

2.22 practical completion the state of completion at the end of construction required in terms of an engineering and construction works contract

NOTE: Practical completion is commonly understood to be a state of readiness for occupation of the whole works although some minor work may be outstanding. Practical completion in an engineering and construction works contract occurs when:

- a) FIDIC Short Form of Contract: the date when the Employer considers that the Works have been completed in accordance with the Contract, except for minor outstanding work and defects which will not substantially affect the use of the Works for their intended purpose.
- b) FIDIC Red, Silver and Yellow Book: the date when the Engineer determines that the Works have been completed in accordance with the contract except for minor outstanding works and defects which will not substantially affect the use of the works for their intended purpose.
- c) GCC 2010: the date when the Engineer certifies that the whole or portion of the Works has reached a state of readiness, fit for the intended purpose, and occupation without danger or undue inconvenience to the Employer, although some work may be outstanding.
- d) JBCC 2000 Principal Building Agreement and JBCC Minor Works Agreement: the date when the principal agent decides that the completion of the works has substantially been reached and can be used for the purpose intended.
- e) NEC3 Engineering and Construction Contract: the date when the Project Manager decides that the Contractor has reached Completion as defined in the contract.
- f) NEC3 Engineering and Construction Short Contract: the date when the Employer decides that the Contractor has completed the works in accordance with the Works Information except for correcting notified Defects which do not prevent the Employer from using the works and others from doing their work.

2.23 professional category a category of registration identified in Table 1 or such other category recognised by the Employer in the application of this standard.

Table 1: Categories of registration

Profession	Category of registration	Act
Architectural	Architect, Senior Architectural Technologist, Architectural Technologist or Architectural Draughtsperson	Architectural Profession Act of 2000 (Act No. 44 of 2000)
Construction project management	Construction Project Manager	Project and Construction Management Professions Act of 2000 (Act No. 48 of 2000)
Construction management	Construction Manager	
Engineering	Engineer, Engineering Technologist, Engineering Technician or Certificated Engineer	Engineering Profession Act of 2000 (Act No. 46 of 2000)

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Profession	Category of registration	Act
Health and Safety Practitioners	Construction Health and Safety Agent, Construction Health and Safety Manager, Construction Health and Safety Officer	Occupational Health and Safety Act of 1993 (Act No. 85 of 1993) Construction Regulations, 2014
Landscape Architectural	Landscape Architect, Landscape Technologist, Landscape Technician or Landscape Assistant	Landscape Architectural Profession Act of 2000 (Act No. 45 of 2000)
Planning	Planner or Technical planner	Planning Profession Act, 2002. (Act No. 36 of 2002)
Quantity surveying	Quantity surveyor	Quantity Surveying Profession Act of 2000 (Act No. 49 of 2000)
Scientists	Natural scientists	Natural Scientific Professions Act (Act No. 27 of 2003)
Surveying	Land surveyor, Engineering surveyor or Technician engineering surveyor	Professional and Technical Surveyors' Act (Act No. 40 of 1984)
Valuers	Valuer or Associate Valuer	Property Valuers Profession Act (Act No. 47 of 2000)

- 2.24 professional fees** financial value of a professional service contract at the time of the award of the contract or an order at the time of issue, excluding all allowances and expenses, but including value added tax
- 2.25 professional service contract**, contract for the provision of services with the skill and care normally delivered by professionals
- 2.26 Sector Education and Training Authority (SETA)** an institution established under section 9 of the Skills Development Act, Act 97 of 1998 and which has the responsibility under this Act to register learners on learning programmes
- 2.27 service contract**, contract for the provision of labour or work, including knowledge-based expertise, carried out by hand or with the assistance of equipment and plant
- 2.28 site** means the land or place made available by the employer, for the purposes of the contract or order, on, under, over, in or through which the works or services are to be executed
- 2.29 skills development agency (SDA)** an agency which performs some or all the functions set out in section 4.1.5.
- 2.30 statutory council** a council established as follows:
- South African Council for the Architectural Profession, established by the Architectural Profession Act of 2000 (Act No. 44 of 2000);
 - South African Council for the Project and Construction Management Professions, established by the Project and Construction Management Professions Act of 2000 (Act No. 48 of 2000);

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- c) Engineering Council of South Africa, established by the Engineering Profession Act of 2000 (Act No. 46 of 2000);
- d) Construction Health and Safety Practitioners established by the Occupational Health and Safety Act of 1993 (Act No. 85 of 1993)
- e) South African Council for the Landscape Architectural Profession, established by the Landscape Architectural Profession Act of 2000 (Act No. 45 of 2000);
- f) South African Council for the Quantity Surveying Profession, established by the Quantity Surveying Profession Act of 2000 (Act No. 49 of 2000);
- g) South African Council for Professional and Technical Surveyors, established by the Professional and Technical Surveyors' of 2000 (Act No. 40 of 1984);
- h) South African Council for Planners, established by the Planning Professions Act of 2002 (Act No. 32 of 2002);
- i) South African Council for Natural Scientific Professions, established by the Natural Scientific Professions Act (Act No. 27 of 2003); or
- j) South African Council for the Property Valuers Profession established by the Property Valuers Profession Act (Act No. 47 of 2000).

- 2.31 structured mentorship**, mentorship provided by a person who is registered in a suitable category of professional registration by a professional body or statutory council who leads and directs a candidate towards professional registration
- 2.32 structured workplace learning** component of learning in an occupational qualification or work placement for a professional designation whereby a learner is mentored by a qualified, and where required, registered mentor in the application and integration of the knowledge and practical skills learnt, under supervision, in the actual context of a workplace in accordance with the prescripts set by the relevant qualifying authority, professional body or statutory council
- 2.33 supervisor** a supervisor is a person in the particular workplace charged with the responsibility of allocating workplace tasks to a learner that are aligned to the prescriptions of their learning programme and of overseeing and reporting on that learning using a formally agreed record keeping system
- 2.34 unemployed learner** a learner who was not in the full-time employment of the contractor prior to the commencement of the contract or execution of the order and is appointed by the contractor or SDA on a limited duration employment contract linked to the prescriptions of a structured workplace learning programme. Their conditions of employment shall not be less favourable than those set out for such learners on learnerships set out in section 18 (3) of the Skills Development Act (Act 97 of 1998)
- 2.35 work integrated learning** the workplace learning component required by learners completing a national diploma at a University of Technology or Comprehensive University

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3 REQUIREMENTS

3.1 CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

3.1.1 The contractor shall attain or exceed the contract skills development goal in the performance of the contract or the execution of an order.

3.1.2 The contract skills development goal shall be expressed as in 3.1.2.1 for engineering and construction works, design and build and services contracts, and as in 3.1.2.2 for professional services contracts.

3.1.2.1 In the case of engineering and construction works contracts, design and build contracts and services contracts the contract skills participation goals, expressed in Rand, shall be no less than the contract amount multiplied by a percentage (%) factor given in Table 2 for the applicable class of construction works used in the application of the Construction Industry Development Regulations issued in terms of the Construction Industry Development Board Act of 2000.

Table 2: Contract skills development goals for different classes of engineering and construction works contracts

Class of construction works as identified in terms of Regulation 25(3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	Description	
CE	Civil engineering	0.25
CE and GB	Civil engineering and General Building	0.375
EE	Electrical Engineering works (buildings)	0.25
EP	Electrical Engineering works (Infrastructure)	0.25
GB	General Building	0.5
ME	Mechanical Engineering works	0.25
SB	Specialist	0.25

Example 1: The contract amount for an engineering and construction works contract in the GB class of construction works is R65,7m. The contract skills development goal in Rands is $R65,7m \times 0.5\% = R328\ 500$.

3.1.2.2 In the case of professional services contracts the contract skills development goals, expressed in hours, shall be not less than the professional fees in millions of Rand multiplied by 150.

Example 2: The contract amount for a professional services contract is R5.6 m. The contract skills development goal in hours is $R5.6m \times 150 = 840$ hours.

3.1.2.3 The number of hours for the contract skills development goal shall be revised as the need arises and be published in a Gazette notice.

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3.1.2.4 Where required in terms of the contract or order, a specified proportion of the learners and candidates shall be selected from persons in the employ of the state who meet the relevant eligibility criteria for the relevant programme.

3.1.2.5 Where required in terms of the contract or order, the employer shall advise the contractor of the types of training to be undertaken by the learners and candidates.

3.2 ACHIEVING THE CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

3.2.1 The contractor shall achieve the measurable contract skills development goal by providing opportunities to learners requiring structured workplace learning using one or a combination of any of the following in relation to work directly related to the contract or order:

Method 1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;

Method 2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan learners being holders of public TVET college qualifications;

Method 3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas;

Method 4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 above.

3.2.2 Employed learners may not account for more than 33 percent of the contract skills development goal.

3.2.3 Not more than one method may be applied to any individual concurrently in the calculation of the contract skills development goal.

NOTE: The principle is that an individual can only be counted once towards the CSDG.

3.3 CONTRACT SKILLS DEVELOPMENT GOAL CREDITS

3.3.1 Contract skills development credits will not be awarded for learners enrolled as beneficiaries of other funded or subsidised programmes.

3.3.2 In the case of engineering and construction works, design and build and services contracts:

- a) The contract skills development goals shall be granted by multiplying the number of people employed by the contractors and placed for continuous

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training opportunities in a three-month period by the notional values contained in Table 3, or as revised in a Gazette notice.

- b) The contractor may source beneficiaries of the contract skills development goal from the cidb Skills Development Agency (SDA).
- c) All beneficiaries of the Standard must be registered with the cidb SDA.

NOTE: The role and function of a cidb SDA is outlined in Annex B

Table 3: The notional cost of providing training opportunities per quarter

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	R7 000	R0	R9 000	R16 000	R9 000
Method 2					
TVET College graduates	R14 000	R0	R9 000	R23 000	N/A
Apprenticeship	R14 000	R0	R12 000	R26 000	R12 000
Method 3					
P1 and P2 learners, or a 240 credits qualification	R24 000	R20 000	R4 500	R48 500	N/A
Method 4					
Candidates with a 360 credits qualification	R37 000	R20 000	R4 500	R61 500	R20 000
Candidates with 480 or more credits qualification	R47 000	R20 000	R4 500	R71 500	R20 000

*Additional provisions include provisions for personal protective equipment, insurance, medical assessments, course fees and trade tools (where applicable) assessment, moderation and monitoring of learners.

NOTE:

- i) Where an unemployed learner is employed directly by the contractor, the contractor shall pay the stipend directly to the learner
- ii) Where an unemployed learner is sourced through an SDA, training provider or skills development facilitator the contractor must pay the stipend to the SDA, training provider or skills development facilitator who in turn will pay the learner
- iii) The notional cost of providing training opportunities will be increase by CPI on an annual basis. The new, revised costs will be published on the cidb website on the 1st April in each year.

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Example 3: Training Target Calculation for a R65,7m GB contract

Contract amount	R65 700 000
Contract duration	12 Months
CSDG	0,50%
Minimum CSDG target	0,5% x R65 700 000
	R328 500

Skills Types	Number of learners	Notional Cost / Learner / Quarter	Notional cost/learner/year	Total Notional Cost over 12 months Contract
Method 2: Workplace learning opportunities, with unemployed TVET graduates	1	R23 000	R92 000	R92 000
Method 3: Candidacy for an unemployed learner with a 3-year qualification	1	R61 500	R246 00	R246 00
Total	2			R338 000

3.3.3 Credits towards the contract skills development goal for professional services contracts shall be granted by summing the hours of structured workplace learning opportunities provided to P1 and P2 learners as well as professional candidates in accordance with this standard.

3.3.4 No more than 45 hours may be claimed per week for any individual.

3.3.5 Contract skills development goal credits shall be reduced to the extent that they fail to comply with the requirements of this standard.

3.4 DENIAL OF CREDITS

Credits towards the contract skills development goal shall be denied should:

- a) the opportunities not be provided on site or the opportunities cannot be directly linked to the contract or order;
- b) Failure to register all beneficiaries of the Standard be with the cidb SDA;
- c) Failure to submit a copy of the final contract compliance training report within 15 days of practical completion;
- d) the following not be provided:
 - 1) the required contract compliance baseline plan, an interim contract compliance report or a final contract compliance report;
 - 2) the required mentorship plan for a candidate not be provided;
 - 3) the required training plan for learners not be provided;
 - 4) the training reports covering a period not be provided;

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- 5) the required records, specified documents and signatures not be provided;
 - 6) the structured mentorship is found not to be in accordance with the requirements of the applicable professional body, statutory council or qualifying authority;
 - 7) the structured workplace learning is found not to be in accordance with the curriculum requirements of the part qualification or occupational qualification or prescription for professional registration for which the learner is registered;
- e) conditions of employment and rates of allowances for learners not be in accordance with legislative provisions; and
 - f) the contractor does not maintain the required training records, or an audit reveals that there is insufficient information to substantiate claims for credits.
 - g) the contractor claims credits for learners enrolled as beneficiaries on programmes that are funded or subsidised from another source.
 - h) the contractor fails to provide sufficient evidence of disciplinary actions taken against a learner who fails to present their interim reports or credentials for assessment when they have had sufficient structured work experience or structured mentorship to do so.

4 COMPLIANCE WITH REQUIREMENTS

4.1 GENERAL

4.1.1 The contractor shall submit to the employer's representative:

- a) within 30 days of the contract coming into effect or the issuing of an order, a contract compliance baseline training plan taking into account the skills mix and type of workers that are to be engaged;
- b) interim contract compliance training reports at intervals which do not exceed 3 months; and
- c) a final contract compliance training report within 15 days of reaching completion, end of the service, the delivery date for all work required or practical completion in the case of professional service, service, design and construct contracts, and engineering and construction works contracts, respectively.

4.1.2 The information contained in the final contract compliance training report shall include the contract skills development goal achieved (in Rands or in hours) in the performance of the contract and a breakdown of the goal achieved in respect of the following:

- a) the name and contact details of the SDA,
- b) the skills mix and skills types achieved on the contract; and

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- c) the names, ID numbers and period of employment of each learner and candidate.

4.1.3 The contractor shall keep records of the hours worked and registration particulars towards compliance with this standard. The contractor shall allow the employer's representative to inspect or audit such training records at any time.

4.1.4 The employer's representative shall undertake suitable random audits on records to confirm compliance with requirements.

4.1.5 The learners shall be directly employed by the contractor or SDA. The contractor shall enter into a contract agreement with the cidb SDAs, training provider or skills development facilitator of their choice participating in the implementation of this standard to:

- a) prepare training plans for registered learners, including details of the scope of experiential work to be covered and expected outcomes;
- b) register learners with the appropriate Sector Education and Training Authority established in terms of the Skills Development Act of 2008 (Act 37 of 2008);
- c) manage learner registration with appropriate trade testing authorities as well as preparation for the trade test;
- d) liaise with the supervisor to monitor onsite training progress of learners;
- e) liaise with the supervisor to arrange for summative assessments at appropriate stages of the training; and
- f) liaise with the supervisor to prepare reports for the employer or employer's representative.

4.2 STRUCTURED WORKPLACE LEARNING OPPORTUNITIES FOR LEARNERS

4.2.1 Structured workplace learning opportunities shall be aligned to the curriculum requirements set for the particular part or full occupational qualification or professional designation for which the learner is registered.

4.2.2 A responsible supervisor will be appointed to allocate learning tasks, under the guidance of a competent person, to learners in line with their training plans.

4.2.3 Mentoring associated with structured workplace learning for artisan learners shall be undertaken by an artisan in the applicable trade with a minimum of 3 years of trade specific experience. The number of artisan learners mentored by a single mentor shall,

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unless otherwise permitted by the National Artisan Moderation Body, not exceed 4 at any one time.

4.2.4 Supervision associated with structured workplace learning for learners leading to a part or full occupational qualification other than artisan learners shall be undertaken by a person qualified in the applicable discipline with a minimum of 3 years of post-qualification experience.

4.2.5 The contractor shall submit to the employer's representative, in respect of each learner:

- a) within one month of commencing work directly related to the contract or order, a workplace training plan together with name of the learner's mentor and supervisor;
- b) within one month of commencing work directly related to the contract or order:
 - 1) proof of registration as a learner with the relevant SETA where applicable; and
 - 2) a copy of the mentorship agreement entered into with the learner or the company mentorship agreement entered into with the relevant qualified agency;
- c) within two weeks of updating a workplace training plan, the revised workplace training plan;
- d) a quarterly progress report and a final report at the end of the structured mentorship period including a log of exposure and interactions with the mentor in sufficient detail to demonstrate compliance with requirements, signed off by the mentor, the supervisor and the learner.

4.2.6 Learners shall be required by the mentor to complete training reports required by the relevant qualifying authority whenever a substantial activity or training period has been completed.

4.2.7 The mentor and supervisor shall sign off all reports and logbooks to allow the learner to move to other projects or employment and continue the path towards a qualification.

4.3 STRUCTURED WORKPLACE LEARNING FOR CANDIDATES

4.3.1 Mentoring associated with structured workplace learning for candidates shall be in accordance with the prescripts of the relevant professional body or statutory council.

4.3.2 The contractor shall:

- a) appoint a supervisor who is actively engaged in work directly associated with the contract to issue tasks, oversee their implementation and provide input to the candidate on an on-going basis;

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- b) identify a suitable mentor for the candidate. If the contractor does not have an inhouse mentor, the contractor shall enter into a mentoring agreement with the candidate and an external company as required by the professional body or statutory council; and
- c) issue each candidate with a portfolio of evidence file which is to be kept up to date with all the documentation issued or prepared including the workplace training plan and all revisions thereof as well as copies of the logbook entries and training experience reports.

4.3.3 The mentor shall from time to time provide an updated workplace training plan for a candidate outlining the activities in which the candidate will be involved, including activities required by the relevant professional body or statutory council. The mentor shall require candidates to maintain a logbook issued by the relevant professional body or statutory council. The mentor shall sign off such logbook at quarterly presentations and progress review meetings.

NOTE: The mentor should ensure where the duration of the contract or order exceeds the minimum time to register in a professional category of registration that candidates are exposed to the full range of activities and work towards assuming the full level of responsibility recommended by the relevant professional body or statutory council. This may require rotations and secondments.

4.3.4 The contractor shall submit to the employer's representative, in respect of each candidate:

- a) within one month of commencing work directly related to the contract or order:
 - 1) a workplace training plan together with name of the candidates' mentor and supervisor;
 - 2) proof of registration as a candidate with the relevant professional body or statutory council; and
 - 3) register all beneficiaries of the Standard be with the cidb SDA
- b) within one month of commencing work directly related to the contract or order a copy of the mentorship agreement entered into with the candidate or the company mentorship agreement entered into with a professional body or statutory council;
- c) within two weeks of updating a workplace training plan, the revised workplace training plan;
- d) quarterly progress reports and a final report at the end of the structured mentorship period including a log of exposure and interactions with the mentor in sufficient detail to demonstrate compliance with requirements, signed off by the mentor, the supervisor and the candidate.

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- 4.3.5** Candidates shall be required by the mentor to complete training reports required by the relevant professional body or statutory council whenever a substantial activity or training period has been completed.
- 4.3.6** The mentor and supervisor shall sign off all reports and logbooks to allow the candidate to move to other projects or employment and continue on the path towards registration where the work related to the contract ends for whatever reason prior to the candidate gaining sufficient experience for registration.

5 RECORDS

- 5.1** The contractor shall submit all the documentation required in terms of clause 4 in a timely manner and according to a prescribed format where applicable.
- 5.2** The employer's representative shall certify the value of the credits counted towards the contract skills development goal, if any, whenever a claim for payment is issued to the employer and shall notify the contractor of this amount.
- 5.3** The contractor shall, upon termination of the opportunities provided in order to satisfy the contract skills development goal, certify the quantum and nature of the opportunity and submit the certificate, counter-certified by the relevant individual, to the employer's representative for record-keeping purposes.

6 SANCTIONS

- 6.1** In the event that the contractor fails to substantiate that any failure to achieve the contract skills development goal was due to reasons beyond the contractor's control which may be acceptable to the employer, the sanctions provided for in the contract or order shall apply.

NOTE: The contract establishes the sanctions that apply. These are set out in a tender evaluation schedule, the scope of work or contract data. Sanctions where tender evaluation points are granted with respect to a tendered CSDG or where a minimum CSDG is specified are usually applied in the form of:

- a) financial penalties (low performance damages), typically formulated on the difference between the contracted CSDG and the CSDG achieved in the performance of the contract; and
- b) the issuing of completion certificates only after the certificates described in clause 5 are received.

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ANNEX A: INCORPORATING THIS STANDARD IN A PROCUREMENT DOCUMENT

(Informative)

A1 GENERAL

- A1.1** The following clause should be added to the scope of work of a contract or order to establish requirements:

Skills development requirements

The contractor shall achieve in the performance of the contract the contract skills development goal established in this *Standard for developing skills through infrastructure contracts (March 2020)*

NOTE: The term contractor may need to be changed to "consultant" or "professional service provider" or "supplier" depending upon the term that is used in the form of contract that is adopted. The term "performance of the contract" may need to be replaced with "execution of an order" where the scope of work forms part of an order.

- A1.2** Where an employer requires that employees of the state be seconded to the contractor in order to be provided with structured workplace learning opportunities in accordance with the provisions of this standard, the following clause should be included in the scope of work:
- A1.3** The specified number of employees of the state is The employer must provide a list of persons for selection by the contractor as prescribed in the implementation guidelines. Persons selected by the contractor shall be seconded to the contractor under the terms and conditions prescribed in the implementation guidelines.
- A1.4** Where the contract is part of a Strategic Infrastructure Project (SIPs) the contractor will be required to report to the Presidential Infrastructure Coordinating Council through the respective SIP Skills Coordinators linked to the office of the SIP Coordinator, using the approved PICC reporting template.

A2 SANCTIONS

- A2.1** Sanctions should be provided for in the contract in the event that the contractor fails to substantiate that any failure to achieve the contract participation goal was due to quantitative under runs, the elimination of items, or any other reason beyond the contractor's control which may be acceptable to the employer.
- A2.2** Reference should be made to the cidb Practice Note to be published on methodologies and mechanisms to be adopted for sanctions on contractors who fail to comply with the provisions of the Standard.

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ANNEX B: ROLE AND FUNCTION OF SKILLS DEVELOPMENT AGENCY

(Informative)

The Skills Development Agency (SDA) will provide career management and compliance reporting functions for all learners for CSDG compliance in terms of this Standard. Where the contractors provide direct employment to unemployed learners, or enrolls own employees for CSDG compliance, the contractor shall register them with the cidb SDA. The SDA can also act as an employment intermediary for unemployed learners.

The roles and functions of the Skills Development Agency (SDA) are summarised below.

B1 CAREER MANAGEMENT AND COMPLIANCE REPORTING

B1.1 The contractor shall enter into a contract agreement with the cidb SDA, training provider or skills development facilitator to manage their learners according to the provisions given below:

- a) preparing training plans for registered learners, including details of the scope of experiential work to be covered and expected outcomes;
- b) registering learners with the appropriate Sector Educational and Training Authority established in terms of the Skills Development Act of 2008 (Act 37 of 2008);
- c) conducting entry and exit level medicals for learners at the conclusion of each placement opportunity;
- d) providing personal protective equipment;
- e) liaising with the supervisor to monitor onsite training progress of learners;
- f) liaising with the supervisor to arrange for summative assessments at appropriate stages of the training; and
- g) liaising with the supervisor to prepare reports for the employer's representative and cidb at practical completion of the contract.

B1.2 The relevant training provider or skills development facilitator shall invoice the contractors for the provision of these services as per cost schedule in Table 3.

B1.3 The cidb SDA shall open a trust fund to ring-fence monies essential for all learner requirements where necessary provided for in this standard such as personal protective equipment, medical assessments, insurance, course fees, monitoring as well as top up training and assessment.

B2 EMPLOYMENT INTERMEDIARY

B2.1 The cidb SDA can act as an employment intermediary for unemployed learners and provide contractors with learners qualifying for participation in the CSDG, as well as managing their employment functions such as payment of stipends, workman's compensation, provision of personal protective equipment, trade specific tools, etc.

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- B2.2** In such cases, the contractor shall contract directly with an SDA, training provider or skills development facilitator of their choice for the recruitment, placement and management of learners. The contractor shall pay the SDA, training provider or skills development facilitator in accordance with the notional costs provided for in this standard, or as amended by a Gazette.

Applying B.U.I.L.D standards in construction projects

Pranveer Harriparsadh & Ishmail Cassiem



DEVELOPMENT THROUGH PARTNERSHIP

Standard for Developing Skills through Infrastructure Contracts Background

Objective

- **Provide an overview of the cidb Standard for developing skills through infrastructure contracts (Skills Standard)**
- **cidb Skills Development Agency (SDA)**



DEVELOPMENT THROUGH PARTNERSHIP

Background

Background

- Skills for Infrastructure Delivery in South Africa 2007
- Shortage of Skills
- Pathways to develop artisan
- Recommendations to restore the skills pipeline:
 - Increase maths and science output at grade 12
 - Improve the attractiveness of the industry
 - Improve the quality and relevance of training
 - **Restoring the experiential learning system**



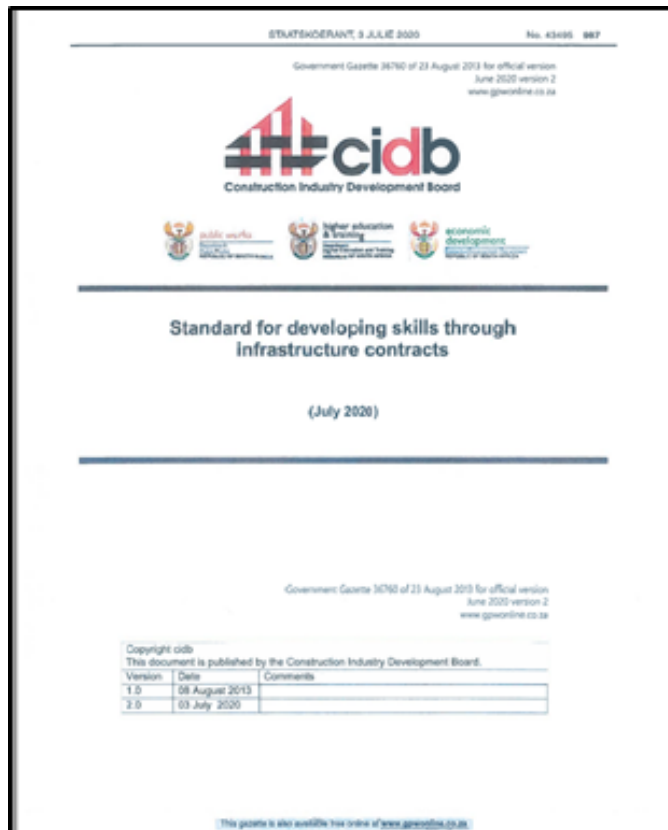
DEVELOPMENT THROUGH PARTNERSHIP

cidb Skills Standard

Outline

- **Cidb Standard for Skills Development**
 - Objectives of the Standard
 - Contract Skills Development Goals
 - Denial of credits

cidb Standard for Developing Skills through Infrastructure Contracts



Gazette 43495 of 3 July 2020 Skills Standard

Objectives of the Standard (i)

- Method 1 - to provide structured workplace learning towards;
 - part, or
 - full **occupational qualification**;
- Method 2 - To provide structured workplace learning towards **trade qualifications**;
 - apprentices, or
 - other artisan learners
 - 60% of the artisan learners from public TVET colleges

Objectives of the Standard (ii)

- Method 3 - To provide work integrated learning opportunities for;
 - university of Technology; or
 - comprehensive University **P1 & P2**
- Method 4 - To provide structured workplace learning for;
 - candidates for **professional registration** with statutory council

Targeted Contract Values

- Professional services contracts:
 - R 5m or more
 - 12 months duration
- Engineering and construction works contracts:
 - R60m or more
 - cidb Grade 7 contractor
 - 12 months duration

Contract Skills Development Goals (CSDG)

- **Hours:**
 - Professional services
- **Headcount:**
 - Engineering and construction works
 - Design and build contracts

CSDG; Hours

- 150 hours/R1 million
- E.g. R5 million = 750 hours or 4.5 months

CSDG in Headcount

Class of construction works as identified in terms of the cidb regulation		Construction skills development goal (%)
Designation	Description	
CE	Civil Engineering	0.25
CE and GB	Civil Engineering and General Building	0.375
EB	Electrical Engineering work (buildings)	0.25
EP	Electrical Engineering works (infrastructure)	0.25
GB	General Building	0.5
ME	Mechanical Engineering	0.25
	Specialist works	0.25

Notional Cost of Training; Headcount

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	R7 000	R0	R9 000	R16 000	R9 000
Method 2					
TVET College graduates	R14 000	R0	R9 000	R23 000	N/A
Apprenticeship	R14 000	R0	R12 000	R26 000	R12 000
Method 3					
P1 and P2 learners	R24 000	R20 000	R4 500	R48 500	N/A
Method 4					
Candidates with a 3 year diploma	R37 000	R20 000	R4 500	R61 500	R20 000
Candidates with 4 year qualification	R47 000	R20 000	R4 500	R71 500	R20 000

Example 1:

Total contract value	R 600,000,000.00
Contract duration	36 months
Classes of Works	CE
CSDG	0.25%
Minimum CSDG	R 1,500,000.00

Contractor's Role

- **Contractor:** entity that contracts with employer
- **Providing workplace learning opportunities through:**
 - Direct employment from colleges
 - Indirect employment through an SDA
- **Appointing a coach/mentor for learners**
- **Submitting:**
 - Compliance baseline training plans
 - 30 days after contract award
 - Quarterly compliance reports
 - Final contract compliance report
 - 30 days after practical completion

Denial of Credits

- **Opportunities provided could not be linked to contract;**
- **Reporting criteria not adhered to;**
- **Conditions of employment and allowances not in accordance with legislative provisions;**
- **Contractor not maintaining training records; and**
- **Contractor not providing evidence of disciplinary action against a learner who fails to present interim reports or credentials for assessment.**



DEVELOPMENT THROUGH PARTNERSHIP

Skills Development Agency
SDA

What is an SDA

- **Facilitates structured, workplace training for beneficiaries of the cidb Standard for Developing Skills through Infrastructure Contractors (Skills Standard)**
 - **Facilitates implementation of the Skills Standard**

Role of the SDA

- **Skills Development Agency (SDA) shall:**
 - Prepare training plans;
 - Register learners on the LMS;
 - Register learners with the appropriate Sector Educational and Training Authority;
 - Conduct entry and exit level medicals for learners;
 - Monitor onsite training progress of learners;
 - Arrange for summative assessments;
 - Provide trade testing opportunities including and top-up training; and
 - Prepare reports for the employer's representative and cidb at practical completion of the contract.



DEVELOPMENT THROUGH PARTNERSHIP

cidb Standard for Indirect Targeting for Enterprise Development

cidb Standard for Indirect Targeting

- The cidb Standard for Indirect Targeting for Enterprise Development helps clients to set goals for development of emerging contractors on public sector projects through subcontracting and joint ventures



cidb Standard for Indirect Targeting

- **Establishes contract participation goals (CPGs) for enterprise development of targeted enterprises**
- **Requires lead partner or main contractor to dedicate a minimum 5% of total project value to provide developmental support to targeted subcontractor or joint venture partner**
- **Applicable to contracts in Grades 7 to 9 General Building and Civil Engineering contracts**
- **Can be adapted to other cidb Classes of Works**



Criteria

- **Needs analysis; development in at least two developmental areas:**
 - administrative; cost control systems
 - construction management systems and plans
 - planning, tendering and programming
 - business; technical; procurement skills
 - legal compliance
 - credit rating/history; financial loan capacity/history
 - contractual knowledge
- **Needs analysis shall be mutually agreed upon between contractor and targeted enterprise**
- **Contractor shall appoint enterprise development co-ordinator:**
 - develop a project specific enterprise development plan
 - submit to the employer's representative a monthly enterprise development report



DEVELOPMENT THROUGH PARTNERSHIP

Thank You

C4: SITE INFORMATION

C4: SITE INFORMATION

C4.1 Site information

The project is scheduled for construction on an existing plot in the East London Industrial Development (ELIDZ), Zone 1A. Access is to be through the main entrance gate of the East London IDZ zone 1A and all incoming traffic should adhere to the ELIDZ security protocols. Construction access will be via a separate entrance gate located along the southern boundary of the ELIDZ along Prince Georges Circuit Drive.

Existing infrastructure exists and services should be reinstated to the conditions established before the use there of. The Contractor must ensure that the road around the site remains operational with the minimum disruption. The Contractor must ensure noise and dust pollution is minimised during the course of the project.

Current services existing on site include water, electrical, telecom, sewer and stormwater reticulation networks. The Contractor must determine the locality of these services in proximity to the works areas and exercise due caution not to damage or disrupt any of these services. The Contractor will be held accountable for any damages to the services for which they are responsible.

The Tenderer is encouraged to arrange for a site visit before tender closing. As the tender briefing meeting will be a virtual meeting, there will be no site visit on the day of the tender briefing meeting.

The Tenderer must also assess the access road to site and in his tender must allow for the delivery of materials on site. No claims will be entertained for the double handling of materials if required. The Tenderer will also be responsible for maintaining the access road for the duration of the contract, and reinstating the access road to the original conditions upon completion of the works.

C4.2 Site Photos



Photo 2:



Photo 3:



Photo 4:
Dispatch/Receiving area



C5: GEOTECHNICAL REPORT

***Geotechnical Report for CSE Consulting - Draeger Manufacturing
Facility - East London IDZ - Eastern Cape***

Reference: 21-215



Dated: May 2021



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Geotechnical Investigation for CSE Consulting - Draeger Manufacturing Facility - East London IDZ - Eastern Cape

Reference : 21-215	Dated : May 2021
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Appendix A: Trial Hole Profiles

Appendix B: Dynamic Cone Penetration (DCP) Results

Appendix C: Laboratory Results

Figures 1 to 3

Geotechnical Investigation for CSE Consulting - Draeger Manufacturing Facility - East London IDZ - Eastern Cape

Reference: 21-215

Dated: May 2021

EXECUTIVE SUMMARY

At the request of Mr. Phillip Kock of CSE Consulting (Pty) Ltd, Delta Geotech (Pty) Ltd provided a proposal, on the 8th March 2021. The proposal indicated the methodology and cost to undertake a geotechnical investigation according to the Request for Quote (RFQ). Delta Geotech's quote was successful and were appointed on the 15th March 2021 to proceed with the investigation.

The site is located within the East London Industrial Development Zone (IDZ) on ERF 60950 & 60948, adjacent to Sundale Dairy Factory. The topography of the site is very gently dipping to the south east. There are abundant clumps of indigenous bush separated by grassy 'pathways' scattered with numerous invasive plants. Site access is gained at the main entrance of the IDZ with direct access achieved off the eastern pavement of Umsimbithi Road within the IDZ.

The fieldwork for the site investigation was carried out on the 26th of March 2021 and comprised Test Pit Excavations, Profiling & Sampling and Dynamic Cone Penetration (DCP) tests

A total of nine test pits, designated TP1 to TP9, were excavated using a TLB. Test pits were positioned by the CSE Consulting and located on site using a hand-held GPS by Delta Geotech. The detailed logs with coordinates of all the profiles are provided in Appendix A with approximate test pit locations indicated in Figure 2 at end of the appendices. A total of 10 DCP tests were conducted alongside each test pit and one at 1.10m begl in TP8. These have been numbered in conjunction with the test pit positions DCP1 – DCP9 and DCP8 at 1.10m (within TP8). The DCP tests extended to depths of between 0.19m - 0.52m begl while DCP8 at 1.10m extended to 1.41m begl. Mass DCP probe refusal was encountered in proximity to the colluvial/ferricrete interface.

Nine Foundation Indicator samples, collected and sent for laboratory testing, were required to ascertain the likelihood or otherwise of active clays at selected positions within the study area. Whilst six moisture-density (MOD) and Californian Bearing Ratio (CBR) tests were required to determine the compactive strength of materials intersected on site.

Regionally the site is underlain by sedimentary rocks of the lower Beaufort Stage - Beaufort Group - Karoo Supergroup that have been extensively intruded by Jurassic dolerite dykes and sills. Locally the site is



underlain by a relatively thick layer of colluvium, pedogenic ferricrete and residual soils and sedimentary rock.

Perched groundwater was not intersected during the investigations. The groundwater would rely mainly on recharge from direct infiltration of rainfall, as well as, from upslope recharge of the groundwater via horizontal flow. As such, this water table will be best developed during the wet and rainy seasons.

DCP data indicates a limited range in consistencies for the soil horizons encountered though generally the materials are medium dense and better from the mid to lower levels of the colluvial soils and underlying formations. Mass DCP probe refusal occurred at the interface with the colluvial and ferricrete horizons.

Completely weathered very closely jointed very soft rock mudstone and sandstone were intersected at depths of between 0.80m and 1.90m begl which extends to depths of between 0.90m and 2.10m begl.

Highly weathered closely jointed soft rock mudstone and sandstone were intersected in all the test pits at depths of between 0.90m and 2.10m begl and extend to depths of between 1.00m and 2.55m begl.

Medium hard sedimentary rock was intersected underlying the highly weathered horizon at depths of between 1.00m and 2.55m and extend to 1.05m and 2.60m begl upon which TLB refusal was encountered.

Structures can be founded on:

1. Highly weathered soft rock sandstone or mudstone rock using strip or pad footings with normal construction techniques and an approximate bearing pressure of 450kPa.
2. Or moderately weathered medium hard rock sandstone or mudstone using strip or pad footings with normal construction techniques and an approximate bearing pressure of 650kPa.

The underlying rock would form a competent in-situ subgrade for pavements and surface beds. If soil horizons occur, the medium dense to dense colluvial soils and, very dense ferricrete should form a competent subgrade for surface beds, access roads and parking, with minor precautions required to accommodate soil movement.

The findings are further discussed, in detail, in the reminder of the report but in in summary, the site is suitable for the developments envisaged provided all structures are designed accordingly.

Geotechnical Investigation for CSE Consulting - Draeger Manufacturing Facility - East London IDZ - Eastern Cape

Reference: 21-215	Dated: May 2021
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1. INTRODUCTION AND TERMS OF REFERENCE

At the request of Mr. Phillip Kock of CSE Consulting (Pty) Ltd, Delta Geotech (Pty) Ltd provided a proposal, on the 8th March 2021. The proposal indicated the methodology and cost to undertake a geotechnical investigation according to the Request for Quote (RFQ). Delta Geotech's quote was successful and were appointed on the 15th March 2021 to proceed with the investigation.

2. SCOPE OF REPORT

The geotechnical report sets out the findings of the geotechnical investigation. The objectives of the investigation were as follows:

- a) Undertake a desktop study using topographical and geological maps, as well as, a review of available geotechnical literature.
- b) Assess 9 No. excavated soil/rock profiles and sampling.
- c) A summary of the engineering properties of the soils derived from laboratory testing
- d) Identification of heave potential.
- e) Provide an assessment of the bearing capacity of the various founding horizons.
- f) Prediction of total heave collapse etc. under buildings and floors.
- g) Determine excavat-ability for earthworks and foundation sidewall stability.
- h) Prediction of groundwater table for the protection of fills, floors and pavements.
- i) Recommendations and design parameters regarding foundation solutions, soil improvement solutions and engineered fills and pavement layerworks.
- j) Recommendations regarding building foundation systems and preventative measures to safeguard against adverse soil conditions.

3. INFORMATION SUPPLIED

The following information was utilized during the investigation:

- Request for Quote (RFQ) which included:
 - Site co-ordinates and erven numbers
 - Locality and site development images from CSE Consulting
- Vegetation Assessment Erven 60948_60950.1903 - 21
- Remote Colour Imagery – Google (2020).
- The 1:250 000 geological map – 3227 D – East London – (Council of Geoscience)
- Brink A.B.A (1985). Engineering Geology of South Africa - Post Gondwana Deposits. Volume 4. Building Publications. South Africa. 332pp.

4. SITE DESCRIPTION

The site is located within the East London Industrial Development Zone (IDZ) on ERF 60950 & 60948, adjacent to Sundale Dairy Factory. The topography of the site is very gently dipping to the south east. There are abundant clumps of indigenous bush separated by grassy 'pathways' scattered with numerous invasive plants. Site access is gained at the main entrance of the IDZ with direct access achieved off the eastern pavement of Umsimbithi Road within the IDZ. As per the environmental assessment document supplied, Delta Geotech stayed clear of any protected plant specimens on site during the investigation.

Plates 1 and 2 below provide an indication of the conditions encountered on site.



Plate 1: Site dominated by indigenous clumps of trees



Plate 2: Ferricrete horizon extending into residual horizon

5. NATURE OF INVESTIGATION

The fieldwork for the site investigation was carried out on the 26th of March 2021.

The fieldwork comprised the following:

- Test Pit Excavations, Profiling & Sampling
- Dynamic Cone Penetration (DCP) tests

5.1 Test Pitting

A total of nine test pits, designated TP1 to TP9, were excavated using a TLB. Test pits were positioned by the CSE Consulting and located on site using a hand-held GPS by Delta Geotech. The detailed logs with coordinates of all the profiles are provided in Appendix A with approximate test pit locations indicated in Figure 2 at end of the appendices.

Test pits were advanced to depths of between 1.05m to 2.60mbegl (meters below existing ground level) and were profiled¹. Representative disturbed samples of material were taken from selected horizons for testing in a SANAS commercial soils laboratory.

5.2 DCP Tests

A total of 10 DCP tests were conducted alongside each test pit and one at 1.10m begl in TP8. These have been numbered in conjunction with the test pit positions DCP1 – DCP9 and DCP8 at 1.10m (within TP8). The DCP tests extended to depths of between 0.19m - 0.52m begl while DCP8 at 1.10m extended to 1.41m begl. Mass DCP probe refusal was encountered in proximity to the colluvial/ferricrete interface.

The results of the DCP tests are provided in Appendix B.

¹ Geoterminology Workshop (2002) – Guidelines for Soil and Rock Logging - SAIEG-AEG-SAICE (Geotech Div) pp47

6. GEOLOGY AND GROUNDWATER CONDITIONS

6.1 Regional Geology

Regionally the site is underlain by sedimentary rocks of the lower Beaufort Stage - Beaufort Group - Karoo Supergroup that have been extensively intruded by Jurassic dolerite dykes and sills (See Figure 3 – Geological plan at the end of the appendices). Locally the site is underlain by a relatively thick layer of colluvium, pedogenic ferricrete and residual soils and sedimentary rock.

6.2 Site Geology

The site is overlain, as intersected in the test pits, by transported colluvium, pedogenic ferricrete and residual soils followed by completely to moderately weathered sandstone or mudstone rock.

6.2.1 Colluvial

Colluvial soils were intersected in all test pits. The colluvium comprises silty sands that occur from surface and extend to depths of between 0.30m and 0.70m begl.

6.2.2 Ferricrete

Underlying the colluvium, the ferricrete horizon was intersected in all the test pits. It is comprised of a slightly clayey silty gravelly sand that is intersected at depths of between 0.30m and 0.70m and extends to depths of between 0.65m and 1.50m begl.

6.2.3 Residual

The residual soil is relatively thinly developed throughout the site and was encountered in all the test pits except for TP5 and TP7. The residual horizons are partly enveloped by the overlying ferricrete horizon. They consist of a gravelly clayey silty sand and clayey silty gravelly sand that were intersected at depths of between 0.65m and 1.50m begl and extend to depths of between 0.80m and 1.90m begl, with an average extent of 214mm thick.

6.2.4 Sedimentary Rock

The above soils are underlain by completely weathered very closely jointed very soft rock mudstone (TP6-TP8) or sandstone (TP1- TP5 and TP9) intersected at depths of between 0.80m and 1.90m begl which extends to depths of between 0.90m and 2.10m begl.

Highly weathered closely jointed soft rock mudstone or sandstone underly the completely weathered rock in all the test pits at depths of between 0.90m and 2.10m begl and extend to depths of between 1.00m and 2.55m begl.

Medium hard sedimentary rock was intersected underlying the highly weathered horizon at depths of between 1.00m and 2.55m and extend to 1.05m and 2.60m begl upon which TLB refusal was encountered.

6.3 Groundwater

Perched groundwater was not intersected during the investigations. The groundwater would rely mainly on recharge from direct infiltration of rainfall, as well as, from upslope recharge of the groundwater via horizontal flow. As such, this water table will be best developed during the wet and rainy seasons.

The main water table is expected to occur at depth within the fractured rock aquifer.

7. LABORATORY TESTING

Nine Foundation Indicator samples, collected and sent for laboratory testing, were required to ascertain the likelihood or otherwise of active clays at selected positions within the study area. Whilst six moisture-density (MOD) and Californian Bearing Ratio (CBR) tests were required to determine the compactive strength of materials intersected on site.

The points below provide a summary of the laboratory tests undertaken:

- Foundation Indicator testing comprising Atterberg Limits, Particle Size Distribution and Hydrometer analysis
- Moisture density using CBR moulds to determine the maximum dry density (MDD) and compaction curve.
- California Bearing Ratio strength test providing a CBR strength value.

The laboratory results are provided in Table 2 and interpreted in Table 3. The full laboratory results are included in Appendix C.

Table 2:
Summary of Results of Particle Size Distribution Analysis, Atterberg Limit Determinations and MOD/CBR Tests.

TP No.	Depth (m)	Description	Particle Size Distribution %				Atterberg Limits %			GM	Modified AASHTO		CBR Values (%) Compaction MDD (%)					Swell (%)	Classification
			Clay	Silt	Sand	Gravel	LL	PI	LS		MDD (kg/m ³)	OMC %	90	93	95	98	100		
1	0.00-0.50	Colluvium	18.7	25.8	49.9	5.7	24	6	3.0	0.62	1960	9.9	4	7	11	21	32	0.60	A-4 (1), CL & ML, low heave potential; G9
5	0.00-0.50	Colluvium	13.7	25.7	50.8	9.8	18	7	2.5	0.78	1945	11.0	7	10	12	16	19	0.40	A-4 (0), SM&SC, low heave potential, G9
7	0.45-1.15	Pedogenic ferricrete	10.4	19.2	34.9	35.5	25	7	3.5	1.44	1889	12.6	4	5	7	9	11	3.60	A-6 (3), SC, low heave potential; >G10
2	0.90-1.10	Residual sandstone	12.3	15.0	40.2	32.6	25	7	3.5	1.44	-	-	-	-	-	-	-	-	A-2-4 (0); SM&SC; low heave potential
8	1.50-1.90	Residual mudstone	19.7	33.1	36.6	10.6	48	19	9.0	0.45	-	-	-	-	-	-	-	-	A-7-6 (16); ML; medium heave potential
6	1.20-1.35	Completely weathered mudstone	6.2	13.1	23.5	57.2	37	15	8.5	1.96	-	-	-	-	-	-	-	-	A-2-6 (1); SC; low heave potential;
9	1.00-1.40	Completely weathered sandstone	10.1	15.7	36.7	37.5	26	9	5.5	1.55	1978	11.3	4	5	7	11	14	2.70	A-2-4 (0); SC; low heave potential; >G10
7	1.25-1.50	Highly weathered mudstone	2.8	6.0	10.4	80.8	29	12	6.0	2.53	2030	8.8	6	10	15	28	41	1.30	A-2-6 (0); GC; low heave potential; G9

9	1.40-2.40	Highly weathered sandstone	2.1	6.6	20.9	70.4	21	3	1.5	2.42	2106	8.1	15	24	33	54	74	0.00	A-1-a (0); GM; Low heave potential; G6
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LL	-	Liquid Limit	GM	-	Grading Modulus	Classification in Terms of:	COLTO
PI	-	Plasticity Index	OMC	-	Optimum Moisture Content		Unified Soil Classification System ²
LS	-	Linear Shrinkage					Van der Merwe ³
							TRH14(1985) ⁴

² ASTM D 2487-06 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System). June 2006

³ D.H. Van Der Merwe (1964) The Prediction of Heave from the Plasticity Index and Percentage Clay Fraction of Soils. The Civil Engineer, pp 103-107

⁴ TRH 14 (1985) - Guidelines for Road Construction Materials; Technical Recommendations for Highways, South African National Institute for Transport and Road Research

8. ENGINEERING PARAMETERS

8.1 Parameter Value Derivation

This section summarises the available in-situ and laboratory data for each stratum recorded across the site based on the site-specific investigation obtained from the ground investigation.

The derivation of geotechnical parameter values will generally follow the guidance set out in Eurocode 7 (EC7). EC7 defines the Characteristic Value as a cautious estimate of the value affecting the occurrence of the limit state and also describes it as a cautious estimate of the mean. This can be defined as being analogous with the 'moderately conservative' values in accordance with CIRIA 104 and CIRIA 185. Where feasible, the characterisation process will follow this statistical approach, whereby Characteristic Values are derived by an assessment of the standard deviation of the dataset. In general, this applies to index properties where there are large data sets. Where data sets are small, or the data shows a trend with depth the selection of the characteristic values has relied on engineering judgement using a plot of the data.

In the absence of sufficient data, published data and empirical correlations have been considered. In these cases, care must be taken during design, as factors such as consolidation history, soil composition variability, and moisture content will drastically affect these parameters. The method of derivation, and any empirical relationships utilised, for each parameter are presented in the following sections for each strata unit and the range of engineering parameters recorded is presented in the table below.

To aid in the clarity of interpreting the laboratory results the interpretation of the materials has been summarized overpage in Table 3.

Table 3: Materials Classification and Usage for Construction

Material	Lab Results Summary	Evaluation	Inferred Geotechnical Parameters
Colluvium	<p>Silt & Clay = 39.4 to 44.5% Sand = 49.9 to 50.8% Gravel = 5.7 to 9.8% PI = 6 to 7 LL = 18 to 24 GM = 0.62 to 0.78 LS = 2.5 to 3.0</p> <p>CBR = 4 - 7 @ 90% MDD CBR = 7 - 10 @ 93% MDD CBR = 11 - 12 @ 95% MDD CBR = 16 - 21 @ 98% MDD CBR = 19 - 32 @ 100% MDD</p> <p>CL&ML to SM&SC; Low heave potential; G9 according to COLTO</p>	<p>Moderate fines but with low PI, LL and LS. Fair CBR values classify material as G9 according to COLTO specifications.</p> <p>After compaction to 95% MDD the colluvium could possibly be considered as in-situ subgrade beneath surface beds and pavements envisaged, if required.</p> <p>The colluvium has low heave potential but very loose and loose soils would be moderately compressible.</p>	<p>Moist unit weight – γ_{moist} – 17.0kN/m³ to 19.0kN/m³ (BS 8002, 2015), (CIRIA 516, 2000).</p> <p>Equivalent “N” Value based on DCP results – 9 to 38.</p> <p>Cohesion (assume zero) = 0kPa Angle of internal friction = 30° to 36° (CIRIA 516, 2000) and (EPRI 6800, 1990).</p> <p>Effective Youngs Modulus / Elastic Modulus – E' = 9 to 38MPa (Look, 2007).</p> <p>Poisson’s Ratio V' = 0.15 to 0.30 (EPRI 6800, 1990).</p> <p>Modulus of subgrade reaction – k = 12 MN/m³ to 24MN/m³ (Bowles, 1996). Considering the presence of minor clay and silt.</p>
Ferricrete	<p>Silt & Clay = 29.6% Sand = 34.9% Gravel = 35.5% PI = 7 LL = 25 GM = 1.44 LS = 3.5</p> <p>CBR = 4 @ 90% MDD CBR = 5 @ 93% MDD CBR = 7 @ 95% MDD CBR = 9 @ 98% MDD CBR = 11 @ 100% MDD</p>	<p>Well graded material. Low PI and LS values indicate low heave potential.</p> <p>Once recompacted the ferricrete has low strength this possibly due to in situ cementation. The ferricrete is classified as <G10 according to COLTO and should not be considered as a construction material on site.</p> <p>Low heave and low compressibility could be</p>	<p>Moist unit weight – γ_{moist} – 17.0kN/m³ to 19.0kN/m³ (BS 8002, 2015), (CIRIA 516, 2000).</p> <p>Equivalent “N” Value based on DCP results – 15 to 38.</p> <p>Cohesion (assume zero) = 0kPa</p> <p>Angle of internal friction = 32° to 38° (CIRIA 516, 2000) and (EPRI 6800, 1990).</p>

Material	Lab Results Summary	Evaluation	Inferred Geotechnical Parameters
	SC; Low heave potential; >G10 according to COLTO	expected from this material when considered as a founding horizon.	Effective Youngs Modulus / Elastic Modulus – $E' = 25$ to 50MPa (Look, 2007). Poisson's Ratio $V' = 0.25$ to 0.35 (EPRI, 1990) Modulus of subgrade reaction – $k = 32$ MN/m^3 to 80MN/m^3 (Bowles, 1996).
Residual	Silt & Clay = 27.3 to 52.8% Sand = 36.6 to 40.2% Gravel = 10.6 to 32.6% PI = 7 to 19 LL = 25 to 48 GM = 0.45 to 1.44 LS = 3.5 to 9.0 SM&SC to CL; Low to medium heave potential.	Low to moderate PI and LS values indicates this material has low to medium heave potential. This material would have poor workability and low post compaction strength. Due to its limited extent and variability this material should not be considered as a founding horizon nor as in-situ subgrade for pavements or surface beds.	Moist unit weight – $\gamma_{\text{moist}} = 17.0\text{kN/m}^3$ to 18.0kN/m^3 (BS 8002, 2015), (CIRIA 516, 2000). Equivalent "N" Value based on DCP results – No data (refusal in overlying ferricrete) Logs indicate firm in consistency. Cohesion (assume zero) = 0kPa Angle of internal friction = 25° to 27° (BS 8004, 2015). Undrained shear strength – $C_u = 40$ to 80 kN/m^2 (Jennings et al, 1973) Youngs Modulus / Elastic Modulus, $E_u = 5$ to 10MPa (Obrzud and Truty, 2012). Poisson's Ratio $V' = 0.35$ to 0.40 (EPRI 6800, 1990). Modulus of subgrade reaction – $k = 12$ MN/m^3 to 24MN/m^3 (Bowles, 1996).
Completely weathered mudstone	Silt & Clay = 19.3% Sand = 23.5% Gravel = 57.2% PI = 15 LL = 37 GM = 1.96 LS = 8.5	Low fines content and predominantly granular material with high gravel fraction. Moderately low PI and LS values indicates low heave potential. The weathered gravel sized fragments would be friable due	Unit weight – $\gamma = 20.0\text{kN/m}^3$ to 22.0kN/m^3 (Look, 2007).

Material	Lab Results Summary	Evaluation	Inferred Geotechnical Parameters
	SC; Low heave potential.	<p>to completely weathered nature of material. And low post compaction strength values would be expected.</p> <p>This material could generally be considered as an in-situ or selected subgrade where encountered but would not be suitable for use during construction.</p>	<p>UCS intact rock strength – 1.25 to 5MN/m² (BS 5930, 1999). Overall rock mass strength will vary.</p> <p>Poisson's Ratio $V' = 0.15$ to 0.30 (Look, 2007).</p>
Completely weathered sandstone	<p>Silt & Clay = 25.8% Sand = 36.7% Gravel = 37.5% PI = 9 LL = 26 GM = 1.55 LS = 5.5</p> <p>CBR = 4 @ 90% MDD CBR = 5 @ 93% MDD CBR = 7 @ 95% MDD CBR = 11 @ 98% MDD CBR = 14 @ 100% MDD</p> <p>SC; Low heave potential; >G10 according to COLTO</p>	<p>Low fines content and predominantly granular material with relatively high gravel fraction. Low PI and LS values indicates low heave potential.</p> <p>Low post compaction strength and high swell means this material does not meet COLTO specifications and should not be considered for use as construction material on site. Unless for landscaping.</p>	<p>Unit weight – γ – 18.0kN/m³ to 21.0kN/m³ (Look, 2007).</p> <p>UCS intact rock strength – 1.25 to 5MN/m² (BS 5930, 1999). Overall rock mass strength will vary.</p> <p>Poisson's Ratio $V' = 0.15$ to 0.30 (Look, 2007).</p>
Highly weathered mudstone	<p>Silt & Clay = 8.8% Sand = 10.4% Gravel = 80.8% PI = 12 LL = 29 GM = 2.53 LS = 6.0</p> <p>CBR = 6 @ 90% MDD CBR = 10 @ 93% MDD CBR = 15 @ 95% MDD</p>	<p>Low fines content and predominantly granular gravel material.</p> <p>The weathered gravel sized fragments would be friable due to highly weathered nature of material and hence CBR strength values are moderate with a G9 classification according to COLTO.</p>	<p>Unit weight – γ – 21.0kN/m³ to 23.0kN/m³ (Look, 2007).</p> <p>UCS intact rock strength – 10 to 25MN/m² (BS 5930, 1999). Overall rock mass strength will vary.</p>

Material	Lab Results Summary	Evaluation	Inferred Geotechnical Parameters
	CBR = 28 @ 98% MDD CBR = 41 @ 100% MDD GC; Low heave potential; G9 according to COLTO	Once compacted the weathered mudstone could possibly be considered as a selected subgrade. Highly weathered mudstone should normally classify as G7/G8 quality material which could be anticipated in less weathered horizons which occur.	Poisson's Ratio $V' = 0.15$ to 0.30 (Look, 2007).
Highly weathered sandstone	Silt & Clay = 8.7% Sand = 20.9% Gravel = 70.4% PI = 3 LL = 21 GM = 2.42 LS = 1.5 CBR = 15 @ 90% MDD CBR = 24 @ 93% MDD CBR = 33 @ 95% MDD CBR = 54 @ 98% MDD CBR = 74 @ 100% MDD GM; Low heave potential; G6 according to COLTO	Low fines content and predominantly granular gravel material indicate potential good workability. CBR strength results are good with the sandstone classified as G6 according to COLTO specifications. This material once compacted could be considered as selected subgrade or subbase horizons.	Unit weight – $\gamma = 20.0\text{kN/m}^3$ to 23.0kN/m^3 (Look, 2007). UCS intact rock strength – 10 to 25MN/m^2 (BS 5930, 1999). Overall rock mass strength will vary. Poisson's Ratio $V' = 0.15$ to 0.30 (Look, 2007).

9. GEOTECHNICAL EVALUATION

9.1 Engineering and Materials Characteristics

On the basis of the desk study and the available geotechnical investigation information, the following points relating to the site geotechnical conditions and constraints, may be made:

- a) DCP data indicates a range in soil consistencies for the colluvium from surface to depths of between 0.30m and 0.70m begl at between medium dense and very dense and are therefore moderately to slightly compressible. Except for a minor loose zone encountered in TP2 from surface to a depth of 0.08m begl. However, the colluvium is generally medium dense from surface to depths of between 0.05m and 0.35m begl becoming dense at depths of between 0.05m and 0.35 which extend to depths of between 0.13m and 0.43m begl. The colluvial soils become very dense in proximity to the underlying ferricrete at depths of between 0.13m and 0.43m and extend to depths of between 0.20m and 0.51m begl. Laboratory results from sample selected at two locations indicate a relatively homogenous horizon across the site. Provided any loose zones are compacted the colluvium could be considered an *in situ* subgrade beneath surface beds or pavements but should not be considered as a founding horizon.
- b) The underlying ferricrete horizon is very dense in consistency with DCP refusals occurring at the upper levels of this horizon or within the lower overlying colluvial material, throughout the site, at depths of between 0.19m and 0.52m begl. These results may however be influenced by the presence of gravels which would cause early refusal. Laboratory results indicate low heave potential but with low post compactive strength. Due to the proximity to good quality competent founding strata (rock) the ferricrete should not be considered as a founding horizon. However, the *in situ* material is slightly cemented and should suffice as an *in situ* subgrade beneath surface beds and pavements if required.
- c) The underlying residual soils are thinly developed with field tests indicating dense consistencies and therefore a moderately compressible material. Laboratory results indicate the clayey variant overlying the mudstone horizon exhibits medium heave potential. The residuum can also be expected to have a lower shear strength than the overlying ferricrete or underlying rock. As it is relatively thinly developed and potentially compressible it should not be considered a founding horizon nor as in-situ subgrade for pavements or surface beds envisaged.
- d) Completely weathered very soft rock sandstone or mudstone is variable but limited in thickness throughout the site. They were intersected at depths of between 0.80m and 1.90m begl and extends to depths of between 0.90m and 2.10m begl. They are friable under firm hand pressure. Laboratory results indicate low heave potential for both rock types. The completely weathered horizons should suffice as *in situ* subgrade under surface beds and pavements if required, but as less weathered competent rock occurs below, it should not be considered as a founding horizon.
- e) Highly weathered soft rock sandstone underlies the completely weathered sandstone at depths of between 0.90m and 1.65m begl and extend to depths of between 1.00m and 2.40m begl. Laboratory results indicate G6 material quality according to COLTO. The highly weathered rock

will suffice as an *in situ* subgrade material or stockpiled to use as a selected subgrade or subbase material where required. The highly weathered soft rock could also be considered as a founding horizon for structures, surface beds and pavements.

- f) Highly weathered soft rock mudstone underlies the completely weathered mudstone at depths of between 1.25m and 2.10m begl and extend to depths of between 1.50m and 2.55m begl. Laboratory results indicate G9 material, though generally this material should classify as G7/G8, which can be expected at less weathered levels. The highly weathered mudstone material should suffice as *in situ* subgrade and possibly as a selected subgrade once compacted. It could also be considered as a founding horizon for structures, surface beds and pavements.
- g) Moderately weathered medium hard sedimentary rock was intersected underlying the highly weathered horizon at depths of between 1.00m and 2.55m and extend to 1.05m and 2.60m begl. The rock once encountered exhibits fairly rapid increase in rock strength over an average depth of 0.64m from completely weathered to moderately weathered material before TLB refusal. Hard excavation requiring ripping and use of pneumatic hammers may be required in this horizon. It can also be considered as a founding horizon for structures, surface beds and pavements.
- h) No ground water was intersected in any of the test pits during the field work. However, perched water conditions could possibly develop at the contact between the permeable colluvium and less permeable ferricrete and residual soils. Upslope drainage may have to be considered to prevent softening of the subgrade for pavements and surface beds.

10. RECOMMENDATIONS

With reference to items discussed in the geotechnical evaluation this section provides recommendations for foundations and surface beds, as well as recommendations for excavatability and drainage.

9.1 Foundation Recommendations

It is anticipated that once earthworks/site levelling are complete that founding of the structures can take place in rock at nominal depth. Therefore, the following option should be considered:

- 3. Found structures on highly weathered soft rock sandstone or mudstone rock using strip or pad footings with normal construction techniques and an approximate bearing pressure of 450kPa.
- 4. Found structures on moderately weathered medium hard rock sandstone or mudstone using strip or pad footings with normal construction techniques and an approximate bearing pressure of 650kPa.

9.2 Pavements and Surface Beds

Once earthworks are complete the underlying rock would form a competent in-situ subgrade for pavements and surface beds. However, if soil horizons occur the following is relevant:

The medium dense colluvial sands would form a competent subgrade for surface beds, but where loose soils are encountered, re-compaction would be required. Alternatively, the lower dense to very dense ferricrete horizon and completely weathered rock could be considered as an *in-situ* subgrade for surface beds with precautions to accommodate for minor heave movements (7.5 to 15mm – depending on thickness, moisture content and applied loads – this based on residual soil parameters) that may occur.

9.3 Excavatability

Excavation in materials on site in terms of the SANS 1200DM Earthworks Specifications classifies as “soft excavations” in all the soil and very soft to soft rock. These materials can be removed using hand excavations or a backhoe digger loader.

“Intermediate excavation” is required for highly weathered medium hard rock, this material will require hard to very hard ripping with larger plant machines i.e. an excavator, or the use of rock bucket and pneumatic hammer before removal.

Hard rock excavation will be required for moderately weathered hard rock. This would require blasting or, wedging and splitting techniques.

9.6 Drainage

In general attention to drainage and the effective collection and disposal of storm water run-off is required throughout the site as part of general surface water management. Upslope drainage may be required to prevent perched groundwater conditions from occurring.

11. CONCLUSIONS

Rock was encountered at fairly shallow levels across the site with the highly weathered horizon existing at depths of between 0.90m and 2.55m begl. This forming a competent founding horizon using strip or pad footings with normal construction techniques and an approximate bearing pressure of 450kPa and less weathered rock with a approximate bearing pressure of 650kPa.

The underlying rock would form a competent in-situ subgrade for pavements and surface beds. If soil horizons occur, the medium dense to dense colluvial soils and, very dense ferricrete should form a competent subgrade for surface beds, access roads and parking, with minor precautions required to accommodate soil movement.

In summary, the site is suitable for the developments envisaged provided that all structures are designed accordingly.

The ground conditions described in this report refer specifically to point sources encountered in test pits and at DCP test positions. It is therefore possible, or probable, that conditions at variance with those discussed may be encountered. Important then is that Delta Geotech (Pty) Ltd carry out periodic inspections during construction, before *in-situ* subgrade treatment is carried out. Any change from the anticipated ground conditions could then be taken into account to avoid unnecessary expense. In this regard, it is important that the construction phase of the project be treated as an augmentation of the geotechnical investigation. This additional work can be conducted on a time and cost basis.

We trust that the information provided meets with your requirements. Should you have any queries do not hesitate to contact us.

Yours faithfully,

DELTA GEOTECH (PTY) LTD

Prepared by:

Daniel Miller

Engineering Geologist

Approved by:

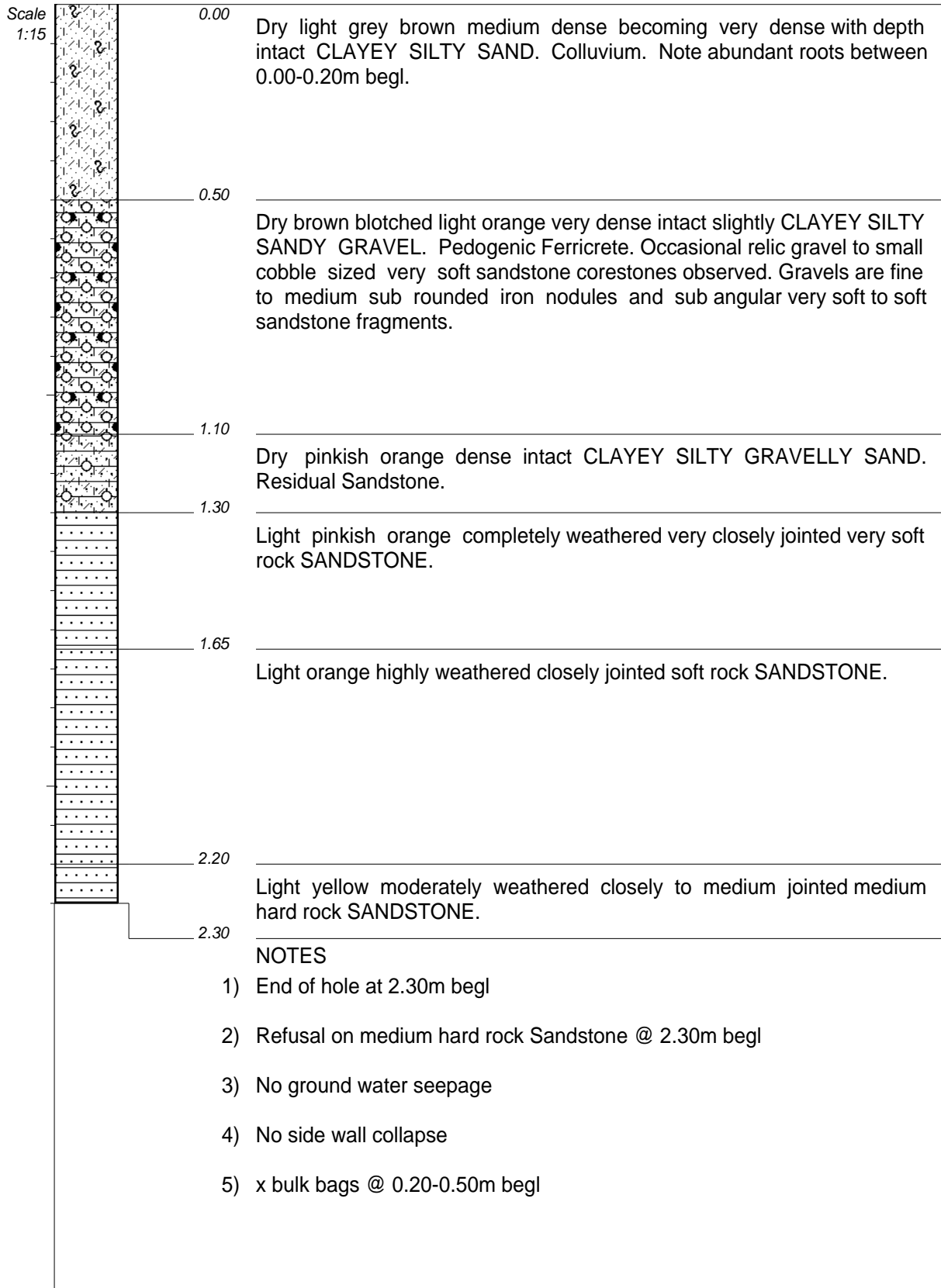


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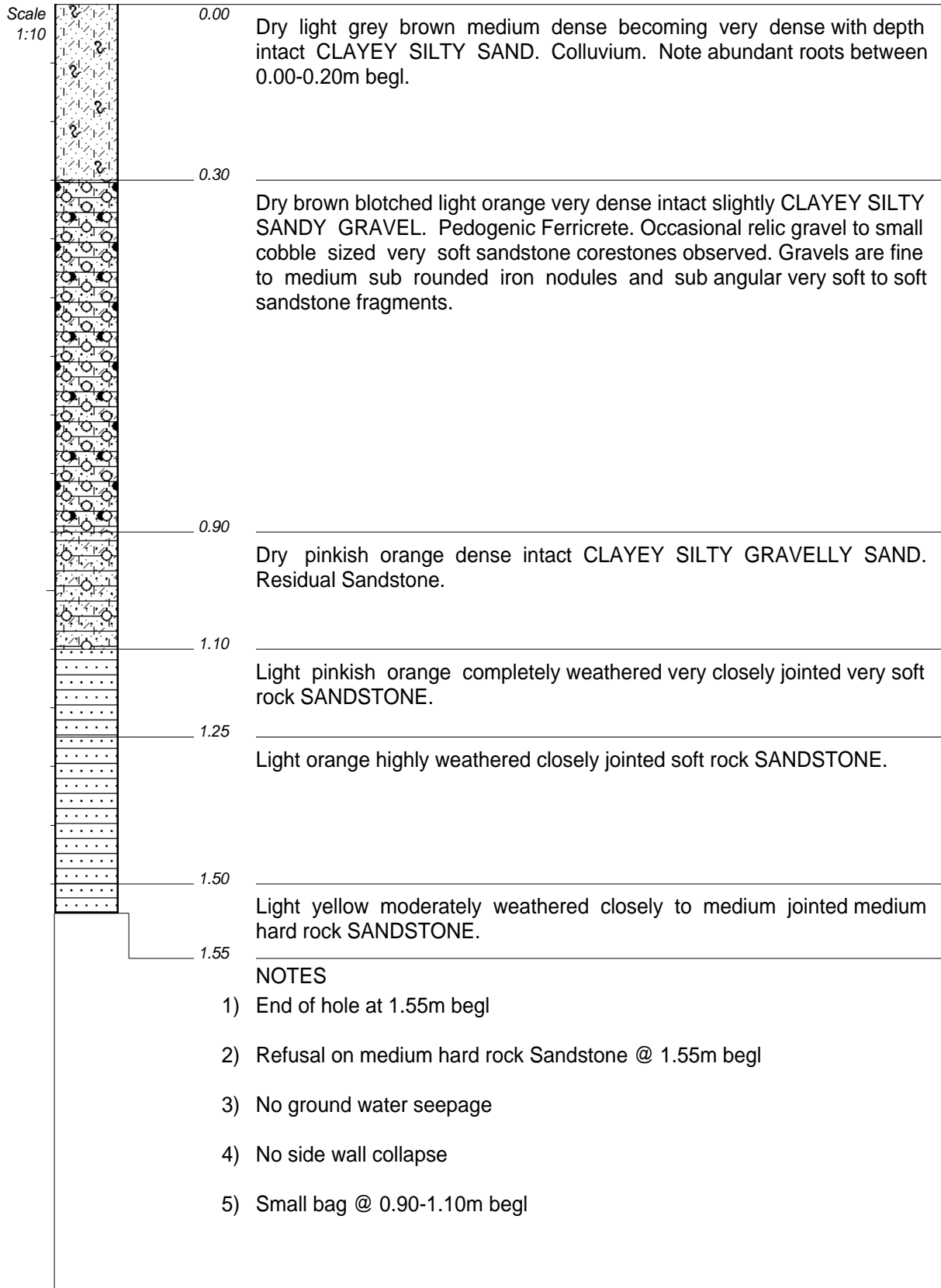


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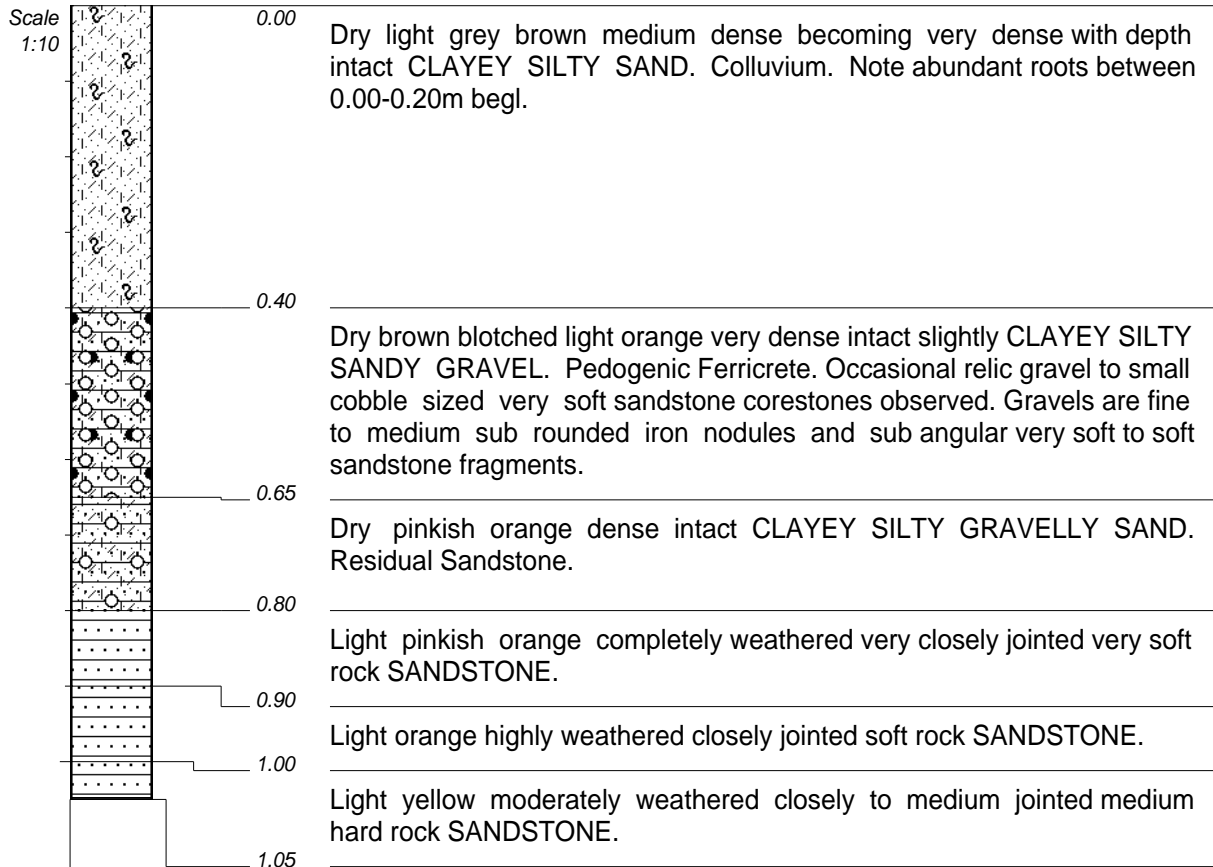


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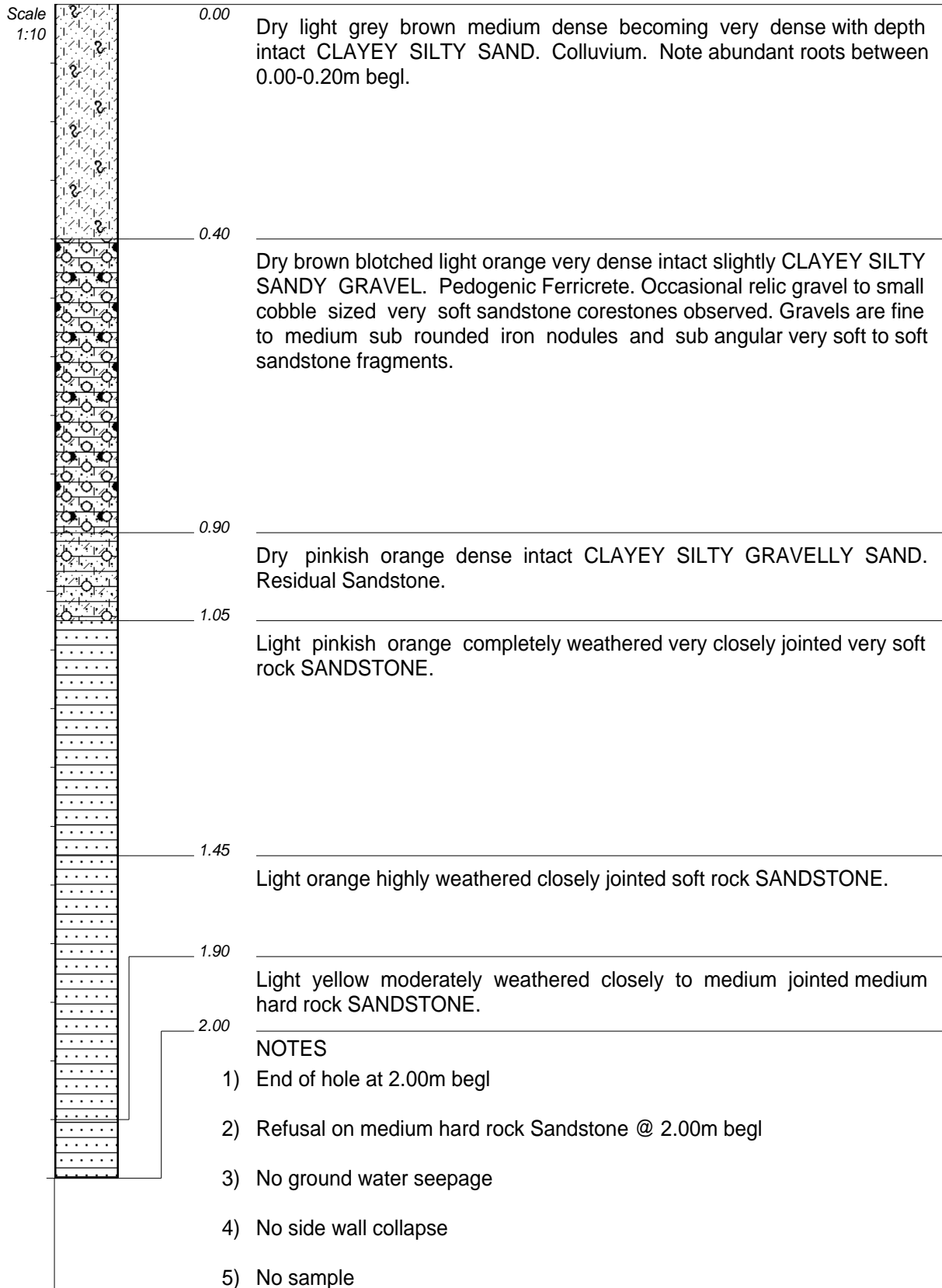
- 1) End of hole at 1.05m begl
- 2) Refusal on medium hard rock Sandstone @ 1.05m begl
- 3) No ground water seepage
- 4) No side wall collapse
- 5) No sample

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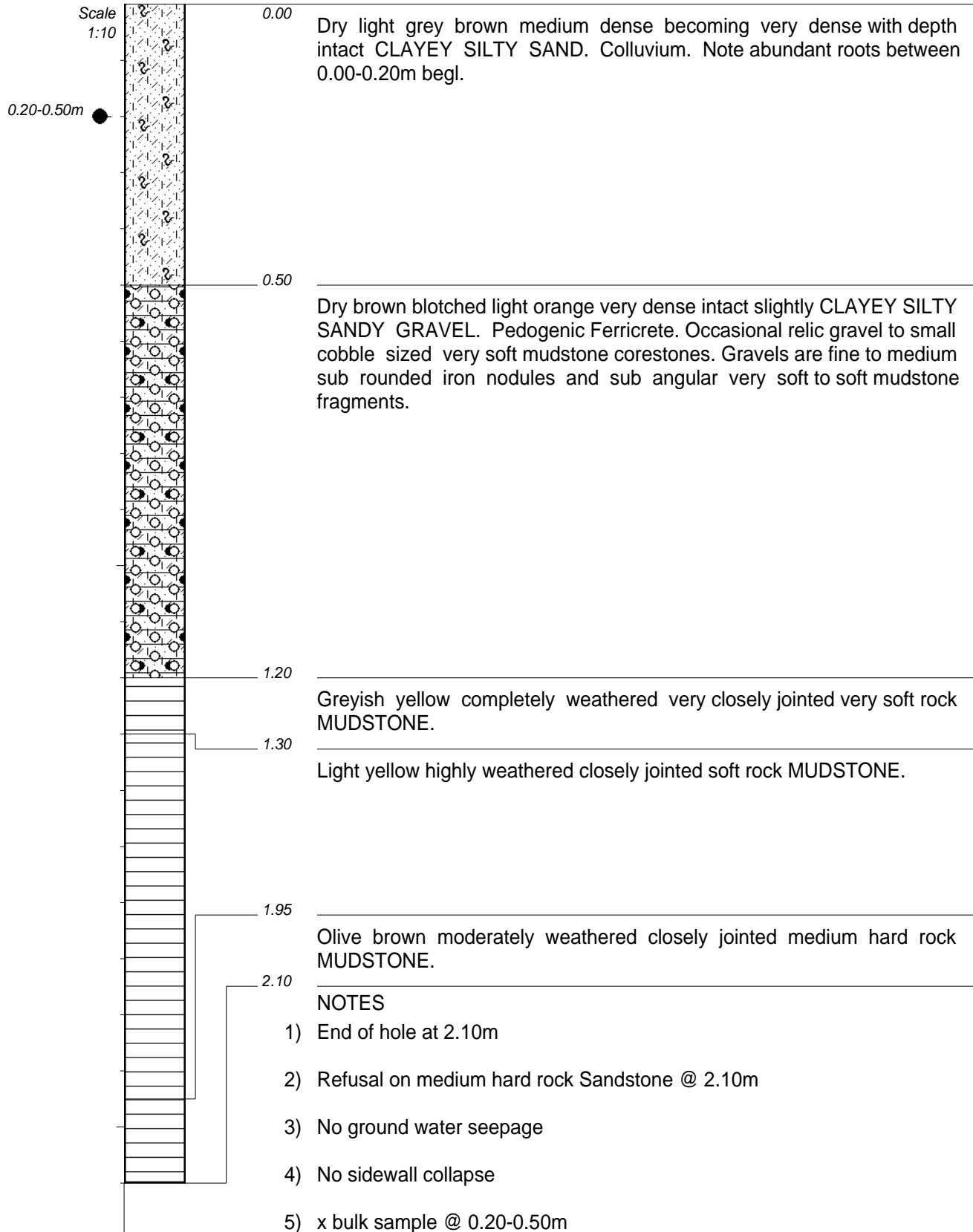


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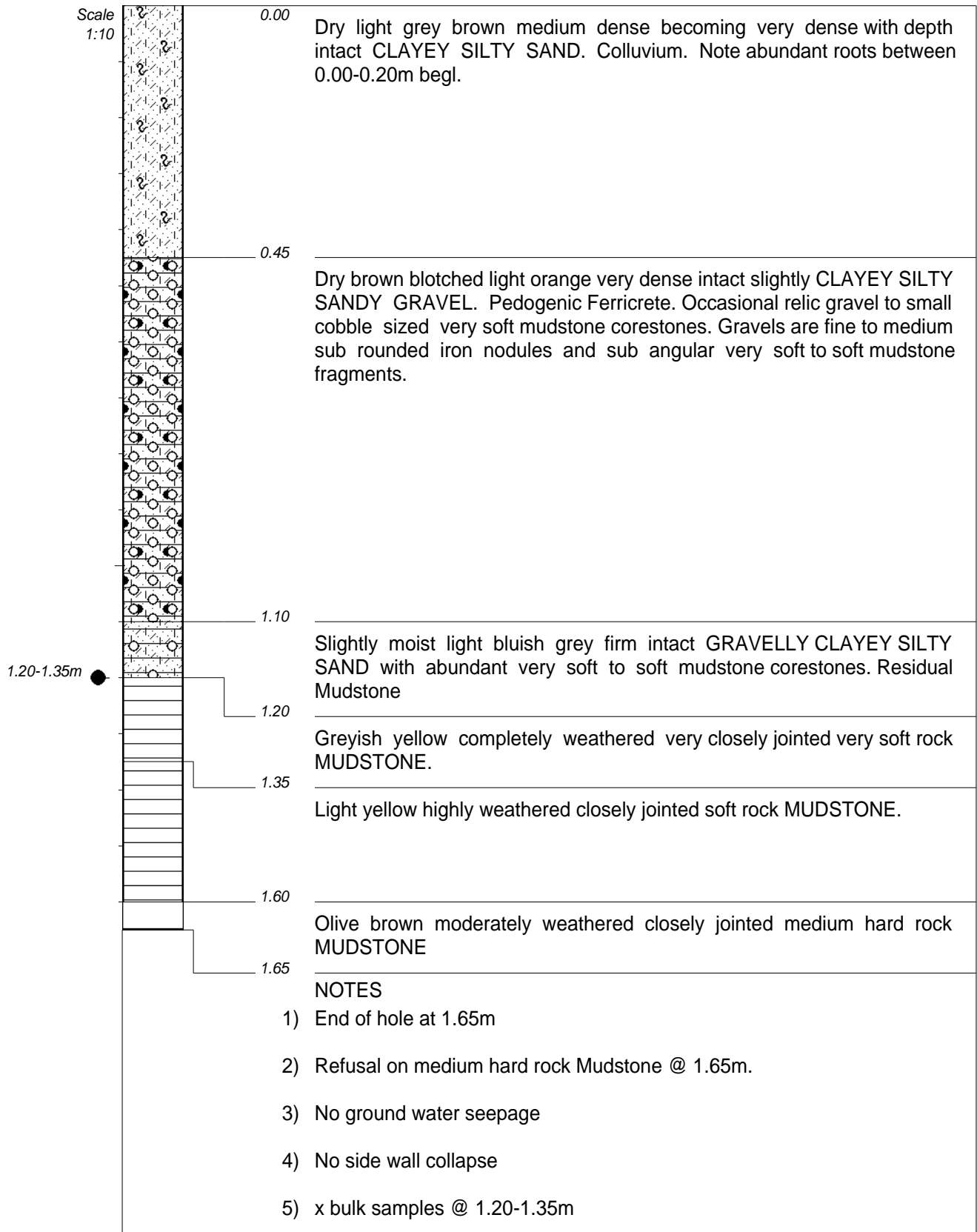


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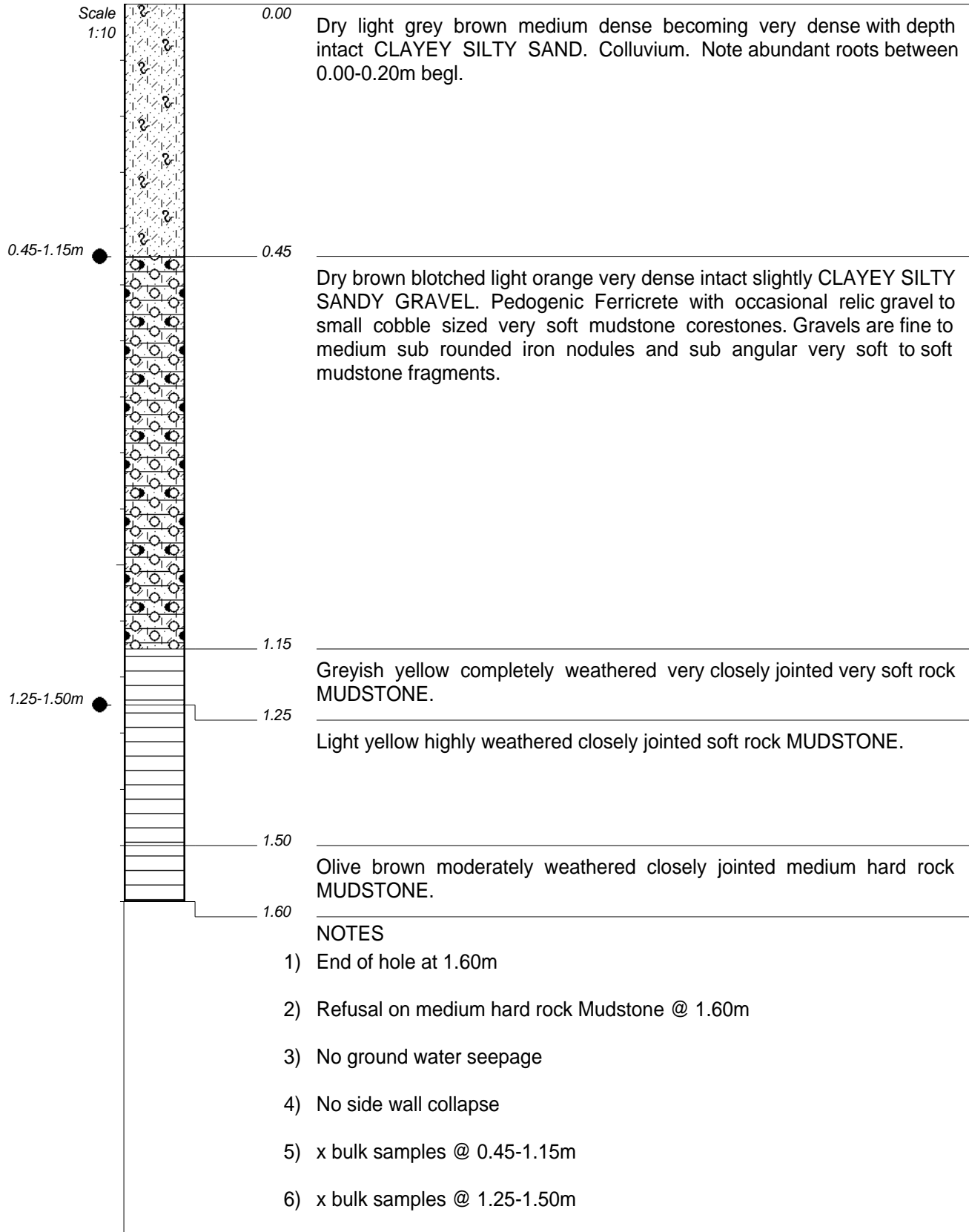


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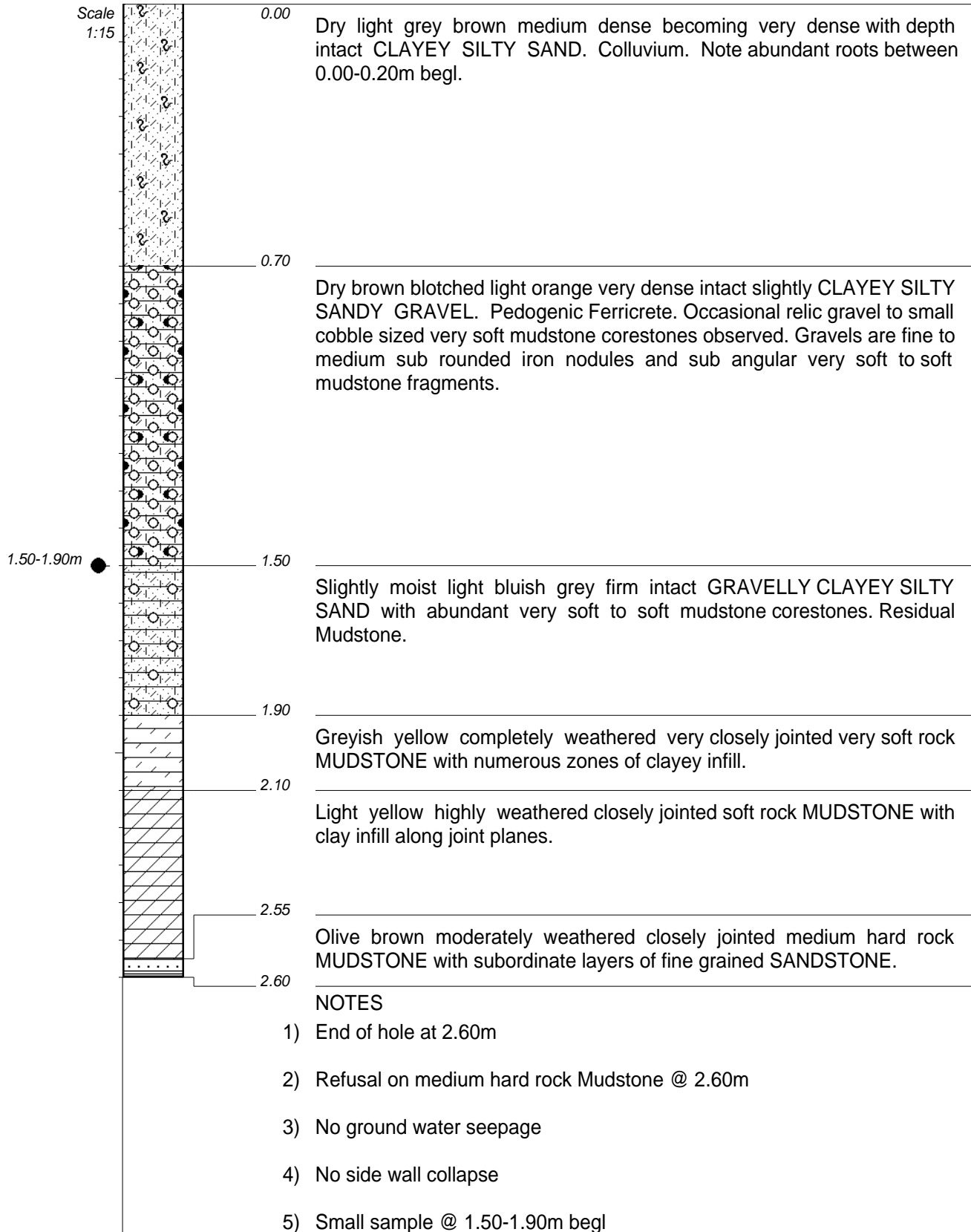


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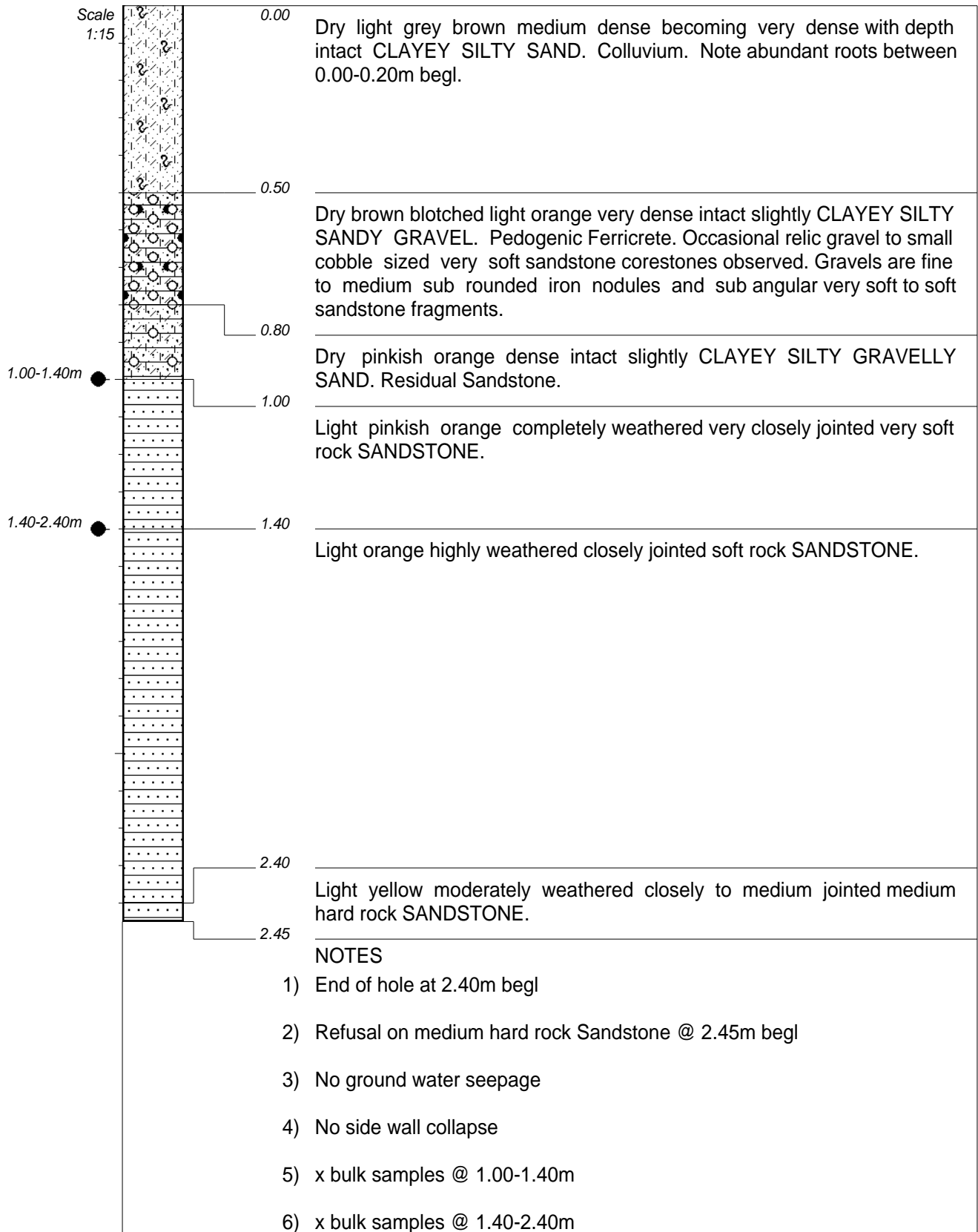


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HOLE No: TP8
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TEXT : ..itProfilesIDZDraeger.doc

ELEVATION :
X-COORD : 33 3.285 S
Y-COORD : 27 51.219 E

HOLE No: TP9
East London IDZ

DYNAMIC CONE PENETROMETER TEST

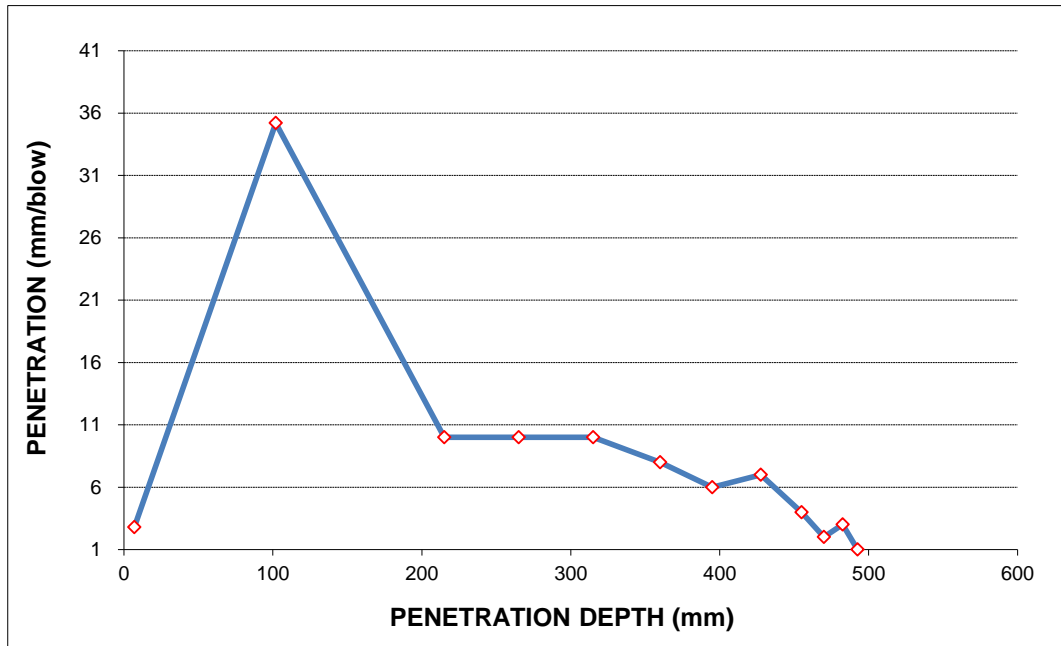
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **1** Location: **TP1**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 -100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL Readings : **12**
 Applied Factor : **1,5** times Terzaghi's value
 Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	14	7	5	7	3	50	110	900
2	14	190	102	5	102	35	9	4	129
3	190	240	215	5	215	10	30	23	518
4	240	290	265	5	265	10	30	23	518
5	290	340	315	5	315	10	30	23	518
6	340	380	360	5	360	8	38	31	654
7	380	410	395	5	395	6	50	44	900
8	410	445	427,5	5	427,5	7	43	36	751
9	445	465	455	5	455	4	50	76	900
10	465	475	470	5	470	2	50	110	900
11	475	490	482,5	5	482,5	3	50	110	900
12	490	495	492,5	5	492,5	1	50	110	900
13	495			5	0	-99	50	110	900
14				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

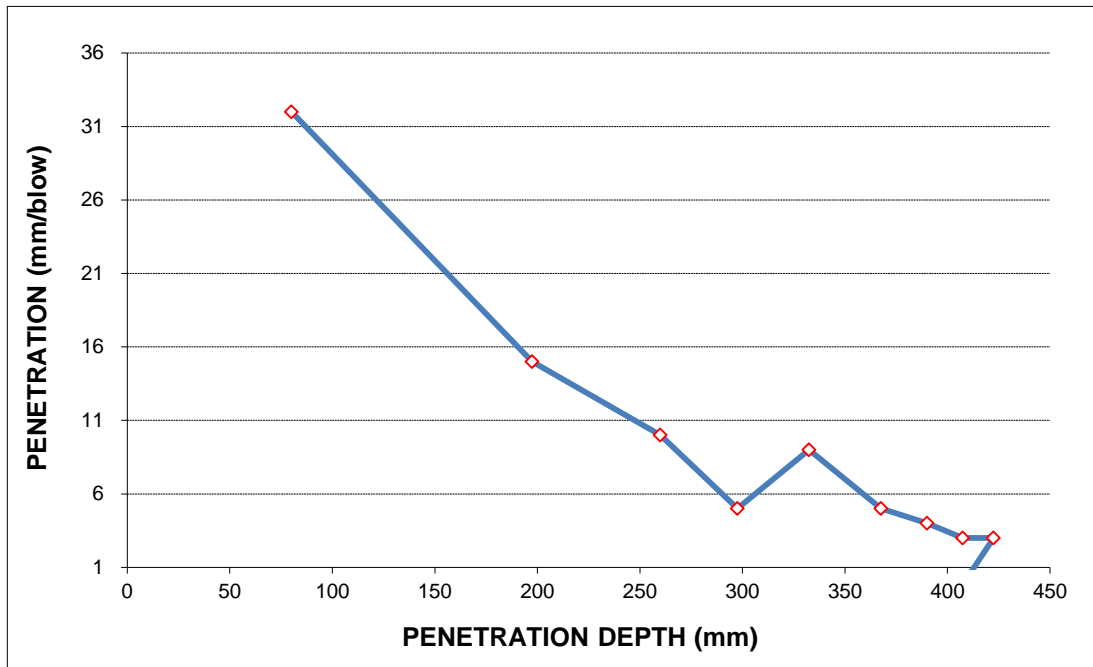
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **2** Location: **TP2**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL

Readings : **9**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	160	80	5	80	32	9	5	144
2	160	235	197,5	5	197,5	15	20	13	336
3	235	285	260	5	260	10	30	23	518
4	285	310	297,5	5	297,5	5	50	56	900
5	310	355	332,5	5	332,5	9	33	26	578
6	355	380	367,5	5	367,5	5	50	56	900
7	380	400	390	5	390	4	50	76	900
8	400	415	407,5	5	407,5	3	50	110	900
9	415	430	422,5	5	422,5	3	50	110	900
10	430			5	0	-86	50	110	900
11				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

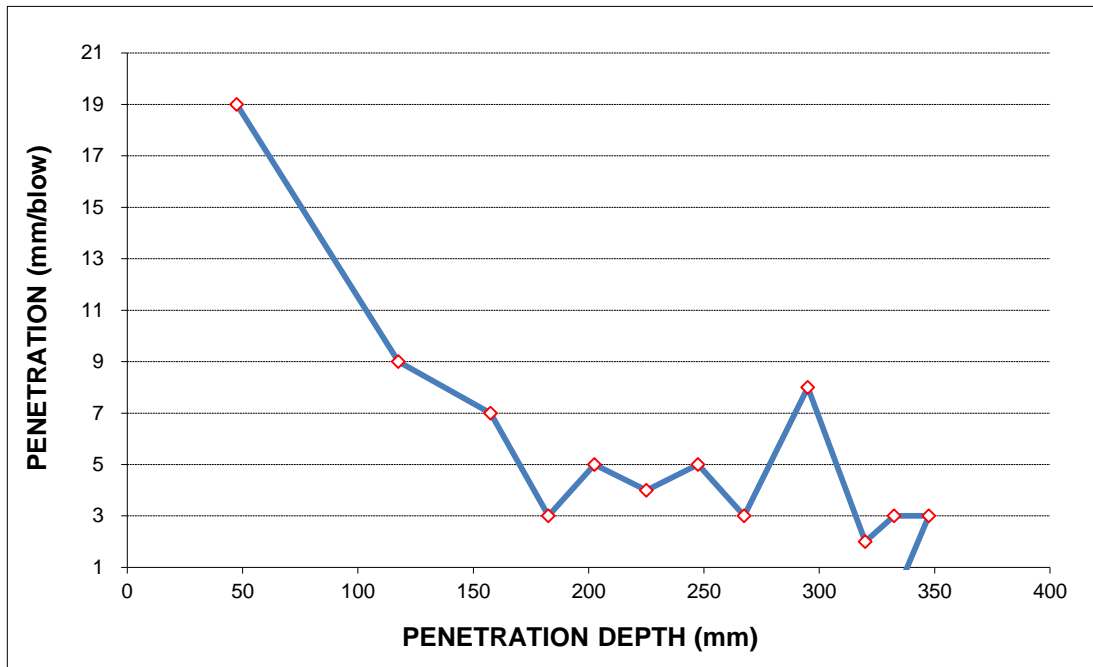
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **3** Location: **TP3**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL

Readings : **12**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	95	47,5	5	47,5	19	16	10	260
2	95	140	117,5	5	117,5	9	33	26	578
3	140	175	157,5	5	157,5	7	43	36	751
4	175	190	182,5	5	182,5	3	50	110	900
5	190	215	202,5	5	202,5	5	50	56	900
6	215	235	225	5	225	4	50	76	900
7	235	260	247,5	5	247,5	5	50	56	900
8	260	275	267,5	5	267,5	3	50	110	900
9	275	315	295	5	295	8	38	31	654
10	315	325	320	5	320	2	50	110	900
11	325	340	332,5	5	332,5	3	50	110	900
12	340	355	347,5	5	347,5	3	50	110	900
13	355			5	0	-71	50	110	900
14				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

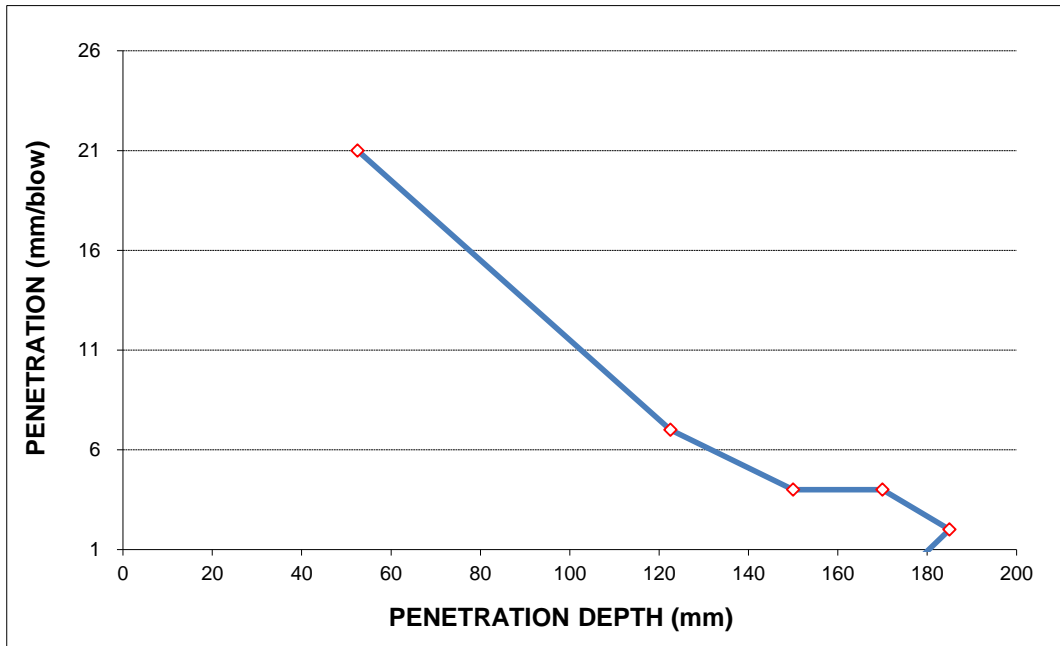
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **4** Location: **TP4**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL Readings : **5**
 Applied Factor : **1.5** times Terzaghi's value
 Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	105	52,5	5	52,5	21	14	9	233
2	105	140	122,5	5	122,5	7	43	36	751
3	140	160	150	5	150	4	50	76	900
4	160	180	170	5	170	4	50	76	900
5	180	190	185	5	185	2	50	110	900
6	190			5	0	-38	50	110	900
7				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

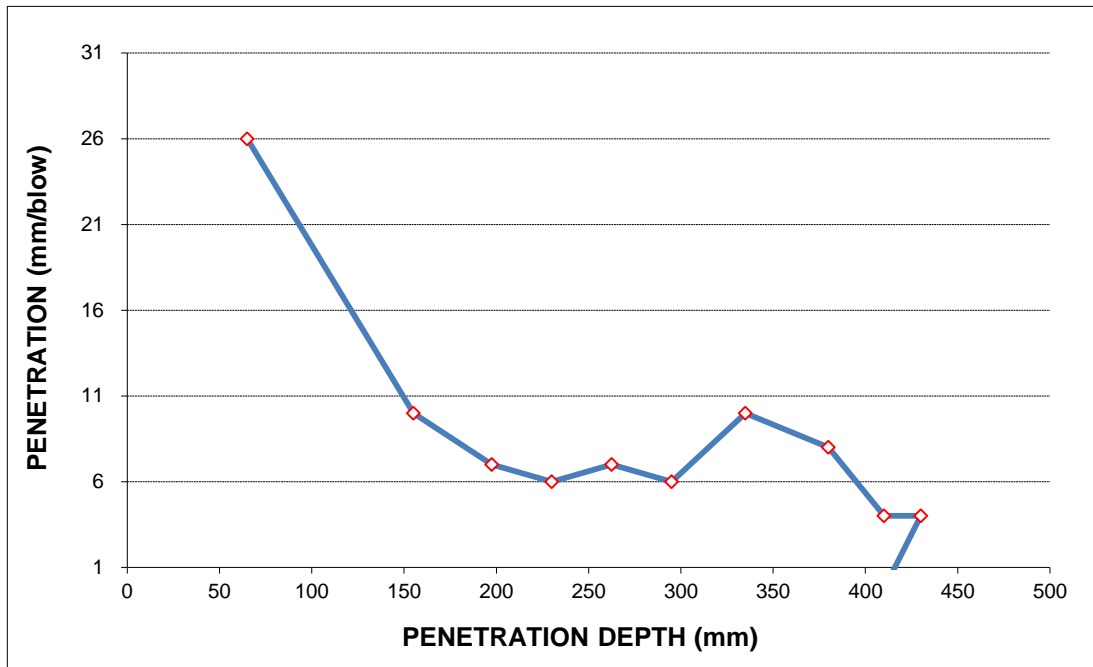
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **5** Location: **TP5**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 -100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL

Readings : **10**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	130	65	5	65	26	12	7	183
2	130	180	155	5	155	10	30	23	518
3	180	215	197,5	5	197,5	7	43	36	751
4	215	245	230	5	230	6	50	44	900
5	245	280	262,5	5	262,5	7	43	36	751
6	280	310	295	5	295	6	50	44	900
7	310	360	335	5	335	10	30	23	518
8	360	400	380	5	380	8	38	31	654
9	400	420	410	5	410	4	50	76	900
10	420	440	430	5	430	4	50	76	900
11	440			5	0	-88	50	110	900

DYNAMIC CONE PENETROMETER TEST

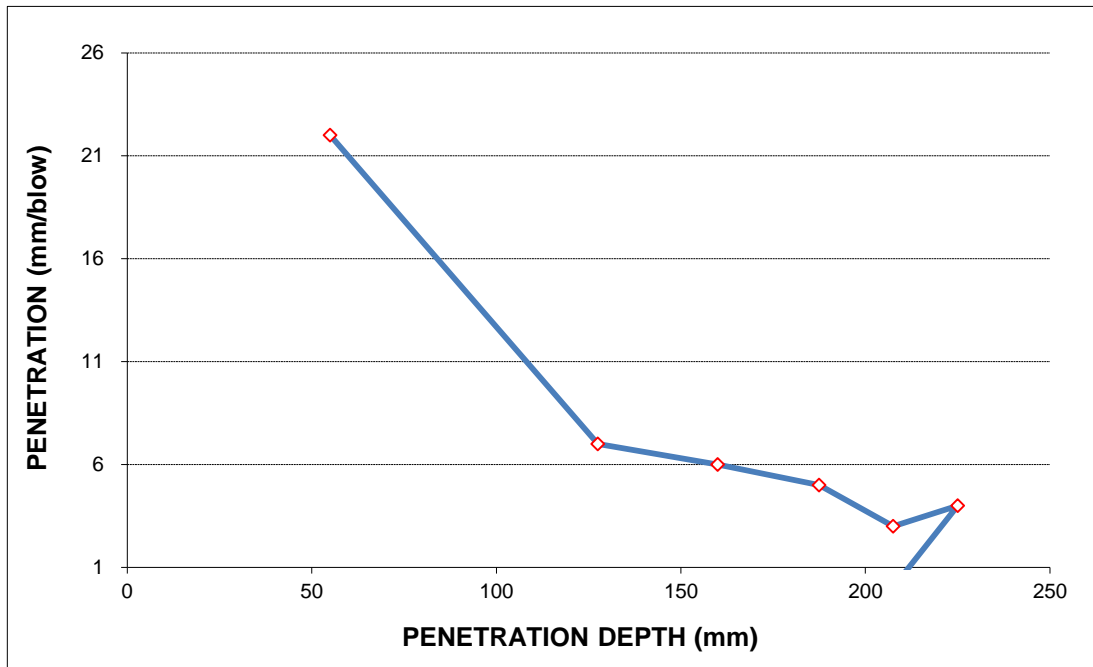
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **6** Location: **TP6**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 -100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL

Readings : **6**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	110	55	5	55	22	14	8	221
2	110	145	127,5	5	127,5	7	43	36	751
3	145	175	160	5	160	6	50	44	900
4	175	200	187,5	5	187,5	5	50	56	900
5	200	215	207,5	5	207,5	3	50	110	900
6	215	235	225	5	225	4	50	76	900
7	235			5	0	-47	50	110	900
8				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

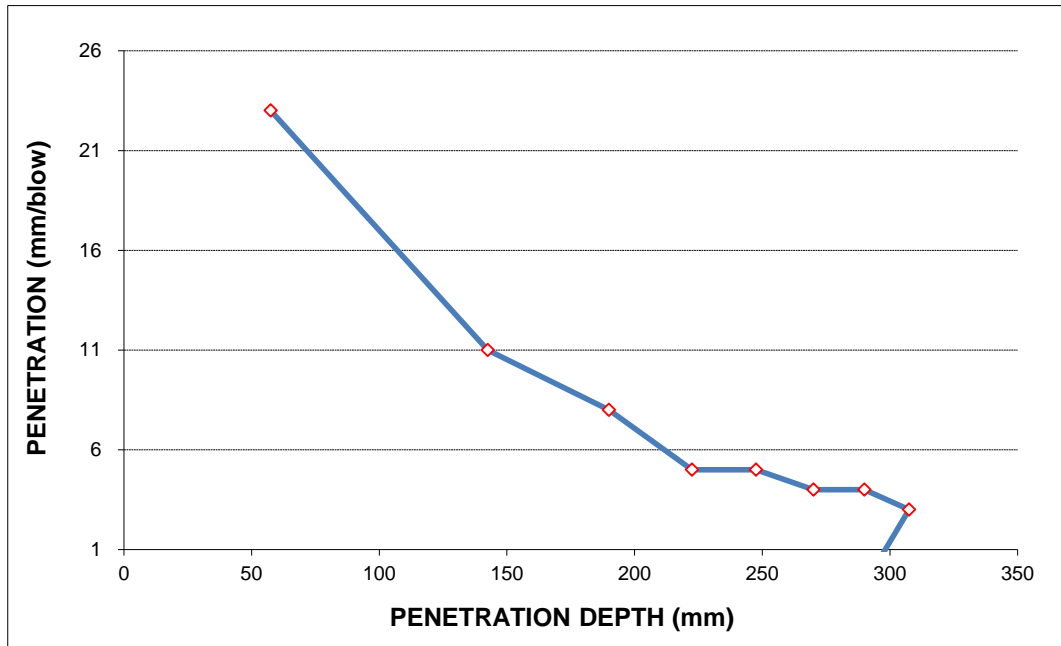
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **7** Location: **TP7**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL Readings : **8**
 Applied Factor : **1.5** times Terzaghi's value
 Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	115	57,5	5	57,5	23	13	8	210
2	115	170	142,5	5	142,5	11	27	20	468
3	170	210	190	5	190	8	38	31	654
4	210	235	222,5	5	222,5	5	50	56	900
5	235	260	247,5	5	247,5	5	50	56	900
6	260	280	270	5	270	4	50	76	900
7	280	300	290	5	290	4	50	76	900
8	300	315	307,5	5	307,5	3	50	110	900
9	315			5	0	-63	50	110	900
10				5	0	0	50		

DYNAMIC CONE PENETROMETER TEST

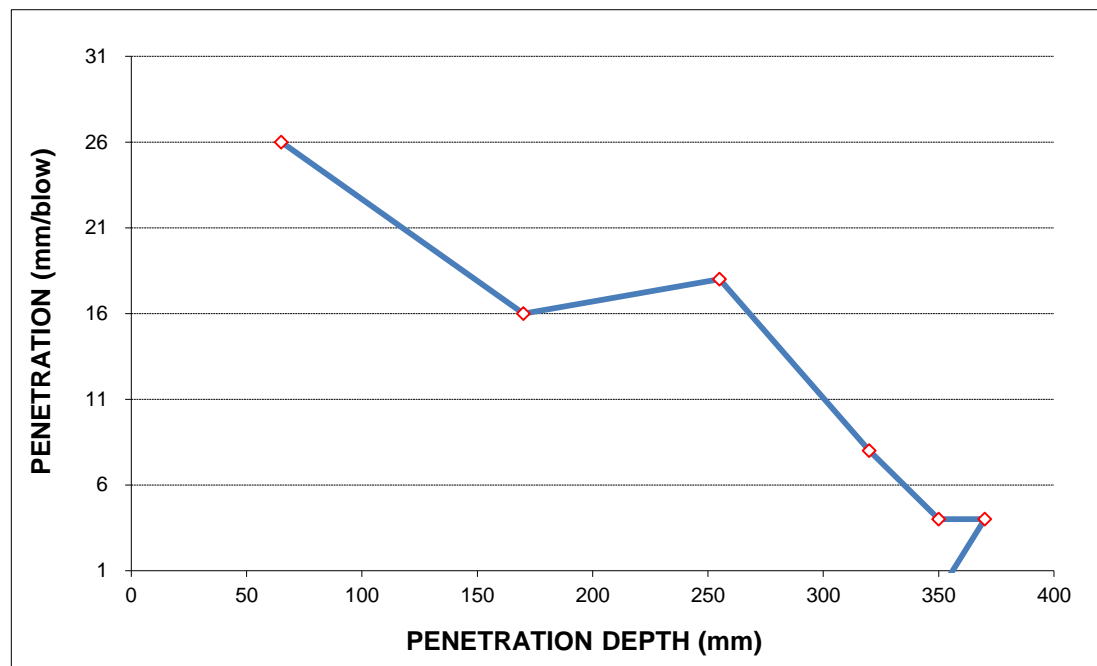
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **8** Location: **TP8**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL Readings : **6**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	130	65	5	65	26	12	7	183
2	130	210	170	5	170	16	19	12	314
3	210	300	255	5	255	18	17	11	276
4	300	340	320	5	320	8	38	31	654
5	340	360	350	5	350	4	50	76	900
6	360	380	370	5	370	4	50	76	900
7	380			5	0	-76	50	110	900

DYNAMIC CONE PENETROMETER TEST

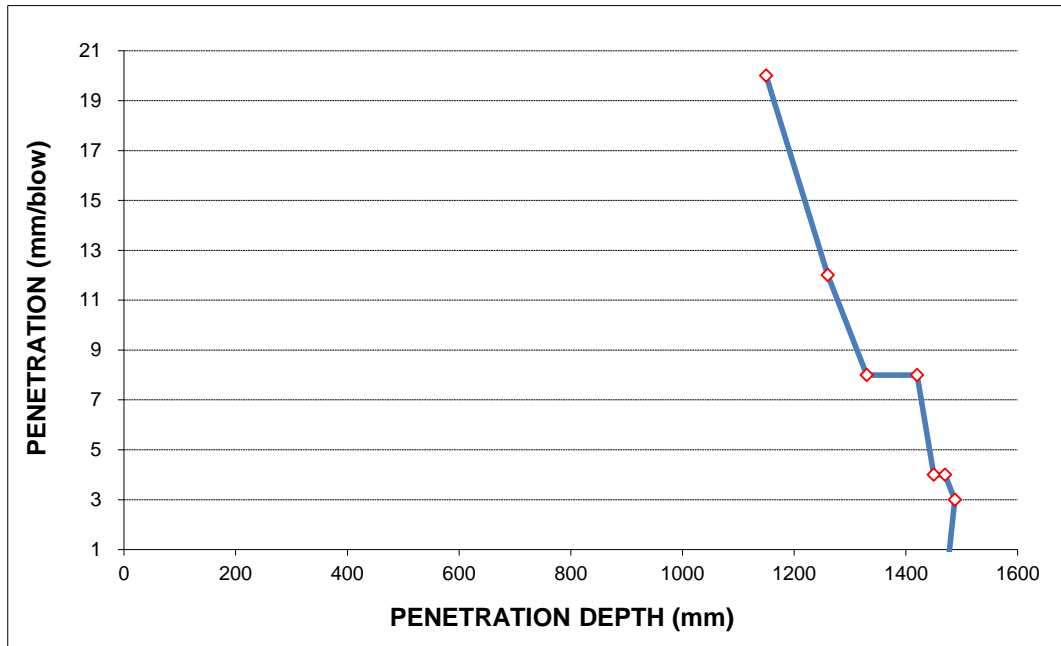
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **8** Location: **TP8**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 - 100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **1100** mm below NGL Readings : **6**
 Applied Factor : **1.5** times Terzaghi's value
 Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	100	50	5	1150	20	15	9	246
2	130	190	160	5	1260	12	25	18	427
3	210	250	230	5	1330	8	38	31	654
4	300	340	320	5	1420	8	38	31	654
5	340	360	350	5	1450	4	50	76	900
6	360	380	370	5	1470	4	50	76	900
7	380	395	387,5	5	1487,5	3	50	110	900
8	395			5	1100	-79	50	110	900
9				5	1100	0	50		

DYNAMIC CONE PENETROMETER TEST

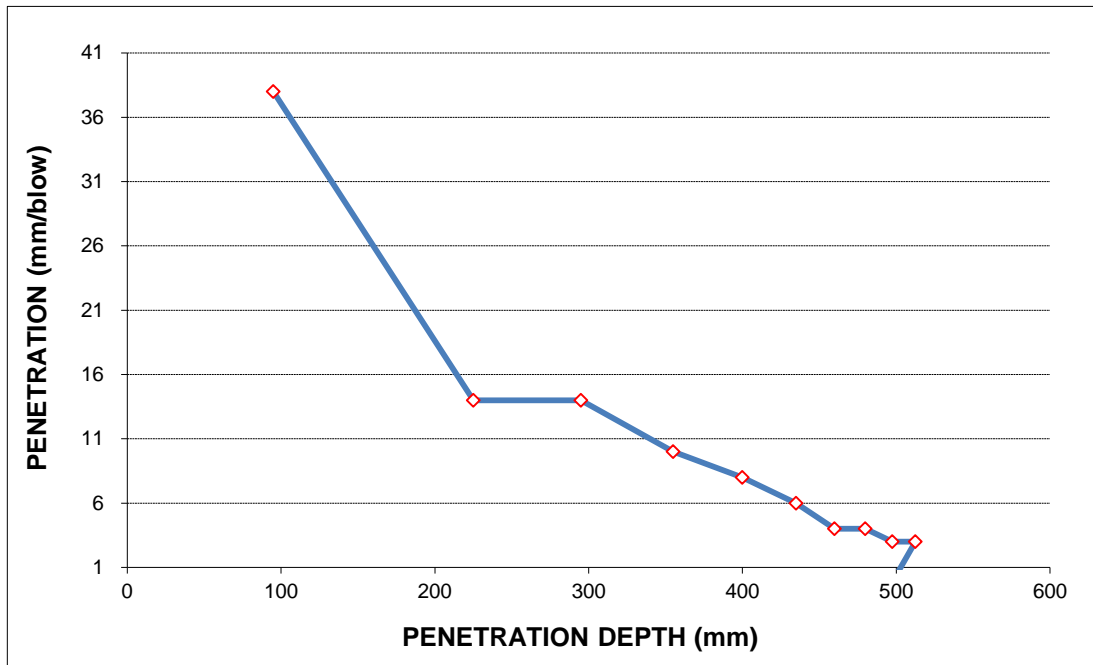
Job Name **Draeger IDZ**

File No: Job No: 21-215

Date of Test: **March 2021**



DCP No: **9** Location: **TP9**



Penetration Guide	
mm/blow	Consistency
< 5	Very Dense
5 - 10	Dense
10 - 30	Med Dense
30 - 75	Loose
75 -100	Very Loose

NOTE :
Stated consistencies do not apply to cohesive materials. Describe using "stiff or firm or soft".

Depth of hole in which DCP was taken : **0** mm below NGL

Readings : **10**

Applied Factor : **1,5** times Terzaghi's value

Remarks :

Reading No.	Layer From	Layer To	Average Layer Depth	Field Reading Blows/layer	Level Below NGL mm	DCP No DN mm/blow	Equiv. N Value	Approx In-situ CBR	Approx EASBP kPa
1	0	190	95	5	95	38	8	4	117
2	190	260	225	5	225	14	21	15	362
3	260	330	295	5	295	14	21	15	362
4	330	380	355	5	355	10	30	23	518
5	380	420	400	5	400	8	38	31	654
6	420	450	435	5	435	6	50	44	900
7	450	470	460	5	460	4	50	76	900
8	470	490	480	5	480	4	50	76	900
9	490	505	497,5	5	497,5	3	50	110	900
10	505	520	512,5	5	512,5	3	50	110	900
11	520			5	0	-104	50	110	900
12				5	0	0	50		



Roadlab Laboratories (Pty) Ltd – East London

Civil Materials Testing
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OUR REF: ELDEL001-01-0007-21
CLIENT: Delta Geotech Pty Ltd
PROJECT: IDZ
Drager

DATE RECEIVED: 2021.03.26

POSITION: Test Pit 1

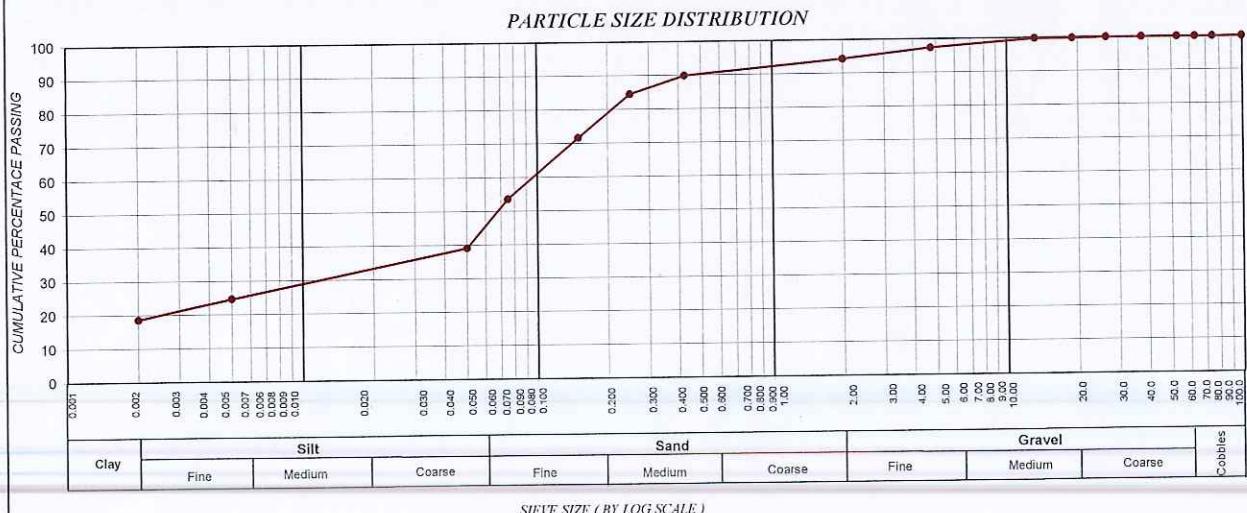
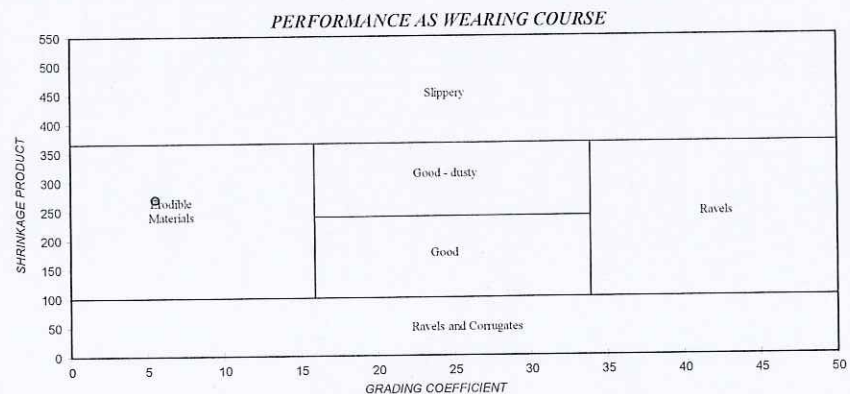
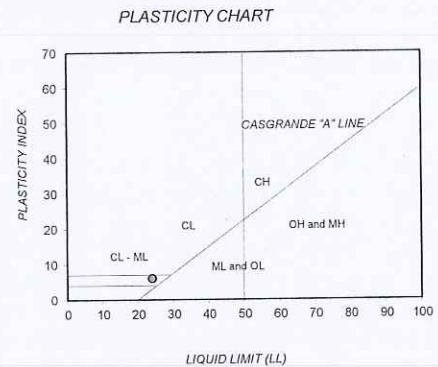
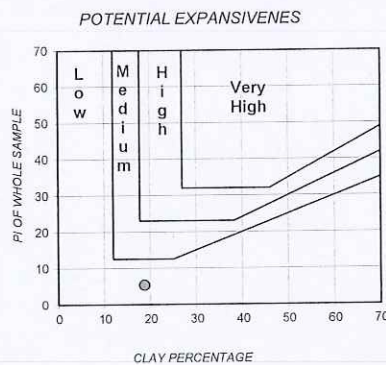
LAYER: 0.00 - 0.50 m

SAMPLE No.: E3599

SAMPLE DESCRIPTION: Colluvium
Clayey Silty Sand

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI	5.4
Sieve analysis Cumulative percentage passing (mm)	
100.0	100
75.0	100
63.0	100
50.0	100
37.5	100
28.0	100
20.0	100
14.0	100
5.00	97
2.000	94
0.425	90
0.250	85
0.150	72
0.075	54
50 µm	39
5 µm	25
2 µm	18.7
Soil Mortar Analysis % < 2.00mm	
2.000 - 0.425	5
0.425 - 0.250	6
0.250 - 0.150	14
0.150 - 0.075	19
< 0.075	57
Effective size	0.002
Uniformity Coefficient	50.7
Curvature Coefficient	2.3
Oversize Index	0.0
Shrinkage Product	269.6
Grading Coefficient	5.5
Grading modulus	0.62
Atter-berg Limits	
Liquid Limit	24
Plasticity Index	6
Linear Shrinkage	3.0
PI < 0.075	15
Unified Soil Classification	CL & ML
U.S. Highway Classification	A-4 (1)



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
18.7	25.8	49.9	5.7



Roadlab Laboratories (Pty) Ltd – East London

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Brae Lynn, East London

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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Western Ave; Ocean View
East London
5201

Attention: Mr Daniel Muller

Dear Sir

Project TEST REPORT
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES				
SAMPLE No.		E3599		
CONTAINER USED FOR SAMPLING		Client Sample Bag		
SIZE / WEIGHT OF SAMPLE		±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL		Moist		
HOLE No. / Km. / CHAINAGE		Test Pit 1		
ROAD No. OR NAME		IDZ Drager		
LAYER TESTED / SAMPLED FROM		0.00 - 0.50 m		
DATE SAMPLED		26/03/2021		
DATE TESTED		13/04/2021		
CLIENTS MARKING		None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)		Colluvium		
		Sandy Clay Silt		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)				
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	100		
	63.0	100		
	50.0	100		
	37.5	100		
	28.00	100		
	20.0	100		
	14	100		
	5	97		
	2.00	94		
	0.425	90		
0.075	54			
SOIL MORTAR ANALYSIS *(SANS - PR5 : 2011)				
Soil Mortar		94		
Coarse Sand		4		
Fine Sand		39		
Coarse Fine Sand		6		
Medium Fine Sand		13		
Fine Fine Sand		20		
Silt & Clay		56		
Coarse Sand Ratio		0		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)				
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL%	24.0		
	P.I.	6.0		
	LS%	3.0		
	GM	0.62		
CLASSIFICATION	H.R.B.*	A-4-(C1)		
	COLTO*	G9		
	T.R.H. 14*	G10		
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)				
SANS 3001 GR30 : 2015	OMC%	9.9		
	MDD(KG/M ³)	1960		
	COMP MC %	9.9		
	% SWELL	0.60		
C.B.R SANS 3001 GR40 : 2014	100%	32		
	98%	21		
	97%	17		
	95%	11		
	93%	7		
	90%	4		
MOD ITS : DRY (kPa) (GR54)		N/A		
ITS @ 95% : DRY (kPa)		N/A		
STABILISED WITH	IN LAB	N/A		
	ON SITE	Neat		
TEST TYPE		Indicator, Mod, CBR		
SAMPLED BY		By Client		
DELIVERED BY		By Client		
SAMPLING METHOD		By Client		
ENVIRONMENTAL CONDITION WHEN SAMPLED		Clear		
REMARKS & NOTES				

Kind Regards

Mr. D. Juckers
Technical Signatory



T0460

Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

Further use of the above information is not the responsibility or liability of Roadlab
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Compiled By : Nicolette Coldrey

**Roadlab Laboratories (Pty) Ltd – East London**

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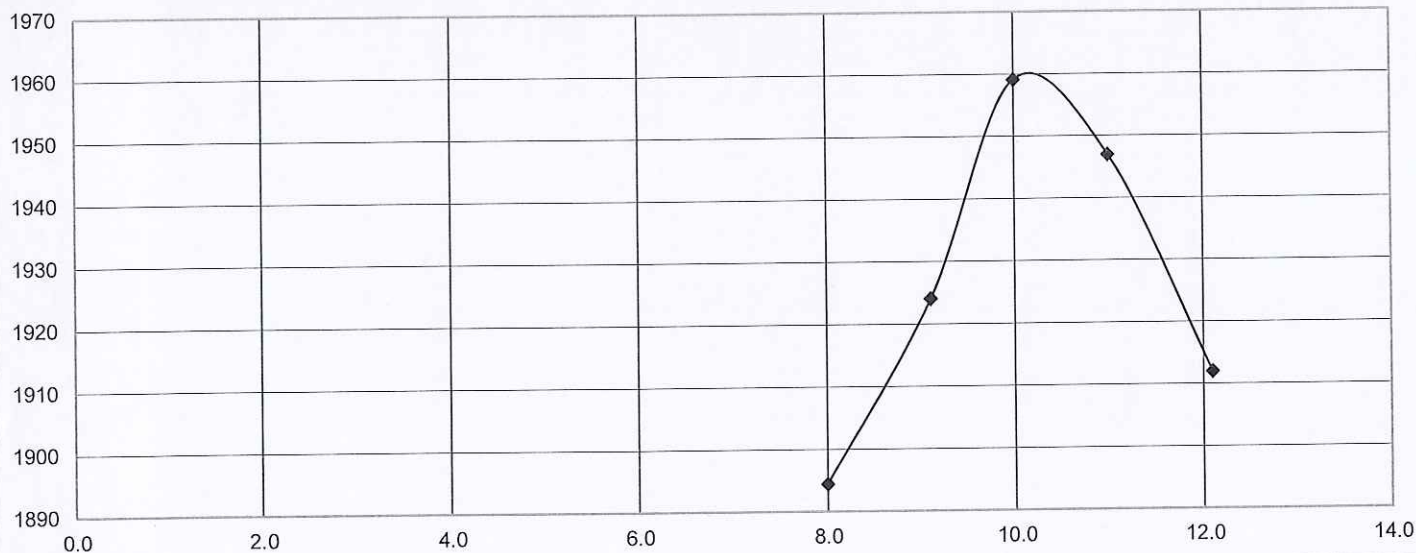
JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager		
		POSITION / LAYER	0.00 - 0.50 m		
		KM / SV	Test Pit 1		
		SAMPLE NUMBER	E3599		
ATTENTION	Mr Daniel Muller	MATERIAL DISCIPTION	Colluvium		
		ENVIROMENTAL CONDITIONS	Sunny		
SAMPLED BY	Client	LABORATORY TESTER	A.Ndlebe		
TEMP:°C INSIDE LABORATORY	26°C	SAMPLE METHOD	By Client		

TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010**COMPACTION DATA**

	2	3	4	5	6
Moisture Content %	9406	9529	9658	9672	9631
Mass Mould & Wet Mat	4681	4681	4681	4681	4681
Mass Mould	4725	4848	4977	4991	4950
Mass of Wet Mat	43	43	43	43	43
Mould Factor	2006	2038	2072	2058	2022
Wet Density					

MOISTURE DATA

Mass Wet Mat	2375.2	2426.1	2339.8	2467.7	2287.6
Mass Dry Mat	2199.3	2223.7	2127.1	2223.2	2040.7
Mass Moisture	175.9	202.4	212.7	244.5	246.9
Hygroscopic Moisture Content %	6.0	6.1	6.0	6.0	6.1
Actual Moisture Content %	8.0	9.1	10.0	11.0	12.1
Dry Density	1894	1924	1959	1947	1912

MAXIMUM DRY DENSITY Kg/m3 1960**OPTIMUM MOISTURE CONTENT** 9.9%**Remarks:**

Opinions and interpretations are not included in our schedule of accreditation. (T0860)

The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)

The test results reported relate to the samples tested.

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Report compiled by : Nicolette Coldrey



T0860

Deon Juckers
Technical Signatory



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OUR REF : ELDEL001-01-0007-21
CLIENT : Delta Geotech Pty Ltd
PROJECT : IDZ
Drager

DATE RECEIVED : 2021.03.26

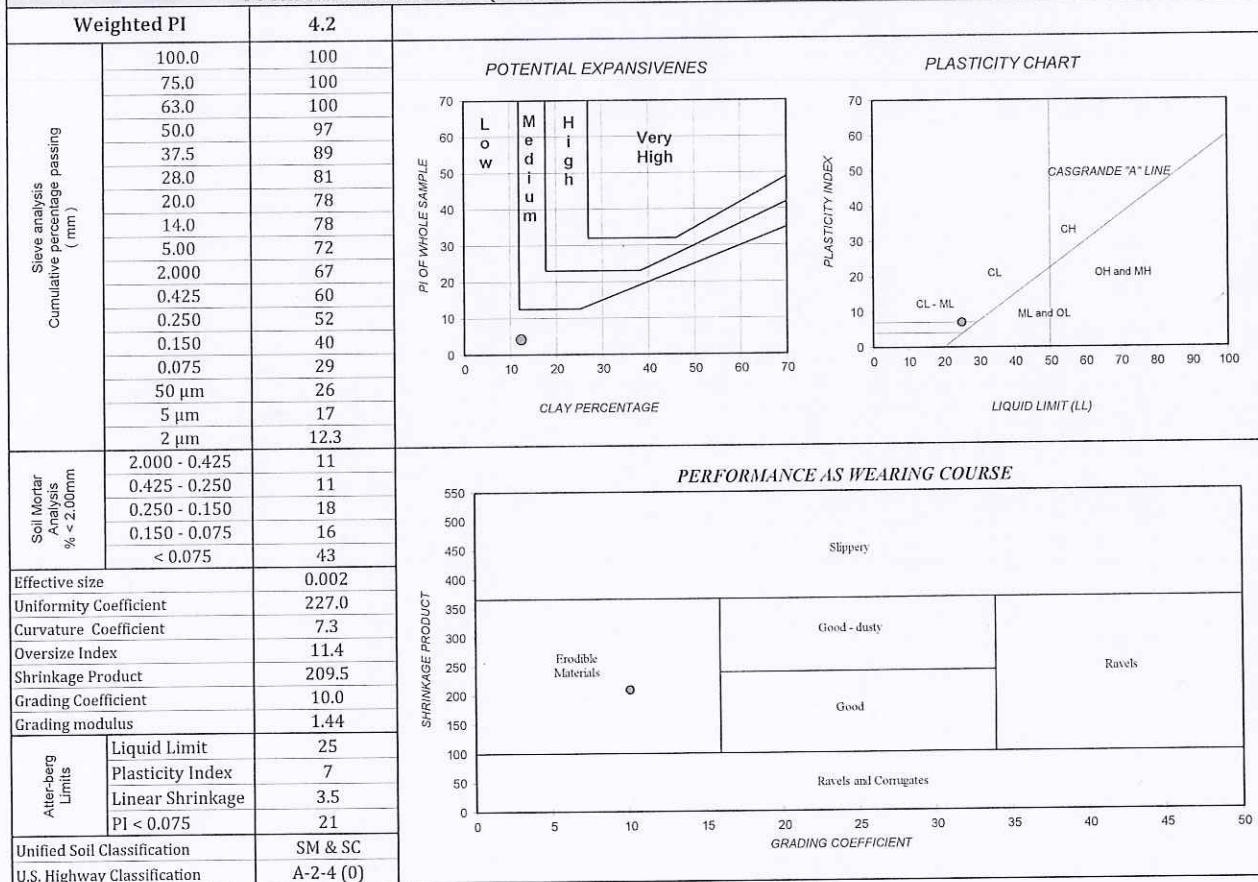
POSITION : Test Pit 2

LAYER : 0.90 - 1.10 m

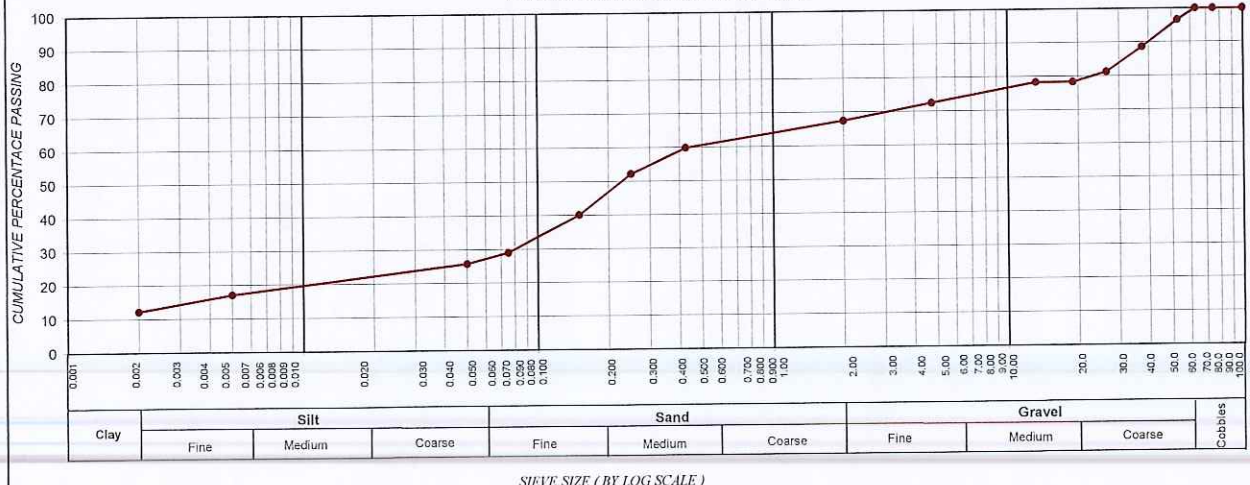
SAMPLE No. : E3620

SAMPLE DESCRIPTION : Residual Sandstone
Clayey Silty Gravelly Sand

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)



PARTICLE SIZE DISTRIBUTION



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
12.3	15.0	40.2	32.6



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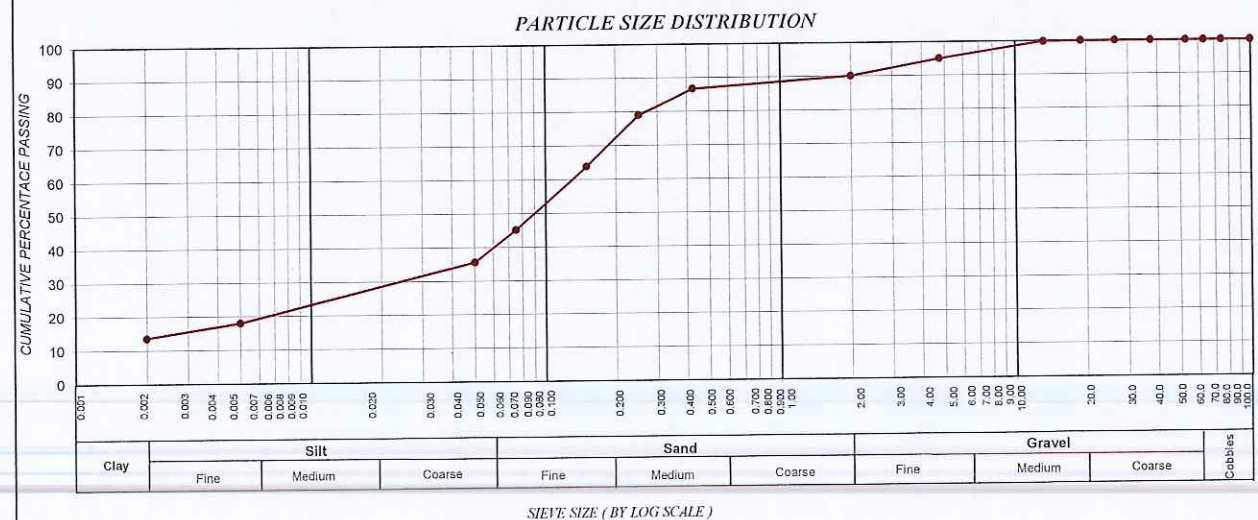
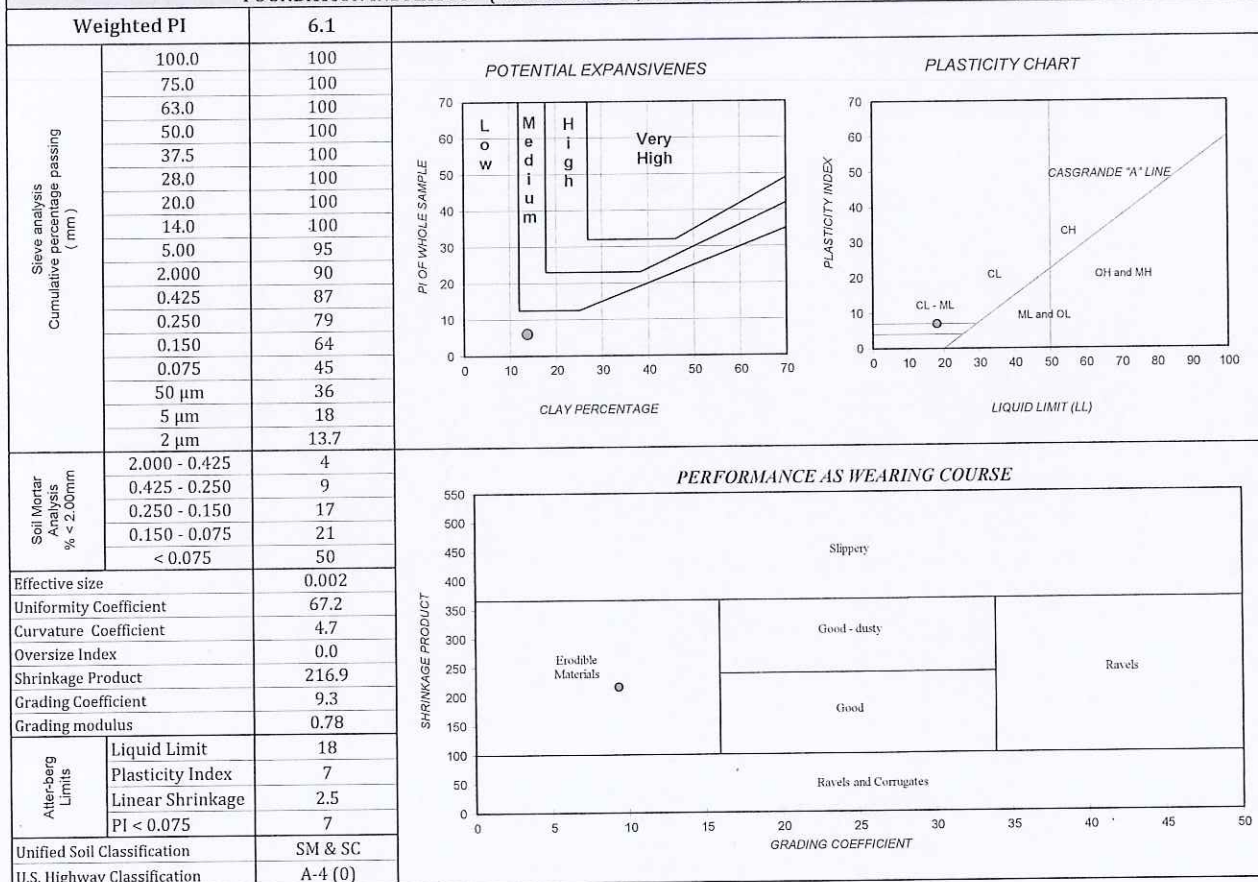
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OUR REF : ELDEL001-01-0007-21
CLIENT : Delta Geotech Pty Ltd
PROJECT : IDZ
Drager

DATE RECEIVED : 2021.03.26
POSITION : Test Pit 5
LAYER : 0.00 - 0.50 m
SAMPLE No. : E3600

SAMPLE DESCRIPTION : Colluvium
Clayey Silty Sand

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
13.7	25.7	50.8	9.8



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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Westen Ave; Ocean View
East London
5201

Attention: Mr Daniel Muller

Dear Sir

Project **TEST REPORT**
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES			
SAMPLE No.	E3600		
CONTAINER USED FOR SAMPLING	Client Sample Bag		
SIZE / WEIGHT OF SAMPLE	±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL	Moist		
HOLE No. / Km. / CHAINAGE	Test Pit 5		
ROAD No. OR NAME	IDZ Drager		
LAYER TESTED / SAMPLED FROM	0.00 - 0.50 m		
DATE SAMPLED	26/03/2021		
DATE TESTED	13/04/2021		
CLIENTS MARKING	None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)	Colluvium		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)			
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	100	
	63.0	100	
	50.0	100	
	37.5	100	
	28.00	100	
	20.0	100	
	14	100	
	5	95	
	2.00	90	
	0.425	87	
	0.075	45	
SOIL MORTAR ANALYSIS (SANS - PR5 : 2011)			
Soil Mortar	90		
Coarse Sand	3		
Fine Sand	47		
Coarse Fine Sand	9		
Medium Fine Sand	17		
Fine Fine Sand	21		
Silt & Clay	50		
Coarse Sand Ratio	0		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)			
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL%	18.0	
	P.I.	7.0	
	LS%	2.5	
	GM	0.78	
CLASSIFICATION	H.R.B.*	A-4-(0)	
	COLTO*	G9	
	T.R.H. 14*	G9	
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)			
SANS 3001 GR30 : 2015	OMC%	11.0	
	MDD(KG/M³)	1945	
	COMP MC %	11.0	
	% SWELL	0.40	
C.B.R SANS 3001 GR40 : 2014	100%	19	
	98%	16	
	97%	14	
	95%	12	
	93%	10	
	90%	7	
MOD ITS : DRY (kPa) (GR54)		N/A	
ITS @ 95% : DRY (kPa)		N/A	
STABILISED WITH	IN LAB	N/A	
	ON SITE	Neat	
TEST TYPE	Indicator, Mod, CBR		
SAMPLED BY	By Client		
DELIVERED BY	By Client		
SAMPLING METHOD	By Client		
ENVIRONMENTAL CONDITION WHEN SAMPLED	Clear		
REMARKS & NOTES			

Kind Regards

Mr. D. Juckers
Technical Signatory



T0460

Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

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Compiled By : Nicolette Coldrey

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JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager		
		POSITION / LAYER	0.00 - 0.50 m		
		KM / SV	Test Pit 5		
		SAMPLE NUMBER	E3600		
ATTENTION	Mr Daniel Muller	MATERIAL DISCIPTION	Colluvium		
		ENVIROMENTAL CONDITIONS	Sunny		
SAMPLED BY	Client	LABORATORY TESTER	A.Ndlebe		
TEMP: °C INSIDE LABORATORY	26°C	SAMPLE METHOD	By Client		

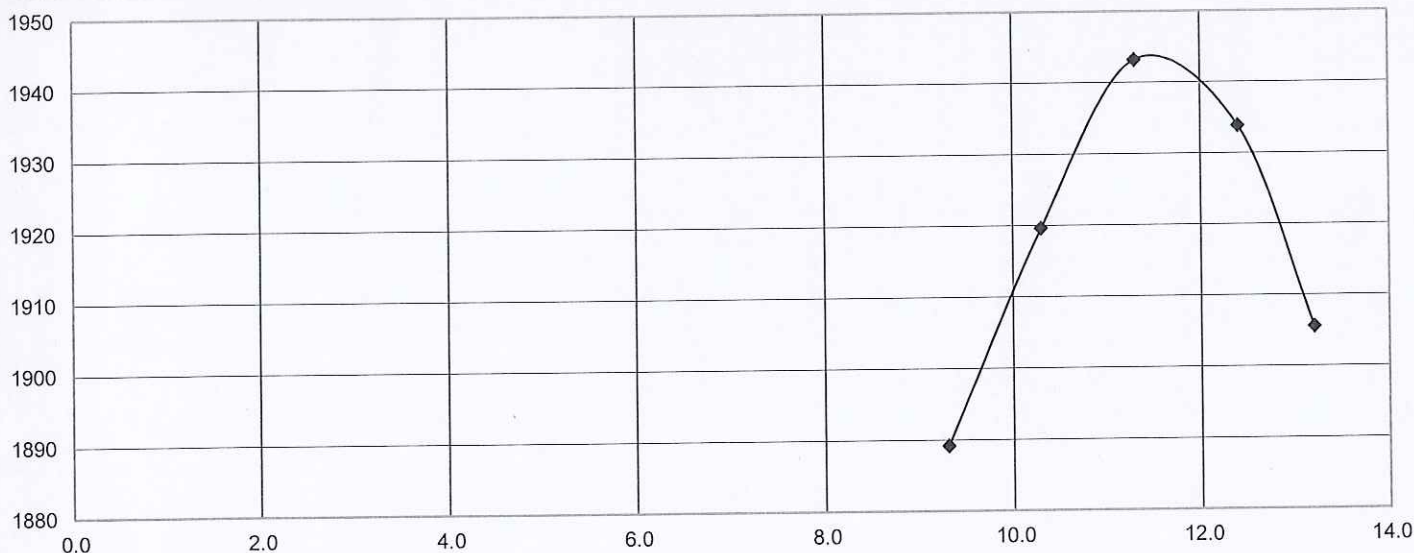
TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010**COMPACTION DATA**

	3	4	5	6	7
Moisture Content %					
Mass Mould & Wet Mat	9450	9571	9676	9701	9663
Mass Mould	4681	4681	4681	4681	4681
Mass of Wet Mat	4769	4890	4995	5020	4982
Mould Factor	43	43	43	43	43
Wet Density	2005	2036	2060	2051	2016

MOISTURE DATA

Mass Wet Mat	2426.1	2540.9	2405.7	2459.4	2359.6
Mass Dry Mat	2219.6	2303.6	2161.4	2188.1	2084.4
Mass Moisture	206.5	237.3	244.3	271.3	275.2
Hygroscopic Moisture Content %	6.3	6.3	6.3	6.4	6.2
Actual Moisture Content %	9.3	10.3	11.3	12.4	13.2
Dry Density	1889	1920	1943	1934	1906

MAXIMUM DRY DENSITY Kg/m ³	1945
OPTIMUM MOISTURE CONTENT	11.0%

**Remarks:**

Opinions and interpretations are not included in our schedule of accreditation. (T0860)
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)
The test results reported relate to the samples tested.
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Report compiled by : Nicolette Coldrey



Deon Juckers
Technical Signatory

T0860



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OUR REF : ELDEL001-01-0007-21
CLIENT : Delta Geotech Pty Ltd
PROJECT : IDZ
Drager

DATE RECEIVED : 2021.03.26

POSITION : Test Pit 6

LAYER : 1.20 - 1.35 m

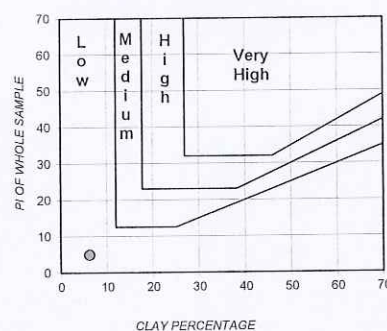
SAMPLE No. : E3598

SAMPLE DESCRIPTION : Completely Weathered Mudstone
Silty Sandy Gravel

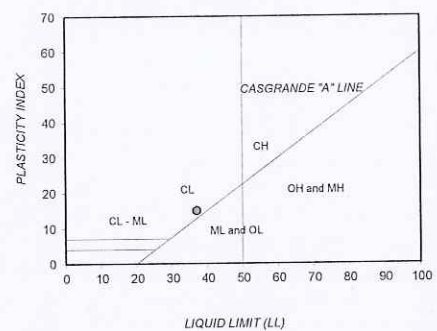
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI	4.9
Sieve analysis	
100.0	100
75.0	100
63.0	100
50.0	97
37.5	93
28.0	87
20.0	77
14.0	76
5.00	56
2.000	43
0.425	33
0.250	32
0.150	31
0.075	28
50 µm	15
5 µm	10
2 µm	6.2
Soil Mortar Analysis	
% < 2.00mm	23
0.425 - 0.250	2
0.250 - 0.150	3
0.150 - 0.075	7
< 0.075	65
Effective size	0.006
Uniformity Coefficient	1138.0
Curvature Coefficient	0.4
Oversize Index	7.3
Shrinkage Product	278.4
Grading Coefficient	24.8
Grading modulus	1.96
Atter-berg Limits	
Liquid Limit	37
Plasticity Index	15
Linear Shrinkage	8.5
PI < 0.075	20
Unified Soil Classification	SC
U.S. Highway Classification	A-2-6 (1)

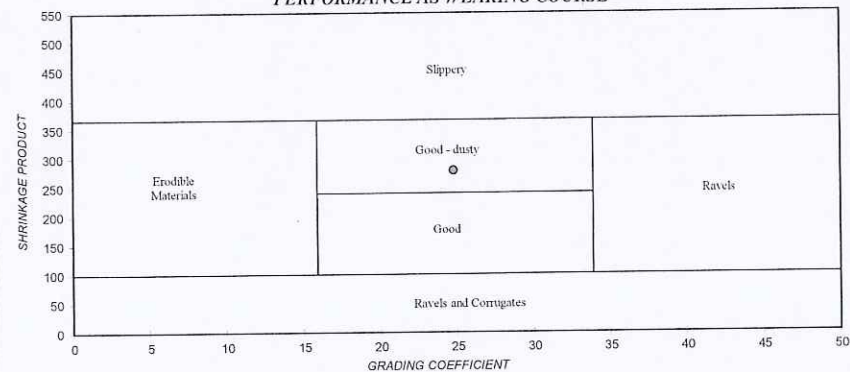
POTENTIAL EXPANSIVENES



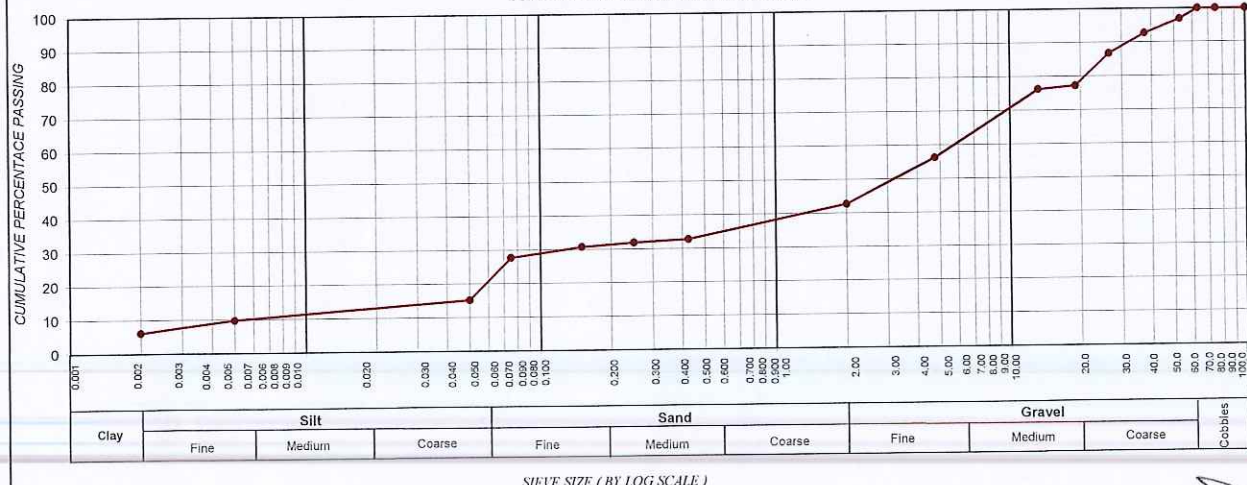
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
6.2	13.1	23.5	57.2



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OUR REF: ELDEL001-01-0007-21
 CLIENT: Delta Geotech Pty Ltd
 PROJECT: IDZ
 Drager

DATE RECEIVED: 2021.03.26

POSITION: Test Pit 7

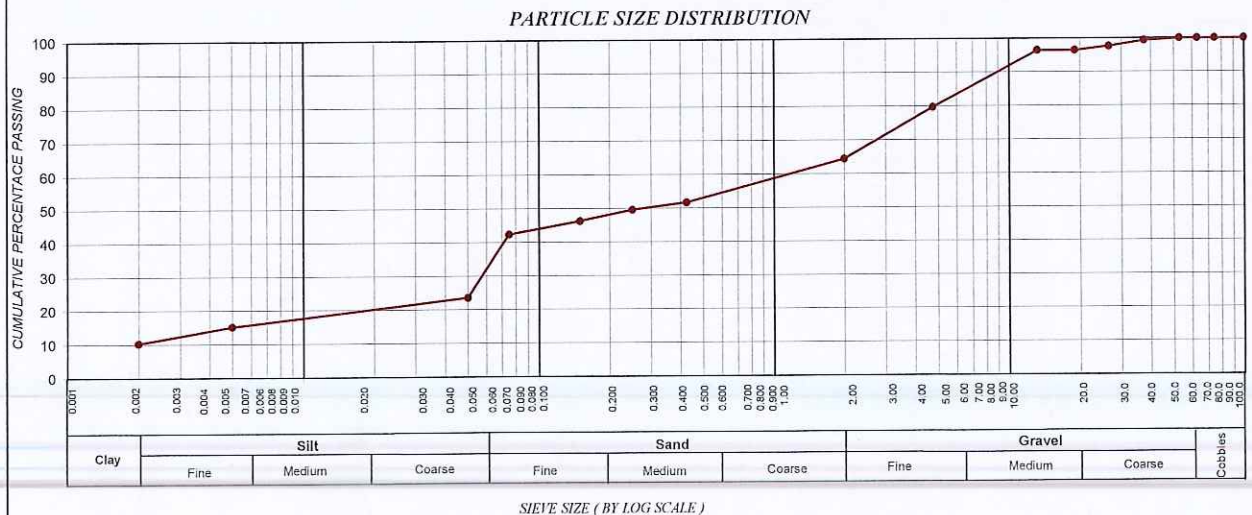
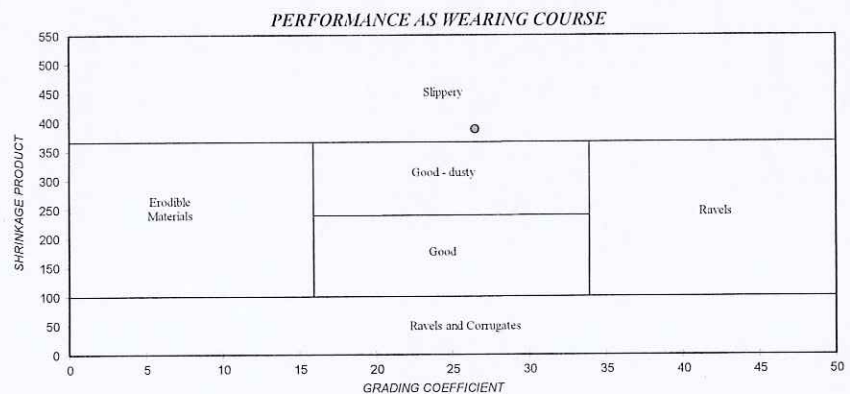
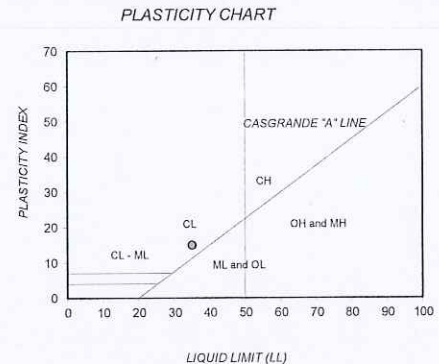
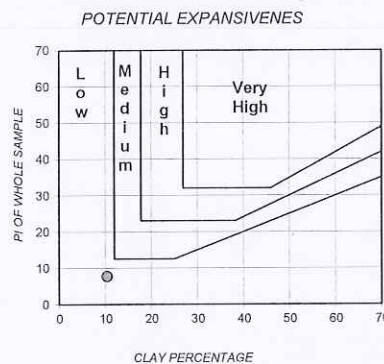
LAYER: 0.45 - 1.15 m

SAMPLE No.: E3601

SAMPLE DESCRIPTION: Pedogenic Ferricrete
 Clayey Silty Sandy Gravel

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		7.8
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	100
	50.0	100
	37.5	99
	28.0	98
	20.0	96
	14.0	96
	5.00	80
	2.000	64
	0.425	52
	0.250	50
	0.150	46
	0.075	42
Soil Mortar Analysis % < 2.00mm	50 µm	24
	5 µm	15
	2 µm	10.4
	2.000 - 0.425	20
	0.425 - 0.250	3
	0.250 - 0.150	5
	0.150 - 0.075	6
	< 0.075	66
Effective size		0.002
Uniformity Coefficient		723.8
Curvature Coefficient		1.2
Oversize Index		0.7
Shrinkage Product		387.9
Grading Coefficient		26.5
Grading modulus		1.42
Atter-berg Limits	Liquid Limit	35
	Plasticity Index	15
	Linear Shrinkage	7.5
	PI < 0.075	18
Unified Soil Classification		SC
U.S. Highway Classification		A-6 (3)



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
10.4	19.2	34.9	35.5



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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Westen Ave; Ocean View
East London
5201

Attention: Mr Daniel Muller

Dear Sir

Project TEST REPORT
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES			
SAMPLE No.	E3601		
CONTAINER USED FOR SAMPLING	Client Sample Bag		
SIZE / WEIGHT OF SAMPLE	±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL	Moist		
HOLE No. / Km. / CHAINAGE	Test Pit 7		
ROAD No. OR NAME	IDZ Drager		
LAYER TESTED / SAMPLED FROM	0.45 - 1.15 m		
DATE SAMPLED	26/03/2021		
DATE TESTED	13/04/2021		
CLIENTS MARKING	None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)	Pedogenic Ferricrete		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)			
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	100	
	63.0	100	
	50.0	100	
	37.5	99	
	28.00	98	
	20.0	96	
	14	96	
	5	80	
	2.00	64	
	0.425	52	
	0.075	42	
SOIL MORTAR ANALYSIS *(SANS - PR5 : 2011)			
Soil Mortar	64		
Coarse Sand	20		
Fine Sand	14		
Coarse Fine Sand	3		
Medium Fine Sand	5		
Fine Fine Sand	6		
Silt & Clay	66		
Coarse Sand Ratio	0.2		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)			
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL% 35.0		
	P.I. 15.0		
	LS% 7.5		
	GM 1.42		
CLASSIFICATION	H.R.B.* A-6-(0)		
	COLTO* -		
	T.R.H. 14* G10		
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)			
SANS 3001 GR30 : 2015	OMC% 12.6		
	MDD(KG/M³) 1889		
	COMP MC % 12.6		
	% SWELL 3.60		
C.B.R SANS 3001 GR40 : 2014	100%	11	
	98%	9	
	97%	8	
	95%	7	
	93%	5	
	90%	4	
MOD ITS : DRY (kPa) (GR54)	N/A		
ITS @ 95% : DRY (kPa)	N/A		
STABILISED WITH	IN LAB N/A		
	ON SITE Neat		
TEST TYPE	Indicator, Mod, CBR		
SAMPLED BY	By Client		
DELIVERED BY	By Client		
SAMPLING METHOD	By Client		
ENVIRONMENTAL CONDITION WHEN SAMPLED	Clear		
REMARKS & NOTES			

Kind Regards

Mr. D. Juckers
Technical Signatory



T0460

Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

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Compiled By : Nicolette Coldrey

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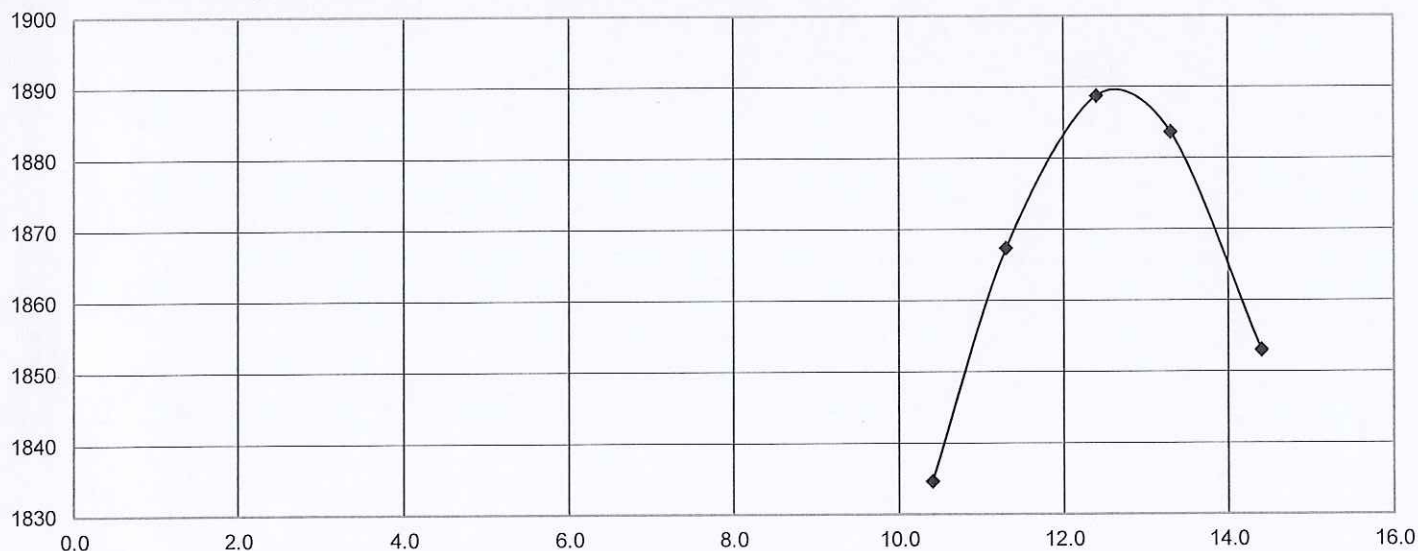
JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager POSITION / LAYER 0.45 -1.15 m KM / SV Test Pit 7		
ATTENTION	Mr Daniel Muller	SAMPLE NUMBER	E3601		
		MATERIAL DISCRIPTION	Pedogenic Ferricrete		
		ENVIROMENTAL CONDITIONS	Sunny		
SAMPLED BY	Client	LABORATORY TESTER	A.Ndlebe		
TEMP.'C INSIDE LABORATORY	26°C	SAMPLE METHOD	By Client		

TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010**COMPACTION DATA**

Moisture Content %	2	3	4	5	6
Mass Mould & Wet Mat	9359	9481	9584	9610	9577
Mass Mould	4681	4681	4681	4681	4681
Mass of Wet Mat	4678	4800	4903	4929	4896
Mould Factor	43	43	43	43	43
Wet Density	1986	2018	2041	2033	2000

MOISTURE DATA

Mass Wet Mat	2355.6	2443.6	2473.5	2290.4	2246.3
Mass Dry Mat	2133.6	2195.5	2200.6	2021.5	1963.5
Mass Moisture	222	248.1	272.9	268.9	282.8
Hygroscopic Moisture Content %	8.4	8.3	8.4	8.3	8.4
Actual Moisture Content %	10.4	11.3	12.4	13.3	14.4
Dry Density	1835	1867	1889	1884	1853

MAXIMUM DRY DENSITY Kg/m3**1889****OPTIMUM MOISTURE CONTENT****12.6%****Remarks:**

Opinions and interpretations are not included in our schedule of accreditation. (T0860)

The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)

The test results reported relate to the samples tested.

Further use of the above information is not the responsibility of liability of Roadlab.

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Report compiled by : Nicolette Coldrey

Deon Juckers
Technical Signatory

T0860



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OUR REF : ELDEL001-01-0007-21
 CLIENT : Delta Geotech Pty Ltd
 PROJECT : IDZ
 Drager

DATE RECEIVED : 2021.03.26

POSITION : Test Pit 7

LAYER : 1.25 - 1.50 m

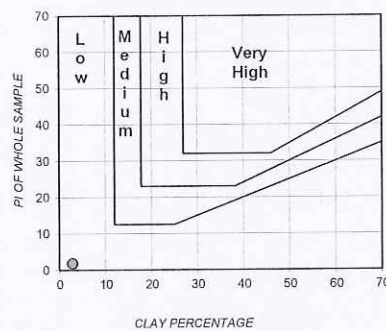
SAMPLE No. : E3597

SAMPLE DESCRIPTION : Highly Weathered Mudstone
 Sandy Gravel

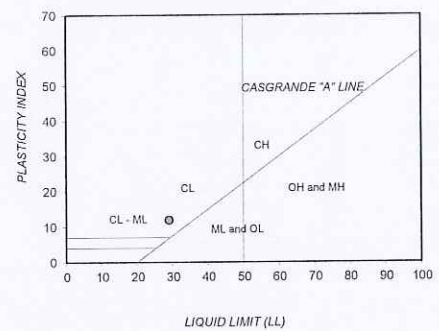
FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI		1.8
Sieve analysis Cumulative percentage passing (mm)	100.0	100
	75.0	100
	63.0	91
	50.0	78
	37.5	71
	28.0	63
	20.0	52
	14.0	45
	5.00	25
	2.000	19
	0.425	15
	0.250	14
	0.150	14
	0.075	13
	50 μm	7
5 μm	4	
2 μm	2.8	
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	22
	0.425 - 0.250	3
	0.250 - 0.150	4
	0.150 - 0.075	5
	< 0.075	66
Effective size		0.064
Uniformity Coefficient		407.1
Curvature Coefficient		30.6
Oversize Index		28.5
Shrinkage Product		90.0
Grading Coefficient		11.1
Grading modulus		2.53
Atterberg Limits	Liquid Limit	29
	Plasticity Index	12
	Linear Shrinkage	6.0
	PI < 0.075	13
Unified Soil Classification		GC
U.S. Highway Classification		A-2-6 (0)

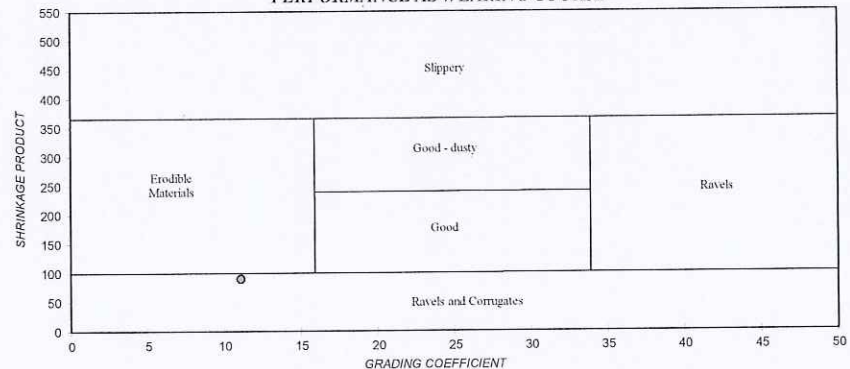
POTENTIAL EXPANSIVENES



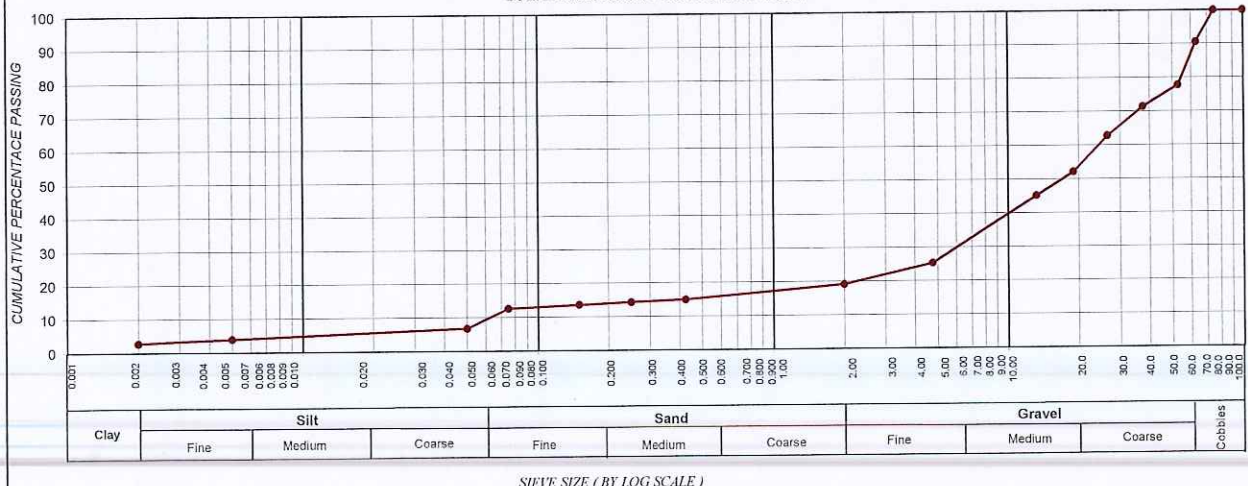
PLASTICITY CHART



PERFORMANCE AS WEARING COURSE



PARTICLE SIZE DISTRIBUTION



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
2.8	6.0	10.4	80.8



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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Western Ave; Ocean View
East London
5201

Attention: Mr Daniel Muller

Dear Sir

TEST REPORT
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES				
SAMPLE No.		E3597		
CONTAINER USED FOR SAMPLING		Client Sample Bag		
SIZE / WEIGHT OF SAMPLE		±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL		Moist		
HOLE No. / Km. / CHAINAGE		Test Pit 7		
ROAD No. OR NAME		IDZ Drager		
LAYER TESTED / SAMPLED FROM		1.25 - 1.50 m		
DATE SAMPLED		26/03/2021		
DATE TESTED		13/04/2021		
CLIENTS MARKING		None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)		Highly Weathered		
		Mudstone		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)				
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	100		
	63.0	91		
	50.0	78		
	37.5	71		
	28.00	63		
	20.0	52		
	14	45		
	5	25		
	2.00	19		
	0.425	15		
0.075	13			
SOIL MORTAR ANALYSIS *(SANS - PR5 : 2011)				
Soil Mortar		19		
Coarse Sand		21		
Fine Sand		11		
Coarse Fine Sand		5		
Medium Fine Sand		0		
Fine Fine Sand		5		
Silt & Clay		68		
Coarse Sand Ratio		0.2		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)				
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL%	29.0		
	P.I.	12.0		
	LS%	6.0		
GM		2.53		
CLASSIFICATION	H.R.B.*	A-6-(0)		
	COLTO*	G9		
	T.R.H. 14*	G10		
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)				
SANS 3001 GR30 : 2015	OMC%	8.8		
	MDD(KG/M³)	2030		
	COMP MC %	8.8		
C.B.R SANS 3001 GR40 : 2014	% SWELL	1.30		
	100%	41		
	98%	28		
	97%	23		
	95%	15		
	93%	10		
	90%	6		
MOD ITS : DRY (kPa) (GR54)		N/A		
ITS @ 95% : DRY (kPa)		N/A		
STABILISED WITH	IN LAB	N/A		
	ON SITE	Neat		
TEST TYPE		Indicator, Mod, CBR		
SAMPLED BY		By Client		
DELIVERED BY		By Client		
SAMPLING METHOD		By Client		
ENVIRONMENTAL CONDITION WHEN SAMPLED		Clear		
REMARKS & NOTES				

Kind Regards

Mr. D. Juckers
Technical Signatory



Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

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Compiled By : Nicolette Coldrey

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JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager		
		POSITION / LAYER	1.25 - 1.50 m		
		KM / SV	Test Pit 7		
		SAMPLE NUMBER	E3597		
ATTENTION	Mr Daniel Muller	MATERIAL DISCIPTION	highly Weathered Mudstone		
		ENVIROMENTAL CONDITIONS	Sunny		
SAMPLED BY	Client	LABORATORY TESTER	A.Ndlebe		
TEMP:°C INSIDE LABORATORY	26°C	SAMPLE METHOD	By Client		

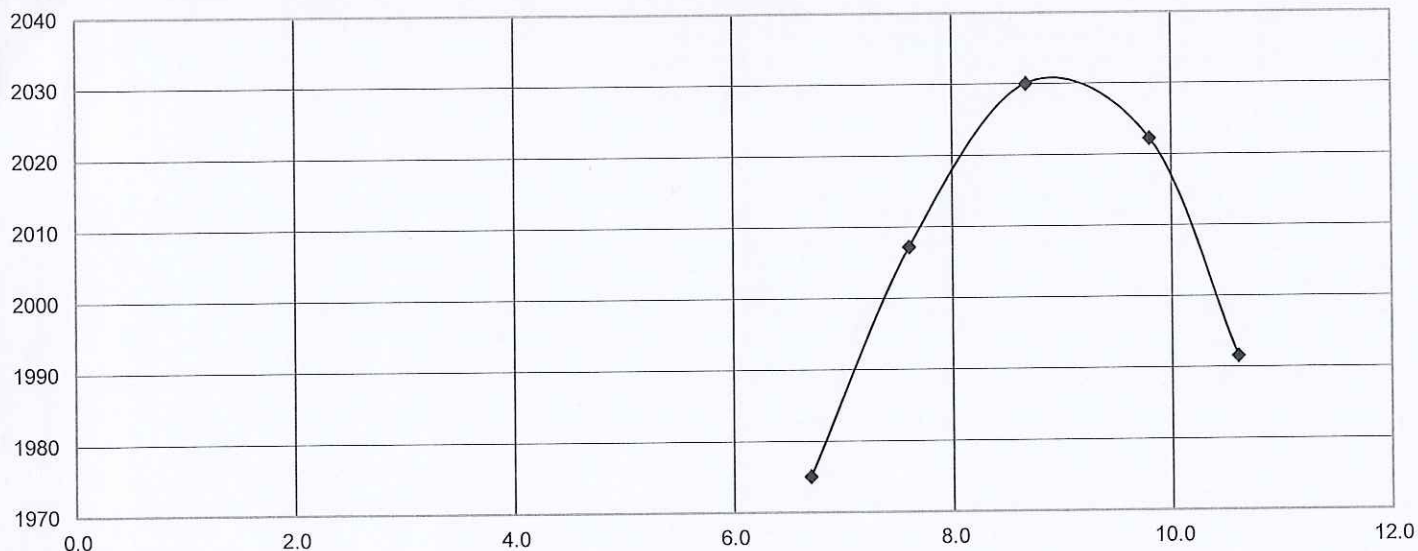
TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010**COMPACTION DATA**

	2	3	4	5	6
Moisture Content %					
Mass Mould & Wet Mat	9548	9669	9776	9809	9768
Mass Mould	4681	4681	4681	4681	4681
Mass of Wet Mat	4867	4988	5095	5128	5087
Mould Factor	43	43	43	43	43
Wet Density	2066	2097	2121	2115	2078

MOISTURE DATA

Mass Wet Mat	2358.4	2409	2379.4	2386.6	2468.9
Mass Dry Mat	2210.3	2238.8	2189.5	2173.6	2232.3
Mass Moisture	148.1	170.2	189.9	213	236.6
Hygroscopic Moisture Content %	4.7	4.6	4.7	4.8	4.6
Actual Moisture Content %	6.7	7.6	8.7	9.8	10.6
Dry Density	1975	2007	2030	2022	1992

MAXIMUM DRY DENSITY Kg/m3	2030
OPTIMUM MOISTURE CONTENT	8.8%

**Remarks:**

Opinions and interpretations are not included in our schedule of accreditation. (T0860)
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)
The test results reported relate to the samples tested.
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Report compiled by : Nicolette Coldrey



T0860

Deon Juckers
Technical Signatory



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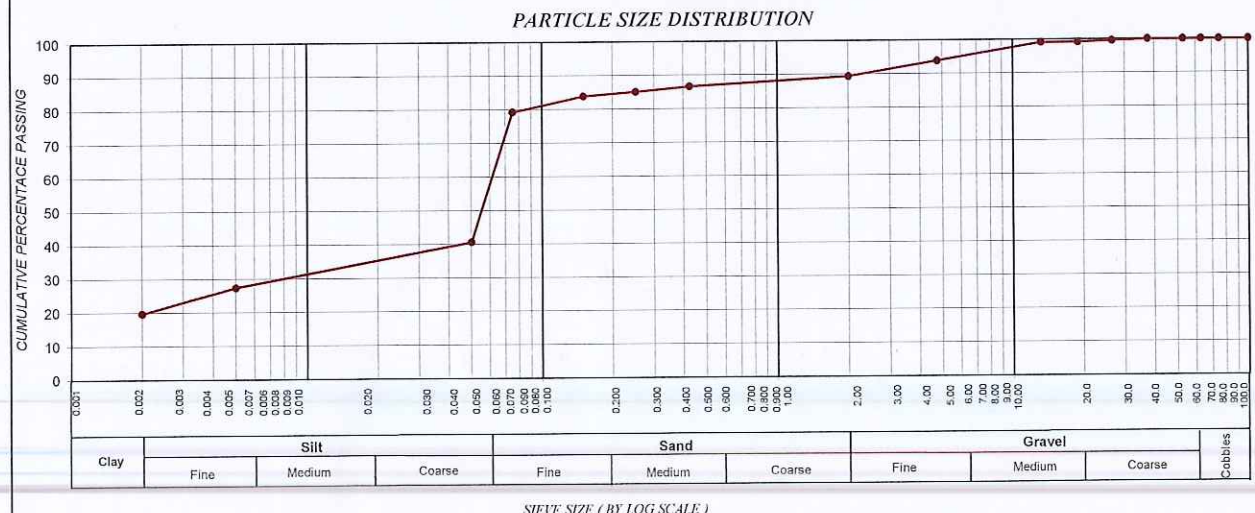
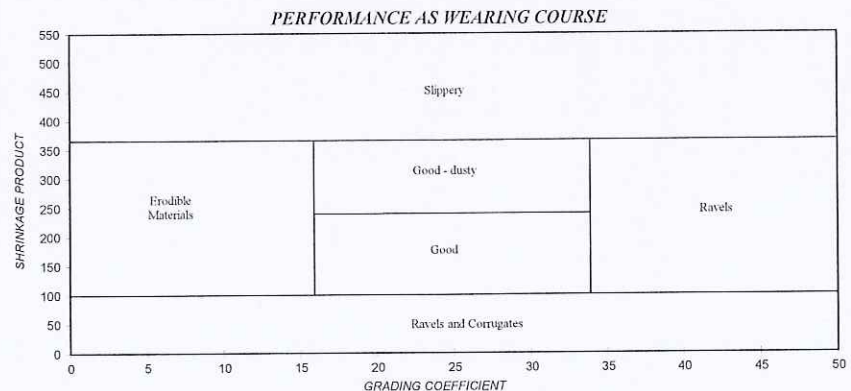
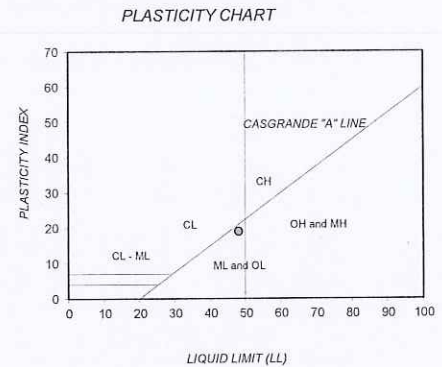
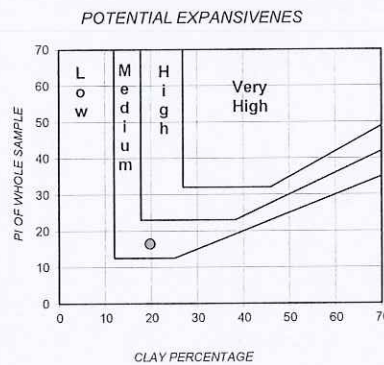
OUR REF : ELDEL001-01-0007-21
 CLIENT : Delta Geotech Pty Ltd
 PROJECT : IDZ
 Drager

DATE RECEIVED : 2021.03.26
 POSITION : Test Pit 8
 LAYER : 1.50 - 1.90 m
 SAMPLE No. : E3621

SAMPLE DESCRIPTION : Residual Mudstone
 Gravelly Clayey Silty Sand

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI	16.5
Sieve analysis	100.0
Cumulative percentage passing (mm)	100
	75.0
	63.0
	50.0
	37.5
	28.0
	20.0
	14.0
	5.00
	2.000
	0.425
	0.250
	0.150
	0.075
	50 µm
	5 µm
	2 µm
Soil Mortar Analysis % < 2.00mm	3
	2
	1
	5
	89
Effective size	0.002
Uniformity Coefficient	31.3
Curvature Coefficient	1.5
Oversize Index	0.0
Shrinkage Product	779.9
Grading Coefficient	9.5
Grading modulus	0.45
Atterberg Limits	Liquid Limit 48
	Plasticity Index 19
	Linear Shrinkage 9.0
	PI < 0.075 29
Unified Soil Classification	ML
U.S. Highway Classification	A-7-6 (16)



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
19.7	33.1	36.6	10.6



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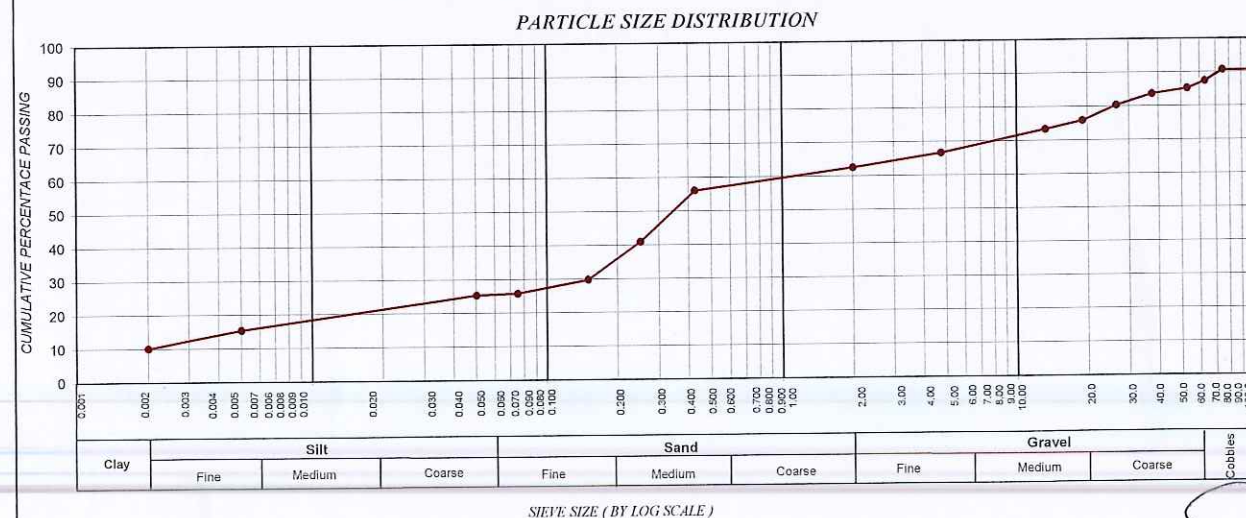
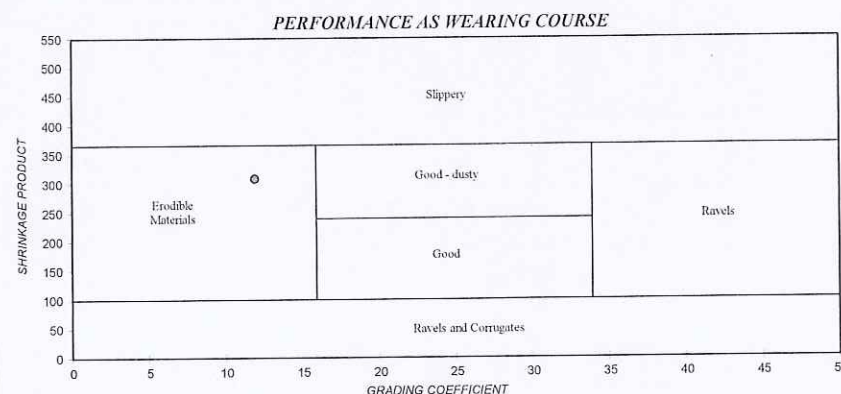
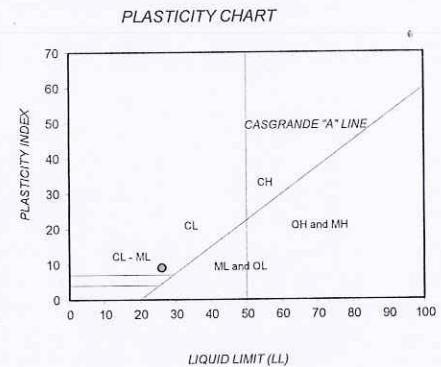
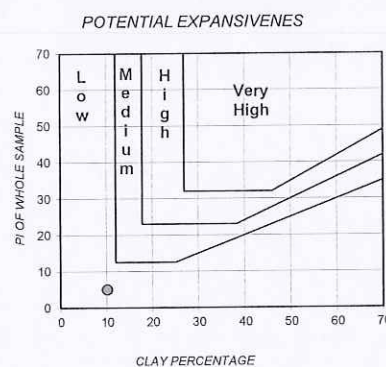
OUR REF : ELDEL001-01-0007-21
CLIENT : Delta Geotech Pty Ltd
PROJECT : IDZ
Drager

DATE RECEIVED : 2021.03.26
POSITION : Test Pit 9
LAYER : 1.00 - 1.40 m
SAMPLE No. : E3596

SAMPLE DESCRIPTION : Completely Weathered Sandstone
Clayey Silty Sandy Gravel

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)

Weighted PI	5.0
Sieve analysis Cumulative percentage passing (mm)	
100.0	91
75.0	91
63.0	87
50.0	85
37.5	84
28.0	80
20.0	76
14.0	73
5.00	67
2.000	62
0.425	56
0.250	41
0.150	30
0.075	26
50 µm	25
5 µm	15
2 µm	10.1
Soil Mortar Analysis % < 2.00mm	
2.000 - 0.425	10
0.425 - 0.250	24
0.250 - 0.150	18
0.150 - 0.075	6
< 0.075	41
Effective size	0.002
Uniformity Coefficient	696.2
Curvature Coefficient	8.3
Oversize Index	16.3
Shrinkage Product	308.4
Grading Coefficient	11.9
Grading modulus	1.55
Atter-berg Limits	
Liquid Limit	26
Plasticity Index	9
Linear Shrinkage	5.5
PI < 0.075	21
Unified Soil Classification	SC
U.S. Highway Classification	A-2-4 (0)



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
10.1	15.7	36.7	37.5



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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Western Ave; Ocean View
East London
5201

Attention: Mr Daniel Muller

Dear Sir

Project TEST REPORT
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES			
SAMPLE No.	E3596		
CONTAINER USED FOR SAMPLING	Client Sample Bag		
SIZE / WEIGHT OF SAMPLE	±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL	Moist		
HOLE No. / Km. / CHAINAGE	Test Pit 9		
ROAD No. OR NAME	IDZ Drager		
LAYER TESTED / SAMPLED FROM	1.00 - 1.40 m		
DATE SAMPLED	26/03/2021		
DATE TESTED	13/04/2021		
CLIENTS MARKING	None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)	Completely Weathered Sandstone		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)			
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	91	
	63.0	87	
	50.0	85	
	37.5	84	
	28.00	80	
	20.0	76	
	14	73	
	5	67	
	2.00	62	
	0.425	56	
	0.075	26	
SOIL MORTAR ANALYSIS *(SANS - PR5 : 2011)			
Soil Mortar	63		
Coarse Sand	11		
Fine Sand	51		
Coarse Fine Sand	24		
Medium Fine Sand	18		
Fine Fine Sand	10		
Silt & Clay	38		
Coarse Sand Ratio	0.1		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)			
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL%	26.0	
	P.I.	9.0	
	LS%	5.5	
	GM	1.57	
CLASSIFICATION	H.R.B.*	A-2-4	
	COLTO*	-	
	T.R.H. 14*	G10	
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)			
SANS 3001 GR30 : 2015	OMC%	11.3	
	MDD(KG/M³)	1978	
	COMP MC %	11.3	
C.B.R SANS 3001 GR40 : 2014	% SWELL	2.70	
	100%	14	
	98%	11	
	97%	9	
	95%	7	
	93%	5	
	90%	4	
MOD ITS : DRY (kPa) (GR54)		N/A	
ITS @ 95% : DRY (kPa)		N/A	
STABILISED WITH	IN LAB	N/A	
	ON SITE	Neat	
TEST TYPE		Indicator, Mod, CBR	
SAMPLED BY		By Client	
DELIVERED BY		By Client	
SAMPLING METHOD		By Client	
ENVIRONMENTAL CONDITION WHEN SAMPLED		Clear	
REMARKS & NOTES			

Kind Regards

Mr. D. Juckers
Technical Signatory



Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

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Compiled By : Nicolette Coldrey

**Roadlab Laboratories (Pty) Ltd – East London**

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JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager	POSITION / LAYER	1.00 - 1.4 m
ATTENTION	Mr Daniel Muller	KM / SV	Test Pit 9	SAMPLE NUMBER	E3596
SAMPLED BY	Client	MATERIAL DISCRIPTION	Completely Weathered Sandstone	ENVIROMENTAL CONDITIONS	Sunny
TEMP:°C INSIDE LABORATORY	26°C	LABORATORY TESTER	A.Ndlebe	SAMPLE METHOD	By Client

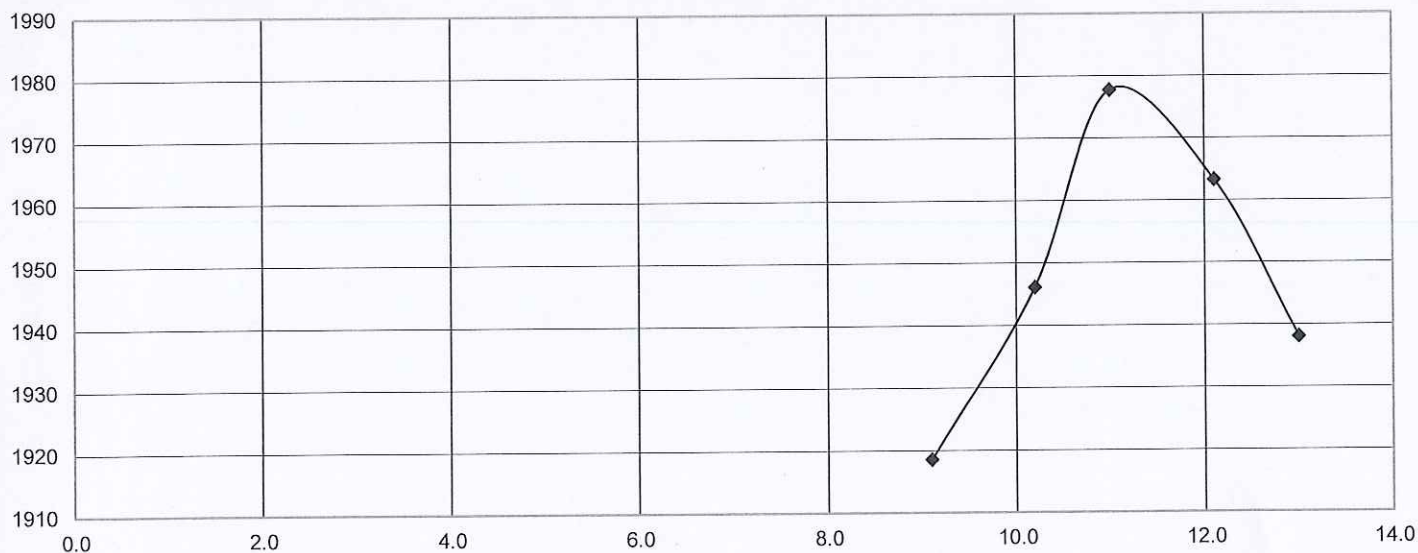
TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010**COMPACTION DATA**

Moisture Content %	2	3	4	5	6
Mass Mould & Wet Mat	9515	9634	9751	9764	9739
Mass Mould	4681	4681	4681	4681	4681
Mass of Wet Mat	4834	4953	5070	5083	5058
Mould Factor	43	43	43	43	43
Wet Density	2052	2082	2111	2096	2066

MOISTURE DATA

Mass Wet Mat	2470	2399.5	2387.5	2389.4	2404.7
Mass Dry Mat	2264	2177.4	2150.9	2131.4	2128
Mass Moisture	206	222.1	236.6	258	276.7
Hygroscopic Moisture Content %	7.1	7.2	7.0	7.1	7.0
Actual Moisture Content %	9.1	10.2	11.0	12.1	13.0
Dry Density	1919	1946	1978	1963	1938

MAXIMUM DRY DENSITY Kg/m3	1978
OPTIMUM MOISTURE CONTENT	11.3%

**Remarks:**

Opinions and interpretations are not included in our schedule of accreditation. (T0860)
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)
The test results reported relate to the samples tested.
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Report compiled by : Nicolette Coldrey



T0860

Deon Juckers
Technical Signatory



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OUR REF : ELDEL001-01-0007-21
CLIENT : Delta Geotech Pty Ltd
PROJECT : IDZ
Drager

DATE RECEIVED : 2021.03.26

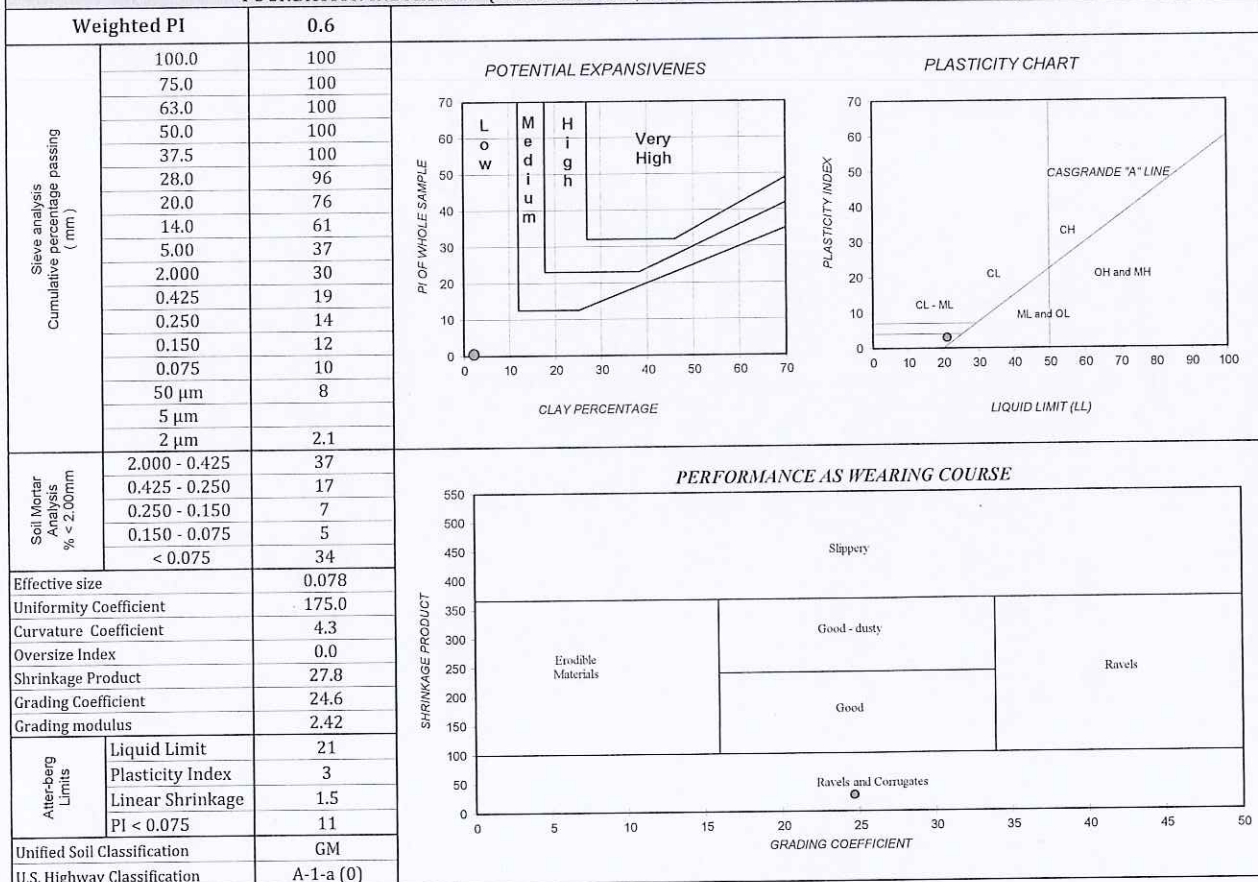
POSITION : Test Pit 9

LAYER : 1.40 - 2.40 m

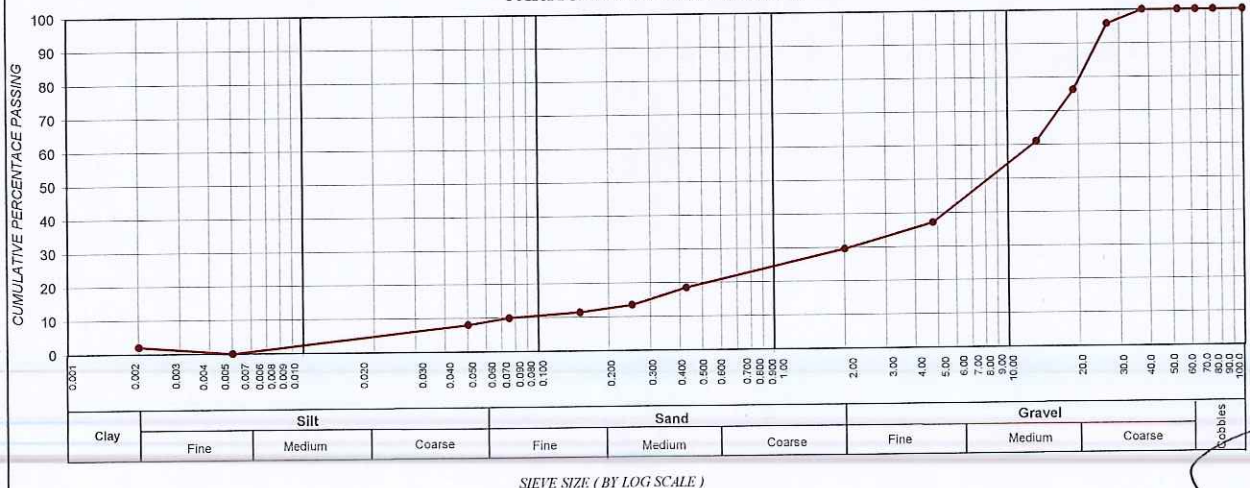
SAMPLE No.: E3595

SAMPLE DESCRIPTION : Highly Weathered Sandstone
Sandy Gravel

FOUNDATION INDICATOR - (SANS 3001-GR1, SANS 3001-GR10) & (ASTM Method D422)



PARTICLE SIZE DISTRIBUTION



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
2.1	6.6	20.9	70.4



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Our Ref - ELDEL001-01-0007-21

Req No - RE2116

Date - 04/05/2021

Delta Geotech Pty Ltd
123 Westen Ave; Ocean View
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5201

Attention: Mr Daniel Muller

Dear Sir

Project TEST REPORT
IDZ Drager

Please find the attached test results for the sample/s as submitted to and tested by Roadlab Laboratories (PTY) Ltd. In East London.
The unambiguous description of the sample/s as received are as follows :

SAMPLE INFORMATION & PROPERTIES			
SAMPLE No.	E3595		
CONTAINER USED FOR SAMPLING	Client Sample Bag		
SIZE / WEIGHT OF SAMPLE	±70kg's		
MOISTURE CONDITION OF SAMPLE ON ARRIVAL	Moist		
HOLE No. / Km. / CHAINAGE	Test Pit 9		
ROAD No. OR NAME	IDZ Drager		
LAYER TESTED / SAMPLED FROM	1.40 - 2.40 m		
DATE SAMPLED	26/03/2021		
DATE TESTED	13/04/2021		
CLIENTS MARKING	None		
DESCRIPTION OF SAMPLE (COLOUR & TYPE)	Highly Weathered Sandstone		
SIEVE ANALYSIS - % PASSING SIEVES (SANS 300 - GR1 : 2013)			
SIEVE ANALYSIS SANS GR1 : 2013 % PASSING	75.0	100	
	63.0	100	
	50.0	100	
	37.5	100	
	28.00	96	
	20.0	76	
	14	61	
	5	37	
	2.00	30	
	0.425	19	
	0.075	8	
SOIL MORTAR ANALYSIS *(SANS - PR5 : 2011)			
Soil Mortar	30		
Coarse Sand	37		
Fine Sand	40		
Coarse Fine Sand	17		
Medium Fine Sand	17		
Fine Fine Sand	7		
Silt & Clay	23		
Coarse Sand Ratio	0.4		
ATTERBERG LIMITS ANALYSIS (SANS 3001 - GR10 : 2013)			
ATTERBERG LIMITS (%) SANS 3001 GR10 : 2013	LL%	21.0	
	P.I.	3.0	
	LS%	1.5	
	GM	2.45	
CLASSIFICATION	H.R.B.*	A-1-a	
	COLTO*	G6	
	T.R.H. 14*	G6	
CALIFORNIA BEARING RATIO (SANS 3001 - GR30 : 2015, SANS 3001 - GR40 : 2014)			
SANS 3001 GR30 : 2015	OMC%	8.1	
	MDD(KG/M ³)	2106	
	COMP MC %	8.1	
	% SWELL	0.00	
C.B.R SANS 3001 GR40 : 2014	100%	74	
	98%	54	
	97%	46	
	95%	33	
	93%	24	
	90%	15	
MOD ITS : DRY (kPa) (GR54)		N/A	
ITS @ 95% : DRY (kPa)		N/A	
STABILISED WITH	IN LAB	N/A	
	ON SITE	Neat	
TEST TYPE	Indicator, Mod, CBR		
SAMPLED BY	By Client		
DELIVERED BY	By Client		
SAMPLING METHOD	By Client		
ENVIRONMENTAL CONDITION WHEN SAMPLED	Clear		
REMARKS & NOTES			

Kind Regards

Mr. D. Juckers
Technical Signatory

Remarks :

*Opinions & Interpretations are not included in our schedule of Accreditation
T 0860

The samples were subjected to analysis according to SANS 3001

The results reported relate only to the sample tested

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Compiled By : Nicolette Coldrey



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material Passion.
trusted Accuracy.
timeous Excellence.

JOB NO:	RE2116	REFERENCE NO:	ELDEL001-01-0007-21	DATE:	03/05/2021
CLIENT	Delta Geotech Pty Ltd 123 Western Ave; Ocean View East London 5201	PROJECT	IDZ - Drager		
		POSITION / LAYER	1.4 - 2.4 m		
		KM / SV	Test Pit 9		
		SAMPLE NUMBER	E3595		
ATTENTION	Mr Daniel Muller	MATERIAL DISCRPTION	Highly Weathered Sandstone		
		ENVIROMENTAL CONDITIONS	Sunny		
SAMPLED BY	Client	LABORATORY TESTER	A.Ndlebe		
TEMP.'C INSIDE LABORATORY	26'C	SAMPLE METHOD	By Client		

TEST REPORT MAXIMUM DRY DENSITY / OPTIMUM MOISTURE CONTENT SANS 3001 GR30:2015; GR20:2010

COMPACTION DATA

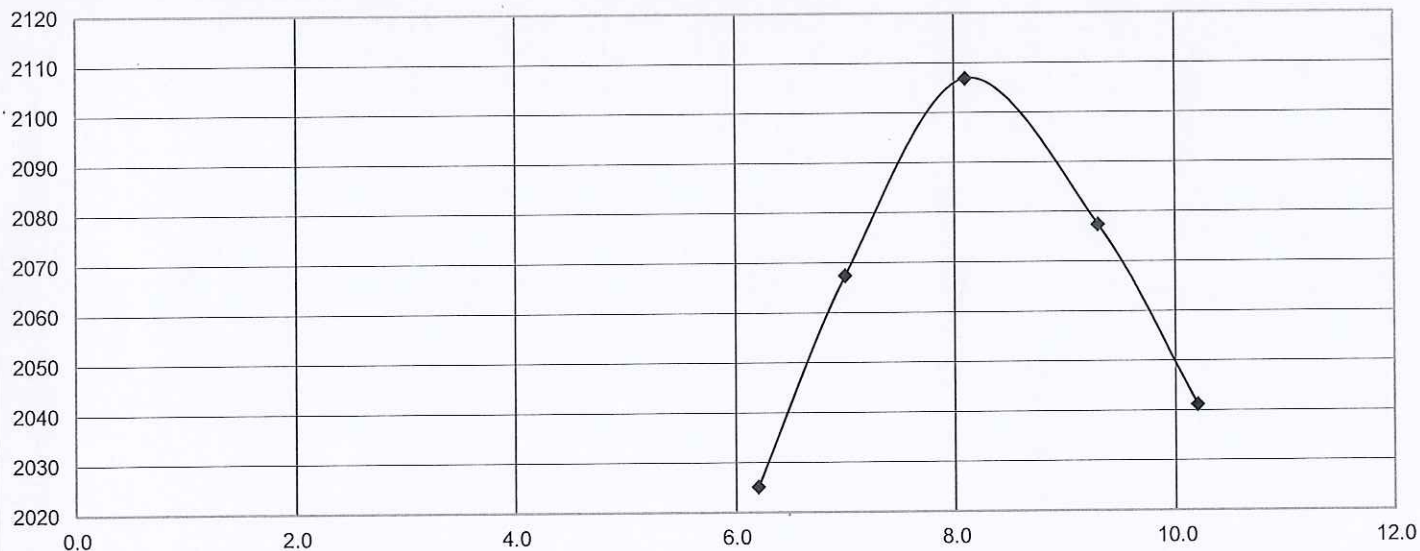
Moisture Content %	4	5	6	7	8
Mass Mould & Wet Mat	9648	9790	9941	9925	9876
Mass Mould	4681	4681	4681	4681	4681
Mass of Wet Mat	4967	5109	5260	5244	5195
Mould Factor	43	43	43	43	43
Wet Density	2068	2107	2149	2122	2083

MOISTURE DATA

Mass Wet Mat	2382.4	2382.5	2415.4	2442.2	2323.9
Mass Dry Mat	2243.3	2226.6	2234.4	2234.4	2108.8
Mass Moisture	139.1	155.9	181	207.8	215.1
Hygroscopic Moisture Content %	2.2	2.0	2.1	2.3	2.2
Actual Moisture Content %	6.2	7.0	8.1	9.3	10.2
Dry Density	2025	2067	2107	2077	2041

MAXIMUM DRY DENSITY Kg/m3 2106

OPTIMUM MOISTURE CONTENT 8.1%



Remarks:

Opinions and interpretations are not included in our schedule of accreditation. (T0860)

The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)

The test results reported relate to the samples tested.

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Report compiled by : Nicolette Coldrey



T0860

Deon Juckers
Technical Signatory

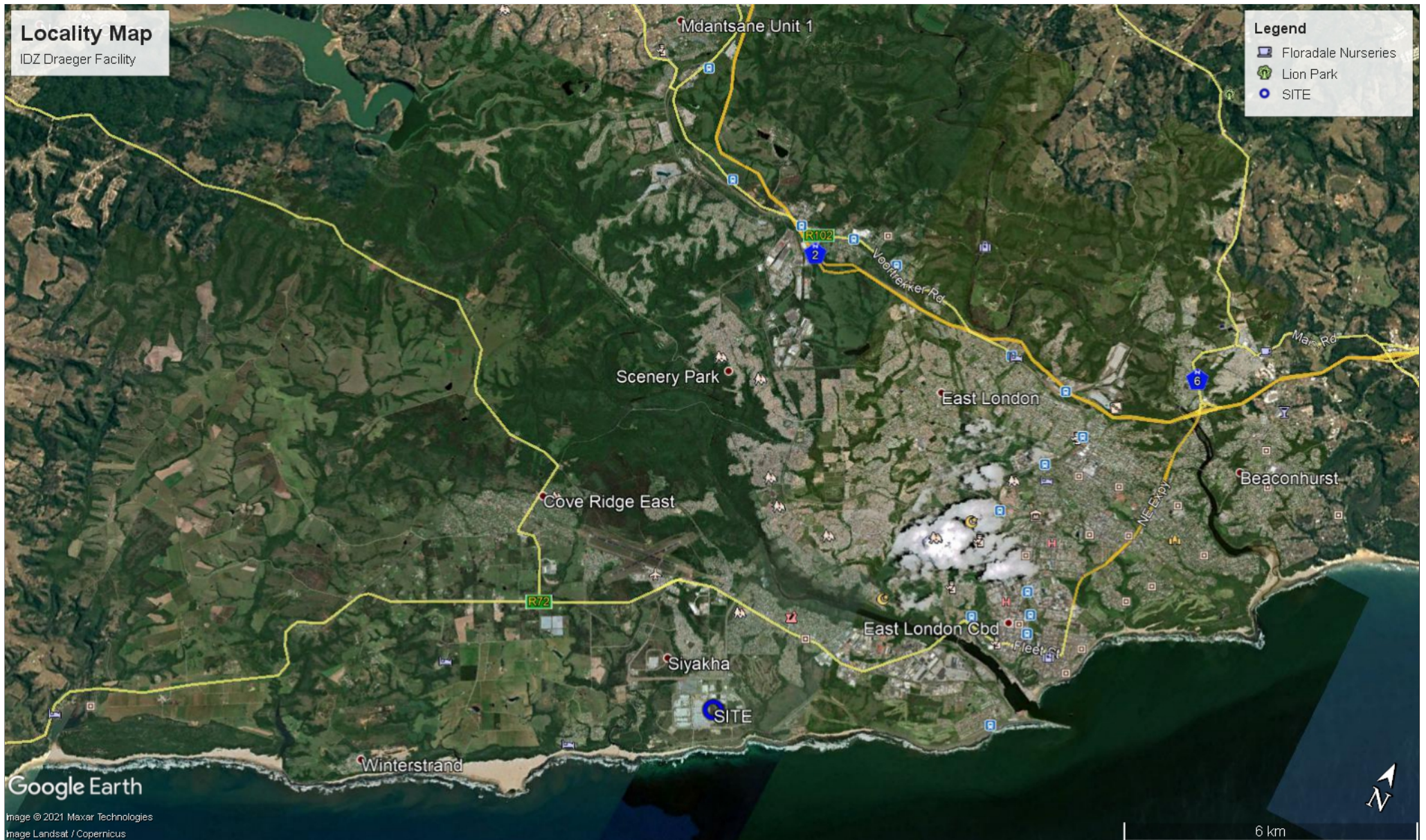


Figure 1 : Locality Plan

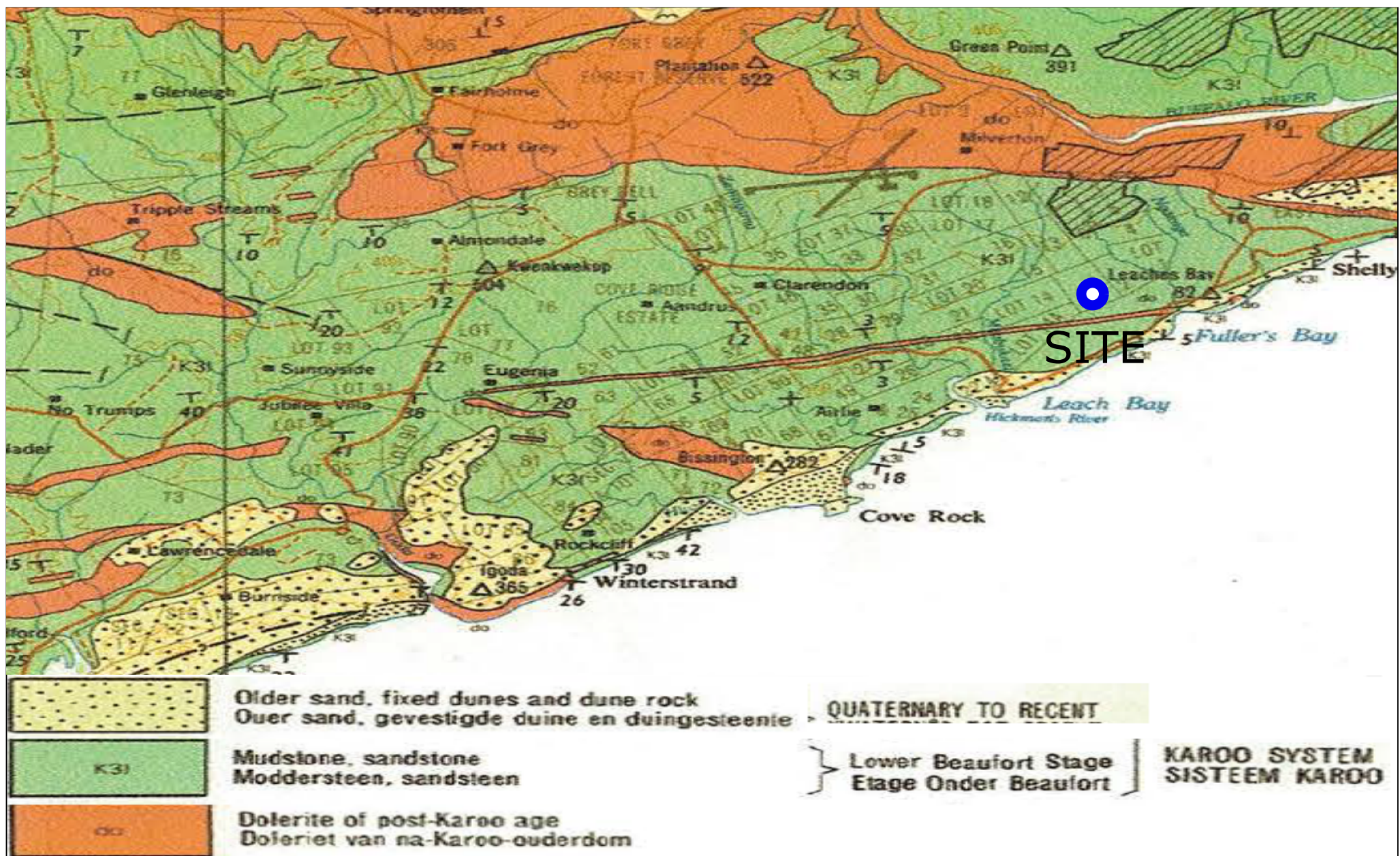
Not to scale



Figure 2 : Site Plan

Not to Scale





●
SITE

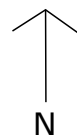


Figure 3 - Geological Plan

Not to Scale



PART D1: DRAWINGS
(See soft copies attached)

D1: DRAWING AND DOCUMENT REGISTER

The following drawings are included in the tender documents:

Drawing Number		Drawing Name	
Discipline:	Architecture	Issued:	Intsika Architects
GA 00-1.1		LOCALITY PLAN	
GA 05-1.1		SITE PLAN	
GA 05-3.1		GROUND FLOOR PLAN (1/2)	
GA 05-3.2		GROUND FLOOR PLAN (2/2)	
GA 05-3.3		GROUND FLOOR PLAN (SCALE 1/200)	
GA 05-4.1		SECTIONS	
GA 05-5.1		ELEVATIONS	
GA 05-6.1		ROOF PLAN	
GA 05-7.1		CEILING PLANS	
GA 05-8.1		PALISADE FENCE	
GA 05-9.1		GATEHOUSE	
AS 05-1.6		WATERPROOFING DETAILS	
AS 05-2.2		MEDIA CALLOUTS	
AS 05-2.3		ADMIN. SECTIONS & ELEVATIONS	
CO 05-1.1		DOOR 01A	
CO 05-1.2		DOOR 01B	
CO 05-1.3		DOOR 02	
CO 05-1.4		DOOR 03	
CO 05-1.5		DOOR 04A & DOOR 04B	
CO 05-1.6		DOOR 04C	
CO 05-1.7		DOOR 05	
CO 05-1.8		DOOR 06	
CO 05-1.9		DOOR 07	
CO 05-1.10		DOOR 08	
CO 05-1.11		DOOR 09	
CO 05-1.12		DOOR 10	
CO 05-1.13		DOOR 11	
CO 05-1.14		RS DOOR 01	
CO 05-1.15		RS DOOR 02	
CO 05-1.16		RS DOOR 03A	
CO 05-1.17		DOOR 12	
CO 05-1.18		DOOR 13	
CO 05-1.19		RS DOOR 03B	
CO 05-1.20		DOOR 14	
CO 05-1.21		DOOR 15	
CO 05-2.1		WINDOW 01	
CO 05-2.2		WINDOW 02	
CO 05-2.3		WINDOW 03	
CO 05-2.4		WINDOW 04	
CO 05-2.5		WINDOW 05	
CO 05-2.6		WINDOW 06	
CO 05-2.7		WINDOW 07	
CO 05-2.8		CWD 01	
CO 05-2.9		CWD 02	
CO 05-3.1		SHOPFRONT 01	
Discipline:	Civil	Issued:	CSE Civil & Structural Engineers
E813-001.1 Rev 0		BULK EARTHWORKS PLAN	
E813-001.2 Rev 0		BULK EARTHWORKS SECTIONS	

Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

E813-002 Rev 0		BULK SERVICES PLAN	
E813-003 Rev 0		PAVEMENT LAYOUT	
E813-004 Rev 0		CONSOLIDATED EXTERNAL SITESERVICES	
E813-010 Rev 0		GENERAL DETAILS	
E813-011 Rev 0		GENERAL DETAILS	
Discipline:	Structural	Issued:	ZNM Consulting Civil & Structural Engineers
DC-CI-WD-3001 Rev A		FOUNDATION LAYOUT AND DETAILS	
DC-CI-WD-3002 Rev A		SURFACE BED LAYOUT AND DETAILS	
DC-CI-WD-3003 Rev A		EAVES LAYOUT AND DETAILS	
DC-CI-WD-3004 Rev A		SUBSOIL DRAINAGE LAYOUT AND DETAILS	
DC-CI-WD-3301 Rev A		STRUCTURAL STEEL: HD BOLT LAYOUT AND DETAILS	
DC-CI-WD-3302 Rev A		STRUCTURAL STEEL: ROOF LAYOUT AND DETAILS	
DC-CI-WD-3303 Rev A		STRUCTURAL STEEL: SECTIONS AND DETAILS – SHEET 1 OF 4	
DC-CI-WD-3304 Rev A		STRUCTURAL STEEL: SECTIONS AND DETAILS – SHEET 2 OF 4	
DC-CI-WD-3305 Rev A		STRUCTURAL STEEL: SECTIONS AND DETAILS – SHEET 3 OF 4	
DC-CI-WD-3306 Rev A		STRUCTURAL STEEL: ELEVATIONS	
Discipline:	Electrical	Issued:	Carifro Consulting Engineers
E21/2111/DRG/100		ELECTRICAL SITE PLAN	
Discipline:	Mechanical	Issued:	Carifro Consulting Engineers
None			